Responsiveness Summary Concerning EPA's March 29, 2002 Public Notice Proposing 98 TMDLs and 20 Determinations That TMDLs Are Not Needed for Waterbody Pollutant Combinations in the State of Louisiana

Public Participation Activity Conducted

On March 29, 2002, EPA Region 6 published a notice in the Federal Register: Volume 67, Number 61, pages 15196-15198. In addition EPA Region 6 placed public notices in the legal advertising section of the New Orleans Times-Picayune, The Lake Charles American Press, and The News Star (Monroe, LA). Additionally, EPA Region 6 notified the plaintiff's in the Louisiana total maximum daily load (TMDL) lawsuit of this action. This public notice requested comments from the public on EPA's proposed 98 TMDLs and determinations that TMDLs are not needed for 20 waterbody/pollutant combinations, in the Ouachita and Calcasieu Basins, from what was then referred to as the 2000 Louisiana court-ordered list.

Summary of Public's Comments:

The following persons provided written comments during the comment period:

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RE: Comments on Federal Register: March 29, 2002 (Volume 67, Number 61) [FRL-7165-6], Clean Water Act Section 303(d): Availability of Total Maximum Daily Loads (TMDLs) and Determinations that TMDLs are not needed for 20 waterbody/pollutant combinations in the Calcasieu and Ouachita river basins.

Dear Ms. Caldwell:

The Louisiana Department of Environmental Quality hereby submits comments on the 98 TMDLs and the calculations for these TMDLs prepared by EPA Region 6 for waters listed in the Calcasieu and Ouachita river basins, under section 303(d) of the Clean Water Act. Listed below are general comments. Refer to the Attachments for specific comments and discussion.

1. It is inappropriate to use non-regulatory "targets" (sediment guidelines or others) as end-points for TMDLs.

2. Incorrect flows were applied in some areas (e.g. harmonic mean was used rather than tidal flows).

3. EPA's use of non-clean technique metals data is inappropriate. Metals data from the Superfund project should not have been used at all since clean sampling and analysis techniques were not used. When EPA did use these data, they were often not applied correctly. For example, Louisiana instream criteria are based on dissolved metals; yet EPA used both dissolved and total metals data to compare to the dissolved criteria. EPA's use of applying total metals to dissolved metals criteria in order to determine exceedences is flawed.

4. LDEQ Ambient Network data should not have been used to justify TMDLs for the same reason as the Superfund data. The available LDEQ data were not collected and analyzed using clean techniques. LDEQ uses these data as a screening tool to target more intensive sampling and analysis using clean techniques, not for justifying and developing TMDLs.

5. It is inappropriate to assume industries discharge a pollutant when it has not been included in their permit. EPA knows that when effluent limits are determined for each facility based on a number of factors, including the type of facility, types of waste-streams and effluent data submitted during the application process.

6. Monitoring schedules and locations for the different pollutants have been recommended for Louisiana throughout the document; Louisiana will continue its

ambient and intensive monitoring programs according to established schedules and agreements.

7. LDEQ's comments concerning specific TMDLs will indicate that EPA has made numerous errors in listing dischargers in the TMDL.

8. The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. Neither LDEQ nor EPA has promulgated sediment criteria. Therefore, the use of non- regulatory sediment guidelines and screening values, as Region 6 has done in this report, is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

9. Many of these TMDLs are based on models using historical water quality data gathered at a single or small number of locations rather than survey data gathered at sites spaced throughout the waterbody. The hydraulic information used was generally an average value or estimated value, not taken at the same time as the water quality data. The calibrations are inadequate due to the lack of appropriate hydrologic data and the paucity of water quality data. The resulting TMDLs are invalid. LDEQ does not accept these TMDLs.

We look forward to hearing your response to these comments.

Response: *Please see responsiveness summary for Calcasieu Toxics TMDL*

Sincerely,

Emelise S. Cormier
Environmental Scientist Senior
Technology Division

Enclosure(s)

cc: Willie Lane
EPA
Region 6

LDEQ COMMENTS ON THE DRAFT TMDLS PUBLISHED BY EPA

LDEQ has reviewed the TMDLs published by EPA on March 29, 2002. One particularly troubling issue for LDEQ is the fact that numerous dischargers that should have been included in these TMDLs were not. This indicates a complete disregard for the discharger inventory LDEQ

provided to EPA. At the least, the TMDLs should acknowledge all facilities present in the covered watershed(s) and present the decisions for including or not including them in the TMDL.

In the future, LDEQ requests that EPA provide hard copies of the TMDLs and Appendices for LDEQ review. Hard copies will insure that the complete official document is being reviewed and will eliminate the time required for LDEQ to put together the document from electronic files.

In general, LDEQ found these TMDLs to be unacceptable.

Federal Register Notice: Volume 67, Number 61, pages 15196 - 15198 (3/29/2002)

MERCURY

Ouachita River Mercury (Subsegment 080101)
Coastal Waters of Calcasieu River Basin TMDL for Mercury (Subsegment 031201)

General Comments on Mercury TMDLs:

1. It was assumed that a linear relationship exists between the mercury load to the subsegment and the king mackerel tissue mercury concentrations. The relationship between mercury load to a waterbody and the accumulation of mercury in the fish tissue is not thoroughly understood. A TMDL based on this relationship is disputable.

Response: *EPA agrees that the relationship between concentrations of mercury in a waterbody and the accumulations of mercury in fish tissue can be complex and is not completely understood. However, data for the Everglades collected by EPA Region 4 demonstrates a surprisingly good correlation between atmospheric loading rate and fish tissue concentrations for mercury. Based on this new data, from a national standpoint, the agency had determined that the assumed linear relationship in the development of TMDLs is reasonable. While the relationship between loading and bioaccumulation may vary by ecosystem, the Region feels that the approach is simplistic, yet logical and reasonable in the absence of definitive studies or calibrated models. The assumption of linear relationship has precedence in previous mercury TMDLs based on fish tissue concentrations. This TMDL can be re-evaluated in the future taking into account a more realistic representation of the relationship between mercury in fish tissue and the environment as this interaction becomes better understood.*

2. The calculations for the load allocations should be thoroughly explained. Sample calculations should be provided in the appendices.

Response: *Explanations of the methods for calculating the load allocations have been added to the document.*

TMDL Stream Specific Comments:

Coastal Waters of Calcasieu River Basin TMDL for Mercury (Subsegment 031201)

1. Section 4.4.2 Local and Global/Regional Atmospheric Deposition Sources; Paragraph 3; Sentences 5-7; Page4-7: The documentation showed that the total mercury emissions for Calcasieu Parish were 1,702 lb. This data was obtained from the National Toxics Inventory (NTI). LDEQ's Toxic Emissions Data Inventory Program stated the emissions for Calcasieu Parish were 1,222 lb. for 1999 and 1,281 for 1996. Mercury emissions from local sources were estimated with the higher NTI values. These values are not consistent with LDEQ's data.

***Response**: Additional text has been added to this paragraph explaining that the loads reported by TEDI and NTI are different because NTI includes loads from minor sources as well as major sources. NTI data were used because it was judged to be a more comprehensive accounting of mercury loading in the airshed.*

2. Section 4.4.5 Current Mercury Load Summary; Page 4-10: Sentence three states that no point source contributions were included in the TMDL. This contradicts statements made in Section 4.4.4, Paragraph 2.

***Response**: Additional text has been added to this paragraph to clarify that while point source data were used to estimate a mercury load for the Calcasieu River, these point sources were not included in the TMDL load allocation as WLAs since they do not discharge directly to the subsegment. Load allocations for these point sources are expected to be addressed in mercury TMDLs for Calcasieu Estuary.*

PESTICIDES

Ouachita River Basin TMDLs for Selected Pesticides (Subsegments 081001, 080903, 080901, 081002, 081201)
Bayou Serpent Fipronil (Subsegment 030701)

General Comments on Pesticide TMDLs:

1. The flow used for calculations should be the flow established in the LDEQ regulations rather than one rationalized by EPA. Since the TMDLs state that they must account for aquatic life and human health, the 7Q10 and the harmonic mean should have been calculated for this stream and the more stringent value should have been used to establish the TMDL. The EPA should have established the TMDL calculation using the correct flow based on the regulations and if necessary made recommendations for changes to the criteria.

***Response**: For the Bayou Serpent Fipronil TMDL, EPA believes the default value for flow given in the Louisiana Technical Procedures Manual and used in this TMDL is appropriate because pesticide (Fipronil) impairment in Bayou Serpent is a function of tailwater release from rice fields.*

EPA believes the 7Q10 is not an appropriate flow for use with pesticides considered in the Ouachita River Basin TMDL because pesticides impairment in this basin is a function of wet weather conditions. This TMDL was written to address violations of the aquatic life use not human health concerns. Human health values are significantly higher and are not exceeded. The EPA determined that using the arithmetic mean is appropriate. Additionally, because flow data is not normally distributed, the arithmetic mean not the 50th percentile but ranges from the 66th to the 70th percentile based on the USGS gaging stations used in this TMDL and therefore, this provides an additional level of protection.

2. The time interval for collecting data represents a time of intense agricultural activity. Data should have been collected for the entire yearly cycle at the very least. Complete understanding of the effects of the pesticides on the waterbody during the rest of the year cannot be established without it. The actual critical periods cannot be established without a complete study.

***Response**: With regard to the Bay Serpent Fipronil TMDL, LDAF conducted studies in the Calcasieu River Basin over 2 growing seasons. In the first year weekly data collection began in March and continued through August. In the second year, weekly data collection began in March and continued through June because no detects were observed at any of the stations since April. Fipronil should not have an effect outside of the growing season because Fipronil use is directly correlated with rice farming and the release of tailwater and both studies indicated exceedances in the Fipronil numeric target only early in the growing season (Mar and April).*

With regard to the Ouachita River Basin Pesticidesf TMDL, due to the court-ordered deadlines, it was not possible for EPA to complete a year-long study. EPA conducted a 6-month study targeted at characterizing the conditions during a period of time when spring pesticides were being actively applied. This study provided first time data for some subsegments and supplemented existing data for stations monitored quarterly by LDAF through their ambient monitoring program. Since LDAF only monitors for currently used pesticides, the study provided data regarding the presence of banned pesticides in these subsegments. The seasonal patterns observed in all the data used in this study were typical of those patterns observed in the MISE study (Kleiss, et al, 2000).

3. A Non-agricultural activity projection was not addressed in this TMDL.

***Response**: As stated in the TMDLs, no known formulators of these pesticides are known to exist in these watersheds. Agriculture was considered to be a significant source for these specific pesticides because it is the primary landuse. Urban landuse in these watersheds accounts for 0.1% to 0.5% and therefore, public use of these pesticides is negligible compared to agricultural uses and was not considered to have a significant effect.*

FECAL COLIFORM

Contraband Bayou Fecal Coliform (Subsegment 030305)
Turkey Creek Fecal Coliform (Subsegment 080905)
Middle Fork Bayou D'Arbonne Fecal Coliform (Subsegment 080610)
Little River Fecal Coliform (Subsegment 081602)
Clear Lake Fecal Coliform (Subsegment 080910)
Bayou Macon Fecal Coliform (Subsegment 081001)
Bayou Chauvin Fecal Coliform (Subsegment 080102)

General Comments on Fecal Coliform TMDLs:

1. In general, LDEQ does not believe that the TMDL concept was intended to address fecal coliform bacteria. Bacteria are living organisms and are not suited to mathematical computations to estimate loading. In the aquatic environment, bacteria reproduce and die off at rates that vary as in-stream conditions vary.

Response: *We appreciate the comment. However, EPA is required under CWA 303(d) to develop total maximum daily loads (TMDLs) for those pollutants that do not meet applicable water quality standards. Levels of fecal coliform bacteria in the above listed water bodies were found to be in exceedance of State established criteria. These TMDLs are based on best available data and are the best estimate of bacterial loading based on such data.*

2. These TMDLs do not explain or quantify how much of the nonpoint loading can be attributed to natural sources or natural conditions. Several of these subsegments have forested land uses in excess of 60% indicating the possibility of wildlife contributions. Since the point sources are controlled through permit requirements to meet the standard in their effluent, then it follows that most of the reduction must come from nonpoint loading. How does EPA propose to reduce natural sources of bacteria?

Response*: These TMDLs are based on all available data and are the best estimate of bacterial loading based on such data. This data did not differentiate between natural sources and anthropogenic sources of bacterial pollutants. Careful consideration of sources, and targeting of these sources for treatment, should take place during the State's implementation phase of these TMDLs.*

3. In calculating the current instream load of fecal coliform bacteria, EPA used the average fecal coliform count based on the available LDEQ water quality ambient data for the appropriate season and the estimated average seasonal flow for the reach. EPA then calculated a criteria load based on the LDEQ (30 day period) geometric mean criteria value of 200 cfu/100ml and the estimated average seasonal flow. These loads were then used to determine the calculated percent load reduction required. LDEQ believes that this comparison is inaccurate because it does not compare equivalent parameters. It is inappropriate and results in a violation of state regulations to compare an average current instream value to an intended regulatory geometric mean criteria

value. If the 200 cfu/100ml criteria is used, Louisiana state regulations require EPA to have a minimum of five samples over a 30-day period in the appropriate season. Since, the required quantity of daily samples are not available, a more reasonable comparison would be using the existing monthly samples to calculate a 75 percentile fecal coliform count and compare it to the state's 75 percentile 400 cfu/100ml criteria. The LDEQ Assessment group currently uses the 75 percentile, 400 cfu/100ml as its assessment criteria and LDEQ believes this would be a more accurate method to determine the percent load reduction. LDEQ takes exception to this practice and requests that these percent reductions be recalculated using an appropriate comparison of instream loads to the 400 cfu/100ml criteria.

***Response**: The geometric mean is required when assessing against the 200cfu/100ml criterion when at least 5 samples were collected during a 30-day period. In completing their assessments, LDEQ assessed the individual data points against the 400cfu/100ml criterion to determine the percentage of exceedances. This was done because the State of Louisiana does not collect data to verify compliance with the geometric mean portion of the standard. Since only one or two samples were collected per month, it was appropriate to use the arithmetic mean to calculate the current in-stream loads. Because these data are not normally distributed the mean typically represents the 60-75th percentile range. Use of the 75th percentile may be another acceptable way of expressing the current load. We did do some calculations comparing the mean and 75th percentile values. We found that they were in some cases the exact same number and were never much different. We do not believe that significant changes to these TMDLs are warranted.*

EPA believes that the use of the 200 cfu/100ml as a TMDL target is appropriate. LDEQ does not collect data to assess against the 200 cfu/100ml geometric mean. Nonetheless, this criterion does exist and all efforts should be made to meet the established criterion. Establishing the TMDL target at 400 cfu/100ml would not be adequate to be protective of this part of the State's fecal coliform criteria. If the target of 400cfu/100ml is used, it would be very likely that the 200cfu/100ml portion of the criterion would not be met. If however, the target is set to the lower 200cfu/100ml criterion it is more likely that both criteria will be met.

4. Margin of Safety: These TMDLs state that using the 200 cfu/100ml standard rather than 400 cfu/100ml is one of the conservative assumptions included in the implicit MOS. Using the appropriate criteria, LDEQ determined this implicit MOS ranged from 10-65%.

***Response**: EPA appreciates the comment. It is unclear how the 10-65% values were calculated, but these values do support that the TMDL is conservative. Because of the high levels of uncertainty in this type of TMDL we believe that the current MOS is appropriate.*

5. LDEQ generally uses a 20% MOS for dischargers. The listed EPA TMDLs used a design flow with no MOS in its TMDL calculations. LDEQ takes exception to this method and requests that the LDEQ MOS protocol be followed.

***Response**: EPA's calculations use an implicit MOS. We believe that using the facility's design flow for the TMDL calculations is conservative and appropriately represents uncertainties related to point source contributions. The use of an increased flow for the point sources would provide a larger WLA. This could be used to establish an allocation for future growth but should not be used to address MOS.*

TMDL Stream Specific Comments:

1. Little River (081602): EPA used one of the three available water quality ambient stations. The data from all three LDEQ stations should be included in the calculations.

***Response**: LDEQ procedures for assessing subsegments with multiple water quality stations calls for an independent assessment of the data at each station. Under this procedure, the station with the greatest number of exceedances is used as the basis for listing the entire subsegment. Translating this procedure to TMDL calculations, it then becomes appropriate to set the current loading conditions to the station upon which the impairment is based. EPA assumes that the comment suggest that the data should be averaged to obtain a current loading estimate. This would be inappropriate because only one station was impaired and averaging this data with stations that were not impaired would result in a lower estimate of current conditions giving a false impression that smaller reductions are needed. This calculation only affects the percent reduction value and has no impact on the TMDL target. Percent reductions are only given as a means for the public to understand the reductions needed to meet the water quality standards.*

2. Contraband Bayou (030305): The TMDL states that there are no known point source dischargers into the bayou. According to the LDEQ database there are several dischargers into this waterbody, including two of the City of Lake Charles treatment plants.

***Response**: The Contraband Bayou (030305) TMDL has been modified to reflect the fecal coliform dischargers provided.*

3. Clear Lake (080910): LDEQ does not believe there is sufficient data to determine whether this waterbody is impaired. Until such data is available LDEQ has removed the subsegment from the 2000 305b report and requests that this TMDL be withdrawn.

***Response**: This subsegment was listed on the court-ordered list as impaired for fecal coliform. This TMDL is due to be completed by May 31, 2002 under the current consent decree agreement. LDEQ did not sample this subsegment during the 1999 sampling of the Ouachita Basin. Since there is no data to support that water quality standards are being met, the agency believes that the most appropriate action is to develop the TMDL. A TMDL is not self-implementing, the TMDL simply implements the state's water quality standards and results in no specific requirements on any party.*

4. Middle Fork of Bayou D'Arbonne (080610): EPA used one of the two available LDEQ water quality ambient stations. The data from both LDEQ stations should be included in the calculations.

***Response**: LDEQ procedures for assessing subsegments with multiple water quality stations calls for an independent assessment of the data at each station. Under this procedure the station with greatest number of exceedances is used as the basis for listing the entire subsegment. Translating this procedure to TMDL calculations it then becomes appropriate to set the current loading conditions to the station upon which the impairment is based. The EPA assumes that the comment suggest that the data should be averaged to obtain a current loading estimate. This would be inappropriate because only one station was impaired and averaging this data with stations that were not impaired would result in a lower estimate of current conditions giving a false impression that smaller reductions are needed. This calculation only affects the percent reduction value and has no impact on the TMDL target. Percent reductions are only given as a means for the public to understand the reductions needed to meet the water quality standards.*

5. Bayou Macon (081001): EPA used one of the four available LDEQ water quality ambient stations. The data from all four LDEQ stations should be included in the calculations.

***Response**: LDEQ procedures for assessing subsegments with multiple water quality stations calls for an independent assessment of the data at each station. Under this procedure the station with greatest number of exceedances is used as the basis for listing the entire subsegment. Translating this procedure to TMDL calculations it then becomes appropriate to set the current loading conditions to the station upon which the impairment is based. The EPA assumes that the comment suggest that the data should be averaged to obtain a current loading estimate. This would be inappropriate because averaging this data with stations that were not as impaired would result in a lower estimate of current conditions giving a false impression that smaller reductions are needed. This calculation only affects the percent reduction value and has no impact on the TMDL target. Percent reductions are only given as a means for the public to understand the reductions needed to meet the water quality standards.*

CHLORIDES, SALINITY/TDS

Castor Creek Chlorides, Salinity/TDS (Subsegment 081501)

1. LDEQ objects to the application of in-stream criteria to the dischargers at "end-of-pipe" without allowing for mixing with upstream flow resulting in unnecessarily stringent wasteload allocations. The Louisiana regulations state: "For chlorides, sulfates and total dissolved solids, criteria are to be met below the point of discharge after complete mixing. Because criteria are developed over a long-term period, harmonic mean flow will be applied for mixing." (33:IX.1115.C.8)

***Response**: EPA recognizes LDEQ's concern regarding the calculation of the waste load allocations for chlorides and TDS. In the case of chlorides, the WLA has been revised (see pages 5-2 and 5-3) to acknowledge the fact that there is additional assimilative capacity available at station 0079, since at station 0332 the state water quality criterion for chloride is not exceeded. The upstream harmonic mean flow was used, to allow for mixing in a mass balance to solve for the concentration of chloride in the discharge.*

For TDS, since the water quality standard for TDS (100 mg/l) is exceeded at Station 0332, mixing with upstream flow quality will not help meet the standard at Station 0079. It is agreed that the Louisiana Regulations allow for mixing in stream and that water quality standards must be met after mixing. In this case, WLA for TDS was calculated using a high discharge TDS concentration of 850 mg/L (Metcalf and Eddy. 1991). See pages 5-2 and 5-3.

2. This TMDL used inappropriate flow data when more appropriate data is available, and faulty calculations of flow from this data resulting in inaccurate TMDL calculations. The USGS station used for the harmonic mean calculation was a peak stage station. This is an inaccurate method for determining a harmonic mean flow in a waterbody, since it is based on peak values and not the entire flow regime. Second the values, which the contractor downloaded from the USGS web site, were not flow rates (cfs), they were gage measurements (feet).

***Response**: EPA verified LDEQ's assertion regarding the flow data used to calculate the TMDLs and modifications have been made accordingly. The harmonic mean at Station 0079 was estimated using the drainage area ratio of that of Station 0332. See page 3-1 and Appendix B.*

3. Since EPA erred in calculating the flows and the loads, the resulting TMDL is not conservative and does not have either an implicit or an explicit MOS. LDEQ uses an explicit MOS of 20% for point sources.

***Response**: EPA recognizes the need to revise the TMDL calculations. In discussion with LDEQ staff to clarify these comments, it was agreed that use of an implicit MOS for this TMDL is acceptable to LDEQ. As per these discussions, additional reasons for utilizing an implicit margin of safety were to page 5-4.*

<u>DISSOLVED OXYGEN AND NUTRIENT TMDLS:</u>

Joes Bayou DO and Nutrients (Subsegment 081002)
Lake St Joseph DO and Nutrients (Subsegment 081202)
Ouachita River DO and Nutrients (Subsegment 080201)
Tensas River DO and Nutrients (Subsegment 081201)
Corney Bayou DO (Subsegment 080607)
Clear Lake DO and Nutrients (Subsegment 080910)
Black River DO and Nutrients (Subsegment 080302)

Bayou LaFourche DO and Nutrients (Subsegment 080904)
Bayou de L'Outre DO (Subsegment 080501)
Bayou Bonne Idee DO and Nutrients (Subsegment 080902)

General Comments on Dissolved Oxygen and Nutrient TMDLs :

1. Many of these TMDLs are based on models using historical water quality data gathered at a single or small number of locations rather than survey data gathered at sites spaced throughout the waterbody. The hydraulic information used was generally an average value or estimated value, not taken at the same time as the water quality data. The calibrations are inadequate due to the lack of appropriate hydrologic data and the paucity of water quality data. The resulting TMDLs are invalid. LDEQ does not accept these TMDLs.

***Response**: The TMDLs were based on existing data plus information that could be obtained with available resources. Each model was developed using the most appropriate hydraulic information and water quality data that were available. A rationale was provided for data used and all assumptions and limitations have been given. Although LDEQ typically collects more data for model calibration than what was available for calibration of most of these models, EPA considers these model calibrations and the resulting TMDLs to be valid.*

2. LDEQ does not consider any of these waters to be impaired due to low dissolved oxygen, nutrients, or ammonia. Many of these waters simply have inappropriate standards and criteria. The resources spent on developing these TMDLs could have been far more effectively and wisely spent on reviewing, approving, and assisting in the development of appropriate standards and criteria for these waters through the UAA process.

***Response**: TMDLs were developed for these subsegments based on the requirements of Section 303(d) of the Clean Water Act and regulations at 40 CFR 130.7 and the suspected causes of impairment (organic enrichment/low DO and/or nutrients) for each subsegment in the EPA Modified Court Ordered 303(d) List. TMDLs must be established to meet existing water quality standards. If it is determined that a standards change is appropriate, the TMDL can be revised to reflect that change.*

3. $CBOD_u$ and NH_3-N were estimated from surrogate parameters rather than actual measured data for most of the TMDLs. The TMDL report uses the LDEQ's multi-basin loading database's median ratio values between the ultimate loads and the proposed surrogates. This data was based on the measured data from the last two years of LDEQ water quality surveys. LDEQ objects to the correlation of TOC to CBOD and NH3-N to TKN unless these correlations are taken from water quality data on the modeled waterbody. Our studies have shown only a moderate correlation between these parameters within the same waterbody, however when this correlation was attempted across waterbodies, extreme variability was seen and the correlations were not judged valid. It is possible that a combination of surrogates will obtain a better correlation, such as TOC along with color, turbidity, pH, etc. LDEQ is currently researching these options.

***Response**: EPA agrees that it would be ideal to have data collected from each modeled waterbody for relating TOC to CBOD and NH3-N to TKN. However, none of these subsegments had sufficient data from which these relationships could be developed.*

4. BOD decay rates were estimated from surrogate parameters rather than actual measured data for most of the TMDLs. The TMDL report uses the LDEQ's multi-basin loading database's median values. This data was based on the measured data from the last two years of LDEQ water quality surveys. It has been LDEQ's experience that these rates vary significantly from waterbody to waterbody and frequently vary significantly within the same waterbody. LDEQ objects to using surrogate data without regard for specific waterbody conditions for these parameters.

***Response:** EPA agrees that COD is not an ideal indicator of CBODu. However, EPA believes that most effluents that exert significant COD are likely to exert some oxygen demand in natural waterbodies and therefore the discharges with COD limits should be included in the TMDLs.*

5. A winter projection model was not developed for most of the TMDLs. Winter projection models must be developed to address seasonality requirements of the Clean Water Act. Where point sources have seasonally variable effluent limitations or such seasonal variations are proposed, a winter projection model is required to show that standards are met year-round.

***Response:** As discussed in Section 4.2 of each report, summer is the most critical season for meeting the year round standard for DO for these subsegments. Therefore, the summer simulation satisfies the seasonality requirements of the Clean Water Act. Performing additional simulations to evaluate permit limits that are seasonal or hydrograph controlled releases was not required for developing these TMDLs and can be done by LDEQ or by permittees.*

6. LDEQ takes exception to the calculation of a TMDL based on TN/TP ratios derived from waterbodies other than the modeled waterbody. It is LDEQ's experience that the natural allowable TN/TP ratio is waterbody-specific and can vary dramatically between streams.

***Response**: These nutrient TMDLs were developed using naturally occurring ratios of nitrogen to phosphorus based on Louisiana's narrative water quality standard for nutrients. These ratios were calculated using reference stream data rather than long term monitoring data for each subsegment because the reference stream data were considered to be more appropriate for naturally occurring conditions.*

7. LDEQ has not adopted the EPA recommended ammonia criteria (1999) and takes exception to its use in these TMDLs. In general, LDEQ does not accept EPA's use of national guidance for TMDL endpoints. The nationally recommended criteria do not consider regional or site- specific conditions or species and may be inappropriately over protective or under protective. No ammonia nitrogen toxicity has been demonstrated or documented in any of the waterbodies in

these TMDLs. The general criteria (in particular, LAC 33:IX.1113.B.5) require state waters be free from the effects of toxic substances.

***Response**: Ammonia toxicity calculations were performed to ensure that the ammonia loadings that will maintain DO standards will not cause any exceedences of the ammonia toxicity criteria. National guidance for ammonia toxicity was used in the absence of any numerical state water quality standards for ammonia. EPA believes that this evaluation offers assurances that waters will continue to be free from the effects of toxic substances.*

8. Algae were not simulated. Was there evidence that algae did not have an impact on the waterbody? Did the contractor have any Chlorophyll a measurements on which to base this determination?

***Response**: For most of these subsegments, the effects of algae were not simulated in the models because there were no data to clearly demonstrate a need for including algae and the models calibrated well without including algae (i.e., the models were calibrated without having to use unreasonable coefficients to compensate for algal effects).*

Joes Bayou DO and Nutrients (Subsegment 081002)

1. Hydraulic data was developed from USGS Station 0066, Tensas River at Tendal, LA. This site is at a bridge. The cross-sectional area is constricted and the channel tends to be braided during periods of low flow. There is a tributary that comes in at the bridge. The hydraulic data at this site is not appropriate for use in developing the hydraulic parameters of the stream. LDEQ strongly objects to any TMDL based on this data.

***Response**: EPA appreciates this additional information pertaining to the Tensas River Tendal site. The only model input parameters that were estimated from the USGS flow measurement data at that site were the exponents for the width and depth power functions. The exponents are mostly dependent on the shape of the channel rather than the size of the channel (Leopold et al, 1964; p. 217). Because there are not enough depth and width data on Joes Bayou to develop exponents, the only alternative for estimating these exponents would be to use default values that are based on 158 USGS gaging stations (Leopold et al, 1964; p. 244). Although the Tensas River at Tendal may not be a perfect site for developing exponents for the width and depth power functions, the exponents developed from the data at that site are considered to be more appropriate for Joes Bayou than the default values based on 158 USGS gaging stations.*

Reference: Leopold, L.B., M.G. Wolman, and J.P. Miller. 1964. Fluvial Processes in Geomorphology. W.H. Freeman and Company, San Francisco.

Lake St Joseph DO and Nutrients (Subsegment 081202)

1. The Fortran program used by the contractor does not adequately show the methodology used in determining the percent reduction based on the projection loading. From the information that

is given, LDEQ believes that the chosen method is contrary to the current method in use by the Department.

***Response**: The percent reductions were calculated by subtracting the projection input value from the calibration input value and then dividing by the calibration input value. This procedure is slightly different from that which LDEQ uses but still provides percent reductions that are useful. These calculations were actually done outside of the Fortran program; the program was just used to calculate the TMDL components (i.e., the numbers in Tables 5.1 and 5.2).*

Ouachita River DO and Nutrients (Subsegment 080201)

1. The hydraulic data derived from the HEC-2 model is suspect due to the large variance between the calibration/projection flow rates and the flow rate used in the hydraulic model.

***Response**: The HEC-2 model has been re-run with the same flows as in the LA-QUAL calibration run. The resulting depths and widths have been input into LA-QUAL. Because the new widths and depths were similar to the previous values, none of the calibration parameters needed to be changed in LA-QUAL.*

2. The incorrect flow station was used to determine the calibration and critical flows. The 7Q10 used does not coincide with the LDEQ determined value at this location.

***Response**: The calibration flow was determined using the only available gages with flow data during the calibration period. The 7Q10 flow used for the headwater in the projection was the published value based on 28 years of data for the Ouachita River at Monroe (07367000). The only other USGS gage on the Ouachita River in Louisiana with a 7Q10 published in Lee (2000) was the Columbia L&D gage, but that 7Q10 was based on only 11 years of data, which is considered insufficient for calculating a 7Q10. There are no significant tributaries entering the Ouachita River between the Monroe gage and the upstream end of this model.*

Reference: Lee, F.N. 2000. Low-Flow on Streams in Louisiana. Report prepared for LDEQ. March 2000.

3. LDEQ takes exception to the method for determining the organic nitrogen load used for the point sources.

***Response**: The point source organic nitrogen loads were assumed to be half of the ammonia loads for mechanical treatment systems and twice the ammonia loads for pond treatment systems. These assumptions have been used in previous TMDLs approved by LDEQ.*

4. The Fortran program used by the contractor does not adequately show the methodology used in determining the percent reduction based on the projection loading. From the information that

is given, LDEQ believes that the chosen method is contrary to the current method in use by the Department.

***Response**: The percent reductions were calculated by subtracting the projection input value from the calibration input value and then dividing by the calibration input value. This procedure is slightly different from that which LDEQ uses but still provides percent reductions that are useful. These calculations were actually done outside of the Fortran program; the program was just used to calculate the TMDL components (i.e., the numbers in Tables 5.1 and 5.2).*

Tensas River DO and Nutrients (Subsegment 081201)

1. This model was calibrated to data obtained primarily from an LDNR study that was conducted on May 30, 1979. This data is outdated and does not coincide with LDEQ assessments, which are limited to the last five years of data. The calibration is inadequate.

***Response**: As discussed in Section 3.2 of the report, the 1979 data set was chosen for calibration because it included data collected at numerous sites along the length of the stream and some hydraulic information was collected at the same as the water quality data were collected. Both of these criteria for selecting a calibration data set are used by LDEQ (as noted in General Comment No. 1 above). Because the stream is dominated by nonpoint sources (rather than point sources that would be upgraded over the years), it is likely that the coefficients for instream processes have not changed significantly since 1979.*

Corney Bayou DO (Subsegment 080607)

1. Based upon a 91% reduction in loads and the fact that no point sources are located in this subsegment, these results suggest that a dissolved oxygen standard criteria change should be investigated. This was not noted in the report.

***Response**: The appropriateness of the DO standard was not mentioned in the report because the scope of this report was only the development of necessary TMDLs. Evaluation of the DO standard can be performed by LDEQ and documented in a separate report.*

2. The margin of safety for both point sources and non-point sources should be 20%.

***Response**: The nonpoint margin of safety (MOS) was set to 10% based on other TMDLS on Louisiana waterbodies that have either been developed by LDEQ or approved by LDEQ. Eleven TMDL reports from LDEQ's website were reviewed to examine the explicit MOS for nonpoint sources. All 11 of these TMDLs were for oxygen demanding substances. The explicit MOS for nonpoint sources was set to 20% for 2 reports, 10% for 3 reports, and 0% for 6 reports. Therefore, the value of 10% was considered to be a*

typical value that was acceptable. However, EPA will consider this in future development of TMDLs in Louisiana.

Clear Lake DO and Nutrients (Subsegment 080910)

1. The Fortran program used by the contractor does not adequately show the methodology used in determining the percent reduction based on the projection loading. From the information that is given, LDEQ believes that the chosen method is contrary to the current method in use by the Department.

***Response**: The percent reductions were calculated by subtracting the projection input value from the calibration input value and then dividing by the calibration input value. This procedure is slightly different from that which LDEQ uses but still provides percent reductions that are useful. These calculations were actually done outside of the Fortran program; the program was just used to calculate the TMDL components (i.e., the numbers in Tables 5.1 and 5.2).*

Black River DO and Nutrients (Subsegment 080302)

See General Comments

Bayou LaFourche DO and Nutrients (Subsegment 080904)

1. Based upon an 81% reduction in loads, these results suggest that a dissolved oxygen standard criteria change should be investigated. This was not noted in the report.

***Response**: The appropriateness of the DO standard was not mentioned in the report because the scope of this report was only the development of necessary TMDLs. Evaluation of the DO standard can be performed by LDEQ and documented in a separate report.*

2. The margin of safety for both point sources and non_point sources should be 20%.

***Response**: The nonpoint margin of safety (MOS) was set to 10% based on other TMDLS on Louisiana waterbodies that have either been developed by LDEQ or approved by LDEQ. Eleven TMDL reports from LDEQ's website were reviewed to examine the explicit MOS for nonpoint sources. All 11 of these TMDLs were for oxygen demanding substances. The explicit MOS for nonpoint sources was set to 20% for 2 reports, 10% for 3 reports, and 0% for 6 reports. Therefore, the value of 10% was considered to be a typical value that was acceptable. However, EPA will consider this in future development of TMDLs in Louisiana.*

Bayou de L'Outre DO (Subsegment 080501)

1. The Fortran program used by the contractor does not adequately show the methodology used in determining the percent reduction based on the projection loading. From the information that is given, LDEQ believes that the chosen method is contrary to the current method in use by the Department.

***Response**: The percent reductions were calculated by subtracting the projection input value from the calibration input value and then dividing by the calibration input value. This procedure is slightly different from that which LDEQ uses but still provides percent reductions that are useful. These calculations were actually done outside of the Fortran program; the program was just used to calculate the TMDL components (i.e., the numbers in Table 5.1).*

Bayou Bonne Idee DO and Nutrients (Subsegment 080902)

1. The calibration simulation must be used as the baseline for the sensitivity analysis, not the projection simulation. LDEQ requests that all TMDLs be revised in this regard.

***Response**: It is considered acceptable to perform the sensitivity analysis using either the calibration or the projection as a baseline. However, EPA will consider this in future development of TMDLs in Louisiana.*

2. Based upon an 82% reduction in loads and the fact that there are four dams located in this subsegment, these results suggest that a dissolved oxygen standard criteria change should be investigated. This was not noted in the report.

***Response**: The appropriateness of the DO standard was not mentioned in the report because the scope of this report was only the development of necessary TMDLs. Evaluation of the DO standard can be performed by LDEQ and documented in a separate report.*

3. With four dams present on the stream, a newer version of Laqual could have been used that included dam functionality.

***Response**: The version of LA-QUAL that was used was the most recent version available on the LDEQ web site at the beginning of this project. This version includes all model processes that are needed for Bayou Bonne Idee.*

4. The margin of safety for both point sources and non-point sources should be 20%.

***Response**: The nonpoint margin of safety (MOS) was set to 10% based on other TMDLS on Louisiana waterbodies that have either been developed by LDEQ or approved by LDEQ. Eleven TMDL reports from LDEQ's website were reviewed to examine the explicit MOS for nonpoint sources. All 11 of these TMDLs were for oxygen demanding substances. The explicit MOS for nonpoint sources was set to 20% for 2 reports, 10% for 3 reports, and 0% for 6 reports. Therefore, the value of 10% was considered to be a*

typical value that was acceptable. However, EPA will consider this in future development of TMDLs in Louisiana.

DIOXIN

Ouachita River Basin TMDLs for Dioxin (Subsegments 080900, 080904, 080912)

1. Treating Dioxin as a conservative conflicts with the report's premise that dioxin becomes interlocked in the sediments. A more appropriate modeling option should be used. LDEQ was given 98 EPA TMDLs within a single 30 day review period. Unfortunately a through review of modeling options could not be performed. LDEQ suggests additional review as to appropriate modeling methods for Dioxin. We would appreciate being included in the discussions.

***Response**: While it is certainly true that Dioxin readily attaches to particulates and, as a result, is transported to the sediments, it also readily moves back into the foodchain from the sediments. Since it is likely that the bulk of the movement into the foodchain occurs from concentrations in the sediment, a more holistic approach is warranted. Removal of Dioxins from the water column to the sediments does not imply that the compounds are unavailable for biotic uptake. The EPA criterion is a water column concentration limit derived with the intention of limiting the accumulation of Dioxins in fish tissue. It only serves as an analog to calculate Dioxin loadings where biotic uptake may exceed fish tissue concentration limits. There are many more sophisticated methods for modeling the transport of pollutants such as Dioxins available; however, the data to support these more intensive efforts do not presently exist for the effected area and the time limitations imposed by the court case preclude the collection of these data.*

2. There is no subsegment 080900. Little Bayou Boeuf/Wham Brake are included within Subsegment 080904 and should be included in its TMDL. Please remove the 080900 descriptions from the report.

***Response**: EPA concurs with LDEQ that there is no subsegment 080900. However, the TMDL report will have a reference to segment 080900 forLittle Bayou Boeuf since it was specifically identified on the 1998 court order list. This correction has been made in the Attachment A list to the consent decree.*

3. Separate TMDLs should be determined for subsegments 080912 and 080904. Subsegment 080904 has a greater assimilative capacity than 080912 and could have additional point sources that should be addressed with wasteload allocations. Additional research for contributing facilities should be done in subsegment 080904.

***Response**: As a basis of its strategy, EPA stated in the TMDL report that: "Since the only known source of dioxin in the watershed contributing to Wham Brake and Bayou Lafourche is IP outfall 001, it is appropriate to establish the TMDL based on critical conditions in Staulkinghead Creek. No data were available to estimate current dioxin loading for point sources or nonpoint sources. It is assumed that if the TMDL is*

established based on the assimilative capacity of Staulkinghead Creek, the dioxin loading limits set will be protective of Wham Brake and Bayou Lafourche since both have a greater assimilative capacity." However, a comprehensive/extensive TMDL could be determined for Subsegment 080904 if the need arises in the future.

4. The margin of safety was incorrectly calculated, thus determining an incorrect TMDL value. First a 25% MOS was used, it is LDEQ standard protocol to use a 20% MOS. Second the TMDL, when treating the parameter as a conservative, should be calculated from the criteria and critical flow. The MOS can then be subtracted to determine the WLA and LA portions. The value the contractor listed as the TMDL is in reality the TMDL minus the MOS (ie. WLA + LA). The reported TMDL should be equal the sum of the WLA, LA and MOS.

***Response**: EPA acknowledges LDEQ's concern regarding margin of safety. The TMDL has been recalculated using a 20% MOS (see pages 5-1 to 5-3).*

TURBIDITY AND SUSPENDED SOLIDS

English Bayou Turbidity and Suspended Solids (Subsegment 030702)

1. In reviewing the R^2 values and plots based on EPA's regression analysis, LDEQ does not believe that the correlation between the TSS and turbidity is strong enough to use the turbidity criteria values to develop a numeric criteria for TSS. Thus it is LDEQ's opinion that this analysis is inaccurate and will not produce viable numeric criteria value for TSS. However, LDEQ does believe that there is a relationship between the two parameters. This can be proven by plotting the average monthly values of turbidity versus the average monthly values of TSS. These regression plots give a much better R^2 values and support EPA and LDEQ opinion that these two parameters are indicators of the same water quality concern.

***Response**: While it is true that a much better R^2 value can be achieved by using the average monthly values of turbidity versus the average monthly values of TSS, EPA believes this is not an appropriate use of regression analysis. Linear regression is intended to describe the relationship between two continuous variables, X and Y. In linear regression, the least squares method is used to determine the relationship between X and Y. This method uses the mean of these variables in its computation. When one averages the X and Y variables over a month and then in turn uses these averages for input into a regression analysis, the variability in the original (actual) data is lost. It is the variability in the original (actual) data that determines the relationship between the X and Y variables. The ultimate purpose of the regression equation is to predict a value for Y when X is known. When using mean values for X and Y then one is in essence predicting a mean Y when a mean X is known. Actual values, rather than mean values are collected in the field. One wouldn't take a monthly mean value to determine whether or not a WQS was being met, but would instead use actual values.*
EPA believes that turbidity may be a good predictor of TSS if a greater amount of the variability in the model can be accounted for. Much of the variability seems to stem from

the proportion of silt, clay and sand in the sample. If a sample is high in clay (resistant to settling from the water column), the turbidity value will remain elevated even at low flows, but the TSS (mg/l) may be small because of the size difference in the particles and their relative weights. Likewise, if a sample is high in sand (readily settles from water column), the turbidity value will be small under low flow conditions. All the while, rate of flow compounds the issue. This is an area that needs to be examined in the future.

2. EPA treated TSS as a conservative parameter in its TMDL calculation. By treating TSS as a conservative EPA is under-calculating the TMDL loads for TSS.

***Response**: While this may be true, the non-conservative portion of TSS represented by the organic component is very small in most cases. For example, chlorophyll a is measured in micrograms per liter rather than mg/L as is TSS. Therefore, 60 micrograms per liter of chlorophyll a, which would represent a concentration of concern with regard to nutrients, would only account for a very small portion (0.6 mg/l) of the TSS. Further more, FTN explored the use of turbidity and chlorophyll a data to predict TSS. They found that including chlorophyll data in the regression analysis did not significantly improve the prediction of TSS and therefore, did not include it in the final equation.*

TOXICS

Calcasieu River Basin (Estuarine Subsegments) TMDLs for Selected Toxics

1. Hydrologic Considerations: TMDLs and allocations were calculated from estimates of a defective flow in the various subsegments, with no consideration of tidal dispersion. This is unacceptable. Below the saltwater barrier the hydrology is dominated by tidal flushing. The hydrology of Lake Charles, Prien Lake, Moss Lake, Calcasieu Lake, Contraband Bayou, Bayou Verdine, and Bayou d'Inde is dominated by tidal flow. Tidal flow also dominates the main channel of the Calcasieu River at least from Lake Charles down.
The best approach to a TMDL is to use a properly calibrated non steady state tidal model. **A non steady state tidal model of the Calcasieu Estuary, using RECEIV-II, has been calibrated and could be used to calculate the water column concentration of conservative pollutants corresponding to a desired pollutant loading.** The next best approach is a calibrated steady state model with tidal dispersion. A very rough approximation of dilution may be obtained using the tidal prism method to obtain an estimate of flow irrespective of direction and then applying the LDEQ regulatory approach cited below.

The LDEQ Environmental Regulatory Code specifies the diluting flow to be used for tidal channels.

A. For tidal channels with flow greater than 100 cfs, the flow is 1/3 of the average or typical flow averaged over one tidal cycle irrespective of flow direction. The fraction of flow for aquatic life criteria is 10 cfs or 1/30 of the flow, whichever is greater. The fraction of flow for human health criteria is 100 cfs or 1/3 of the flow, whichever is greater.

B. For tidal channels with flow less than or equal to 100 cfs the flow is 1/3 of the average or typical flow averaged over one tidal cycle irrespective of flow direction. The fraction of flow for aquatic life criteria is 1/10 of the flow. One hundred % flow is used for human health criteria.

Table G-1 is cited as a listing of the source of flow data for all subsegments of concern. The reach file numbers listed are not recognizable NHD Reach File Numbers. Of the three numbers listed that appear to be Louisiana Subsegment numbers, one does not exist and the data given for the other two are not believable. Basins 3.0 is given as the source for flow data. The information in Basins 3.0 does not, to our knowledge, have any basis in fact.

Table 4 contains the advective flows used in the analysis. The advective flow in the Calcasieu River at the saltwater barrier is apparently derived from the USGS station at Kinder. This is the only flow used in the TMDL that we can agree with.

The estimates of 7Q10, mean, and harmonic mean flow in Table 4 for Contraband Bayou, Bayou Verdine, and Bayou d'Inde are without a reasonable basis. The advective 7Q10 flows for these bayous are actually zero. Treating these bayous as tidal prisms is the most reasonable approach to the calculation of TMDLs.

The flow assumptions for Lake Charles, Prien Lake, Moss Lake, and Calcasieu Lake are equally without basis. The non-steady state model of the Calcasieu Estuary includes these waters.

Response: *Please see responsiveness summary for Calcasieu Toxics TMDL*

2. Review of Significant Dischargers:

A. Bayou Verdine

Both of the listed dischargers, Conoco (LA 0003026) and Vista (LA0003336), currently discharge their process wastewater directly to the Calcasieu River and not to Bayou Verdine. Both facilities discharge some stormwater to Bayou Verdine.

PPG discharges once-through non-contact cooling water, wash-down water, cooling tower blowdown, and stormwater to Bayou Verdine. Lyondell Chemical Worldwide discharges stormwater to Bayou Verdine.

B. Bayou d'Inde

The TMDL lists 5 industrial dischargers:

PPG Industries LA0000761
Firestone Synthetic Rubber and Latex LA0003824
Certainteed Products Corp. LA0041025
Equistar Chemical LA0069850

Westlake Polymers LA0071382

Discharging industries of significance, including the 5 above, are:

Air Liquide LA0051730 Air separation
Westlake Polymers LA0071382 Polyethylene mfg.
PPG Industries LA0000761 Organic & inorganic chemicals
Equistar Chemical LA0069850 Ethylene & propylene production
Firestone Synthetic Rubber and Latex LA0003824 Synthetic rubber and latex
Certainteed Products Corp. LA0041025 PVC product mfg.
Citgo Petro Corp. LA0005941 Petroleum Refining
Praxair Inc. LA0100099 Hydrogen gas mfg.
Air Liquid LA0053708 Cryogenic air separation
Tessenderlo Kerley Inc. LA0047058 Compressed hydrogen production
W-H Holdings Inc. LA0105155 Warehousing and wash racks
Cetco LA0101869 Environmental remediation and sand blasting
Denmar Enterprises LA0108596 Heavy equipment washing and refurbishing

C. Contraband Bayou

The TMDL lists:

City of Lake Charles WWTP "C" LA0036366
City of Lake Charles WWTP "B" LA0036358

Significant dischargers are:

City of Lake Charles WWTP "B" and "C" LA0036366 Municipal wastewater treatment
City of Lake Charles Center St East Water Treatment Plant LAG380006
City of Lake Charles Center St West Water Treatment Plant LAG380008
City of Lake Charles McNeese St Water Treatment Plant LAG380009
City of Lake Charles Chennault Water Treatment Plant LAG380009
McNeese Univ. Farm Labs LA0104850 Meats, equine, and breeding labs

The discharge from Plant B has been routed to Plant C and the permit voided.

D. **Calcasieu River and Ship Channel – Saltwater Barrier to Moss Lake**

The TMDL lists:

WR Grace LA0001333
Basell USA LA0003689
Lyondell Chemical World Wide LA0005347
Citgo Petroleum LA0005941
City of Lake Charles WWTP "A" LA0036340
Calcasieu Refining LA0052370

City of Sulphur WWTP LA0067083
Westlake Petrochemicals LA0082511
Westlake Styrene LA0087157
Westlake Polymers LA0103004

The TMDL list is complete except for the two facilities that were mistakenly put in Bayou Verdine, and one facility mistakenly put in Segment 030401:

Condea Vista Chemical LA0003336
Conoco Lake Charles Refining LA0003026
Louisiana Pigment LA0080829

E. **Lake Charles**

The TMDL listed no dischargers. Our files include one significant discharger for non-contact cooling water only:

Holnam Inc., FKA Ideal Cement LA0003956

F. **Prien Lake**

Neither the TMDL nor LDEQ files list a significant discharger.

G. **Moss Lake**

Neither the TMDL nor LDEQ files list a significant discharger.

H. **Lower Calcasieu Estuary and Ship Channel**

The TMDL lists:

Louisiana Pigment LA0080829
Lake Charles Carbon LA0003735

Significant dischargers are:

Cameron Parish Sewerage District 11 LA0039136
Reynolds Metals (Lake Charles Carbon) LA0003735
Trunkline LNG LA0055522

Louisiana Pigment is in Segment 030301, discharging to the Calcasieu River.

Response: *Please see responsiveness summary for Calcasieu Toxics TMDL*

SEDIMENT ISSUES

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. In using this approach, Region 6 has gone beyond the regulatory guidance under

the TMDL regulations. While the Louisiana general water quality standards state that no substances shall be present in toxic amounts in water and sediments underlying said waters, they contain promulgated criteria only for water. The criteria for water are used to protect sediments. Neither LDEQ or EPA have promulgated sediment criteria therefore the use of non regulatory sediment guidelines or screening values as Region 6 has done in this report is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

The present status of the particular guidelines and screening values used in the report further support our contention that they are inappropriate for making assessments of Louisiana water quality standards or determining the need for TMDLs. As noted in the report, the EPA "Equilibrium Partitioning Sediment Guidelines (ESGs)" are "draft". They are draft guidelines only and have been in various stages of development for many years resulting in changing values and approaches. Although based on scientific studies, if this concept was appropriate for use in assessing Louisiana water quality standards and determining the need for TMDLs, EPA would have made ESGs final by now. But as noted in the report, they are still draft and under development and not appropriate or justified as a regulation for determining water use impairment or need for TMDLs.

The use of the National Oceanic and Atmospheric Administration's (NOAA) Effects Range Medium (ERM) sediment screening values is equally problematic. The ERM concept was developed from a wide range of sediment toxicity data from a variety of habitats across the nation but has not reached the proper level of scientific or regulatory documentation or acceptance to justify incorporation as a regulation for use in assessing water quality standards or justifying a TMDL. Indeed NOAA stresses in their publications developing ERMs that both Effects Range Low (ERL) and ERM values "are not to be construed as NOAA standards or criteria". And it might equally be stated that they not be construed as LDEQ or EPA standards or criteria. In fact EPA has recognized this fact by denoting in the recently released Coastal Condition Report that, "these guidelines are still considered experimental and several publications have questioned their reliability in assessing sediment toxicity". It is obvious therefore that the NOAA ERL/ERM screening values are just that, screening values, and are to be used only as a screening tool for evaluating and comparing sediment concentrations between habitats in different regions of the nation and not as a definitive assessment of aquatic toxicity, water use attainment or the need for developing a TMDL.

There are further concerns with using sediment concentrations for determining water use impairment and the need for TMDLs. Most contaminants found in sediments today relate to historical conditions and discharges and are not representative of current discharge conditions. To develop expensive TMDLs for chemicals that are no longer discharged or no longer discharged into specific waterbodies is inappropriate, unjustified and a waste of valuable resources. We believe that is the case with most of the sediment chemicals EPA alleges are causing water use impairment and require TMDLs in the Lower Calcasieu Basin and Ship Channel.

The state has listed contaminated sediments in its 305(b)/303(d) process for only Bayous Verdine and d'Inde. The listings were done specifically for the historical problems with the

chemicals hexachlorobenzene (HCB), hexachlorobutadiene (HCBD) and polychlorinated biphenyls (PCBs), which were reflected in an existing fish advisory, and not for the chemical substances in sediment as listed in the TMDL report. Controls to reduce or eliminate these discharges have since been put in place. The LDEQ has not determined that the concentrations of DDT, methoxyclor, PAHs or any metallic ions are high enough in sediments to document water use impairment or to justify a TMDL. As stated previously, the use of the sediment guidelines and screening values proposed in the report is completely inappropriate and not scientifically defensible for determining water use impairment of Louisiana waterbodies or to justify the need for TMDLs in Louisiana waterbodies. We further protest the use of draft and experimental sediment guidelines and screening values to determine water quality impairment and then use the water quality standard for TMDL development when the water quality standard is attained in the waterbody. This is certainly without precedent and totally unjustified.

Also, any listing of contaminated sediments and toxicity for the Calcasieu Ship Channel, subsegment 030301, based on LDEQ alleged data is in error. A complete check of LDEQ assessment records for 030301 clearly shows that EPA listed this subsegment for contaminated sediments and toxicity on the 303(d) list in error and it should be delisted. Documentation is submitted with these comments. Once again, the use of NOAA ERM experimental screening values is totally inappropriate to determine the need for TMDLs in the Calcasieu Ship Channel. And it is equally unjustified to use the water quality criterion for developing a TMDL for a chemical or metal such as Region 6 has done with mercury when the mercury water quality criterion is met in the waterbody.

Table 1. LDEQ documentation for delisting contaminated sediments and toxicity for the Upper Calcasieu River and Ship Channel, subsegment 030301.

Reporting year	**§ 305(b)**	**§ 303(d)**
1992	Contaminated sediments not listed	Contaminated sediments not listed
1994	Contaminated sediments not listed	Contaminated sediments not listed
1996	Contaminated sediments not listed	Contaminated sediments not listed
1998	Contaminated sediments not listed	Contaminated sediments not listed
2000	Contaminated sediments not listed	No § 303(d) list produced due to Court Ordered list.

Response: *Please see responsiveness summary for Calcasieu Toxics TMDL*

METALS ISSUES

Science Applications International Corporation (SAIC), on behalf of U.S. EPA Region 6, kept or placed six separate Louisiana water body subsegments on the Louisiana § 303(d) list. These water bodies were listed as impaired for one or more metals, among other suspected impairments. Based on the *Draft Total Maximum Daily Load For Toxics For the Calcasieu Estuary* (herein after referred to as the Calcasieu Toxics TMDL) required actions for each of these water bodies includes development of TMDLs and future monitoring. The water bodies in question and their prior § 303(d) status are as follows (Table 2):

Table 2. Louisiana water body subsegments considered impaired and requiring a TMDL by EPA Region 6, based on the December 2001 Calcasieu Toxics TMDL.

Subsegment Name	**Subsegment Number**	**Metals requiring TMDL according to EPA Region 6 TMDL**	**§ 303(d) Metal Listings Prior to TMDL Development by EPA Region 6**
Upper Calcasieu Estuary and Ship Channel	030301	copper, mercury, lead	copper and mercury in water column nonspecific metals in sediments
Prien Lake	030303	copper	not listed for any metals in water or sediment
Moss Lake	030304	copper, mercury.	copper
Contraband Bayou	030305	copper	not listed for any metals in water or sediment
Bayou Verdine	030306	mercury, nickel	nonspecific metals in water column and nonspecific metals in sediments
Bayou d'Inde	030901	copper, nickel, mercury	copper nonspecific metals in sediments

Table 3 contains a summary of LDEQ's assessment of water quality with regards to freshwater and marine metals criteria as defined in LAC 33:IX.1113.C.6.

Table 3. LDEQ assessment results for ambient and clean-technique water quality sampling of metals in six Calcasieu Estuary Water Bodies. As of April 2002.

			Criteria Support by Metal				
Water body name	**Water Body Subsegment**	**Fresh or Marine**	**Cu**	**Hg**	**Pb**	**Ni**	**Summary**
Upper Calcasieu Estuary and Ship Channel	030301	Fresh	Full	Full	Full	-------	All metals criteria fully supported. Summary text 1.
		Marine	Full	Full	Full	-------	
Prien Lake	030303	Fresh	Full	-------	-------	-------	All metals

		Marine	Full	-------	-------	-------	criteria fully supported. Summary text 2
Moss Lake	030304	Fresh	Full	Full	-------	-------	All metals criteria fully supported. Summary text 3
		Marine	Full	Full	-------	-------	
Contraband Bayou	030305	Fresh	Full	-------	-------	-------	All metals criteria fully supported. Summary text 4
		Marine	Full	-------	-------	-------	
Bayou Verdine	030306	Fresh	-------	Full	-------	Full	Summary text 5
		Marine	-------	Full	-------	Not	
Bayou d'Inde	030901	Fresh	Full	Full	-------	Full	All metals criteria fully supported. Summary text 6
		Marine	Full	Full	-------	Full	

Water Body Assessment Summaries

1. **Upper Calcasieu Estuary and Ship Channel (030301):**
   Subsegment 030301 was listed on the Court Ordered § 303(d) list for Cu and Hg in the water column and unspecified metals in sediments. It was not listed for Pb in the water column. Therefore, Pb should be removed from consideration in the Calcasieu Toxics TMDL. Ambient water quality data for metals collected in 1997 and 1998 by LDEQ was found to be fully supporting of freshwater criteria for Cu, Hg, and Pb, and not supporting marine criteria for Cu. However, clean-technique metals data previously submitted by LDEQ was found to be fully supporting both freshwater criteria and marine water criteria for Cu. Therefore, EPA Region 6 should remove Cu and Hg from the § 303(d) list, and remove Cu, Hg, and Pb from consideration in the Calcasieu Toxics TMDL.

2. **Prien Lake (030303):**
   Subsegment 030303 was not listed on the Court Ordered § 303(d) list for any metals in the water column nor for sediment contamination with metals. Therefore, Cu should be removed from consideration in the Calcasieu Toxics TMDL. Ambient water quality data for metals collected by LDEQ was found to be fully supporting of both freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

3. **Moss Lake (030304):**
   Subsegment 030304 was listed on the Court Ordered § 303(d) list for Cu, but not for Hg. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Hg should be removed from consideration in the Calcasieu Toxics TMDL. Ambient water quality data for metals collected by LDEQ was found to be fully

supporting of freshwater and marine criteria for both Cu and Hg. Therefore, EPA Region 6 should remove Cu and Hg from consideration in the Calcasieu Toxics TMDL.

4. **Contraband Bayou (030305):**
Subsegment 030305 was not listed on the Court Ordered § 303(d) list for any metal. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Cu should be removed from considered in the Calcasieu Toxics TMDL. Ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

5. **Bayou Verdine (030306):**
Subsegment 030306 was listed on the Court Ordered § 303(d) list for unspecified metals and unspecified metals in sediments. However, ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Hg. Therefore, EPA Region 6 should remove Hg from consideration in the Calcasieu Toxics TMDL. Nickel was found to be fully supporting of freshwater criteria but not supporting marine criteria.

6. **Bayou d'Inde (030901):**
Subsegment 030901 was listed on the Court Ordered § 303(d) list for Cu in the water column and for unspecified metals in sediments. It was not listed for Hg or Ni in the water column. Therefore, Hg and Ni should be removed from consideration in the Calcasieu Toxics TMDL. Ambient water quality data for metals collected by LDEQ from 1997-1999 was found to be fully supporting of freshwater criteria for Cu, Hg, and Ni, and not supporting marine criterion for Cu. However, clean-technique metals data previously submitted by LDEQ was found to be fully supporting both freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu, Hg, and Ni from the § 303(d) list and from consideration in the Calcasieu Toxics TMDL.

LDEQ's 2000 § 305(b) report found no metals criteria exceedances and, therefore, no metals were listed for any of the six water bodies in question in EPA Region 6's Calcasieu Toxics TMDL. A second review of metals data for the Calcasieu Estuary was conducted at this time for comments regarding the Calcasieu Toxics TMDL. Ambient water quality data collected by LDEQ, along with clean-technique metals data previously submitted by LDEQ came to the same conclusion as that reached for Louisiana's 2000 § 305(b) report. This review has shown that five of six water bodies considered by the Calcasieu Toxics TMDL (Upper Calcasieu (030301), Prien Lake (030303), Moss Lake (030304), Contraband Bayou (030305) and Bayou d'Inde (030901)) are fully supporting both fresh and marine criteria for the metals shown in Tables 1 and 2. The remaining water body, Bayou Verdine is not supporting marine criteria for Ni.

LDEQ believes that EPA Region 6's use of metals data from their Superfund project is inappropriate because clean sampling and clean lab analysis techniques were not used during

data collection and analysis. Further, use of EPA's data was incorrect because Louisiana instream criteria are based on dissolved metals analysis; yet EPA used both dissolved and total metals data to compare to the dissolved metals criteria. As a result, not only is EPA's use of non-clean technique metals data inappropriate, EPA's use of applying total metals data to dissolved metals criteria in order to determine exceedances is flawed.

Response: *Please see responsiveness summary for Calcasieu Toxics TMDL*

TOTAL MAXIMUM DAILY LOAD
FOR TOXICS FOR THE CALCASIEU ESTUARY

Comments and Responses

Fourteen comment letters were received on the Draft Total Maximum Daily Load for Toxics for the Calcasieu Estuary. Each letter was given an identification number in the sequence in which it was examined. The commenters and their identification numbers are presented in the following table[1].

Number	Organization
001	Gulf Restoration Network
002	Louisiana Department of Environmental Quality
003	C-K Associates, Inc.
004	Louisiana Chemical Association
005	Equistar
006	Lyondell Chemical Company
007	Sasol North America, Inc.
008	W.R. Grace & Co.
009	Citgo Petroleum Corporation
012	RESTORE
013	Louisiana Mid-Continent Oil & Gas Association
014	Conoco Inc.
015	Firestone Polymers
016	PPG Industries, Inc.

For each letter, individual comments were identified in sequence, from 0001 to the number of comments identified.

In responding to the comments, some comments that were originally identified were combined with other, adjacent comments, so that sequential comments may indicate gaps in the sequence. Sometimes, originally identified comments were divided into more than one comment. In these cases, an "a" and "b" were appended to the sequence number.

Originally, almost 700 individual comments were identified, but after consolidation and splitting of comments, only 600 individual comments remained.

Responses to comments were developed in commenter sequence. Several of the comment letters contained identical, very similar, or essentially the same comments as other comment letters. As these were identified, these comments were linked in a database to the response to the original comment. This process determined the structure of the response-to-comments document.

The responses to comments document presents the response only to unique comments. After each comment and response, if other commenters had made the same or similar comments, the comment number is listed. Thus, one can check to see whether the comment represented the

[1] Note that comment letters 010 and 011 are not included. The letters did not pertain to the Draft Total Maximum Daily Load for Toxics for the Calcasieu Letter, but this was not identified before the identification numbers were assigned.

views of several commenters. After matching similar comments to already-developed responses, just over 200 unique responses were developed. The Comment/Response document identifies the original comment for which each unique response is developed. The Comments document lists each comment by commenter and identified comment.

Comments/Responses

Comment 001/0001 Gulf Restoration Network

According to a federal TMDL advisory committee formed in 1998, waters should only be removed from the state 303(d) list when (1) new data shows the listed water has attained water quality standards or (2) new information shows that the original listing was in error. The GRN believes that waters should only be removed from the 303(d) list when one of these two conditions is satisfied.

Response

EPA has delisted subsegments only where there is a weight of evidence that the subsegment is no longer impaired. The evidence used includes evaluation of "all existing and readily available data" and information to demonstrate that:

1. Louisiana water quality standards are being met; or
2. On evaluation of the weight of evidence, it is reasonably certain that Louisiana water quality standards are being met.

Unless there was a weight of evidence that water quality standards are being met, pollutants on the court-ordered 303(d) list were not delisted. EPA regulations allow for delisting of waters for "good cause". Good cause includes

Comment 001/0002 Gulf Restoration Network

In addition, all information and data used to show that the water is currently meeting water quality standards must be provided to the public for review. Without this information, it is impossible for members of the public to make detailed, knowledgeable comments on the validity of the proposed delistings.

Response

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

Comment 001/0003 Gulf Restoration Network

The GRN notes that only 4/20 of the proposed delistings were accompanied by information and data that are used to support the delisting proposals. In particular, subsegments 030301 (ammonia), 030302 (non-priority organics), 030306 (non-priority organics), 030901 (non-priority organics), 030901 (other inorganics), 030302 (priority organics), 030303 (priority organics), 030304 (priority organics), 030305 (priority organics), 030401 (priority organics), 030402 (priority organics), 081001 (nutrients), 081402 (organic enrichment/low DO), 081609 (organic enrichment/low DO), 080901 (phosphorus), and 080903 (phosphorus) were not

accompanied with information or data that supports a delisting decision for the public to review.

Response

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

Comment 001/0004 Gulf Restoration Network

Given that no supporting data or information was provided, or in any way referenced in the federal register notice for these water segment/pollutant combinations, the GRN can only assume that this data does not exist. Consequently, the justification for the delisting of the aforementioned segment/pollution combinations is unacceptable, and EPA Region 6 cannot approve the delistings. Until new information or data that supports these delistings is made available to the public for review, with an adequate opportunity for the public to comment, these segments should be considered impaired and TMDLs should be developed to address these pollutant concerns.

Response

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

Comment 001/0005 Gulf Restoration Network

The only data sources that were included on EPA's website to support the delistings proposed by EPA were (1) ammonia data taken for three different waterbodies and (2) a draft report of Fish Tissue Dioxin Investigation for Dugdemona River. This information does not represent all the available information concerning levels of dioxin and priority organics in waters in the Calcasieu Basin. In particular, the following sources of data need to be considered before EPA approves these delistings:

(1)Data and information from EPA's own website, which document the severity of contamination from priority organics in subsegments 030302, 030303, 030304, and 030305 ;

(2)Studies undertaken by the Agency for Toxic Substances and Disease Registry, which analyze dioxin levels in seafood in the Calcasieu River Basin;

(3)Studies undertaken by the Environmental Protection Agency, in coordination with other federal and state agencies, which analyze the level of contamination in sediments in the Calcasieu River and surrounding watershed ; and

(4)The National Coastal Condition Report, which documents problems with contaminated sediment, benthos, and fish in the Louisiana's coastal rivers and estuaries.

Response

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D

for edible fish tissue information, and Appendix E for facility discharge information.

With the exception of "studies undertaken by the Agency for Toxic Substances and Disease Registry, which analyze dioxin levels in seafood in the Calcasieu River Basin," these data sources were evaluated in the TMDL. The absence of a fish advisory for dioxin in the Calcasieu indicates that the Louisiana Department of Health and Hospitals believes that there is no significant risk associated with current dioxin levels.

Comment 001/0006 Gulf Restoration Network

Before EPA can approve the delisting of any stream segment for priority organics, non-priority organics, or other organics, sediment and fish tissue sampling data need to be collected and considered. Because many of these organics are hydrophobic, they do not easily dissolve in the water column. Instead, these pollutants tend to build up in the sediment and, under certain conditions, may become available to be uptaken by fish and other aquatic life, as well as the humans who consume this fish. Thus, contamination of sediment and fish by priority organics is a serious health threat that must be considered when evaluating the quality of a water environment. The GRN strongly advises EPA to only delist waters for hydrophobic pollutants (e.g. priority organics and heavy metals such as mercury) that have been tested and proven clean for water column quality, sediment quality, and fish tissue quality. Without a comprehensive approach to water ecosystem sampling, many waters that pose significant public health threats will be removed from the 303(d) list and not receive the cleanup they deserve.

Response

EPA has documented the data that are used to make the delisting determinations in the TMDL. EPA believes it has taken a conservative approach to delisting and has not delisted waters where there is no weight of evidence that the subsegment is not impaired.

Comment 001/0007 Gulf Restoration Network

The state of Louisiana has not yet adopted numeric criteria that identify acceptable levels of nutrients (i.e., nitrates, phosphorus, and ammonia) in waterbodies throughout the state. Currently, only narrative nutrient criteria are incorporated in Louisiana's Water Quality Standards. This narrative standard is difficult to translate to numeric criteria that fully protect the designated uses of the waters of the state. The GRN, therefore, requests EPA to deny delistings for waters listed as impaired by high nutrient levels (including water segments 030301 (ammonia), 080102 (ammonia), 080901 (ammonia), 080905 (ammonia), 081001 (nutrients), 080901 (phosphorus), and 080903 (phosphorus)), until numeric nutrient criteria are adopted by the state in 2004, and adequate nutrient water quality data are collected that indicate these criteria are being met.

Response

The TMDL for the Calcasieu concerns the toxic aspect of the nutrient ammonia. Ammonia can also have adverse environmental impacts by contributing to eutrophication and contributing to oxygen depletion in a waterbody. EPA evaluated the likely sources of ammonia and the likely toxicity of ammonia that would result from those sources and has determined that ammonia toxicity is not contributing to impairment in subsegment 030301.

Comment 002/0001 Louisiana Department of Environmental Quality

It is inappropriate to use non-regulatory "targets" (sediment guidelines or others) as end-points for TMDLs.

Response

It is clear from available data that the sediments in several of the subsegments in the Calcasieu Estuary are toxic to aquatic life. Louisiana's narrative toxicity standard (LAC 33:IX.1113.A.5) applies to sediments. Non-regulatory targets were used to interpret the State's narrative toxic criterion by identifying those pollutants that may be contributing to sediment toxicity to ensure that continuing sources of those pollutants are at levels that likely prevent continuing sediment toxicity.

Sediment targets were used only as screens for pollutants that may reasonably be expected to contribute to sediment toxicity. This is necessary to protect the sediments and ensure that Louisiana's narrative toxicity standard is being met. In each case where a pollutant (or group of pollutants) were identified, results of a Toxicity Identification Evaluation (TIE) were compared with the identified pollutant to see whether the pollutants identified were consistent with the TIE results. In each case, identified pollutants are consistent with the TIE results, indicating that there is a weight of evidence that the identified pollutants are at least partially responsible for the observed toxicity.

Once a pollutant was identified, however, Louisiana Numerical Criteria for Specific Toxic Substances (LAC 33.IX.1113.C.6) or EPA Recommended Water Quality Criteria (http://www.epa.gov/ost/oc'revcom.pdf, for pollutants with no Louisiana numerical criteria) were used to calculate TMDLs. If discharges meet the water quality-based TMDLs, then sediments and the water column should be protected.

Similar Comments

002/0025a	Louisiana Department of Environmental Quality
004/0032	Louisiana Chemical Association
007/0009	Sasol North America, Inc.
009/0035	Citgo Petroleum Corporation

Comment 002/0002 Louisiana Department of Environmental Quality

Incorrect flows were applied in some areas (e.g. harmonic mean was used rather than tidal flows).

Response

Tidal flows as described in LDEQ's Standards Implementation document have been used to calculate wasteload allocations in the Final TMDL. Tidal flows were taken from permit fact sheets obtained from LDEQ.

Similar Comments

004/0015	Louisiana Chemical Association
009/0014	Citgo Petroleum Corporation
016/0019	PPG Industries, Inc.

Comment 002/0003 Louisiana Department of Environmental Quality

EPA's use of non-clean technique metals data is inappropriate. Metals data from the Superfund project should not have been used at all since clean sampling and analysis techniques were not used. When EPA did use these data, they were often not applied correctly. For example, Louisiana instream criteria are based on dissolved metals; yet EPA used both dissolved and total metals data to compare to the dissolved criteria. EPA's use of applying total metals to dissolved metals criteria in order to determine exceedances is flawed.

Response

EPA TMDL regulations (130.7(b)(5) require that "all existing and readily available water quality-related data and information" be used in making listing decisions. This does not limit this information to those data that are sampled and analyzed by clean techniques. Clean techniques are appropriate, in fact necessary, when metals are present at low concentrations (at levels below the detection limits of conventional techniques). When, however, metals are detected at levels well above the method detection limits, the data are valid, when appropriate quality assurances protocols are used, and can and should be used to determine compliance with applicable water quality criteria.

The EPA data used in the TMDL were validated through extensive quality assurance procedures. The data are the subject of the report entitled "Phase I Data Evaluation Summary Report? Text, Tables, and Appendix A-Data Evaluation Summary Tables, Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, Volume 1." This document was prepared by CDM and dated October 6, 2000. "Appendix C - Contract Laboratory Program Inorganic Data Validation Reports, Volume IV" served as the data validation for both the sediment and water samples collected during Phase I sampling. These were two volumes of a five volume data validation. This form of validation is conducted for all Superfund data. Volume IV included data reviews performed by the Regional Laboratory in Houston. Of the ten sample groups (which consisted entirely or predominantly of water matrix results) reviews contained in this volume, nine had data that were considered to be "acceptable for Regional use." On the remaining set, the blank concentrations affected cadmium and chromium data, and the lead results indicated high negative instrument readings, thus these data were qualified. Volume I, Section 3 concludes "Assessment of the data collected for this project by validation and evaluation criteria has determined that the majority of the data collected are usable for their intended purposes. The data that are not usable is limited and does not greatly impact the decision making process for the RI/FS." Volume I indicates that precision, accuracy and representativeness of the inorganics data (including metals) were acceptable.

Total metals data are not used to determine pollutants of concern in the Final TMDL.

Similar Comments

002/0036	Louisiana Department of Environmental Quality
002/0038	Louisiana Department of Environmental Quality
003/0007	C-K Associates, Inc.
004/0013	Louisiana Chemical Association
004/0039	Louisiana Chemical Association
005/0014	Equistar
006/0008	Lyondell Chemical Company
009/0010	Citgo Petroleum Corporation
009/0012	Citgo Petroleum Corporation
009/0042	Citgo Petroleum Corporation
014/0017	Conoco Inc.
015/0014	Firestone Polymers
016/0012	PPG Industries, Inc.
016/0013	PPG Industries, Inc.
016/0044	PPG Industries, Inc.

Comment 002/0004 Louisiana Department of Environmental Quality

LDEQ Ambient Network data should not have been used to justify TMDLs for the same reason

as the Superfund data. The available LDEQ data were not collected and analyzed using clean techniques. LDEQ uses these data as a screening tool to target more intensive sampling and analysis using clean techniques, not for justifying and developing TMDLs.

Response

EPA TMDL regulations require that "all existing and readily available water quality-related data and information" shall be assembled and evaluated (40 CFR 130.7(b)(5), not strictly those data that are sampled and analyzed by clean techniques. Clean techniques are appropriate, in fact necessary, when metals are present at low concentrations (at levels below the detection limits of conventional techniques). When, however, metals analyzed by conventional techniques are detected at levels well above the method detection limits, the data, if appropriately quality assured, are valid and can and should be used to determine compliance with applicable water quality criteria. EPA believes that in this case there is no justifiable basis for excluding the Superfund data. (See also response to comment 002/0005.)

Comment 002/0005 Louisiana Department of Environmental Quality

It is inappropriate to assume industries discharge a pollutant when it has not been included in their permit. EPA knows that when effluent limits are determined for each facility based on a number of factors, including the type of facility, types of waste-streams and effluent data submitted during the application process.

Response

Most facilities discharge toxic pollutants at some level, and there are numerous examples of facilities similar to the facilities discharging to the Calcasieu Estuary that discharge the identified toxic pollutants at low levels. The fact that a facility has no limits at present is an indication that the facility either a) did not detect the pollutant in its wastestream and/or b) that the permit writer, using Louisiana Water Quality Criteria and data and guidance available at the time the permit was written, did not determine that the pollutant was likely to cause a water quality exceedance.

Where water quality criteria or sediment quality guidelines are exceeded, and facilities similar to those discharging to the receiving water have effluent limits and monitoring data that show the potential to discharge the pollutant, it is logical to limit the effluent for that pollutant. If, in fact, a facility does not discharge the pollutant at levels detectable using the most sensitive methods, then no additional cost, except the monitoring cost, is incurred, irrespective of at what level the effluent limit is set. If, however, detectable concentrations of the pollutant are present in a discharge, additional controls may be needed to ensure that instream criteria are met and sediments are protected.

Comment 002/0006 Louisiana Department of Environmental Quality

Monitoring schedules and locations for the different pollutants have been recommended for Louisiana throughout the document; Louisiana will continue its ambient and intensive monitoring programs according to established schedules and agreements.

Response

The monitoring locations and frequencies that are specified in the TMDL are those that are recommended minimum requirements to determine whether individual subsegments are meeting or not meeting water quality standards. There are options available for cooperative monitoring

programs.

Comment 002/0007 Louisiana Department of Environmental Quality

DEQ's comments concerning specific TMDLs will indicate that EPA has made numerous errors in listing dischargers in the TMDL.

Response

EPA acknowledges that there were errors. The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

Comment 002/0008 Louisiana Department of Environmental Quality

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. Neither LDEQ nor EPA has promulgated sediment criteria. Therefore, the use of non- regulatory sediment guidelines and screening values, as Region 6 has done in this report, is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

Response

The Calcasieu Estuary has been identified by the Superfund Program as representing a serious risk to human health and the environment. It is clear from available data from multiple sources that the sediments in several of the subsegments in the Calcasieu Estuary are toxic to aquatic life. Louisiana's narrative toxicity standard, "no substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant or animal life" (LAC 33:IX.1113.A.5), includes sediments. Non-regulatory targets were used to identify those pollutants that may be contributing to sediment toxicity to ensure that continuing sources of those pollutants are at levels that likely prevent continuing sediment toxicity.

Sediment guidelines were used only as screens for pollutants that likely contribute to sediment toxicity. In each case where a pollutant (or groups of pollutants) were identified, results of a Toxicity Identification Evaluation (TIE) were compared with the identified pollutant to see whether the pollutants identified were consistent with the TIE results. In each case, identified pollutants or groups of pollutants are consistent with the TIE results, indicating that there is a weight of evidence that the identified pollutants are at least partially responsible for the observed toxicity.

Once a pollutant was identified, however, Louisiana Surface Water Quality Criteria (LAC IX:33:1113) or EPA Recommended Water Quality Criteria (63 FR 68354, for pollutants with no Louisiana Water Quality Criteria) were used to calculate TMDLs. If discharges meet the water quality-based TMDLs, then sediments and the water column should be protected.

Similar Comments

007/0008 Sasol North America, Inc.

Comment 002/0009 Louisiana Department of Environmental Quality

Many of these TMDLs are based on models using historical water quality data gathered at a single or small number of locations rather than survey data gathered at sites spaced throughout the waterbody.

Response

The water quality data used for most subsegments, particularly those with the highest percentage of water quality criterion exceedances or sediment quality target exceedances, were taken at a large number of stations over a limited time period or at limited stations over a one- or three-year period. While water quality concentrations can vary widely, the number of water quality criterion exceedances indicate receiving water degradation that must be addressed. Sediment concentrations, on the other hand, vary less over time and are more indicative of average sediment conditions. A limited temporal, but detailed spatial sampling for sediment concentrations adequately identifies sediment quality concerns.

It is acknowledged that flow data were not taken concurrently with water quality (or sediment quality) data. Available flow information for the Calcasieu is extremely limited during any time period. This TMDL reflects the most accurate information available at the time of establishment.

Comment 002/0010 Louisiana Department of Environmental Quality

The hydraulic information used was generally an average value or estimated value, not taken at the same time as the water quality data. The calibrations are inadequate due to the lack of appropriate hydrologic data and the paucity of water quality data.

Response

It is acknowledged that flow data were not taken concurrently with water quality (or sediment quality) data. Available flow information for the Calcasieu is extremely limited during any time period.

Comment 002/0011 Louisiana Department of Environmental Quality

LDEQ has reviewed the TMDLs published by EPA on March 29, 2002. One particularly troubling issue for LDEQ is the fact that numerous dischargers that should have been included in these TMDLs were not. This indicates a complete disregard for the discharger inventory LDEQ provided to EPA. At the least, the TMDLs should acknowledge all facilities present in the covered watershed(s) and present the decisions for including or not including them in the TMDL.

Response

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

Comment 002/0012 Louisiana Department of Environmental Quality

Bayou Verdine

Both of the listed dischargers, Conoco (LA 0003026) and Vista (LA0003336), currently discharge their process wastewater directly to the Calcasieu River and not to Bayou Verdine. Both facilities discharge some stormwater to Bayou Verdine. PPG discharges once-through non-contact cooling water, wash-down water, cooling tower blowdown, and stormwater to Bayou Verdine. Lyondell Chemical Worldwide discharges stormwater to Bayou Verdine.

Response

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

Similar Comments

007/0033 Sasol North America, Inc.
007/0038 Sasol North America, Inc.

014/0002 Conoco Inc.

Comment 002/0013 Louisiana Department of Environmental Quality

Bayou d'Inde. The TMDL lists 5 industrial dischargers:

PPG Industries	LA0000761
Firestone Synthetic Rubber and Latex	LA0003824
Certainteed Products Corp	LA0041025
Equistar Chemical	LA0069850
Westlake Polymers	LA0071382

Discharging industries of significance, including the 5 above, are:

Air Liquide	LA0051730
Westlake Polymers	LA0071382.
PPG Industries	LA0000761
Equistar Chemical	LA0069850
Firestone Synthetic Rubber and Latex	LA0003824
Certainteed Products Corp.	LA0041025
Citgo Petro Corp.	LA0005941
Praxair Inc	LA0100099.
Air Liquid	LA0053708
Tessenderlo Kerley Inc.	LA0047058
W-H Holdings Inc.	LA0105155
Cetco	LA0101869
Denmar Enterprises	LA0108596

Response

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

Similar Comments

009/0028 Citgo Petroleum Corporation
009/0095 Citgo Petroleum Corporation

Comment 002/0014 Louisiana Department of Environmental Quality

Contraband Bayou

The TMDL lists:

City of Lake Charles WWTP "C"	LA0036366
City of Lake Charles WWTP "B"	LA0036358

Significant dischargers are:

City of Lake Charles WWTP "B" and "C"	LA0036366
City of Lake Charles Center St East Water Treatment Plant	LAG380006
City of Lake Charles Center St West Water Treatment Plant	LAG380008
City of Lake Charles McNeese St Water Treatment Plant	LAG380009
City of Lake Charles Chennault Water Treatment Plant	LAG380009
McNeese Univ. Farm Labs	LA0104850

The discharge from Plant B has been routed to Plant C and the permit voided.

Response

The document has been revised based on the information provided in this letter and review of

facility permits, fact sheets, and permit applications.

Comment 002/0015 Louisiana Department of Environmental Quality

Calcasieu River and Ship Channel – Saltwater Barrier to Moss Lake

The TMDL lists:

WR Grace	LA0001333
Basell USA	LA0003689
Lyondell Chemical World Wide	LA0005347
Citgo Petroleum	LA0005941
City of Lake Charles WWTP "A"	LA0036340
Calcasieu Refining	LA0052370
City of Sulphur WWTP	LA0067083
Westlake Petrochemicals	LA0082511
Westlake Styrene	LA0087157
Westlake Polymers	LA0103004

The TMDL list is complete except for the two facilities that were mistakenly put in Bayou Verdine, and one facility mistakenly put in Segment 030401:

Condea Vista Chemical	LA0003336
Conoco Lake Charles Refining	LA0003026
Louisiana Pigment	LA0080829

Response

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

Comment 002/0016 Louisiana Department of Environmental Quality

Lake Charles

The TMDL listed no dischargers. Our files include one significant discharger for non-contact cooling water only: Holnam Inc., FKA Ideal Cement LA0003956

Response

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

Comment 002/0017 Louisiana Department of Environmental Quality

Lower Calcasieu Estuary and Ship Channel

The TMDL lists:

Louisiana Pigment	LA0080829
Lake Charles Carbon	LA0003735

Significant dischargers are:

Cameron Parish Sewerage District 11	LA0039136
Reynolds Metals (Lake Charles Carbon)	LA0003735
Trunkline LNG	LA0055522

Louisiana Pigment is in Segment 030301, discharging to the Calcasieu River.

Response

The document has been revised based on the information provided in this letter and review of

facility permits, fact sheets, and permit applications.

Comment 002/0018 Louisiana Department of Environmental Quality

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. In using this approach, Region 6 has gone beyond the regulatory guidance under the TMDL regulations. While the Louisiana general water quality standards state that no substances shall be present in toxic amounts in water and sediments underlying said waters, they contain promulgated criteria only for water. The criteria for water are used to protect sediments. Neither LDEQ or EPA have promulgated sediment criteria therefore the use of non-regulatory sediment guidelines or screening values as Region 6 has done in this report is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

Response

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 15 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

Similar Comments

014/0009 Conoco Inc.

Comment 002/0019 Louisiana Department of Environmental Quality

The present status of the particular guidelines and screening values used in the report further support our contention that they are inappropriate for making assessments of Louisiana water quality standards or determining the need for TMDLs. As noted in the report, the EPA "Equilibrium Partitioning Sediment Guidelines (ESGs)" are "draft". They are draft guidelines only and have been in various stages of development for many years resulting in changing values and approaches. Although based on scientific studies, if this concept was appropriate for use in assessing Louisiana water quality standards and determining the need for TMDLs, EPA would have made ESGs final by now. But as noted in the report, they are still draft and under development and not appropriate or justified as a regulation for determining water use impairment or need for TMDLs.

Response

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through

wasteload and load allocations based on numeric water quality criteria.

Comment 002/0020 Louisiana Department of Environmental Quality

The use of the National Oceanic and Atmospheric Administration's (NOAA) Effects Range Medium (ERM) sediment screening values is equally problematic. The ERM concept was developed from a wide range of sediment toxicity data from a variety of habitats across the nation but has not reached the proper level of scientific or regulatory documentation or acceptance to justify incorporation as a regulation for use in assessing water quality standards or justifying a TMDL. Indeed NOAA stresses in their publications developing ERMs that both Effects Range Low (ERL) and ERM values "are not to be construed as NOAA standards or criteria". And it might equally be stated that they not be construed as LDEQ or EPA standards or criteria. In fact EPA has recognized this fact by denoting in the recently released Coastal Condition Report that, "these guidelines are still considered experimental and several publications have questioned their reliability in assessing sediment toxicity". It is obvious therefore that the NOAA ERL/ERM screening values are just that, screening values, and are to be used only as a screening tool for evaluating and comparing sediment concentrations between habitats in different regions of the nation and not as a definitive assessment of aquatic toxicity, water use attainment or the need for developing a TMDL.

Response

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

Comment 002/0021 Louisiana Department of Environmental Quality

There are further concerns with using sediment concentrations for determining water use impairment and the need for TMDLs. Most contaminants found in sediments today relate to historical conditions and discharges and are not representative of current discharge conditions. To develop expensive TMDLs for chemicals that are no longer discharged or no longer discharged into specific waterbodies is inappropriate, unjustified and a waste of valuable resources. We believe that is the case with most of the sediment chemicals EPA alleges are causing water use impairment and require TMDLs in the Lower Calcasieu Basin and Ship Channel.

Response

While it is possible that much of the sediment contamination may have been from historical discharges, there are no data that allow the conclusion that existing discharges are not continuing to contribute to sediment contamination. This could be demonstrated, however, with monitoring data using as sensitive analytical methods as are available. If all discharges are at levels that comply with wasteload allocations developed under the TMDL, there will be evidence that

historical, not current discharges have resulted in sediment contamination.

Comment 002/0022 Louisiana Department of Environmental Quality

The state has listed contaminated sediments in its 305(b)/303(d) process for only Bayous Verdine and d'Inde. The listings were done specifically for the historical problems with the chemicals hexachlorobenzene (HCB), hexachlorobutadiene (HCBD) and polychlorinated biphenyls (PCBs), which were reflected in an existing fish advisory, and not for the chemical substances in sediment as listed in the TMDL report.

Response

Sediments in these subsegments have been shown to exhibit toxic effects in toxicity testing results. The original listing of contaminated sediments for Bayou Verdine and Bayou D'Inde does not change the fact that sediment concentrations of other toxic pollutants are elevated in these subsegments. While it is acknowledged that available data indicate that hexachlorobutadiene, hexachlorobenzene, and PCBs do not appear to be present in toxic amounts in the sediments, the sediments, nevertheless, exhibit toxicity. It is reasonable to identify those pollutants that are most likely responsible for the toxicity and ensure that current discharges are not contributing to continued sediment toxicity.

Comment 002/0023 Louisiana Department of Environmental Quality

Controls to reduce or eliminate these discharges have since been put in place. The LDEQ has not determined that the concentrations of DDT, methoxyclor, PAHs or any metallic ions are high enough in sediments to document water use impairment or to justify a TMDL.

Response

Nevertheless, the sediments are toxic, and there is a large amount of sediment chemical data that indicates what pollutants are likely contributing individually or in combination to toxicity. Actions should be taken to control these substances. If it is shown through effluent monitoring data that current discharges do not contribute these pollutants and other sources do not become apparent through additional monitoring, then sediment remediation and long-term attenuation may be indicated to remove sediment toxicity.

Comment 002/0024 Louisiana Department of Environmental Quality

As stated previously, the use of the sediment guidelines and screening values proposed in the report is completely inappropriate and not scientifically defensible for determining water use impairment of Louisiana waterbodies or to justify the need for TMDLs in Louisiana waterbodies. We further protest the use of draft and experimental sediment guidelines and screening values to determine water quality impairment and then use the water quality standard for TMDL development when the water quality standard is attained in the waterbody. This is certainly without precedent and totally unjustified.

Response

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed

journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

Comment 002/0025 Louisiana Department of Environmental Quality

Also, any listing of contaminated sediments and toxicity for the Calcasieu Ship Channel, subsegment 030301, based on LDEQ alleged data is in error. A complete check of LDEQ assessment records for 030301 clearly shows that EPA listed this subsegment for contaminated sediments and toxicity on the 303(d) list in error and it should be delisted. Documentation is submitted with these comments.

Response

Check. The court-ordered 303(d) list included contaminated sediments for subsegment 030301, and thus they must be considered.

Comment 002/0025b Louisiana Department of Environmental Quality

And it is equally unjustified to use the water quality criterion for developing a TMDL for a chemical or metal such as Region 6 has done with mercury when the mercury water quality criterion is met in the waterbody.

Response

Where this was done it was because additional data or information indicted a reason for concern die to sediment concerns. When a subsegment is impaired, water quality criteria are the only legal basis for calculating a TMDL.

Comment 002/0026 Louisiana Department of Environmental Quality

Subsegment 030301 was listed on the Court Ordered § 303(d) list for Cu and Hg in the water column and unspecified metals in sediments. It was not listed for Pb in the water column. Therefore, Pb should be removed from consideration in the Calcasieu Toxics TMDL.

Response

Lead has been removed as a pollutant of concern for subsegment 030301.

Comment 002/0027 Louisiana Department of Environmental Quality

Ambient water quality data for metals collected in 1997 and 1998 by LDEQ was found to be fully supporting of freshwater criteria for Cu, Hg, and Pb, and not supporting marine criteria for Cu. However, clean-technique metals data previously submitted by LDEQ was found to be fully supporting both freshwater criteria and marine water criteria for Cu. Therefore, EPA Region 6 should remove Cu and Hg from the § 303(d) list, and remove Cu, Hg, and Pb from consideration in the Calcasieu Toxics TMDL.

Response

The court-ordered 303(d) list includes copper, and quality assured and verified EPA data indicate that 20 of 30 copper measurements exceed the marine dissolved copper criterion in subsegment 030301. This does indicate copper should be delisted.

The court-ordered 303(d) list includes mercury, and one EPA measurement of mercury exceeds the criterion by two orders of magnitude, and one LDEQ measurement exceeds the criterion by a

factor of five. These data indicate that there are occasional large exceedances of the criterion that would likely be confirmed with additional data. The magnitude of the exceedances indicate a TMDL is warranted. As mentioned in response to comment C-002/#26, lead has been removed as a pollutant of concern for subsegment 030301.

Comment 002/0028 Louisiana Department of Environmental Quality

Subsegment 030303 was not listed on the Court Ordered § 303(d) list for any metals in the water column nor for sediment contamination with metals. Therefore, Cu should be removed from consideration in the Calcasieu Toxics TMDL.

Response

Copper has been removed as a pollutant of concern for Prien Lake.

Comment 002/0029 Louisiana Department of Environmental Quality

Ambient water quality data for metals collected by LDEQ was found to be fully supporting of both freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

Response

The appropriate water quality criterion for all subsegments of the Calcasieu Estuary is marine criterion. Freshwater criterion are not appropriate for these waters. Copper has been removed as a pollutant of concern for Prien Lake.

Comment 002/0030 Louisiana Department of Environmental Quality

Subsegment 030304 was listed on the Court Ordered § 303(d) list for Cu, but not for Hg. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Hg should be removed from consideration in the Calcasieu Toxics TMDL.

Response

For the purposes of this TMDL, mercury is no longer a pollutant of concern for Moss Lake.

Comment 002/0031 Louisiana Department of Environmental Quality

Subsegment 030305 was not listed on the Court Ordered § 303(d) list for any metal. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Cu should be removed from considered in the Calcasieu Toxics TMDL.

Response

Copper is on the court-ordered 303(d) list for Moss Lake, and copper concentrations exceed the marine dissolved criterion in at least three samples. That other data indicate that Moss Lake does not exceed criteria is not a sufficient reason to delist copper in subsegment 030304.

As stated in response to comment 002/0030, mercury is no longer considered a pollutant of concern for the purposes of this TMDL.

Comment 002/0032 Louisiana Department of Environmental Quality

Ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

Ambient water quality data for metals collected by LDEQ was found to be fully supporting of freshwater and marine criteria for both Cu and Hg. Therefore, EPA Region 6 should remove Cu and Hg from consideration in the Calcasieu Toxics TMDL.

Response

Copper has been removed as a pollutant of concern for Contraband Bayou. Originally copper was selected based both on dissolved and total data. When comparing only dissolved data against the criterion, the copper criterion is attained.

Comment 002/0034 Louisiana Department of Environmental Quality

Subsegment 030306 was listed on the Court Ordered § 303(d) list for unspecified metals and unspecified metals in sediments. However, ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Hg. Therefore, EPA Region 6 should remove Hg from consideration in the Calcasieu Toxics TMDL. Nickel was found to be fully supporting of freshwater criteria but not supporting marine criteria.

Response

Quality assured data for mercury in Bayou Verdine indicated that concentrations exceeded the dissolved mercury criterion in four of five samples and that the mean of detected values was almost 18 times the criterion. This level is sufficient to warrant a TMDL for mercury for subsegment 030306.

Comment 002/0035 Louisiana Department of Environmental Quality

Subsegment 030901 was listed on the Court Ordered § 303(d) list for Cu in the water column and for unspecified metals in sediments. It was not listed for Hg or Ni in the water column. Therefore, Hg and Ni should be removed from consideration in the Calcasieu Toxics TMDL.

Response

Almost half (45%) of the sediment samples taken in Bayou D'Inde are higher than NOAA's ERM, indicating that mercury contamination is certainly a major contributor to the sediment toxicity in subsegment 030901. TIE results are consistent with mercury contamination of the sediments. Quality assured data for water column mercury in Bayou D'Inde also indicate that concentrations exceed the marine dissolved mercury criterion in 2 of 12 samples, and the mean of the two detected samples exceed the criterion by a factor just over a factor of 2. LDEQ water quality network data also indicate a single exceedance for mercury at approximately 18 times the criterion level. EPA is also concerned that the total mercury in water appears to be much higher than the dissolved mercury, and the particulate portion of the total mercury is continuing to contribute to mercury contamination of the sediments. The weight of evidence indicates that a TMDL for mercury is warranted for Bayou D'Inde.

Quality assured data for copper in Bayou D'Inde indicate that concentrations exceed the marine dissolved copper criterion in 26 of 36 samples (72%), with a mean of detected values (28 samples) at 2.75 times the copper criterion. LDEQ water quality network data indicate a much lower percentage of exceedances (25%) and a mean of detected values that is below the copper criterion. The weight of evidence indicates that a TMDL for copper is warranted for Bayou D'Inde.

For the purposes of this TMDL, nickel is not included as a pollutant of concern for Bayou D'Inde.

Similar Comments

016/0005 PPG Industries, Inc.
016/0050 PPG Industries, Inc.
016/0055 PPG Industries, Inc.

Comment 002/0037 Louisiana Department of Environmental Quality

LDEQ's 2000 § 305(b) report found no metals criteria exceedances and, therefore, no metals were listed for any of the six water bodies in question in EPA Region 6's Calcasieu Toxics TMDL. A second review of metals data for the Calcasieu Estuary was conducted at this time for comments regarding the Calcasieu Toxics TMDL. Ambient water quality data collected by LDEQ, along with clean-technique metals data previously submitted by LDEQ came to the same conclusion as that reached for Louisiana's 2000 § 305(b) report. This review has shown that five of six water bodies considered by the Calcasieu Toxics TMDL (Upper Calcasieu (030301), Prien Lake (030303), Moss Lake (030304), Contraband Bayou (030305) and Bayou d'Inde (030901)) are fully supporting both fresh and marine criteria for the metals shown in Tables 1 and 2. The remaining water body, Bayou Verdine is not supporting marine criteria for Ni.

Response

LDEQ's 2000 305(b) report did not include evaluation of the newly available Superfund data. See response to comment 002/0003.

Comment 003/0001 C-K Associates, Inc.

The Louisiana Department of Environmental Quality's (LDEQ's) 303(d) list is currently being updated by the LDEQ to accurately identify waterbodies and pollutants of concern which require inclusion on this list. Historical data used for this task in the past has been determined to be "not so" accurate and representative (i.e., metals data which did not employ field and laboratory "clean technique" procedures or analytical laboratory methods which were not used to achieve a certain minimum quantification level) of actual ambient conditions whereby waterbodies and/or pollutants (i.e., trace metals, organics) were placed on this list. This task has not been adequately completed and it is our opinion that calculating TMDLs before revision of the 303(d) list, for which some waterbodies and pollutants of concern may not all together be needed, is inappropriate.

Response

See also response to comment 002/0003.

It is acknowledged that ongoing efforts are examining the quality of metals data taken with conventional techniques. Quality assured and validated data that achieve appropriate detection levels are appropriate in determining compliance with water quality criteria, particularly when observed data are detected at several times criterion levels. EPA believes these data are appropriate for decision-making purposes. Disregarding all metals data not collected by clean techniques would introduce a bias by eliminating a considerable body of information

While LDEQ claims that all of its data taken with conventional techniques are invalid, there has been no direct comparison of results analyzed using conventional versus clean techniques by LDEQ staff. It is accepted that clean techniques are necessary to achieve below criterion detection levels for some metals.

The selection of pollutants of concern for the TMDLs in this document is based in large part on a dataset that is of known and technically-defensible quality. Therefore, it is believed that the

selection of the great majority of pollutants of concern is soundly based. From an environmental protection viewpoint, it is logical to select a pollutant of concern in all cases where monitoring data indicate that criteria are not being met instream.

The recently signed Louisiana Consent Decree requires that TMDLs for the Ouachita and Calcasieu Basins be completed by May 31, 2002. Waiting for additional information is not an option.

Comment 003/0002 C-K Associates, Inc.

The State's 303(d) list needs to be updated before TMDLs are calculated. TMDLs were calculated for hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, and hexachlorobenzene solely on the fact that they are on the 303(d) list even though available data indicates that the constituent is not present in the water body or that an inadequate analytical method was used which did not achieve a certain minimum quantification level.

Response

It is acknowledged that water column concentrations of hexachlorobutadiene, hexachlorobenzene, tetrachloroethane, bromoform, and PCBs are not demonstrably exceeding water quality criteria. Similarly, however, available data do not indicate that water column concentrations of the pollutants are NOT exceeding water quality criteria. The pollutants are selected as pollutants of concern when they appear on the court-ordered 303(d) list and there are insufficient data to justify their delisting. It will be almost impossible to determine that some pollutants such as PCBs comply with water quality criteria because conventional analytical techniques do not allow quantitation at criterion concentrations. In such cases other indicators of possible impairment such as fish tissue levels are appropriate. For this reason, a conservative approach of developing TMDLs for these pollutants was adopted.

Similar Comments

005/0003	Equistar
016/0011	PPG Industries, Inc.
016/0042	PPG Industries, Inc.

Comment 003/0003 C-K Associates, Inc.

Recent studies have shown that statewide criteria for metals are inappropriately stringent for rivers and streams in southern Louisiana. These streams naturally exhibit low, but significant background, ambient concentrations of metals as a result of natural geochemical conditions in the watershed.

Response

Under existing regulations, the State of Louisiana, with approval of EPA, may modify water quality standards based on the results of a site-specific criteria study in order to address natural geochemical conditions.

Comment 003/0004 C-K Associates, Inc.

The derivation of dissolved metals criteria set forth in the Louisiana Water Quality Standards (WQS) result in inappropriately and unrealistically low criteria for the protection of aquatic life because they do not account for the site-specific physical and chemical characteristics of the effluent and receiving water which determines the fate of the dissolved metal.

Response

Under existing regulations, dischargers may conduct a study to determine appropriate site-specific criteria for specific waterbodies based on evaluation of the considerations mentioned in this comment. With suitable technically-defensible analyses, the State of Louisiana and EPA could approve the use of the site-specific criteria for specific waterbodies. This procedure is outlined in the LDEQ's water quality standards implementation document.

Similar Comments

004/0044	Louisiana Chemical Association
004/0105	Louisiana Chemical Association
005/0019	Equistar
006/0013	Lyondell Chemical Company
007/0032	Sasol North America, Inc.
009/0047	Citgo Petroleum Corporation
009/0093	Citgo Petroleum Corporation
014/0022	Conoco Inc.
015/0019	Firestone Polymers

Comment 003/0005 C-K Associates, Inc.

In order for a metal to exhibit a toxic effect on aquatic organisms, the metal must be present in a bioavailable state. Certain water chemistry factors can change the partitioning of metal between the bioavailable and the non-bioavailable states, thereby affecting the toxicity of the metal. Relative to synthetic laboratory water, ambient receiving stream waters and wastewater effluents have significantly more complex water chemistries and therefore, have a greater capacity to assimilate dissolved metals, thus the potential to reducing the bioavailable concentration of a metal. The effect of this is a reduction in the toxicity of the metal in ambient receiving stream waters and wastewater effluents relative to synthetic laboratory water.

The EPA has recognized this phenomenon and published a guidance manual entitled Interim Guidance on Determinations and Use of Water-Effect Ratios for Metals, EPA 823-94-001, February 1994 in order for site-specific criteria to be developed and implemented that protect water quality. The effect of this is to raise statewide criteria to realistic levels based on a sound, scientific approach. Since the TMDLs calculated in this "draft" report were based on existing criteria, we believe it is prudent to evaluate existing criteria and modify criteria determined to be inappropriate and then calculate TMDLs rather than calculate TMDLs based on inappropriate criteria values.

Response

Dischargers may conduct appropriate studies as described in response to comment C-003/#5 at any time for approval by the State of Louisiana and EPA.

Comment 003/0006 C-K Associates, Inc.

The methodology to determine pollutants of concern included several sources. Some of these sources are not appropriate and many valuable sources are not included which indicates a lack of research by the contractor. Specifically, C-K Associates, Inc. conducted a Trace Metals "Clean Technique" Sampling and Laboratory Analysis Study on Bayou d' Inde, Bayou Verdine and the Calcasieu River in 2000. This report including the data were submitted to the LDEQ in March 2001 and subsequently reformatted by the LDEQ and submitted to the EPA, Region 6 in August 2001. This study consisted of the collection and evaluation of "conventional" and "clean technique" data which were collected "side-by-side" in accordance with the EPA guidance

manual Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, EPA 821-R95-034, April 1995. Evaluation of the data indicated “clean technique” results were substantially lower than the “conventional” results. The ambient concentrations of dissolved copper obtained using “clean technique” monitoring clearly demonstrated that concentrations on Bayou d’Inde and the Calcasieu River did not exceed, or closely approach the marine numerical criteria established by the Louisiana WQS for copper.

Response

The study is useful in that it provided additional clean techniques data. However, EPA is not comfortable discounting other recent data based on a limited set of results.

Comment 003/0008 C-K Associates, Inc.

The TMDL calculation method employed a mass-balance approach. The narrative section and appendices do not provide adequate documentation of where input variables came from or how calculations were performed.

Response

A different approach is used in developing wasteload allocations in the Final TMDL than in the Draft TMDL. The revised approach is described in the Methodology section of the final TMDL.

Comment 003/0009 C-K Associates, Inc.

Louisiana does not have an aquatic life criterion for total copper as indicated in Table A-1. The aquatic life criterion for marine waters are expressed as a dissolved metal concentration (see LAC 33:1X.1113, Table 1).

Response

No "total" criteria are used in developing pollutants of concern or wasteload allocations in the Final TMDL.

Comment 004/00.5 Louisiana Chemical Association

Many of the following comments reflect serious concerns with the extreme lack of scientific rigor in EPA's TMDL process. Like concerns have been identified and discussed in previous high-level scientific advisory groups, most notably in Assessing the TMDL Approach to Water Quality Management (National Research Council, National Academy Press, 2001) (the "NRC Report"). LCA strongly suggests that EPA incorporate the recommendations of this and other evaluations to assure that TMDL decisions are made on a sound technical basis.

Response

EPA also supports the recommendations of the NRC. The Region developed the most supportable approach it could, taking into account time, resources, and data availability. Recommendations of the report are included in the Final TMDL as much as data, time, and resources allow.

Comment 004/0001 Louisiana Chemical Association

LCA submits that it is entirely inappropriate for EPA to establish TMDLs for pollutants which were not identified in the 303(d) list as causing or expected to cause violations of the applicable water quality standards. In particular, LCA submits that EPA inappropriately established TMDLs for pollutants which were not on the 303(d) list but for which EPA asserts there have been water

quality criterion exceedances, ERM exceedances, ESG exceedances, fish advisories, etc. For example, as indicated below, EPA has established TMDLs for certain water quality limited segments for pollutants not on the 303(d) list.

Response

EPA is being consistent with the court-ordered 303(d) list as indicated below:

The basis for selecting pollutants of concern for the Final TMDLs is four-fold:

1. If a pollutant is on the court-ordered 303(d) list and there are insufficient data to delist the pollutant, the pollutant is retained as a pollutant of concern and a TMDL was developed.
2. Within pollutant categories on the court-ordered 303(d) list, if available water quality data indicate that pollutant criteria are not being met instream, then the pollutant is selected as a pollutant of concern.
3. If a pollutant not otherwise identified is subject to a fish advisory, then the pollutant is selected as a pollutant of concern.
4. Within pollutant categories on the court-ordered 303(d) list, if sediment quality data indicate that a pollutant is reasonably expected to contribute to sediment toxicity by comparison to available sediment quality targets, then the pollutant is selected as a pollutant of concern.

Each of these procedures provides evidence of impairment.

Similar Comments

004/0004	Louisiana Chemical Association
004/0055	Louisiana Chemical Association
004/0056	Louisiana Chemical Association
005/0026	Equistar
006/0020	Lyondell Chemical Company
009/0003	Citgo Petroleum Corporation
009/0056	Citgo Petroleum Corporation
014/0028	Conoco Inc.
015/0026	Firestone Polymers
015/0027	Firestone Polymers
016/0008	PPG Industries, Inc.

Comment 004/0002 Louisiana Chemical Association

The State of Louisiana has primacy in determining whether to add waters to the state's 303(d) list, and the state should be given the opportunity to review any data relied upon by EPA to determine (i) whether the 303(d) list should be amended to include the above pollutants or (ii) whether the data show that no impairment due to these pollutants exists. By reproposing TMDLs for pollutants not on the state's 303(d) list, EPA has impermissibly usurped state authority. See, Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), and 40 C.F.R. 130.7.

Response

For the purposes of this TMDL, no pollutants not specifically identified or within categories identified on the court-ordered 303(d) list are selected as pollutants of concern.

Similar Comments

004/0006	Louisiana Chemical Association
009/0001	Citgo Petroleum Corporation
009/0005	Citgo Petroleum Corporation
013/0013	Louisiana Mid-Continent Oil & Gas Association
016/0006	PPG Industries, Inc.

Comment 004/0003 Louisiana Chemical Association

LCA further submits that to the extent EPA desires to establish TMDLs for pollutants not

included on the current 303(d) list, EPA should first establish a revised 303(d) list pursuant to the authorities referenced in the previous paragraph. EPA should not unilaterally establish TMDLs for water quality limited segments absent first revising the 303(d) list to add the pollutants of concern.

Response

The 303(d) list was reviewed, and appropriate procedures were used to determine pollutants of concern based on the court-ordered 303(d) list and available data. The selection of pollutants of concern is documented in the Final TMDL.

Similar Comments

009/0002 Citgo Petroleum Corporation

Comment 004/0005 Louisiana Chemical Association

Where EPA's investigation of a pollutant shows that the state water quality standard for that pollutant is not being exceeded, then EPA must delist that waterbody for that pollutant on the 303(d) list. Indeed, EPA clearly has proposed to delist 20 waterbody/pollutant combinations in the Calcasieu Estuary and Ouachita River Basin for exactly that reason. See, 67ed. Reg. 15176, March 29, 2002.

Response

EPA has delisted several pollutants for Calcasieu Estuary subsegments when there is a weight of evidence that no impairment exists. EPA established specific pollutants for categorical pollutant listings when a weight of evidence indicates impairment exists. But EPA did not delist pollutants in subsegments where delisting could not be supported by the weight of evidence.

Similar Comments

009/0004 Citgo Petroleum Corporation
016/0009 PPG Industries, Inc.

Comment 004/0007 Louisiana Chemical Association

EPA has proposed TMDLs for several of the pollutants based on the fact that the detection limit for such pollutants is lower than the relevant water quality standard. This is an inappropriate interpretation of the Clean Water Act. TMDLs are warranted only when there is evidence that a discharge has a reasonable potential to contribute to exceedance of a standard. It is not appropriate for EPA to adopt a TMDL simply because it presumes that substances do exist in the water and presumes further that these will be at levels above the standards. EPA cannot presume impairment without scientific basis. EPA should withdraw TMDLs where there is no detection of such pollutants using reliable data (such as clean and ultra-clean data where warranted). EPA should rely instead on 40 CFR 122.44(d)(1)(i) and (vi)(A) and (B) which require the permitting authority to impose water quality based effluent limits where the discharges from and individual facility have "reasonable potential" to exceed a state water quality standard. Under these rules, if the permitting authority has reason to believe that a pollutant will contribute to an exceedance of the standard, a site-specific limit may be set. This existing rule is fully protective of water quality without the existence of a TMDL.

Response

Pollutants of concern are selected in the Final TMDL based on receiving water quality, sediment toxicity, fish advisories, and historical listing of pollutants for which there is no weight of

evidence that allows delisting. If pollutants of concern have been selected when, in fact, pollutant concentrations in the receiving water comply with applicable criteria, it is done so based on other data and information that indicates that Louisiana's water quality standards are not being met.

Similar Comments

009/0006 Citgo Petroleum Corporation
016/0018 PPG Industries, Inc.

Comment 004/0008 Louisiana Chemical Association

Although LDEQ indicated that HCB, HCBD and PCBs should remain on the 303(d)list, this recommendation was solely due to the existence of a fish consumption advisory from the Louisiana Department of Health and Hospitals. There is no current evidence of impairment of Bayou d'Inde for these parameters even though the Department of Health and Hospitals is protectively continuing the advisory. In fact, water sampling has not detected HCB or HCBD for over 4 years.

Response

EPA has delisted several pollutants for Calcasieu Estuary subsegments when there is a weight of evidence that no impairment exists. While it is acknowledged that recent data indicate that hexachlorobutadiene, hexachlorobenzene, and PCBs have not been detected in the Bayou D'Inde water column, the failure to detect a pollutant at minimum detection levels that are several orders of magnitude greater than the water quality criteria does not demonstrate that water quality criteria are being achieved in the light of other information such as the fish advisory. The Louisiana Department of Health and Hospitals is appropriately maintaining the fish advisory for Bayou D'Inde until it is shown that the advisory is no longer necessary. Similarly, wasteload allocations for these pollutants provide a measure of protection to ensure that the advisory is ultimately removed.

Similar Comments

009/0007 Citgo Petroleum Corporation
016/0017 PPG Industries, Inc.

Comment 004/0009 Louisiana Chemical Association

Further, PCBs are banned from manufacture and most uses under the federal Toxic Substances Control Act, so such regulations provide reasonable assurance that this pollutant will not be an ongoing issue. TMDLs, which address ongoing discharges, are simply unwarranted as they have no impact on water quality.

Response

While it is acknowledged that the production of PCBs as a commercial product has been illegal for many years, PCBs can and are produced during the production of other compounds. For example, it has been documented that trace quantities of PCBs can be produced during the manufacture of chlorinated hydrocarbon compounds (e.g., 1,1,1-trichloroethylene, tetrachloroethylene, carbon tetrachloride) in the presence of catalysts or at high temperatures (National Study of Chemical Residues in Fish, Vol. II. U.S. EPA, September 1992. EPA 823-R-92-008b). Similarly, for discharges to Patrick Bayou, Texas, PCB 1248 exceeded levels protective of water quality standards in several discharges from facilities manufacturing organic chemicals. (Parsons Engineering Science. 2000. Final Report, Patrick Bayou Pollutant Source Study. Prepared for Lubrizol, OxyVinyls and Shell Oil Company. June 2000). PCBs also may

be discharged through nonpoint sources, including urban runoff. EPA believes that continued diligence in assessing discharges for this parameter is warranted.

Similar Comments

004/0095 Louisiana Chemical Association
009/0008 Citgo Petroleum Corporation
016/0039 PPG Industries, Inc.

Comment 004/0010 Louisiana Chemical Association

EPA proposed TMDLs for metals without performing data gathering using clean techniques. This is an invalid scientific approach when EPA is clearly aware that use of data gathered using clean techniques would likely demonstrate that no impairment exists.

Response

Certainly clean techniques will not ensure that no impairment exists. For example, clean techniques data submitted by LDEQ for Bayou Verdine indicates that 3 of 12 samples do not meet the marine dissolved criterion for copper. The same data shows that one sample exceeds the criterion in Bayou D'Inde. See also response to comment 002/0003.

Similar Comments

009/0009 Citgo Petroleum Corporation
013/0010 Louisiana Mid-Continent Oil & Gas Association

Comment 004/0011 Louisiana Chemical Association

On August 20, 2001, LDEQ provided "clean techniques" sampling data to EPA demonstrating that there were no exceedances of the aquatic copper criteria in Bayou D'Inde, Bayou Verdine, and the Calcasieu Ship Channel. (The original of this submittal is in EPA Region 6's files. LCA requests that EPA include the original submittal, or a copy thereof, in the official administrative record for this TMDL proceeding.) However, EPA's contractor apparently did not receive or did not consider this data for these waterbodies although similar data was used as a basis for delisting copper in other waterbodies. The data provided by LDEQ to EPA in August 2001 was developed from a report commissioned by PPG titled "A Final Report for Trace Metals "Clean Technique" Sampling and Laboratory Analysis, CK Associates, Inc., March 2001."

Response

This information was provided by EPA and was provided by PPG Industries, Inc. in comments on the Draft TMDL and is part of the administrative record. The data it contains have been added to Appendix B. See also response to comment 002/0003. It should be noted however, that this data did not demonstrate no exceedances for Cu in Bayou Verdine. Three of twelve samples submitted were above the marine criterion for copper.

Similar Comments

005/0005 Equistar

Comment 004/0012 Louisiana Chemical Association

EPA proposed TMDLs/WLAs for copper, mercury and nickel were based upon data collected and analyzed without use of "clean techniques." As noted above, data collected using clean techniques was already been provided to EPA by LDEQ in August 2001, but apparently was not considered in the study. This data showed that there is no exceedance of the aquatic copper criteria and that Bayou d'Inde should thus be delisted for copper. The "dirty" data used by the

EPA contractor showed nickel detected above the criteria in less than 10% of the samples. In light of this data , Louisiana Water Quality Standards ("LWQS") indicate that clean techniques or ultra-clean techniques must be used when other data indicate that a criteria may be exceeded. LAC 33:IX.1113.C.6.f provides: The use of clean or ultra-clean techniques may be required to definitively assess ambient levels of some pollutants (e.g., EPA method 1669 for metals) or to assess such pollutants when numeric or narrative water quality standards are not being attained. Clean and ultra-clean techniques are defined in LAC33:IX.1105. The relevant definitions of "clean" and "ultra-clean" in LAC33:IX.1105 provide: Clean Techniques—those requirements (or practices for sample collection and handling) necessary to produce reliable analytical data in the microgram per liter (µg/L) or part per billion (ppb) range. Ultra-Clean Techniques—those requirements or practices necessary to produce reliable analytical data in the nanogram per liter (ng/L) or part per trillion (ppt) range.

Response

It is acknowledged that clean techniques are required when analyzing waters that contain pollutants at levels approaching the detection limits of conventional techniques. EPA believes that discounting entire databases analyzed with conventional techniques, and evaluated using rigorous quality control measures, is unfounded, There is no compelling evidence that data quality of those databases was compromised. See also response to comment 002/0003.

Similar Comments

009/0011	Citgo Petroleum Corporation
016/0015	PPG Industries, Inc.
016/0054	PPG Industries, Inc.

Comment 004/0014 Louisiana Chemical Association

With respect to mercury, EPA did not use ultra-clean techniques. Further, while EPA apparently detected mercury in the ambient water, it has not yet identified any exceedance of the chronic aquatic protection standard because it did not perform any fish testing. LDEQ's aquatic protection criteria requires fish testing for implementation. LAC 33:IX.1113 Table 3 note 11. EPA data developed in Phase II of the Calcasieu Estuary Superfund Study support LCA's conclusion that there is no exceedance of the aquatic protection criteria. Thus, the TMDL for mercury should be withdrawn.

Response

The citation referred to in the comment is as follows:

"If the four-day average concentration for total mercury exceeds 0.012 mg/L in freshwater or 0.025 µg/L in saltwater more than once in a three-year period, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level (1.0 mg/kg). If the FDA action level is exceeded, the state must notify the appropriate EPA Regional Administrator, initiate a revision of its mercury criterion in its water quality standards so as to protect designated uses, and take other appropriate action such as issuance of a fish consumption advisory for the affected area."

The purpose of the fish testing, as explicitly stated in this quote, is not to determine whether there is, in fact, an exceedance, but to determine whether EPA should be notified or whether other appropriate action, such as issue a fish consumption advisory should be taken.

Water column exceedances of mercury are independently assessed against the water column

criterion. The lack of fish tissue information does not preclude the establishment of a TMDL to meet a water column criterion.

Similar Comments

004/0103 Louisiana Chemical Association
007/0031 Sasol North America, Inc.
009/0013 Citgo Petroleum Corporation
009/0091 Citgo Petroleum Corporation
016/0016 PPG Industries, Inc.
016/0051 PPG Industries, Inc.

Comment 004/0016 Louisiana Chemical Association

The treatment of discharge data grossly over-estimated loadings in many cases by ignoring non-detected values in facilities' discharge monitoring reports and/or presuming that pollutants were present when "zero" values were reported for pollutant concentrations below the analyte method detection limit.

Response

The method used to determine the loadings is explicitly described. If a pollutant was never detected in an effluent, it is characterized as not detected. A zero value (representing a nondetect) does not signify that the pollutant is absent from the effluent, only that it is not detected. Without knowledge of the detection limits used for the nondetected data, there is no basis for using conventional methods (such as representing nondetects at 1/2 the detection level) to calculate an average load. The maximum load is what it is reported to be.

Note that existing loads do not factor into the calculation of wasteload allocations. They are presented for informational purposes only.

Similar Comments

009/0015 Citgo Petroleum Corporation
016/0030 PPG Industries, Inc.

Comment 004/0017 Louisiana Chemical Association

EPA misused data from the LDEQ Ambient Water Quality Network. All "non-detects" ("ND"s) were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.

EPA misused data from the National Oceanic and Atmospheric Administration's Calcasieu database. All NDs were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.

Response

The commenter is incorrect in the assumption that the mean of detected values was the only value compared against criterion values. In the analysis, each individual observation was compared against aquatic life criteria. Nondetects, however, were not counted in this comparison. The mean of detected values was compared against human health criteria. Three pollutants had means of detected values greater than the human health criterion: 1,2-dichloroethane in Bayou Verdine, and heptachlor and PCBs in Bayou D'Inde. 1,2-dichloroethane was detected in 8 of 9 samples taken, and the mean value is approximately 7 times the human health criterion value. This is a reasonable determination that the human health criterion for 1,2-dichloroethane is exceeded in Bayou Verdine. The mean values for both heptachlor and PCBs

were based on only one value and were ignored.

Similar Comments

009/0016 Citgo Petroleum Corporation
016/0033 PPG Industries, Inc.

Comment 004/0019 Louisiana Chemical Association

EPA may have inappropriately determined point source loadings. It is unclear whether EPA used permit limits or average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA states says both in the Executive Summary of the Draft Total Maximum Daily Load for Toxics for the Calcasieu Estuary (the "Draft TMDL Document"), p. ES2.

Response

The context of this comment is not clear. In fact, both were done. The results were used for informational purposes only. Existing loads do not materially affect wasteload allocations in this TMDL.

Similar Comments

009/0018 Citgo Petroleum Corporation

Comment 004/0020 Louisiana Chemical Association

Nothing in the Draft TMDL Document indicates which years of facility data were reviewed and why that time period was deemed sufficiently representative of normal, authorized plant operations.

Response

Acknowledged. This information is included in the Final TMDL.

Similar Comments

009/0019 Citgo Petroleum Corporation

Comment 004/0021 Louisiana Chemical Association

EPA may have inappropriately determined nonpoint source contributions and failed to consider reductions in nonpoint source loadings.

Response

The TMDL process requires an assessment of point source and nonpoint source loads.

Similar Comments

009/0020 Citgo Petroleum Corporation

Comment 004/0022 Louisiana Chemical Association

The TMDL mass balance methodology used by EPA is overly simplistic, particularly for a system as hydraulically complex as the Calcasieu Estuary. Such complexity requires fate and transport modeling to generate scientifically acceptable TMDLs. This modeling should include hydrodynamics and water column/sediment pollutant interactions. EPA used a mass balance approach to model toxic pollutants in the Calcasieu Estuary system. The mass balance approach is most problematic for simulating compliance with water quality criteria that have a short-term exposure basis, e.g., acute and chronic aquatic life criteria. A mass balance across an entire surface water subsegment that is miles in length and contains islands and looping channels (e.g., the Upper Calcasieu Estuary and Ship Channel) is inadequate for demonstrating compliance with

water quality criteria. The mass balance analysis is especially problematic for aquatic life criteria because temporal-spatial concentration differences must be properly simulated to assure that wasteload allocations are protective, but not overly so. The water quality criteria and implementation methods of the LDEQ are designed to assure that the standards are met at all places in the waterbody, but the TMDL approach used by EPA fails to accomplish this objective.

Response

EPA acknowledges the limitations of a mass balance approach involving a system as complex as the Calcasieu Estuary. But it must be noted that this is the best approach that could be applied given the time, resources, and available data. Given uncertainties about the dynamics of the estuary, it is not clear whether the approach is conservative or not. EPA encourages permittees and other interested parties to improve on the understanding of this system, particularly with regard to system hydrology, in order to ensure that any future wasteload allocations are environmentally protective and equitable among dischargers.

Similar Comments

007/0003	Sasol North America, Inc.
007/0005	Sasol North America, Inc.
009/0021	Citgo Petroleum Corporation
013/0020	Louisiana Mid-Continent Oil & Gas Association
014/0052	Conoco Inc.
016/0022	PPG Industries, Inc.

Comment 004/0023 Louisiana Chemical Association

The hydrodynamics of a surface waterbody determine the transport of chemicals and particulates. As described in the Draft TMDL Document, the Calcasieu Estuary, with its ship channel, islands, lakes, and tributary bayous has very complex hydraulics and pollutant transport. Rather than justifying the simplifying assumption of a mass balance, this complexity demands development of a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants. The foundation of a TMDL is the ability to satisfactorily simulate the hydraulics of the surface waterbody of concern. This has not been done for the Proposed TMDLs.

Response

As the commenter noted, the Calcasieu is a very complex system. Data for the system are extremely limited. While a model of the system exists (RECEIVE II), when the model was originally developed, the developer indicated that there were severe data limitations. These limitations persist. A systematic effort is needed to develop and refine the data that go into the model.

EPA encourages activities that refine the capabilities of the RECEIVE II model or other suitable models so that it/they can be reliably used for wasteload allocation decisions in the Calcasieu. This effort, however, will require considerable information gathering, calibration, and verification. Therefore, applications of these models may be more appropriate in future TMDLs for the estuary.

Similar Comments

007/0006	Sasol North America, Inc.
009/0022	Citgo Petroleum Corporation

Comment 004/0024 Louisiana Chemical Association

Another major deficiency of the TMDLs performed by EPA is the failure of the mass balance to account for pollutant fate including both water column-sediment interactions, partitioning of pollutants to solids, and processes such as biodegradation and volatilization. These processes are not considered in the Draft TMDL Document, but are necessary in order to develop technically supported wasteload allocations.

Response

In the attempts to develop a technically defensible water quality model for the Calcasieu, the interactions mentioned in this comment were evaluated under a variety of flow conditions. Even under the very low net downstream flows that were used in the Draft TMDL, transport by water movement was by far the most significant process that determined concentrations in receiving waters. Adding in other processes, either individually or in combination, changed the receiving water concentration by less than 0.1%. While the other processes can be added as a model refinement at some time in the future, decisions based on model results using water flow alone would not be changed with their addition.

Similar Comments

007/0007	Sasol North America, Inc.
009/0023	Citgo Petroleum Corporation
016/0059	PPG Industries, Inc.

Comment 004/0025 Louisiana Chemical Association

EPA needs to correct errors in the segment flow.

Response

Flows used to determine wasteload allocations have been changed in the Final TMDL to incorporate tidal flow components.

Similar Comments

005/0051	Equistar
006/0045	Lyondell Chemical Company
009/0024	Citgo Petroleum Corporation
013/0014	Louisiana Mid-Continent Oil & Gas Association
014/0053	Conoco Inc.
015/0051	Firestone Polymers

Comment 004/0026 Louisiana Chemical Association

EPA needs to correct errors in facility outfall flow.

Response

The flows used in wasteload allocations were reviewed based on information contained in existing permits, fact sheets, permit applications, and reported discharges. Note that there is a substantial difference between total facility flows (that include stormwater and cooling water outfalls) and process water flows. To the extent they are separable in existing data, only process water flows were used in determining wasteload allocations.

Similar Comments

004/0029	Louisiana Chemical Association
005/0048	Equistar
005/0052	Equistar
006/0042	Lyondell Chemical Company

006/0046 Lyondell Chemical Company
009/0026 Citgo Petroleum Corporation
009/0032 Citgo Petroleum Corporation
014/0048 Conoco Inc.
014/0054 Conoco Inc.
015/0047 Firestone Polymers
015/0052 Firestone Polymers

Comment 004/0027 Louisiana Chemical Association

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations. EPA's method for estimating facility maximum discharge (for use with chronic toxicity pollutant of concern ("POC") TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Response

It is accepted that an appropriate statistical approach for stormwater discharges is necessary to develop load allocations for stormwater. The wasteload allocations in the Draft and Final TMDL are based solely on process flows. Stormwater flows and pollutant contributions were not included. Once-through non-contact cooling water was also not included when determining wasteload allocations.

Similar Comments

005/0054 Equistar
006/0048 Lyondell Chemical Company
009/0027 Citgo Petroleum Corporation
014/0056 Conoco Inc.
015/0054 Firestone Polymers

Comment 004/0028 Louisiana Chemical Association

Point Source Flow Information. EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors. These errors include:

Concoco--primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Sasol North America, Inc. (formerly CONDEA Vista)--permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).

Citgo--outfalls for CitCon portion of operations (001, 002, 012) to Bayou D'Inde (Segment 030901) were not included.

Lyondell--stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.

PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Response

Based on a number of comments about discharge locations, the receiving water for all outfalls was reviewed using permits and fact sheets for all significant discharges. Changes have been made in the Final TMDL to correct discharge locations.

Similar Comments

005/0047 Equistar

006/0041 Lyondell Chemical Company
014/0047 Conoco Inc.
015/0047 Firestone Polymers

Comment 004/0030 Louisiana Chemical Association

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors. EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Response

EPA's estimates of average and maximum flows are based on:

1. Discharge data reported to Louisiana and EPA;
2. Facility permits;
3. Permit fact sheets; and
4. Permit applications (in a limited number of cases).

The majority of the data were obtained from reported discharges between 1/1/98 and 12/31/00. The data reported in the Final TMDL are reported by outfall, to avoid confusion about which flows are included in the calculations and which are not. Note that cooling water and stormwater flows were always excluded (to the extent that they are separable at a given facility) from the estimation of flows. Average flows are generally consistent (within a few percent) of flows reported in permits or fact sheets. Maximum flows are generally considerably larger than average flows, primarily because of stormwater contributions to many process outfalls.

Similar Comments

005/0049 Equistar
006/0043 Lyondell Chemical Company
009/0030 Citgo Petroleum Corporation
009/0033 Citgo Petroleum Corporation
014/0049 Conoco Inc.
015/0049 Firestone Polymers

Comment 004/0031 Louisiana Chemical Association

EPA should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach. EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determined. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Response

In determining wasteload allocations, average process flows are used in recognition of the fact that stormwater flows contribute significantly to maximum flows.

Similar Comments

005/0050 Equistar
006/0044 Lyondell Chemical Company
009/0034 Citgo Petroleum Corporation
014/0050 Conoco Inc.
015/0050 Firestone Polymers

Comment 004/0033 Louisiana Chemical Association

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper. LDEQ (in a letter to EPA dated August 20, 2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

Response

The data submitted by LDEQ have been added to Appendix B. See also response to comment 002/0004.

Similar Comments

005/0008	Equistar
006/0002	Lyondell Chemical Company
009/0036	Citgo Petroleum Corporation
014/0011	Conoco Inc.
015/0008	Firestone Polymers

Comment 004/0034 Louisiana Chemical Association

LDEQ (in a letter to EPA dated October 10, 2001) provided information clarifying the listings of "priority organics" and "non-priority organics" for the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901), and other segments. Based on this information LDEQ stated that the only POCs which are the suspected cause of waterbody impairment are: Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only). LDEQ stated that no other use impairments for organic POCs have been documented. LDEQ (in the same letter to EPA dated October 10, 2001) provided information clarifying the listings of "other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

Response

EPA used available data to determine pollutants of concern in categories included on the 303(d) list. EPA considered LDEQ's submission in the light of the fact that considerable data have become available since the time of the original listing. To the extent that more recent data supports the contention that the original listing covered the pollutants of concern and a waterbody is no longer impaired for those pollutants, EPA delisted the subsegment for the parameter.

Similar Comments

004/0048	Louisiana Chemical Association
005/0009	Equistar
006/0003	Lyondell Chemical Company
009/0037	Citgo Petroleum Corporation
009/0052	Citgo Petroleum Corporation
014/0012	Conoco Inc.
015/0009	Firestone Polymers
016/0010	PPG Industries, Inc.

Comment 004/0035 Louisiana Chemical Association

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of the Calcasieu Estuary area which were not designed to support TMDL determinations. In the Draft TMDL Document, EPA states that data

from the following seven reports were reviewed and evaluated to identify POCs:

Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.

Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996.

Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case, these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs:

The sampling schemes--locations, depths, compositing, etc.--of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g., random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Response

This comment implies that the only valid data for use in determining pollutants of concern is a statistically-based or grid-based sample design covering a complete subsegment. EPA disagrees with this statement. While it is acknowledged that some of the sampling focused on localized areas, the 1999-2000 Superfund data provided broad general coverage of the estuary, and the sampling locations were determined by a grid. In some areas, Bayou D'Inde, for example, grid lines were closely spaced to obtain geographic resolution of sediment concentrations (see Appendix Figure C-2). In other areas, such as Prien Lake, grid lines were more widely spaced because geographic resolution was considered less important. The number of samples taken for any pollutant in any area were selected from the grid at random, with the total number of samples taken for any pollutant being allocated by the geographic detail required. These data present an overall assessment of each subsegment without over-representing "hot spots."

Where concentrations in either the water column or the sediments had exceedances of quality targets, locational information was used to determine any possible or likely continuing sources of pollutants. Thus, even if sampling was more intense in one area than another by chance, this information was taken into account when determining what facilities would required wasteload allocations.

Similar Comments

005/0002	Equistar
005/0010	Equistar
006/0004	Lyondell Chemical Company
006/0005	Lyondell Chemical Company
009/0038	Citgo Petroleum Corporation
009/0039	Citgo Petroleum Corporation
013/0009	Louisiana Mid-Continent Oil & Gas Association

014/0013 Conoco Inc.
015/0010 Firestone Polymers
015/0011 Firestone Polymers
016/0028 PPG Industries, Inc.

Comment 004/0037 Louisiana Chemical Association

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Response

It is not necessary for an entire subsegment to be uniformly impaired before a TMDL is required. By analogy, if the dissolved oxygen concentration in a particular segment is below the water quality criterion for oxygen at only one location, and that location occupies only a few hundred feet of a 10-mile long segment, a TMDL could be required if a combination of point and nonpoint sources contributed to the impairment. The same applies to toxic pollutants. In fact, the availability of only "hot spot" data could underestimate the extent of the impairment.

Similar Comments

005/0012 Equistar
006/0006 Lyondell Chemical Company
009/0040 Citgo Petroleum Corporation
014/0015 Conoco Inc.
015/0012 Firestone Polymers

Comment 004/0038 Louisiana Chemical Association

The LDEQ information referred to under Comment 7.c. above--combined with the absence of data showing presence in segment water or sediment above reference levels--should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)
Bromoform, Bayou D'Inde (030901)
1,1, 2, 2 Tetrachloroethane, Bayou D'Inde (030901)

Response

For pollutants specifically identified on the 303(d) list, EPA must give a positive demonstration, through at least a weight of evidence approach, that the pollutant is not reasonably expected to cause an impairment. Only 5 samples were analyzed for bromoform, 3 samples for 1,1,2,2-tetrachloroethane, and 1 sample for phenol. These data are inadequate to demonstrate that the subsegments are not impaired for the identified pollutants.

Similar Comments

005/0013 Equistar
006/0007 Lyondell Chemical Company
009/0041 Citgo Petroleum Corporation
014/0016 Conoco Inc.
015/0013 Firestone Polymers

Comment 004/0040 Louisiana Chemical Association

In the Draft TMDL Document, EPA does not address whether the above studies relied upon by EPA found the POCs under conditions consistent with application of the reference level--such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Response

The above studies assessed sediment concentrations of toxics in a manner consistent with EPA's assessment in the TMDL. Also, ESGs incorporate TOC as a mediating factor addressing bioavailability of non-polar organics.

In making a comparison between a water or sediment concentration to some reference level, it is not clear how POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity apply. There is a limited possibility that the chemical form, bioavailability, and biotoxicity of specific pollutants are sufficiently different for the Calcasieu Estuary that the reference levels used do not apply. Sediment reference levels, however, are based on a range of environmental conditions that likely involve a wide variety of chemical forms and availabilities. Water quality human health values (especially for organic compounds) are determined independent of chemical form. There are procedures that can be used by affected parties for developing site-specific criteria for metals in the water column should pollutant form and toxicity be at issue. Absent a demonstration that there are location-specific factors that affect bioavailability and toxicity, the application of the reference levels used in the TMDL is appropriate.

Similar Comments

005/0015 Equistar
006/0009 Lyondell Chemical Company
009/0043 Citgo Petroleum Corporation
014/0018 Conoco Inc.
015/0015 Firestone Polymers

Comment 004/0041 Louisiana Chemical Association

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Response

The Final TMDL relies only on the dissolved criteria for metals in Louisiana's water quality standards.

Similar Comments

005/0016 Equistar
006/0010 Lyondell Chemical Company
009/0044 Citgo Petroleum Corporation
013/0015 Louisiana Mid-Continent Oil & Gas Association
014/0019 Conoco Inc.
015/0016 Firestone Polymers

Comment 004/0042 Louisiana Chemical Association

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh water conditions.

Response

For purposes of application of water quality criteria, all of the subsegments covered in this

document meet the definition of marine waters. Based on Louisiana's Water Quality Standards, marine water quality criteria apply.

Similar Comments

005/0017 Equistar
006/0011 Lyondell Chemical Company
009/0045 Citgo Petroleum Corporation
014/0020 Conoco Inc.
015/0017 Firestone Polymers

Comment 004/0043 Louisiana Chemical Association

Reference levels for fresh water must be adjusted for hardness.

Response

For purposes of application of water quality criteria, all of the subsegments covered in this document meet the definition of marine waters. Based on Louisiana's Water Quality Standards, marine water quality criteria apply. Marien criterion do not dependent upon water hardness values.

. See also response to comment 002/0027.

Similar Comments

005/0018 Equistar
006/0012 Lyondell Chemical Company
009/0046 Citgo Petroleum Corporation
014/0021 Conoco Inc.
015/0018 Firestone Polymers

Comment 004/0045 Louisiana Chemical Association

Reference levels that are not appropriate to local biota should not be used.

Response

Water quality criteria and sediment quality screening levels are appropriate for application to the Calcasieu Estuary as well as other estuarine waters. Louisiana may, as an alternative, adopt site-specific numeric criteria.

The applicability of reference levels to local biota can only be addressed through the development of site-specific criteria. Should any discharger wish to develop data and information that substantiates the application of a site-specific criterion, it is free to do so at any time.

Similar Comments

005/0020 Equistar
006/0014 Lyondell Chemical Company
009/0048 Citgo Petroleum Corporation
014/0023 Conoco Inc.
015/0020 Firestone Polymers

Comment 004/0046 Louisiana Chemical Association

Sediment reference levels should be adjusted based on sediment mineral type, soil type, AVS/SEM ratio, and other relevant characteristics. Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Response

To the extent that reference levels are defined in terms of such parameters, they have been incorporated in their application in the Draft and Final TMDLs. For example, TOC concentrations were considered in the assessment of non-polar organics.

Similar Comments

005/0021	Equistar
006/0015	Lyondell Chemical Company
009/0049	Citgo Petroleum Corporation
014/0024	Conoco Inc.
015/0021	Firestone Polymers

Comment 004/0047 Louisiana Chemical Association

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Response

The criteria and reference levels used in the assessment of pollutants of concern are all applicable to the Calcasieu Estuary, as they are applicable to a wide variety of estuarine systems in the nation.

Similar Comments

005/0022	Equistar
006/0016	Lyondell Chemical Company
009/0050	Citgo Petroleum Corporation
014/0025	Conoco Inc.
015/0022	Firestone Polymers

Comment 004/0050 Louisiana Chemical Association

Nonpriority organics - three subsegments (030302, 030306, and 030901) were originally listed for "nonpriority organics" and not for any specific pollutant. LDEQ indicated that this listing was intended to be a generic term for periodic oil spills. LDEQ indicated that because oil spills are episodic events more appropriately regulated through enforcement actions, they are not appropriate for TMDLs and that these subsegments were delisted for "nonpriority organics." With respect to EPA's proposed Draft TMDLs, this confirms that EPA is not authorized by the Clean Water Act nor the court ordered list to establish wasteload allocations for PAHs, methoxyclor or DDT based upon the generic listing for "nonpriority organics." Thus, EPA's sole asserted basis for imposing WLAs for these pollutants for Bayou Verdine (030306) and the Calcasieu River (030301) must rest on EPA's ability to establish WLAs solely based on contaminated sediments. As discussed below, LCA does not believe that EPA has this legal authority.

Other Inorganics - Bayou d'Inde (030901) was listed on the 303(d) list for "other inorganics". LDEQ discussed the meaning of this term as follows:

Other Inorganics

Subsegment 030901 – Bayou D'Inde – Headwaters to Calcasieu River

The term "other inorganics" was intended as a generic term for those non-metallic inorganic compounds that may occur in the water from brine discharges during oil and gas activities. No water quality sample was collected; therefore, no quantitative assessment was made. Non-

metallic inorganic water quality parameters in brine discharges include chlorides, sulfates, total dissolved solids and salinity.

Since Bayou D'Inde is a natural estuarine waterbody frequently influenced by high salinity from the Gulf of Mexico, no water quality criteria for these parameters are set for the bayou in the Louisiana Water Quality Standards. The listing for "other inorganics" in subsegment 030901 was for general informational purposes and not a listing for impairment of water use by any specific parameters (Emphasis added.) Thus, it is clear that the term "other inorganics" does not include mercury or nickel. For this reason, EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for mercury and nickel for Bayou D'Inde.

Response

EPA has found no compelling evidence that Bayou D'Inde is impaired by any constituents that would represent the category of "other inorganic" pollutants. EPA has delisted other inorganics for Bayou D'Inde.

Similar Comments

009/0051 Citgo Petroleum Corporation
016/0007 PPG Industries, Inc.

Comment 004/0051 Louisiana Chemical Association

EPA has proposed TMDLs for lead for the Calcasieu River (030301) and for copper at Contraband Bayou (030305). EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for these pollutants at these water bodies as these substances are not on the court approved 303(d) list. Further, neither waterbody was listed for the generic category of "other inorganics." There is simply no basis for EPA to usurp LDEQ's authority to establish these TMDLs. Pursuant to section 303(d) of the CWA, LDEQ has primacy over these waters and such primacy has not been changed by the Consent Agreement.

Response

Those pollutants that are not specifically identified or covered by categories identified on the court-ordered 303(d) are not selected as pollutants of concern in the Final TMDL. If impairments are noted during the review process, this information will be provided to LDEQ for consideration for the October 2002, 303(d) list.

Comment 004/0052 Louisiana Chemical Association

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations. Interested parties in the Lake Charles area have demonstrated the willingness to undertake detailed sampling studies--e.g., using "clean techniques"--for specific POCs that had previously been identified in the 303(d) list (e.g., copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA's final determination on the Proposed TMDLs.

Response

The development of TMDLs for a variety of pollutants in the Calcasieu Estuary will result, in the first instance, in the development of additional data on the magnitude and extent of water quality

exceedances and the discharges of pollutants of concern. Review of the additional data may indicate either that receiving waters are not, in fact, impaired, or that many dischargers do not discharge pollutants at concentrations that result in receiving water impairment. EPA appreciates industry willingness to provide additional data and accepts that additional data are often necessary. However, it is unable, due to consent decree commitments, to delay the TMDLs while additional data are being collected.

Similar Comments

005/0023	Equistar
006/0017	Lyondell Chemical Company
009/0053	Citgo Petroleum Corporation
014/0010	Conoco Inc.
015/0023	Firestone Polymers

Comment 004/0053 Louisiana Chemical Association

EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination. As explained on page ES-1 of the Draft TMDL Document, EPA has used a simple screening method to select POCs:

(i) pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; and (ii) pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples. This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (e.g., formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs for TMDL development is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management. The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Response

The procedure that is used to assess water column data is consistent with Louisiana's protocol. Also, assessment using sediment guidelines is consistent with Louisiana's protocol from an exceedance standpoint. The "flagging" method is based on an extensive data assessment that EPA believes is technically supportable.

Available data were evaluated to determine whether impairment existed due to exceedances of water quality criteria or sediment quality targets. Concentrations above water quality criteria or sediment quality targets are known to affect human health or the health of the aquatic ecosystem. Because of the variability in pollutant concentrations in receiving waters, a low number of exceedances was used. If occasional exceedances are detected, impairment of the water column is often much more extensive than data suggest. In many cases, however, a very large number of exceedances were observed.

The NRC Report recommends many technically sound approaches to improving TMDL development. The report also recommends that lack of guidance or methods at present is not a rationale for delaying TMDL development. EPA has applied current tools to establish these TMDLs in a defensible framework. The TMDL also outlines a future monitoring program which

will further aid in assessing the degree of impairment and pollutant sources.

Similar Comments

005/0024 Equistar
006/0018 Lyondell Chemical Company
009/0054 Citgo Petroleum Corporation
014/0026 Conoco Inc.
015/0024 Firestone Polymers

Comment 004/0057 Louisiana Chemical Association

To evaluate a set of results for comparison with a reference level, good scientific, statistical practice requires an appropriate estimate of central tendency--appropriate to the type distribution--and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Response

Except for human health criteria, measures of central tendency have no relevance in determining exceedances of water quality criteria.

Similar Comments

005/0028 Equistar
006/0022 Lyondell Chemical Company
009/0058 Citgo Petroleum Corporation
014/0030 Conoco Inc.
015/0028 Firestone Polymers

Comment 004/0058 Louisiana Chemical Association

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Response

Use of surrogate values is only relevant when measures of central tendency are germane to decision making. The only place this is relevant is in assessment of compliance with human health criteria. See also response to comment 004/0017.

Similar Comments

005/0029 Equistar
006/0023 Lyondell Chemical Company
009/0059 Citgo Petroleum Corporation
014/0031 Conoco Inc.
015/0029 Firestone Polymers

Comment 004/0059 Louisiana Chemical Association

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.

Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

Response

It is acknowledged that contaminated sediments may be the result of historical discharges only,

but there are no data that demonstrate that current discharges are not contributing to sediment contamination. Absent this demonstration, an approach that allows the evaluation of the effect current discharges are having on sediment contamination is adopted in the Final TMDLs.

It is accepted that available data indicate that sediment levels for some pollutants are declining, and burial of the sediments is likely one of the most important processes that are causing the reduction.

Similar Comments

005/0030 Equistar
006/0024 Lyondell Chemical Company
009/0060 Citgo Petroleum Corporation
014/0032 Conoco Inc.
015/0030 Firestone Polymers

Comment 004/0060 Louisiana Chemical Association

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to the water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Response

While simple diffusion of pollutants from sediments to the water column would be substantially reduced by a thin cover of "clean" sediment, underlying sediments would still be toxic to aquatic organisms, in violation of Louisiana's "free from toxics in toxic amounts" standard, and organisms would likely mobilize sediment pollutants to the water through their activity.

Similar Comments

005/0031 Equistar
006/0025 Lyondell Chemical Company
009/0061 Citgo Petroleum Corporation
013/0011 Louisiana Mid-Continent Oil & Gas Association
014/0033 Conoco Inc.
015/0031 Firestone Polymers

Comment 004/0061 Louisiana Chemical Association

EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification--based on scientifically valid, statistically representative, segment-specific data--for using sediment conditions as a basis for inferring the need for water column POCs and TMDLs.

Response

Sediment serves as a relatively stable indicator of pollutant loading. Elevated concentrations in surficial sediments may indicate active loading. Monitoring contained in the TMDL will quantify the degree of pollutant loading that is occurring. Contaminated sediments may or may not be affecting the water column. Louisiana's narrative toxicity standard applies equally to sediments (LAC 33:IX.1113.A.5).

Similar Comments

005/0032 Equistar

006/0026 Lyondell Chemical Company
009/0062 Citgo Petroleum Corporation
014/0034 Conoco Inc.
015/0032 Firestone Polymers

Comment 004/0062 Louisiana Chemical Association

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Response

EPA acknowledges that ESGs and ERMs are not regulatorily-defined levels, yet they are the best indicators available as to what pollutants may be contributing to sediment toxicity. For two of the pollutants identified (DDT and methoxychlor) by comparison with sediment quality targets, no TMDLs are developed because the expected source of these pollutants is either historical runoff or runoff from a historically contaminated site(s).

The other pollutants listed (PAHs, calcium, and zinc) could be the result of historical contamination, or current discharges could be contributing to observed levels. The setting of wasteload allocations for these pollutants is a precautionary action.

Similar Comments

004/0075 Louisiana Chemical Association
005/0033 Equistar
006/0027 Lyondell Chemical Company
007/0004 Sasol North America, Inc.
007/0013 Sasol North America, Inc.
007/0034 Sasol North America, Inc.
009/0063 Citgo Petroleum Corporation
009/0070 Citgo Petroleum Corporation
014/0035 Conoco Inc.
015/0033 Firestone Polymers
016/0062 PPG Industries, Inc.

Comment 004/0063 Louisiana Chemical Association

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

Response

The court-ordered list underwent a previous public review. There is no provision to take portions of this list to provide a "preliminary" list. EPA is required to complete TMDLs for the listed waters by May 31, 2002.

Similar Comments

005/0034 Equistar
006/0028 Lyondell Chemical Company

009/0064 Citgo Petroleum Corporation
014/0036 Conoco Inc.
015/0034 Firestone Polymers

Comment 004/0064 Louisiana Chemical Association

ESGs and ERMs are not promulgated standards for protection of water quality and, absent a rigorous scientific justification, should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)

Mercury, Calcasieu Ship Channel (030301)

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Response

Mercury would have been selected as a pollutant of concern in the Calcasieu Estuary and Ship Channel irrespective of sediment contamination levels for mercury. The high percentage of sediments that exceed the mercury ERM in Bayou D'Inde simply reinforce the fact that a mercury TMDL is needed in this waterbody.

For PAHs, see response to comment 004/0062.

Similar Comments

005/0035 Equistar
006/0029 Lyondell Chemical Company
009/0065 Citgo Petroleum Corporation
014/0037 Conoco Inc.
015/0035 Firestone Polymers

Comment 004/0065 Louisiana Chemical Association

Under Section 303 of the Clean Water Act and the TMDL process, EPA is not authorized to establish waste load allocations simply to address sediment. EPA may establish WLA's to ensure compliance with the state ambient water quality criteria in the water column. The touchstone under the Clean Water Act for a TMDL to be authorized is a finding that controls on point sources or non-point sources beyond technology based limitations are necessary to achieve the state water quality standard. Section 303 requires that more stringent, water quality- based discharge limits be imposed only where it is demonstrated that technology limits are insufficient to meet water quality standards in waterbody segment. The whole purpose of the TMDL is to determine what more stringent requirements should be applied to the effluent discharges of point sources and non-point sources.

Where the EPA seeks to establish a WLA (which is to be translated into numerical or best management practices limits on point sources more stringent than technology based standards) solely due to the alleged presence of contaminated sediment, EPA must prove not only that the contaminated sediment is presently contributing to an exceedance of the ambient water quality criteria, but also that controls on the point sources or specified non-point sources will achieve the criteria. Where, as in the proposed TMDLs at issue in this proceeding, EPA has not demonstrated that the sediment is contributing to ambient water quality problems, it cannot be determined whether controls more stringent than technology based controls on point sources or non-point sources will assist in rectifying the problem.

Response

EPA's TMDL regulations require that for the purposes of listing waters under section 130.7(b)(1), all applicable water quality standards includes numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements. EPA regulations at 40 CFR 130.7(C)(1)(ii) require that "TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards as identified pursuant to paragraph (b)(1)." The TMDLs are all designed to address water column standards. Louisiana's water quality standards include sediments in the narrative toxicity standard, strengthening the legal basis for establishing a TMDL when the sediments are demonstrably toxic. A benefit of assuring compliance with water column criteria is that it may aid in addressing pollutant sources that contribute to sediment contamination.

Comment 004/0067 Louisiana Chemical Association

The method used in the Draft TMDL Document to calculate wasteload allocations for sediment contaminants (PAHs, pesticides, etc.) has no scientific basis because it does not relate pollutant loads in the water column to concentrations in the sediment. EPA assumes in the draft TMDL that if the water quality criteria for organic chemicals and metals are achieved, the sediment targets will also be achieved. This assumption has no scientific foundation and is not supported by any technical analysis in the Draft TMDL Document.

Response

Simple logic indicates that if a pollutant is not being discharged, it cannot contribute to sediment toxicity. We agree that guidance for addressing point and nonpoint sources of sediment contamination are lacking. EPA has opted to address the pollutants of concern in a fashion consistent with EPA's regulatory authority.

It is accepted that if water quality criteria are met (i.e., if wasteload allocations are met) pollutant levels in the water column may not provide protection of the sediments, particularly for hydrophobic pollutants such as PAHs. EPA has a legal basis to set effluent limits at levels that ensure water quality criteria are met, and the expectation is that if water quality criteria are met, then sediment contamination will also be controlled. Future monitoring will serve to evaluate the effectiveness of the TMDL in protecting sediment quality.

Should evidence be developed to the contrary, then alternative control approaches (such as periodic sediment remediation) might be needed to control sediment contamination.

Similar Comments

007/0028 Sasol North America, Inc.
009/0089 Citgo Petroleum Corporation

Comment 004/0068 Louisiana Chemical Association

If the sediment concentrations are due to historic discharges (before current treatment was installed), then there is no correlation between the current point source discharges and the sediment pollutant concentrations.

EPA must evaluate and determine the cause and effect between organic chemical and metal concentrations in point and nonpoint discharges, the water column, and sediments before it can perform the TMDL for sediments. It has not done this, so the Proposed TMDLs are fatally flawed with respect to the evaluation of sediments.

Response

EPA believes that it is possible that historic practices may be a significant contributor to sediment concerns. But, EPA thinks it is prudent to ensure that current discharges are not causing water quality problems and not contributing to sediment contamination. This is especially critical considering Superfund's investment in remediating contaminated sediments in portions of the estuary.

Comment 004/0070 Louisiana Chemical Association

EPA has other legal authority to address contaminated sediments where the cause of the contamination is historic releases or other causes that will not be addressed by imposition of limitations on existing dischargers. The TMDL process is inappropriate and not legally authorized for the purpose of addressing contaminated sediments where such sediments have no impact on the ability of the water column to meet water quality criteria and/or where imposition of controls on existing dischargers has no impact on the sediments.

Response

EPA is using the other legal authority (CERCLA) to deal with sediment contamination issues. It also has the authority to take actions that ensure water quality standards are being met.

Comment 004/0071 Louisiana Chemical Association

Sediment quality guidance values and EPA's national water quality criteria cannot be used for a TMDL because they have not been adopted as provisions of LDEQ's water quality standards. EPA has used the LDEQ surface water quality standards (LAC 33:IX.1101-1123) as compliance targets for the Proposed TMDLs. The LDEQ criteria are appropriate for this purpose because they were adopted by LDEQ through formal rulemaking, including public comment, and have been approved by EPA.

Response

The real issue is how the sediment quality targets are used. They are used solely to identify pollutants that are reasonably expected to contribute to sediment toxicity based on a large body of scientific evidence. Wasteload allocations are based on Louisiana's water quality criteria, and for PAHs, EPA's recommended water quality criteria. Sediment quality targets are not used to set wasteload allocations.

Similar Comments

007/0010 Sasol North America, Inc.
009/0066 Citgo Petroleum Corporation

Comment 004/0072 Louisiana Chemical Association

EPA also used several other databases as TMDL targets for specific pollutants: (1) EPA national water quality criteria ("EPA WQC") (63 Fed. Reg. 68354, December 10, 1998); (2) effects range-median (ERM) values for sediments that were developed by the National Oceanic and Atmospheric Administration ("NOAA"); and EPA's equilibrium partitioning sediment guidelines (ESG). None of these databases that were used as TMDL targets have been adopted as Louisiana water quality criteria. They have no legal standing and have not been subject to public review and comment through a rulemaking process at either the national level or in Louisiana. Therefore, they cannot be legally used as TMDL targets unless EPA shows in the TMDL that they are correlated to water column or sediment toxicity, or bioaccumulation in aquatic animals, to a sufficient extent that they can be used in a cause-effect relationship to develop wasteload

allocations ("WLA") and load allocations ("LA") for point and nonpoint sources, respectively.

Response

EPA's recommended water quality criteria have been subject to comment and review (63 FR 68354). It is accepted that ERMs and ESGs have no regulatory standing. But they are not used in setting wasteload or load allocations, only in determining the pollutants that may reasonably be expected to contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria. Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

Similar Comments

007/0011 Sasol North America, Inc.
009/0067 Citgo Petroleum Corporation

Comment 004/0073 Louisiana Chemical Association

Sediments can be listed as impaired based on measured toxicity and the LDEQ's narrative toxicity standard (LAC 33:IX.1113.B.5); however, a toxicity identification evaluation ("TIE") must be performed to identify the specific pollutant(s) causing the toxicity before a TMDL can be performed. EPA has not performed a TIE for sediments, or the water column, that identifies the pollutant or pollutants that are allegedly causing the measured toxicity.

Response

TIEs can sometimes be used to provide definitive evidence that a single pollutant is responsible for sediment toxicity. Generally, however, TIEs can only be used to define categories of compounds that cause toxicity in a given sediment. EPA conducted a TIE on Calcasieu Estuary sediments, and the TIE results are consistent with the identified sediment pollutants of concern. While this provides a weight of evidence that identified pollutants of concern are potentially responsible, it does not provide conclusive proof. Other pollutants within the toxic categories could also be contributing to sediment toxicity.

Similar Comments

007/0012 Sasol North America, Inc.
009/0068 Citgo Petroleum Corporation

Comment 004/0074 Louisiana Chemical Association

Neither has EPA presented in the Draft TMDL Document any scientific analysis that demonstrates that the EPA WQC, NOAA ERM, or EPA ESG values have any relationship to the measured sediment and water column toxicity identified in certain segments of the estuary. Therefore, the use of these "targets" that are based on numeric levels in EPA and NOAA guidance that has never undergone review and comment as substitute water quality standards for Louisiana is unlawful and technically unsupported.

Response

ERMs and ESGs are not used to set wasteload allocations, only to identify pollutants of concern.

EPA's recommended water quality criteria are based on effects on human health and aquatic biota. While aquatic life criteria are based on water column toxicity, human health criteria may not be. So acute and chronic toxicity of pollutants is addressed by comparison with aquatic life criteria (Note that only the application of Louisiana aquatic life criteria result in exceedances that

indicate a TMDL is needed).

For sediments, there are adequate data that indicate that the sediments are toxic. The uncertainty concerns the pollutants that are responsible for the toxicity. It is essentially impossible to determine the relative contribution of any pollutant to total sediment toxicity, but toxicity identification evaluation (TIE) procedures allow assessment of which groups of compounds are contributing to sediment toxicity.

A TIE has been done on a limited number of samples in the Calcasieu Estuary, and the TIE results indicate that the pollutant classes identified are representative of those constituents contributing to sediment toxicity.

Similar Comments

009/0069 Citgo Petroleum Corporation

Comment 004/0078 Louisiana Chemical Association

Because EPA has not developed an acceptable narrative standard translator for sediment toxicity, the proposed TMDLs for sediment in the draft TMDL are not scientifically supported and should not be adopted. Instead, EPA should provide for a data collection program to conduct the necessary sediment toxicity identification evaluations (TIE) to determine the pollutants causing sediment toxicity and the appropriate pollutant concentration targets.

Response

See responses to comments 004/0062 and 004/0074.

Similar Comments

007/0016 Sasol North America, Inc.
009/0073 Citgo Petroleum Corporation

Comment 004/0079 Louisiana Chemical Association

As noted by EPA on page 15 of the Draft TMDL Document, a TMDL should "provide an opportunity to compare relative contributions from all sources and consider technical and economic tradeoffs between point and non-point sources." There is no evidence within the Draft TMDL Document that EPA actually considered "technical and economic tradeoffs between point and non-point sources."

LCA submits that EPA made no effort to allow increased use of best management practices to control discharges of zinc, copper, and lead from nonpoint sources so as to allow increased loadings of zinc, copper, and lead from point sources. See, e.g., (a) proposed TMDL for zinc for Bayou Verdine (030306), (b) proposed TMDL for copper for Bayou D'Inde (030901), (c) proposed TMDL for copper for Upper Calcasieu Estuary and Ship Channel (030301), and (d) proposed TMDL for lead for Upper Calcasieu Estuary and Ship Channel (030301). LCA submits that failure to consider such tradeoffs for the affected pollutants renders the relevant TMDLs arbitrary, capricious, and legally impermissible.

Response

The Final TMDL bases wasteload allocations on tidal flows. When tidal flows are considered, the relative contribution of nonpoint source loads is very small in relation to the allowable load for a subsegment. Reducing nonpoint sources would affect only the third significant figure of wasteload allocations for facilities. The economic trade-offs between point source and nonpoint source controls essentially do not exist.

Similar Comments

009/0074 Citgo Petroleum Corporation
013/0019 Louisiana Mid-Continent Oil & Gas Association

Comment 004/0081 Louisiana Chemical Association

It is technically incorrect to use nonpoint source loadings for aquatic life criteria that are evaluated at the 7Q10. There is no surface runoff from rain events when the 7Q10 occurs; therefore, there should be no nonpoint source loadings of pollutants under such flow condition.

In the Draft TMDL Document, EPA uses a flow-based ratio method to estimate nonpoint source runoff contributions at critical low flow in the tributaries and estuary (page 14). No technical analysis is provided to support the conclusion that any surface runoff (i.e., nonpoint source flows) will occur coincident with the 7-day, 1-in-10-year low stream flows (7Q10). In fact, it is logical to assume that there will be no surface runoff during the critical low flow periods for this basin. The potential for surface runoff can be evaluated by reviewing the stream flow records in the watershed to determine when the 7Q10 flow has most recently occurred and then collecting and evaluating precipitation records for the same time period. It is probable that even if there is precipitation somewhere within the watershed during the period when the 7Q10 occurs, it will be very limited in both amount and spatial distribution and will not contribute nonpoint source loadings of significance.

The Proposed TMDLs should be recalculated assuming that there is no nonpoint source loading for all pollutants that have aquatic life criteria as targets, i.e., those wasteload allocations that are based on the 7Q10.

Response

It is accepted that nonpoint source contributions of specific metals may have been overestimated in the Draft TMDL by assuming that the amount of runoff is related to the ratio between average flow and the 7Q10 flow. But it is also true that runoff can occur at the 7Q10 flow, unless the 7Q10 flow is zero. The relative importance of nonpoint sources has been substantially reduced in the Final TMDL because tidal flows have been incorporated into the wasteload allocation procedures.

Similar Comments

007/0018 Sasol North America, Inc.
009/0076 Citgo Petroleum Corporation
016/0064 PPG Industries, Inc.

Comment 004/0083 Louisiana Chemical Association

LCA submits that the 20% MOS used by EPA in the development of TMDLs in the Draft TMDL Document is overly conservative and inappropriate, especially in light of the conservative approach used by EPA in its modeling and projection methodologies. As noted by EPA in its "Guidance for Water Quality-Based Decisions: The TMDL Process," EPA 440/4-91-001 (April 1991):

> "The MOS is normally incorporated *into the conservative assumptions used to develop TMDLs (generally within the calculations or models)* and approved by EPA either individually or in State/EPA agreements. If the MOS needs to be larger than that which is allowed through the conservative assumptions, additional MOS can be added as a separate component of the TMDL . . . ." (Emphasis added)

The overly conservative approach used by EPA--in adding an additional margin of safety of 20% to the calculated TMDLs--renders the TMDLs arbitrary, capricious, and legally impermissible.

LCA further submits that margins of safety for TMDLs should be based on estimates of the uncertainty of the estimated wasteload and load allocations. EPA has done no analysis that justifies its arbitrary MOS of 20%. EPA has stated in the TMDL regulation that the MOS should be based on the estimated uncertainty in the TMDL predictions. While this regulation is not yet effective, this recommendation is both scientifically sound and good public policy. EPA should base any MOS on an uncertainty analysis of the TMDLs.

Response

Check. LDEQ, in developing TMDLs for toxic pollutants, typically applies a 20% margin of safety in TMDLs submitted to EPA. EPA is also employing a 20% margin of safety to be as consistent as possible with LDEQ policies.

Similar Comments

007/0029	Sasol North America, Inc.
009/0078	Citgo Petroleum Corporation
009/0080	Citgo Petroleum Corporation
013/0018	Louisiana Mid-Continent Oil & Gas Association
016/0066	PPG Industries, Inc.

Comment 004/0085 Louisiana Chemical Association

A hydrodynamic model should have been used to estimate flows and dispersion in the estuary. Because of tidal dispersion, the water column-sediment interactions are very important in this estuary, and the failure to use a modeling approach that accounts for tidal dispersion and sediment transport is a fatal flaw in the Proposed TMDLs. EPA states that it evaluated the use of the WASP6 model to simulate pollutant transport and fate in the estuary and tributaries (Draft TMDL Document, page 16). EPA abandoned this effort and selected the mass balance approach because:

Although the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited. Because of these limitations, model results varied over a large range, depending on assumptions made about parameters for which there were no data. As a result, the use of the model as a quantitative tool to estimate allowable loads was not deemed appropriate.

This is not a justifiable reason to abandon the scientifically supported approach needed for a TMDL of this importance and magnitude. Indeed, this statement indicates that because EPA was under a schedule set by court order, it abandoned the best available scientific tools to perform the TMDL in order to meet its schedule.

Response

In an ideal world, a fully developed, verified, and calibrated hydrodynamic model would be preferred to estimate wasteload allocations. It is desirable that considerable time and effort be spent to develop such a model or refine existing models for the Calcasieu Estuary. It should be noted, however, that developing such models is not a trivial matter, even for simple hydrologic systems. The major difficulty in developing (or refining) such a model for the Calcasieu Estuary is data. The Calcasieu Estuary is a very complex system, and data that can be used to fully

describe even the flow interactions among the parallel channels, multiple connections between channels, and loops simply do not exist.

Similar Comments

007/0024 Sasol North America, Inc.
009/0080 Citgo Petroleum Corporation
016/0023 PPG Industries, Inc.

Comment 004/0086 Louisiana Chemical Association

TMDLs are routinely conducted by states and EPA using literature values for certain of the fate constants used in WASP6 and similar models. EPA has issued numerous guidance documents on selecting necessary coefficients for these models and performing sensitivity analyses of the results to better understand the reliability of model predictions. Models can also be parameterized using sensitivity analysis and/or optimization approaches. As a worst case simplification, pollutants that are modeled could be considered as conservative (i.e., not subject to biodegradation, chemical reactions, biodegradation or volatilization) in a model that simulates the hydrodynamics of the system. Even a conservative pollutant simulation approach using an appropriate mass transport model would be preferable to a mass balance. The mass balance approach does not allow any analysis of the precision and accuracy of the TMDL results, which is a fundamental concept that EPA included in the 2000 TMDL regulation.

The transport and dispersion of pollutants in the Calcasieu Estuary is complex and must be considered in any TMDL analysis. The basic hydrodynamics of the system can be represented by a number of models, including WASP6, and only requires fresh water inflows, tidal data, and the bathymetry of the estuary and tributaries (including the ship channel) to obtain realistic simulation. This information is readily available and should have been used to develop a model for determining pollutant transport in the tributaries and estuary (a previous water quality model developed by LDEQ for dissolved oxygen evaluations has sufficient hydraulic data to serve as a starting point).

EPA should redo the draft TMDL using an appropriate model to simulate the complex hydrodynamics of the Calcasieu Estuary. The hydrodynamic model should be calibrated and verified with tidal data and salinity data, both of which are available.

Once an acceptably calibrated hydrodynamic model is available, a water quality model using those hydrodynamics should be developed. The WASP6 model would be acceptable. Alternatively, other models could also be used if they represent the fate and transport processes that occur in the estuary. As a minimum, the water quality model should include chemical reactions, biodegradation, volatilization, and particulate attachment and sedimentation for organic chemicals and particulate partitioning and sedimentation for metals. It must also include sediment resuspension and transport, for reasons discussed elsewhere in these comments. The water quality model should be calibrated to the extent practical with available data. Where insufficient data are available, then sensitivity analyses should be performed to determine the uncertainty in the model predictions. All of this information is justified for a TMDL that is as complex and has as much potential impact on dischargers as this one does.

Response

Considerable effort was spent on trying to develop a model using the coefficients described in this comment. As was mentioned in the Draft TMDL, the model developed was not of sufficient reliability to be confident of the predicted results. Too many assumptions about flows and cross-

sectional areas were required to develop credible results. Comprehensive, synoptic monitoring of the system could develop sufficient data to develop a comprehensive, calibrated model.

Similar Comments

007/0025 Sasol North America, Inc.
009/0081 Citgo Petroleum Corporation
016/0026 PPG Industries, Inc.

Comment 004/0089 Louisiana Chemical Association

EPA's statement that tidal dispersion at low flows is unimportant and can be ignored is not accurate for the main channel of the estuary. EPA states in the Draft TMDL Document that tidal dispersion is not important at low (critical) stream flows (Draft TMDL Document, page 18). Also, EPA states that no estimates of tidal dispersion are available to use in a model. Both of these statements are inaccurate.

Failure to account for tidal dispersion (which LDEQ considers in NPDES permitting actions) results in overly conservative estimates for discharges to the estuary and is another major technical flaw in the TMDL evaluation. As stated in the previous comment, it is not true that a hydrodynamic model is impractical. Tidal records, salinity, bathymetry, and major inflow are all available and because basic hydraulics of estuarine systems can be reliably simulated with such models, they should be used to predict the effects of tidal dispersion.

Response

Acknowledged. The procedures used to calculate TMDLs incorporates tidal dispersion in the Final TMDLs.

Similar Comments

007/0026 Sasol North America, Inc.
009/0084 Citgo Petroleum Corporation
013/0017 Louisiana Mid-Continent Oil & Gas Association
016/0020 PPG Industries, Inc.

Comment 004/0091 Louisiana Chemical Association

The TMDL incorrectly excludes partitioning of organic chemicals and metals to particulates and subsequent sedimentation and potential resuspension. EPA states that it did not include partitioning of organic chemicals and metals to particulates and subsequent sedimentation because:

(1) it has no estimates of particle density and sedimentation rates; and

(2) if metals and organic chemicals in particulates accumulate in contaminated sediments they will contribute to an existing impairment (Draft TMDL Document, page 18).

Both of these arguments for not dealing with this fate mechanism are unjustified.

Response

Partitioning was explored in runs of an uncalibrated model of the Calcasieu Estuary. Even under the very low flows that were used in the Draft TMDLs, the settling of particulates, using a range of assumptions about particulate densities, was insignificant in relation to transport by net downstream flows. Thus water column concentrations were essentially unchanged by exchange of pollutants with the sediments. This does not mean, however, that the settling of particulates to the sediments is not contributing to sediment toxicity. This is the premise of our approach to controlling water column concentrations to preclude this element as much as possible.

Similar Comments

007/0027 Sasol North America, Inc.
009/0086 Citgo Petroleum Corporation

Comment 004/0092 Louisiana Chemical Association

With respect to sedimentation rates, there are ample data in the technical literature that can be used to estimate such rates in tidally-affected surface waters. As discussed earlier, default rates for variables such as sedimentation of particulates can be used in a model and sensitivity analyses can be used to establish acceptable estimates for prediction of water column pollutant concentrations. The particulates settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. A simple calculation will show that if a point source is achieving a water quality-based effluent limit for a pollutant such as a metal, the concentration of the metal in any particulates that are discharged will typically be well below the elevated sediment concentrations reported in some segments of the Calcasieu Estuary. However, such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.

Response

The assumption was made that if water column concentrations of pollutants comply with water quality criteria that the sediments would be protected--sediment concentrations would not increase and could quite possibly decrease. As mentioned in response to comment 004/0091, a sensitivity analysis was conducted, but the object of the sensitivity analysis was to determine changes in water column concentrations, not changes in sediment concentrations. With the amount of data available at this time, understanding of the system is too limited to estimate changes in sediment concentrations with changes in effluent discharges.

Similar Comments

009/0087 Citgo Petroleum Corporation

Comment 004/0093 Louisiana Chemical Association

A very important issue with respect to sediment-water column interaction and the fate of organic chemicals and metals in the Calcasieu Estuary is not evaluated by EPA (other than mentioning it) in the TMDL. Most if not all of the sediment contamination in the estuary and its tributaries is likely to be a legacy issue, from past discharges that were not treated as effectively as they are today. The existing discharges may not contribute to the existing sediment contamination and may actually be diluting sediment contaminant concentrations if they are having any effect at all. However, EPA did not evaluate any fate or transport mechanisms with respect to sediment contamination so there is no information or evaluation to determine if existing discharges are contributing to sediment pollutant concentrations. The absence of any scientific analysis of the cause and effect relationship between discharges and sediment contaminants results in a scientifically flawed TMDL.

Response

It is acknowledged that legacy issues may play a large role in addressing sediment contamination, and EPA is dealing with this issue through the Superfund Program. The Superfund Program is not, however, dealing with the potential for continuing releases of

pollutants that have the potential to contribute to sediment toxicity. The TMDLs address the issue of current pollutant sources contributing to water column and sediment contamination and will work in conjunction with the Superfund program activities to ensure future health of the Calcasieu Estuary.

Similar Comments

009/0088 Citgo Petroleum Corporation
016/0061 PPG Industries, Inc.

Comment 004/0094 Louisiana Chemical Association

EPA has proposed a TMDL for total PCBs for Bayou d'Inde. The Draft TMDL Report indicates that only 1 sample out of 27 water column samplings for PCBs in Bayou d'Inde showed detectable levels of PCBs. Without more supporting information concerning the data quality (general methodology, detection limits, selectivity of detection, quantification method) and given the difficulty of low level measurement, the use of this data point is questionable.

Response

PCBs were selected as a pollutant of concern because there is a fish advisory for PCBs in Bayou D'Inde. It is acknowledged that a single detection for PCBs in the water column would not be sufficient reason to select PCBs.

Comment 004/0098 Louisiana Chemical Association

Other TMDLs, such as that performed for the Flat Fork Creek in West Virginia, acknowledged that controls on ongoing sources would not be required and no WLA was proposed. Instead the TMDL recognized that PCB contamination was from nonpoint sources and that natural processes would decrease instream sediments and water column concentrations of PCBs. Thus, the action plan under the TMDL was to continue fish monitoring to confirm that PCB contamination was being reduced.

Response

It is acknowledged that such may be the case for Flat Fork Creek in West Virginia. It may also be the case for the Calcasieu Estuary. But available information indicates that PCBs may be formed during manufacturing of other products, and thus could currently be discharged. During the Implementation Phase of the TMDL, a more detailed source assessment will need to be conducted to determine if such a situation exists in the Calcasieu Basin. See response to comment 004/0009.

Comment 004/0099 Louisiana Chemical Association

In the case of the Calcasieu River, the fish tissue concentrations throughout the estuary, especially in less motile aquatic species, indicate the ubiquitous nature of PCBs. Further, comparison with nationally published data (EPA 1992) indicate the levels of PCBs found in the Calcasieu Estuary are typically encountered in other urbanized areas of the U. S. For these reasons, EPA should conduct further potential source analysis, including potential urban runoff, prior to taking any further action.

Response

In conjunction with setting effluent limitations for the discharge of PCBs, monitoring for potential nonpoint sources of PCBs is also addressed. If current dischargers can demonstrate that they are not discharging PCBs, then greater importance will be placed on identifying nonpoint

sources of PCBs.

Comment 004/0100 Louisiana Chemical Association

It should also be noted that EPA has revised its human health criteria for total PCBs based upon changes in the IRIS database. In 1999 EPA revised the human health water quality criteria for PCBs in the National Toxics Rule. 64 Fed. Reg. 61182 (November 1999). The NTR calculates human health criteria for PCBs using the cancer slope factor entered in IRIS. Because better data became available as the result of new studies, IRIS updated the cancer potency factor. This updated cancer potency factor resulted in a revised EPA human health water quality criteria of 0.14 μg/L for protection of human health from consumption of aquatic organisms and water, and 0.15 μg/L for consumption of aquatic organisms only. Louisiana's human health water quality criteria of 0.01 ng/L is based on an outdated cancer slope factor and will likely be revised to reflect updated cancer potency data during the next triennial review.

Response

It is acknowledged that EPA's human health criterion for PCBs has been changed. Louisiana may choose to modify its criterion to make it consistent with EPA's. The criteria specified in Louisiana's water quality standards are those that must be used. If the value of a criterion is changed, then the new value would be used to recalculate wasteload allocations.

Similar Comments

016/0041 PPG Industries, Inc.

Comment 004/0101 Louisiana Chemical Association

However, even if the human health water quality criteria is revised, which will necessitate a revision of any TMDL, it is highly unlikely that any proposed or future TMDL-derived effluent limitations will cause any decline in tissue concentrations A TMDL is simply not the appropriate vehicle to address historic PCB contamination.

Response

It is acknowledged that a TMDL may not be an appropriate mechanism for dealing with strictly historical sediment contamination. This TMDL is not attempting to correct historical problems. It is only trying to protect for current contributions to an already impacted system. See response to comment 004/0009.

Comment 004/0102 Louisiana Chemical Association

EPA must perform uncertainty analyses of its TMDLs in order to demonstrate the reliability and reasonableness of the wasteload allocations. In the Draft TMDL Document, EPA assumes that all of the impairments identified in the Calcasieu Estuary can be eliminated by control of point sources. In the Draft TMDL Document, EPA makes no attempt to estimate the uncertainty in the proposed wasteload allocations and load allocations. Estimates of uncertainty are essential to allow the regulated community and the general public to understand how effective the Proposed TMDLs will be in achieving the water quality objectives.

If an appropriate uncertainty analysis is conducted, it will allow identification of those portions of the TMDL that require more data collection and analysis to result in wasteload allocations and load allocations that will eliminate the impairments, but will not be so overly conservative that they cause excessive economic and social impacts.

Response

It is envisioned that one outcome of the TMDLs will be the generation of data that indicate the appropriateness of the wasteload and load allocations. For many pollutants, concentrations in most facility effluents are expected to be below the detection limits of the most sensitive approved methods. If this expectation is realized, then facilities would be in compliance with the wasteload allocations. Should this expectation not be realized, however, additional controls might be necessary to ensure that instream criteria are met

Similar Comments

007/0030 Sasol North America, Inc.
009/0090 Citgo Petroleum Corporation

Comment 004/0106 Louisiana Chemical Association

The draft TMDL proposes wasteload allocations for certain pollutants that are lower than the applicable surface water criterion. This result conflicts with the NPDES regulations, because a discharge that is at a water quality criterion concentration cannot cause or contribute to an exceedance of that criterion. EPA applies its arbitrary MOS of 20% to each TMDL that it calculates, which results in wasteload allocations for some dischargers that are lower than the limits that are calculated with the applicable water quality criteria for zinc, mercury, and nickel. For example, EPA states that the zinc limit for Sasol that is calculated by applying the water quality criterion as an end of pipe limit (no mixing zone) is 1.95 lb/day (Draft TMDL Document, page 31). The proposed zinc TMDL for Sasol is 1.6 lb/day (Draft TMDL Document, Table 15). Thus, because of the 20% MOS applied by EPA, the allowable TMDL for Sasol is approximately 20% lower than the water quality criterion.

LCA believes that the proposed wasteload allocation for zinc, mercury, and nickel, are not consistent with EPA's NPDES regulations for water quality-based effluent limits (40 CFR 122.44(d)) because if the effluent concentrations are equal to the water quality criterion for a pollutant, the discharge cannot cause or contribute to an exceedance of the criterion because it cannot increase the ambient concentration above the criterion. A wasteload allocation that is set below the applicable criterion is inconsistent with EPA permitting regulations and is not scientifically justified. These TMDLs must be revised to set the wasteload allocations at concentrations no lower than the applicable water quality criteria.

Response

Under the procedures used to determine wasteload allocations in the Final TMDL, this is no longer the case.

Similar Comments

007/0035 Sasol North America, Inc.
009/0094 Citgo Petroleum Corporation

Comment 004/0107 Louisiana Chemical Association

The analysis for calcium limits in Bayou Verdine has no scientific foundation and, in fact, no site-specific data were used to generate the wasteload allocation. The TMDL establishes proposed wasteload allocations for calcium, based on the assumption that calcium is causing sediment toxicity (Draft TMDL Document, pages 31-32). This assumption is based on an inconclusive TIE performed by EPA's contractor. In the Draft TMDL Document, EPA indicates that the TIE didn't reduce toxicity of the sediments significantly using a range of treatment and

states that these results "suggest" an ion imbalance due to calcium is the cause of toxicity. A TMDL should not be based on a "suggestion" of the cause of toxicity.

Response

The initial TIE report was completed by the EPA Narragansett laboratory (Ho 2000). This work indicated that calcium and ionic imbalance was the primary source of toxicity for Bayou Verdine sediments.

The calcium water quality target was calculated as the mean plus three standard deviations of the calcium metal concentrations in the EPA Superfund data as per LAC 33.IX.1113.B.13. The load allocations in the Final TMDL can hardly be considered restrictive. A major intent of the TMDL is to obtain data that allow the determination of whether calcium is an issue in Bayou Verdine sediments.

Similar Comments

007/0036 Sasol North America, Inc.

Comment 004/0108 Louisiana Chemical Association

Once calcium was identified as the "suggested" target pollutant, the "criterion" was derived from water column data taken from the 1999-2000 EPA Superfund monitoring program (Draft TMDL Document, page 32). This value is incorrectly listed in Appendix A of the TMDL as a chronic water quality criterion. It has not been officially adopted by LDEQ as such. There are two fundamental problems with EPA's selection of a calcium target for the TMDL: (1) there is no technical analysis to demonstrate that calcium in the water column has any correlation to calcium in the sediments; and (2) the calcium data used by EPA was taken from the entire surface water database for the Calcasieu Estuary TMDL and thus has no demonstrated relevance to the site-specific conditions in Bayou Verdine. In fact, there are no calcium data for Bayou Verdine in the EPA database. All of the data are taken from other areas of the estuary and are thus of questionable validity for projecting protective concentrations for the sediments in Bayou Verdine.

The TMDL for calcium in Bayou Verdine is based on a series of assumptions, none of which are supported by any scientific analysis. This TMDL should be deleted from the final TMDLs. It should be replaced by a sediment TIE program that when properly designed and executed, will identify the pollutant or pollutants that are causing the toxicity. EPA requires meeting this objective when an individual discharger performs a TIE--no less should be required of EPA before a TMDL is developed.

Response

The facts of this comment are correct. See response to comment 004/0107. The calcium value calculated is considered a site-specific target that is applicable to Bayou Verdine as well as other tidal bayous in the system.

Similar Comments

007/0037 Sasol North America, Inc.

Comment 004/0109 Louisiana Chemical Association

EPA should provide water quality endpoints based on dissolved concentrations of POCs. LDEQ's water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved

fractions. EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Response

All POCs based on water quality criterion exceedances are based only on dissolved data in the Final TMDL. Similarly, wasteload allocations are calculated using only dissolved criteria.

Similar Comments

005/0036 Equistar
006/0030 Lyondell Chemical Company
009/0098 Citgo Petroleum Corporation
014/0038 Conoco Inc.
015/0036 Firestone Polymers

Comment 004/0110 Louisiana Chemical Association

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments. LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

Response

All of the subsegments of the Calcasieu Estuary covered by these TMDLs meet the definition of marine systems as define in the Louisiana water quality standards, and thus marine criteria apply. It is unnecessary and inappropriate to conduct evaluation of these waters using freshwater criterion.

Similar Comments

005/0037 Equistar
006/0031 Lyondell Chemical Company
014/0039 Conoco Inc.
015/0037 Firestone Polymers

Comment 004/0111 Louisiana Chemical Association

EPA should evaluate stream specific conditions that may result in adjusting endpoints. Other factors can affect water quality criteria for toxic POCs, and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific water effects ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Response

Dischargers may conduct studies that demonstrate that a site-specific criterion would be more applicable to various subsegments of the Calcasieu Estuary at any time. Should the studies provide compelling evidence that a less stringent criterion is applicable, the use of such a criterion can be approved by Louisiana and EPA.

Similar Comments

005/0038 Equistar

006/0032 Lyondell Chemical Company
009/0099 Citgo Petroleum Corporation
014/0040 Conoco Inc.
015/0038 Firestone Polymers

Comment 004/0112 Louisiana Chemical Association

There are several pollutants for which TMDLs have been proposed which have been calculated to achieve existing state human health criteria - including TMDLs for HCB, HCBD and PCBs. These human health criteria are likely to be revised at the state's next triennial review because EPA has revised the cancer slope factors in IRIS upon which these criteria are based. EPA has already revised its human health criteria in 40 CFR 131.36 for these pollutants to account for the changes to the IRIS data. All three criteria were revised to slightly higher values. See 40 CFR 131.36. For HCBD, the new criteria is above achievable method detection limits and water quality monitoring data within the Calcasieu Basin has shown that there is no exceedance of this criteria. CA requests that EPA delay completion of any Waste Load Allocations for these criteria until the state completes this triennial review, or, in the alternative, that EPA specify in the response to comments that if LDEQ has proposed to amend these criteria at the time of any permit issuance, then the WLA can be adjusted pursuant to the new criteria.

Response

TMDLs are written to the existing uses and criteria associated with those uses. Louisiana may revise their water quality criteria based on changes to EPA's recommended water quality criteria at any time. TMDLs may be revised to reflect these changes to the water quality standards.

Similar Comments

016/0035 PPG Industries, Inc.
016/0046 PPG Industries, Inc.

Comment 004/0113 Louisiana Chemical Association

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error. The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs. Alternatively, Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3).

The low flow estimate for Bayou D'Inde appears to be in error. Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above PPG Outfall No. 001, near the Bayou D'Inde, critical flow based on tide-cycle is reported to be 121 cfs (Ref 7).

The estimates for the low flows on the remaining segments also appear to be in error. Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.

The estimates for mean flows for the segments appear to be in error. The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1). Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error. LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).

The estimate for harmonic mean flow for Bayou D'Inde appears to be in error. LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7).

The estimates for harmonic mean flows on the remaining segments also appear to be in error. EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

Response

For the Final TMDLs, calculations of tidal flow, using the tidal prism method, have been used. These data were obtained from the State of Louisiana, as they have been applied in previous permits.

Similar Comments

005/0039 Equistar
006/0033 Lyondell Chemical Company
009/0100 Citgo Petroleum Corporation
014/0041 Conoco Inc.
015/0039 Firestone Polymers
015/0040 Firestone Polymers

Comment 004/0121 Louisiana Chemical Association

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements. There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which are offering "clean techniques" and both are out of state (Madison, Wisconsin and Seattle, Washington).

Response

EPA Headquarters has compiled a list of 24 laboratories that are capable of analyzing metals using clean techniques. The list is available from Region 6.

Similar Comments

005/0058 Equistar
006/0052 Lyondell Chemical Company
006/0056 Lyondell Chemical Company

009/0105 Citgo Petroleum Corporation
014/0060 Conoco Inc.
015/0058 Firestone Polymers

Comment 004/0122 Louisiana Chemical Association

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of "generic" endpoints, and facility flows. Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of new information.

Response

This is a matter of discretion of the permitting authority.

Similar Comments

005/0059 Equistar
006/0053 Lyondell Chemical Company
006/0057 Lyondell Chemical Company
009/0106 Citgo Petroleum Corporation
014/0061 Conoco Inc.
015/0059 Firestone Polymers

Comment 004/0123 Louisiana Chemical Association

EPA should eliminate sampling and testing of total metals. The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Response

When effluent limits are imposed on facilities at permit reissuance, limits will be specified as total limits, not dissolved limits. But there are additional concerns that the amounts of pollutants that are associated with particulates are relatively high in the Calcasieu Estuary, and it is the particulate fraction that is associated with sediment contamination. The measurement of both dissolved and total metals will provide data for the more "realistic" assessment of the fate and effects of metals, and thus allow more accurate determination of appropriate wasteload allocations, should they become necessary.

Similar Comments

005/0060 Equistar
006/0058 Lyondell Chemical Company
009/0107 Citgo Petroleum Corporation
014/0064 Conoco Inc.
015/0062 Firestone Polymers

Comment 004/0124 Louisiana Chemical Association

EPA should eliminate the requirement for LDEQ to sample and monitor sediments. The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly

warranted.

Response

The continued monitoring of sediments is necessary to determine trends in pollutant concentrations, baseline levels, and the effectiveness of the TMDLs. These data allow the determination of whether appropriate controls are having the effect of reducing sediment contamination. It is in the dischargers' interests that these data be developed.

Similar Comments

005/0061 Equistar
006/0059 Lyondell Chemical Company
009/0108 Citgo Petroleum Corporation
014/0065 Conoco Inc.
015/0063 Firestone Polymers

Comment 004/0125 Louisiana Chemical Association

Facilities should be allowed to report loadings on a "net" basis for POCs with nonpoint source load allocations. Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. "Background" loads in segment water--including upstream, tributary, atmospheric, and nonpoint source loads--are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all "background" contributions from the facility's measured final discharge load.

Response

It is acknowledged that EPA's concern relates to those pollutants that are added by a facility, not just those that are present in intake water. The approach taken in the Final TMDLs is to apply limits to process wastes only, not including once-through, non-contact cooling water, and stormwater. To the extent that cooling water outfalls are separated from process outfalls, wasteload allocations are established only on process flows.

Similar Comments

005/0062 Equistar
006/0060 Lyondell Chemical Company
009/0109 Citgo Petroleum Corporation
014/0066 Conoco Inc.
015/0064 Firestone Polymers

Comment 004/0126 Louisiana Chemical Association

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable, averaged basis. TMDL wasteload allocations should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

Response

Wasteload allocations would be implemented as permit limits according to Louisiana's standard practices. Although these individual WLAs may be revised during the permitting process. Compliance with the permit limits would be determined according to Louisiana's standard practices. Permit limits may be specified as maximum daily or average monthly limits, according to Louisiana's standard practices.

Similar Comments

005/0063 Equistar
006/0061 Lyondell Chemical Company
009/0110 Citgo Petroleum Corporation
014/0067 Conoco Inc.

Comment 004/0127 Louisiana Chemical Association

Given the many identified limitations of the science in the TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as "provisional". In its final determination on the Proposed TMDLs, EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly state that such TMDLs are provisional. In this section, EPA should set forth a process for prompt review and revision of the affected TMDLs upon obtaining new information. Such information could be generated either by EPA itself, LDEQ, or other interested parties. Finally, EPA should specifically acknowledge that future ambient water quality information may result in delisting of the affected waterbodies and/or POCs and rescinding of TMDLs.

Response

The Consent Decree requires that the Final TMDL be developed by May 31, 2002, not a Provisional TMDL.

Similar Comments

006/0054 Lyondell Chemical Company
009/0111 Citgo Petroleum Corporation
014/0062 Conoco Inc.
015/0060 Firestone Polymers

Comment 004/0128 Louisiana Chemical Association

LCA notes that under the consent decree, effective April 1, 2002, entered into by the parties in those proceedings entitled "Sierra Club and Louisiana Environmental Action Network v. Gregg A. Cooke, Regional Administrator, Christine T. Whitman, Administrator, United States Environmental Protection Agency; and U.S. Environmental Protection Agency," Civil Action No. 96-0527, Section "S" (4) on the docket of the United States District Court for the Eastern District of Louisiana (the "Consent Decree), EPA agreed that for the waterbody/pollutant combinations in the Calcasieu Basin (including, without limitation, Waterbody Subsegments 030301, 030306, and 030901), TMDLs would be established by May 31, 2002, unless EPA received an extension of such deadline. LCA submits that the comments submitted in connection with the proposed TMDLs for the Calcasieu Basin justify a request by EPA to extend the deadline(s) for establishment of TMDLs for those waterbodies. LCA further submits that the proposed TMDLs for such waterbodies should not be finalized by EPA until EPA has had a reasonable opportunity to review, consider, and appropriately respond to the comments submitted on such proposed TMDLs. LCA thus requests EPA to take such action(s), as necessary, under the Consent Decree to obtain extension(s) of the May 31, 2002 deadline for establishment of TMDLs for such waterbodies.

Response

No extension of the comment period can be granted at this time.

Similar Comments

005/0001 Equistar
009/0112 Citgo Petroleum Corporation

015/0007 Firestone Polymers
016/0001 PPG Industries, Inc.
016/0004 PPG Industries, Inc.

Comment 005/0004 Equistar

According to the draft document, all major and minor dischargers to Bayou D'Inde would be required to test effluents for "chronic toxicity" at least quarterly to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing in-stream toxicity. It is recommended that facilities having previous chronic toxicity testing data be allowed to submit the data as evidence to achieve this demonstration. Quarterly toxicity analyses should not be necessary for those facilities whom have successfully performed this demonstration in the past and are currently continuing to monitor at a less frequent basis per their NPDES/LPDES water permits.

Response

Should any facility have monitoring frequencies less than once per quarter based on previous compliance with permit chronic toxicity requirements, it is appropriate that the reduced monitoring frequency be applied at permit reissuance so long as the data were recently collected. Such requests would be considered on a case-by-case basis by the permitting authority.

Comment 005/0006 Equistar

The document states that concentrations of Aroclor 1254 (a PCB) are higher in red drum from Bayou D'Inde than in other parts of the estuary, but that the concentrations are only based on two samples. It appears that more testing of the fish and water column is needed in order to identify the sources of this PCB contamination, prior to establishing TMDL's and WLA's for this pollutant.

Response

Further monitoring of fish tissue is recommended for PCBs, hexachlorobutadiene, and hexachlorobenzene. The results of available data are not sufficiently compelling for the Louisiana Department of Health and Hospitals to remove the fish advisory for Bayou D'Inde and the data are not sufficiently compelling for EPA to delist PCBs for the waterbody. Given the possibility that PCBs may be being discharged into the subsegment, a TMDL for PCBs is appropriate.

Comment 005/0007 Equistar

The document states that only two of the five facilities that discharge to the bayou are permitted to discharge these pollutants. Each of the five facilities would be required to monitor effluents quarterly to demonstrate compliance with these waste load allocations. Our facility has several years of weekly analytical data, which demonstrates that this pollutant is not present in the outfall discharge water from the facility. Because of our previous demonstration, our current water permit has a less frequent measuring requirement of once per year. Subsequent analyses on a quarterly basis are not necessary. Quarterly analyses should not be required for those facilities whom have successfully performed this demonstration in the past and are currently continuing to monitor at a less frequent basis per their NPDES/LPDES water permits.

Response

Should any facility have monitoring frequencies less than once per quarter based on previous

compliance with permit limits for specific pollutants, it may be appropriate that the reduced monitoring frequency be applied at permit reissuance. Such requests would be considered on a case-by-case basis by the permitting authority.

Comment 005/0053 Equistar

EPA needs to determine if certain POC point source loadings are associated with point source stormwater outfalls and develop statistically valid segment flow estimates.

For some POCs, significant point source loads may be attributable to stormwater outfalls. In these cases, use of low flows for dilution are not reasonable since facility discharges of the POC would occur during periods when significantly higher stream flows would be present. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate segment flow estimates for stormwater events.

Response

Some estimated loads identified in the TMDL unquestionably have stormwater components, but these loads are identified for informational purposes only. Wasteload allocations are developed on process outfall flows only to avoid the confounding effect of stormwater discharges and a paucity of load information on pollutants of concern for many facilities.

Similar Comments

006/0047 Lyondell Chemical Company
014/0055 Conoco Inc.
015/0053 Firestone Polymers

Comment 005/0055 Equistar

Due the errors in locating discharge outfalls and estimating point-source flows EPA has not included allocations for all potential point sources.

Response

Based on a review of permits and fact sheets, which represents the best available information these oversights have been corrected.

Similar Comments

006/0049 Lyondell Chemical Company
014/0057 Conoco Inc.
015/0055 Firestone Polymers

Comment 005/0056 Equistar

PAHs may be present in petroleum refinery point-source discharges. EPA should include wasteload allocations for PAHs for all petroleum refineries.

Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.) Allocations of PAHs should be provided to:

Conoco—Calcasieu Ship Channel (Segment 030301)
Citgo—Calcasieu Ship Channel (Segment 030301)
Citgo—Bayou D'Inde (Segment 030901)

Response

Wasteload allocations for PAHs are included in the Final TMDL for all organic chemical,

plastics, and synthetic fiber facilities and all petroleum refineries for those outfalls discharging to subsegments on which PAHs are selected as a pollutant of concern.

Similar Comments

006/0050 Lyondell Chemical Company
009/0096 Citgo Petroleum Corporation
014/0058 Conoco Inc.
015/0056 Firestone Polymers

Comment 005/0057 Equistar

Given the indeterminate level of POCs in point-source stormwater, and very low wasteload allocations for these POCs, EPA should include wasteload allocations for POCs for all major facilities.

No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point-source discharges of stormwater should receive an allocation of each POC.

Response

Wasteload allocations are developed for process discharges only. Load allocations for stormwater discharges are problematic, and not all stormwater discharges are reasonably expected to contain each pollutant of concern. Monitoring is required of all stormwater discharges for facilities that could discharge the pollutant in stormwater. But until consistent data are developed across all discharges, allocations for stormwater discharges are premature.

Similar Comments

006/0051 Lyondell Chemical Company
009/0097 Citgo Petroleum Corporation
014/0059 Conoco Inc.
015/0057 Firestone Polymers

Comment 006/0001 Lyondell Chemical Company

Lyondell believes that in several instances, there are significant omissions in data that should have been considered in the development of these TMDLs. Further concerns are that much data demonstrating that water quality standards are not being exceeded seemed to be ignored and that EPA did not use the mixing zone flows required by state rules for determining flows, particularly for tidally influenced waters. In addition it appears that EPA's contractor used models and/or guidance that have not been accepted by the scientific community. Specific concerns are addressed in the Technical Comments report dated 4/26/02.

Response

These issues are dealt with in more detail in responses to comments above.

Comment 006/0055 Lyondell Chemical Company

EPA should specifically acknowledge that future ambient water quality information will result in delisting of POCs and rescinding of TMDLs.

Response

Additional data and information may lead to delisting of particular pollutants of concern for specific subsegments, but delisting does not imply that the TMDL would be rescinded.

Similar Comments

014/0063 Conoco Inc.
015/0061 Firestone Polymers

Comment 007/0001 Sasol North America, Inc.

Sasol will soon receive an NPDES permit from EPA Region 6 that will authorize discharge through a high-rate diffuser into the upper Calcasieu Estuary (subsegment 030301) just upstream of the Clooney Island loop. The draft TMDL lists the Sasol discharge into Bayou Verdine. Upon issuance of the NPDES permit, the process wastewater will discharge to the Calcasieu River, except during emergencies or when maintenance is being performed on the effluent pipeline or diffuser.

Response

The location of Sasol's discharge has been changed as per the permit issued May 15, 2002.

Comment 007/0002 Sasol North America, Inc.

EPA exceeded its authority for the pollutants included in TMDL. Section 303(d) of the Clean Water Act is very clear that TMDLs are to be developed for pollutants that exceed water quality standards, not for ad hoc lists of pollutants generated from guidance.

Response

The pollutants of concern are selected based on exceedances of Louisiana's Water Quality Standards, a previous listing for which there is no weight of evidence that allows delisting, the presence of fish advisories and sediment concerns documented in the 303(d) list.

Comment 007/0017 Sasol North America, Inc.

Assuming zero loadings for anthropogenic pollutants in upstream flows and tributaries is appropriate. The draft TMDL assumes that the background concentrations of anthropogenic pollutants is zero. Sasol agrees that this assumption is appropriate and it should be included in the final TMDL methodology. This assumption is also justified for the polynuclear aromatic hydrocarbons (PAH) which, although not strictly limited to anthropogenic sources, are not typically found in surface waters at significant concentrations when they originate from natural sources.

Response

Comment noted.

Comment 007/0019 Sasol North America, Inc.

EPA used one atmospheric deposition station to estimate the potential mercury contribution by atmospheric sources. There are other EPA databases that should be consulted to determine the importance of this source of mercury. In the draft TMDL, EPA used a single atmospheric deposition station located within the Calcasieu Estuary watershed to estimate the contribution of atmospheric mercury to the surface water loading of this chemical. The estimated rate of mercury deposition used in the TMDL was 10.6 µg/m2 per year (draft TMDL, page 15). In the TMDL that EPA Region 4 performed on the Savannah River, it used the RELMAP model from EPA's 1997 Mercury Study Report to Congress to estimate wet and dry deposition rates for mercury. The estimated annual wet deposition rate for the entire Savannah River basin was 12.2 µg/m2 and the annual dry rate was 8.22 µg/m2 for a total deposition rate of 20.42 µg/m2. This is almost twice the rate used for the Calcasieu Estuary.

Response

The rate used for the Calcasieu Basin is based on data taken within the Calcasieu Basin (at Lake Charles). Local data are probably more applicable to the Calcasieu Basin than modeled outputs for the Savannah River Basin.

Comment 007/0020 Sasol North America, Inc.

If EPA has underestimated the atmospheric deposition rate for mercury, it may have overestimated the importance of the contribution of mercury by point sources to any measured fish tissue concentrations. In other locations, such as the Savannah River TMDL, atmospheric deposition is estimated to constitute well over 90% of the mercury that enters surface waters. In such cases, additional controls on point sources are ineffective at improving water quality and are extremely costly. EPA should reevaluate its estimates of atmospheric deposition in the Calcasieu Estuary watershed using all available and relevant databases.

Response

In the Calcasieu Basin, there is no evidence that atmospheric deposition is greater than point source discharges. Estimated atmospheric deposition of mercury is several orders of magnitude lower than existing, known discharges. The commenter is directed to EPA's TMDL for Calcasieu coastal subsegments for addition information on atmospheric deposition information.

Comment 007/0021 Sasol North America, Inc.

It appears that EPA has only estimated the contribution of atmospheric mercury deposition due to direct deposition on the surface of the waterbodies. If this is the case, it has significantly underestimated the mercury loading due to atmospheric deposition.

EPA has recently published its Mercury Maps study, which quantitatively links atmospheric deposition of mercury to fish tissue concentrations. This EPA study indicates that greater than 75% reduction in atmospheric deposition of mercury could be required in the Calcasieu Estuary in order to achieve acceptable fish tissue concentrations. The Mercury Maps study and the Savannah River TMDL both consider the atmospheric deposition of mercury on the entire watershed, with subsequent discharge to the surface water during runoff events. This source of mercury is several orders of magnitude greater than the atmospheric deposition of mercury on the water surface. If EPA only estimated the deposition of mercury on the water surfaces of the Calcasieu Estuary, it has significantly underestimated the mercury loadings from this source.

Response

Althought limited, available evidence (Appendix D) suggests that mercury concentrations are elevated in fish tissue in the Calcasieu, but with the possible exception of Bayou D'Inde, not at levels of concern. The TMDLs for mercury are to address water column and sediment toxicity concerns, not fish tissue concentration concerns. The presumption is the attainment of the aquatic life criterion, which is more stringent than the human health criterion, should protect against localized bioaccumulation.

Comment 007/0022 Sasol North America, Inc.

If EPA has underestimated the atmospheric deposition rate of mercury for the draft TMDL, it will overestimate the required reductions in effluent mercury from point sources. The result is that point sources are faced with possible mercury waste load allocations that may be both unachievable and unnecessary. If atmospheric deposition of mercury is the cause of impaired

surface water quality, which EPA has indicated is likely to be true in the majority of watersheds in the country, then assigning very low effluent loadings of mercury to point sources will not eliminate the impairment but will place an undue burden on points sources that have little or no contribution to the impairment.

EPA should reevaluate its atmospheric mercury deposition estimates and should not establish numeric mercury allocations to point sources unless it demonstrates that they are causing and/or contributing to the impairment.

Response

Wasteload allocations have been recalculated in the Final TMDL.. Based on available data, EPA believes these limits are achievable. They are necessary to ensure that Louisiana Water Quality Standards are achieved in the Calcasieu Estuary.

Comment 007/0023 Sasol North America, Inc.

There will be essentially no atmospheric deposition of the volatile organic pollutants reported in the toxics release inventory. Therefore, it is inappropriate to include the loadings for these pollutants in the non-point source loading terms. EPA used the toxics release inventory (TRI) data for facilities in the watershed to estimate the potential for organic chemicals to enter the watershed by atmospheric deposition (draft TMDL, page 14). These data are provided in Appendix B of the report. Ultimately, EPA did not use any of the TRI data for organic chemicals to calculate atmospheric deposition. This decision is appropriate because most of the reported compounds are gases at atmospheric temperature and pressure and will have a very low potential to enter surface water by wet or dry deposition.

Response

Comment noted.

Comment 008/0001 W.R. Grace & Co.

W. R. Grace & Co. agrees with the recommended delisting of ammonia as causing any toxic impairment to segment 030301 of the Calcasieu Estuary, where the W. R. Grace & Co. plant discharges. Ammonia has always been a monitored parameter of the plant water permit and is reported on the monthly Discharge Monitoring Report (DMR). Ammonia is a raw material for the plant, being used in almost all the units.

Response

Comment noted.

Comment 008/0002 W.R. Grace & Co.

Copper, mercury, benzo(a)anthracene and benzo(a)pyrene are not used directly in any of the plant processes. Also, these compounds are not known to be in any of the raw materials or ancillary chemicals used in the plant processes. The last effluent priority pollutant scan (see attached) showed the concentrations for these four chemicals to be below the Minimum Quantification Level (MQL) for each test, which supports the fact that these chemicals are not used in the plant processes. Therefore, W. R. Grace & Co. believes these four chemicals are not discharged by the plant, and a wasteload allocation for them is not warranted.

Therefore, based on plant operations and effluent test data, W. R. Grace & Co. respectfully requests that the W. R. Grace & Co. name be removed from each list of plants receiving

wasteload allocations for copper, mercury, benzo(a)anthracene and benzo(a)pyrene. The final TMDL for toxics in the Calcasieu Estuary would show our draft wasteload allocation going to the remaining plants on the list.

Response

A wasteload allocation for PAHs is not calculated in the Final TMDL for W.R. Grace & Co. Based on review of the processes at the W.R. Grace, discharge of PAHs is considered unlikely. Copper and mercury, however, are far more prevalent in most industrial facility discharges and may enter wastestreams as contaminants in raw materials.

Comment 009/0029 Citgo Petroleum Corporation

In the Draft TMDL Document, EPA has used incorrect estimates of mean flow for CITGO's point source discharge outfalls. The TMDL Draft Document reflects the following flows for CITGO into the Upper Calcasieu Estuary and Ship Channel (030301): average, 11.30 MGD; max 15.00 MGD. The correct flows for such discharge are: average 50.12 MGD; max, 62.60 MGD. Thus, the flow data used by EPA is off by a factor of 5. This flow information was obtained from CITGO's DMRs for the year 2001.

Response

Wasteload allocations were developed on process flows. Cooling water and stormwater flows are explicitly not considered.

Comment 009/0031 Citgo Petroleum Corporation

EPA's information on the location of several other major point-source discharge outfalls contain numerous significant errors. These errors include:

Conoco--Primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Condea Vista--Permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).

Lyondell--Stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.

PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Response

A number of commenters, including LDEQ, indicated a number of discharges were incorrectly located. Significant effort has been made to address these errors. Outfall receiving waters are identified in the Final TMDL by a combination of sources including permits, fact sheets, and comments.

Comment 012/0001 RESTORE

EPA and NOAA were supposed to have, last month, released the results of comprehensive analyses they have been doing on fish tissue. Those results are late, we are told, because of some sort of laboratory or interpretation delay.

Surely those two brand new datasets might have made it possible for everyone to more efficiently construct and comment on Calcasieu TMDLs and the proposed determinations of non-necessities.

Response

EPA agrees these data would be useful. However the timelines for completion of TMDLs in the Calcasieu basin in the April 2002 consent decree do not allow for the time to collect this information.

Comment 012/0002 RESTORE

Your own Region 6 website has a section on the Calcasieu Estuary in which a massive amount of data is available showing that there is serious contamination of various types in the most heavily utilized sections of the river. RESTORE believes that it is imperative that you take another look at your proposals in order to properly restore the ecosystem and prudently protect the public health.

Response

The most recent data from the Calcasieu database are included in the TMDL.

Comment 012/0003 RESTORE

Subsegment 030301 -- dioxins and other priority organics seem to have been omitted. We think they should be added. See attached Marplot sheets for PCD_T4 and Total Chlorobenzenes.

Response

While the sediment concentrations of the chemicals identified in this comment appear to be elevated, comparison of recent (since 1996) sediment concentrations with available ESGs and ERMs indicate these pollutants are not at sufficiently high levels to warrant being selected as pollutants of concern for any subsegment in the Calcasieu Estuary. The ATSDR has recently sampled fish tissue for dioxins in the Calcasieu Estuary, but the analyses are not yet complete. These data may be useful in determining if there is a human health concern for dioxin in the estuary.

Comment 012/0004 RESTORE

See also the attached sheet for B2ETHXPHTH (bis-ethylhexylphthalate, BEHP). The presence of BEHP in the heavily utilized recreational areas such as Prien Lake is especially disturbing given the building evidence of that molecule's hormone disrupting effects even at low levels.

Response

Unfortunately, bis (2-ethylhexyl) phthalate has no ESG or ERM, so no comparison with reference levels is possible. Certainly levels appear elevated, particularly in Bayou Verdine and Bayou D'Inde, but the importance of sediment concentrations greater than 970 µg/kg is not known as far as sediment toxicity is concerned. EPA is not aware of any data that allow determining the effects on human health of sediment concentrations of BEHP. Louisiana also has not adopted a water quality standard for this pollutant.

Comment 012/0005 RESTORE

One of the background elements in our concerns is the fact that there are strong mechanisms for resuspension of contaminated sediments throughout this river system, mechanisms such as winds across shallow lakes, tugboats slugging through the shallow bayous, and supertankers grinding up the main Ship Channel. Those contaminated sediments are encountered by aquatic biota, children wading on the local parks beaches, water skiers, kneeboarders, wave runners, and other swimmers. The toxic chemicals adherent to the suspended clay particles often have more

affinity for skin oils than for clay and are therefore easily transferred through dermal absorption into the human system.

Response

An informational advisory has been established by the State Department of Health for concerns related to fish consumption in the Calcasieu Estuary. It is a state decision process to establish swimming advisories to warn the public against dermal contact. Also the state has the option to incorporate dermal absorption and incidental injestion of water in its water quality standards process.

Comment 012/0006 RESTORE

Look at another Marplot from your website, the one showing the number of ERMs Exceeded (ERM = Effects Range Median, an indication of the potency of the overall contamination situation).

Notice that the graphic is saturated with multiple exceedances at most locations in the central part of the study area.

In order to get these waters back to fishable and swimmable conditions (which we had hoped would be accomplished by 1983, one of the goals of the Clean Water Act if we recall correctly), there must be TMDLs that are meaningful, not convenient.

Response

Exceedances of ERMs for most pollutants occur in most subsegments of the Calcasieu Estuary. But a single exceedance for a given pollutant does not signify that the subsegment is contaminated to the degree that a TMDL is warranted. As specified in the methodology section of the TMDL, EPA did not select pollutants of concern for any pollutant based on exceedances of ERMs unless more than 10% of the samples taken in a subsegment exceed the ERM. This is not a matter of convenience. Exceedances in more than 10% of samples, indicates that the pollutant is reasonably expected to have adverse effects on sediment toxicity.

Comment 012/0007 RESTORE

It is unwise to say that a TMDL for priority organics is not needed in Segment 030302 Lake Charles when we can see the needs from the chlorobenzene and ERM Marplots.

Response

Given the absence of dischargers that are reasonably expected to discharge priority organics into Lake Charles and the low concentrations of priority organics in sediments, a TMDL for Lake Charles would have no discernible impact on either water or sediment quality. EPA does not believe that these waters are impaired by priority organics.

Comment 012/0008 RESTORE

It is unwise to say that Priority Organics TMDLs are not needed in 030303 Prien Lake, 030304 Moss Lake, and 030305 Contraband Bayou when we can see the needs from the same Marplots as above and the BEHP Marplot.

Response

The same argument used in response to comment 012/0007 applies to these subsegments as well.

Comment 012/0009 RESTORE

It is unwise to delete non-priority and other organics from segments 030302 Lake Charles, 030306 Bayou Verdine, and 030309 Bayou D'Inde since may of those molecules likely contribute to the mobility, solvency, biotic uptake, and dermal absorption of the more dangerous organics.

Response

While the comment may be correct, there are no data that relate concentrations of these pollutants to heightened mobility or dermal absorption of other pollutants of concern. There is therefore no basis to select any pollutants in these categories as pollutants of concern.

Comment 013/0001 Louisiana Mid-Continent Oil & Gas Association

Mid-Continent is extremely disappointed that the EPA did not timely grant Mid-Continent's (dated April 12, 2002) and others' requests to extend the comment deadline. This in spite of gross errors identified in the document and significant legal issues that require significant time to address. The following are Mid-Continent's best effort to address the areas of major concern in the time allotted.

Response

Comment noted.

Comment 013/0002 Louisiana Mid-Continent Oil & Gas Association

Table 3 (Page 8) shows the Conoco, Inc. refinery discharging to both Bayou Verdine and the Calcasieu River. It is Mid-Continent's understanding, however, that Conoco no longer discharges process waters to Bayou Verdine and has not done so for several years. In spite of this, the EPA calculates TMDLs for Conoco for Bayou Verdine. Conoco does discharge to the Calcasieu River (Upper Calcasieu Estuary and Ship Channel – Segment 030301), but EPA fails to include the discharge for Conoco in the TMDL calculations for this segment (begins on Page 55). It is Mid-Continent's understanding that this concern is also true for Sasol North America, Inc.'s (identified in the document as Condea Vista) discharge as well which is about to also be changed to the Calcasieu River.

The TMDLs for both Bayou Verdine and the Calcasieu Estuary must be reperformed to account for these changes. It not, one can argue that neither facility could discharge into the Calcasieu River since no wasteload allocation was provided.

Response

These facts have been incorporated into the Final TMDL.

Comment 013/0003 Louisiana Mid-Continent Oil & Gas Association

Table 3 (Page 8) shows discharges from Citgo Petroleum into both Bayou D'Inde and the Calcasieu River. This is correct. The refinery complex discharges into the Calcasieu River while an auxiliary facility discharges into Bayou D'Inde.

Response

Comment noted.

Comment 013/0004 Louisiana Mid-Continent Oil & Gas Association

The report states that Segment 030901 does not include all of Bayou D'Inde and part of the

bayou is included in Segment 030301. Mid-Continent wants to ensure that the Citgo discharges are properly accounted for in the analysis.

Response

The location of these outfalls is correct in the Final TMDL.

Comment 013/0005 Louisiana Mid-Continent Oil & Gas Association

If the Citgo discharge is actually into Segment 030901, then the EPA does not allocate a wasteload for the Citgo facility into Bayou D'Inde. Mid-Continent requests that the EPA confirm this situation. The EPA would have to reperform the TMDL calculation to account for the discharge.

Response

Wasteload allocations are recalculated for all subsegments of the Calcasieu Estuary in the Final TMDL.

Comment 013/0007 Louisiana Mid-Continent Oil & Gas Association

Mid-Continent wants to ensure that the EPA properly characterizes the potential constituents found in wastewater discharges and accounts for these in the TMDL analysis. In September 2001, the EPA published a Research and Development document (EPA-600/R-01-066) entitled "Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing and Combustion". In Table 7-3 of this document, EPA lists several trace metals and trace organics found in a "typical" refinery wastewater. These include:

Arsenic
Chromium
Copper
Mercury
Nickel
Selenium
Zinc
Benzene
Toluene
Ethylbenzene
Acenaphthene
Benz[a]anthracene
Benzo[a]pyrene
Chrysene
Phenanthrene
Pyrene
2,4-Dimethylphenol

The identified sources of this data are two American Petroleum Institute (API) documents and an EPA document. These include:

API Publication No. 4296 (1978)
API Publication No. 4336 (1981)
EPA Document EPA/440/1-82/014 (NTIS PB 83-172569) (1982)

Mid-Continent requests that all of these documents be made part of the record for this rulemaking action.

If the EPA is required to calculate a TMDL for one of these constituents and a refinery discharge is involved, then the EPA must include an allocation for that discharge point.

Response

These facts are incorporated into the Final TMDL.

Comment 013/0008 Louisiana Mid-Continent Oil & Gas Association

The Louisiana Department of Environmental Quality (DEQ) provided compelling data during the TMDL process justifying "delisting" of several waterbody impairments. Mid-Continent is disappointed that the EPA did not give great weight to this information in the development of the TMDLs. In the response to comment period, Mid-Continent urges the EPA to give serious consideration of this information and therefore remove the constituents from the TMDL listing or make other appropriate adjustments.

Response

EPA considered the information provided, but could not delist some of the subsegments identified because of other data and information that indicate that the waterbodies are, in fact, impaired for the pollutants.

Comment 013/0016 Louisiana Mid-Continent Oil & Gas Association

Some wasteload allocation concentrations are lower than the applicable surface water criterion. EPA is only authorized to regulate to a concentration that would cause or contribute to an exceedances of the criterion. Concentrations less than the criterion can not have such an impact.

Response

Wasteload allocations are recalculated in the Final TMDL and required concentrations in effluents are no longer less than criterion values.

Comment 014/0001 Conoco Inc.

Conoco requests that EPA (1) establish wasteload allocations for Conoco in the Calcasieu River; and (2) conclude that TMDLs are not necessary for occasional discharges into Bayou Verdine or establish wasteload allocations for Conoco's intermittent discharges into Bayou Verdine based upon annual average rather than a daily load.

Response

These requests are incorporated into the Final TMDL.

Comment 014/0003 Conoco Inc.

There are two additional outfalls that were permitted to discharge effluent other than non-contact stormwater runoff into Bayou Verdine. However, these outfalls may discharge only on a temporary basis, under unusual conditions that amount to emergency bypasses. Outfall 002 is permitted for "emergency discharge of process area stormwater and hydrostatic test water" and Outfall 005 is permitted to discharge into Bayou Verdine only when discharge from Outfall 001 is "not possible due to pipeline maintenance or pump repair." In addition, there are a number of non-contact stormwater runoff outfalls that discharge into both Bayou Verdine and the Calcasieu River.

Response

Wasteload allocations have not been developed for the emergency discharges, only for outfall

001 to the Upper Calcasieu Estuary in the Final TMDL.

Comment 014/0004 Conoco Inc.

Conoco therefore requests that EPA re-calculate wasteload allocations for the Calcasieu River and assign Conoco's discharge a wasteload allocation based on accurate, up-to-date information about Conoco's flow rates.

Response

The wasteload allocation is recalculated in the Final TMDL based on evaluation of permits, fact sheets, and flow data for individual outfalls.

Comment 014/0005 Conoco Inc.

Further, Conoco urges EPA to reconsider the necessity of TMDLs in the Bayou Verdine. As indicated in comments provided by Sasol, Inc., (formerly CONDEA Vista), Sasol's discharge is anticipated to move to the Calcasieu River, with the consequence that there will be no more daily loading into the Bayou Verdine. Since the only future discharges into the Bayou Verdine will be related to isolated events such as maintenance on each facility's primary outfall or severe rainfall conditions, EPA should reconsider whether it is necessary to establish TMDLs for all of Bayou Verdine. If EPA concludes that some sort of load limitation is necessary, then EPA should consider establishing annual pound limitations rather than daily load requirements.

Response

Only load allocations are calculated for Bayou Verdine as there are no process discharges that warrant TMDLs.

Comment 014/0006 Conoco Inc.

Further, as described in detail in Section IV of the attached technical comments, it appears that other data presumably imported from PCS also may be inaccurate. Most significantly, it appears that other facilities discharge outfalls have been mis-located and the flow data for Conoco and other has been underestimated. Since LDEQ has been delegated authority to administer the NPDES program in Louisiana, it may be more appropriate for EPA to collect source assessment data from LDEQ than to rely on PCS.

Response

See responses to comments 002/0012 to 002/0017.

Comment 014/0007 Conoco Inc.

Finally, Conoco anticipates that changing the incorrect assumptions about its discharge location and clarifying possible incorrect assumptions about flow rates and effluent loading will result in the assignment of fundamentally different TMDLs and wasteload allocations. Accordingly, Conoco requests that TMDLs be re-proposed for the Calcasieu River Basin in order to afford interested persons notice and opportunity to comment on what we anticipate will be entirely new TMDLs and wasteload allocations.

Response

TMDLs for all subsegments are recalculated in the Final TMDL.

Comment 014/0008 Conoco Inc.

Finally, in addition to the points made above and in Conoco's attached technical comments,

Conoco concurs with the comments submitted by Louisiana Mid-Continent Oil and Gas Association (Mid-Continent) and Sasol North America, Inc. In the interest of both brevity and time (since Conoco shares Mid-Continent's dismay that the requested extension of time was not granted), Conoco adopts the points made in each of these comments as our own, except to the extent of any conflict with specific statements made herein.

Response

Comment noted.

Comment 014/0051 Conoco Inc.

The treatment of nondetected values in assessing loads of existing point sources has no sound technical basis. In assessing loads of various pollutants of concern that are currently contributed by point sources, EPA treated nondetected values differently, depending on the reporting convention that was used by the facility reporting the data. If the facility reported a nondetected value as "<" the relevant detection limit, EPA assumed the pollutant of concern actually was present at a concentration of one-half the detection limit, and used that value in calculating loads. However, EPA does not provide a technical justification to support this excessively conservative assumption, which has been critiqued as "having no theoretical basis" (Helsel and Hirsch, 1993).

If the nondetected analyte was reported as zero, EPA did not include a value of one-half the detection limit in its load calculations. However, zero values were disregarded in the calculations of average and daily loads. EPA does not provide a technical basis for treating these values differently, nor does EPA provide a technical justification for either of the approaches selected for treating nondetect values.

Response

The existing load calculations in the TMDL are not used for allocation of loads, only for informational purposes. While the different approaches for dealing with nondetects results in variations among estimated loads for facilities, these variations have no impact on wasteload allocations.

Comment 015/0001 Firestone Polymers

Firestone is concerned with the methodology SAIC used to identify pollutants of concern (POC) for each segment of the estuary. The attached comments summarize most of our concerns, however, Firestone wants to emphasize the following. SAIC used screening criteria to identify POCs for final TMDL determination. This is not appropriate. In several cases for Bayou d'Inde, a substance was not detected in any media of concern or it was not detected at concentrations exceeding Louisiana standards, yet based on the screening criteria, the substance was retained as a POC. Furthermore, several substances were detected at extremely low frequency and their presence is not statistically significant. Based on this lack of scientific foundation, Firestone requests that EPA rely on more rigorous, scientific, and risk- based criteria for including substances in the TMDL rather than the simple screening criteria that were used. Alternatively, there is insufficient analytical justification provided or demonstrated for the inclusion of the POCs.

Response

See responses to comments 002/0001 and 002/0003.

Comment 015/0002 Firestone Polymers

In the TMDL, the Firestone facility has been assigned waste load allocations and/or testing requirements for the following compounds: hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, copper, hexachlorobenzene and nickel. Firestone has no knowledge of these substances entering our facility in our raw materials with the exception of nickel. Furthermore, Firestone has no knowledge of the significant presence of these substances at our facility, with the exception of nickel and copper. After consulting with our scientists, we feel confident that there are no mechanisms for forming the listed halogenated organic chemicals in all manufacturing processes used at the facility. The only copper at the facility is a very minor amount of the metallic form in piping and equipment. Firestone incorporates by reference all monitoring data and reports and NPDES/LPDES permit submittals on file with EPA and the Louisiana State Department of Environmental Quality. Therefore, we request that TMDLs and testing requirements for Firestone be removed for the following chemicals: hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, copper and hexachlorobenzene.

Response

Each of these pollutants has the potential to be created through processes typical of the SIC classification reported for Firestone or be contaminants in raw materials. During implementation, Firestone is free to provide evidence that there is no potential for these pollutants to exist in the discharge.

Comment 015/0003 Firestone Polymers

The TMDL requires that all testing be conducted using "clean techniques". It is Firestone's understanding that this analytical technique is available from only two laboratories nationwide. Industry should not be held to a higher standard than EPA with respect to its analysis. Thus, Firestone requests that for any scientifically valid TMDLs, the required analysis be consistent with Clean Water Act methodologies.

Response

EPA believes that clean techniques analytical data are appropriate for both effluents and receiving waters and recommends their use for all metal pollutants of concern the TMDL. See also response to comment 004/0121.

Comment 015/0004 Firestone Polymers

The waste load allocations for the TMDLs are proportioned based on volumetric flow rates from the facilities. The amount of a pollutant of concern (POC) discharged by a facility usually is totally unrelated to the volume of water discharged from the facility. Therefore, each allocation should be proportioned based on mass flow rate of each POC. Moreover, since this method would result in the same percent reduction of POCs for all of the contributing facilities, this is the only representative and equitable approach. Otherwise, those facilities that discharge large amounts of water and not necessarily a large amount of POC would get a disproportionate allocation of a TMDL. Thus, Firestone requests that each TMDL allocation be based on mass flow rate for each substance.

Response

There are a variety of wasteload allocation methodologies, and the one suggested in this comment may be appropriate. At this time, it is not possible to use this allocation methodology

because it requires mass loading data for each facility on a subsegment, and these data do not exist.

Comment 015/0005 Firestone Polymers

The volumetric flow rates used to set the TMDLs for Firestone's waste allocation are not accurate. The last year that Firestone recorded storm water flow rates for every event during the entire year was 1998. Using the 1998 storm water flow data for outfalls 003 and 004 along with 2001 effluent data for outfall 001, the following flow rates are obtained (See Table 1 in Hard Copy): Thus, Firestone requests that all calculations using facility flow rates from Firestone Polymers be recalculated using the more current volumes.

Response

Stormwater discharges are not included in the current wasteload allocation therefore no update of this infomrtion is necessary. It is possible that future TMDLs may incorporate stormwater flows.

Comment 015/0006 Firestone Polymers

The "lower reaches of Bayou D'Inde" (Segment 030901) should be divided into two segments. POC exceedances, hydrology, watersheds and industrial discharge flows in the lower reaches of Bayou D'Inde vary considerably between the upper and lower half. The water body should be divided into two segments at Hwy 108 or where Maple Fork joins Bayou D'Inde. The lower portion of this segment contains the vast majority of exceedances, the largest discharger by far and different hydrology where Bayou D'Inde fans into a marsh as it joins Calcasieu River. The Draft TMDL report shows that 85% of the average industrial discharge is in the lower Bayou D'Inde. Thus, Firestone requests that EPA divide "the lower reaches of Bayou d'Inde" into two segments (Middle Bayou d'Inde and Lower Bayou d'Inde) at the Hwy 108 bridge.

Response

In essence, the methodology used to calculate wasteload allocations accomplishes this. Wasteload allocations were calculated based on a total allowable load to the bayou and on the allowable dilution at the point of discharge. The more stringent of the two limits is applied: the first to ensure overall water quality of the bayou is attained considering the number of discharges; the second to ensure that water quality of the bayou is attained at the edge of each mixing zone. Any formal reconfigurations of the existing subsegment is a matter that would have to be addressed to the State and incorporated as a revision of the water quality standards.

Comment 016/0002 PPG Industries, Inc.

The proposal actually referenced a draft TMDL report available on the EPA Region 6 website, but the appendices containing the supporting data were not available on the website. While we have ordered these, we have not yet received the supporting data. In addition, our preliminary review indicates that there appear to be factual errors omissions in the data upon which the proposal is based as well as potential legal errors in the methodology for determining TMDLs.

Response

Initially EPA did not make the appendices available on the website. It was apparent after several days that demand for this information warranted posting it. Within approximately3 days from issuing the draft notices this information was available. EPA apologizes for any inconvenience. We attempted to contact commenters who had requested copies of the appendices and apologize if you were not notified.

Comment 016/0003 PPG Industries, Inc.

In addition, we have concerns that EPA is proposing TMDLs for pollutants even where data demonstrate that the state numeric water quality standards are not being exceeded.

Response

Comment noted.

Comment 016/0021 PPG Industries, Inc.

EPA's contractor grossly underestimated flows for Bayou d'Inde. The average tidal flow for Bayou d'Inde is 363 cfs according to a memorandum from Max J. Forbes, Jr., LDEQ Engineering Section to LDEQ and EPA permitting staff members. A copy of this memorandum is attached as Exhibit 4. The critical low flow, in accordance with the LWQS, LAC 33:IX.1115, is one-third of the average tidal flow or 121 cfs. Id. The basis for these determinations was a Woodward and Clyde survey and a CK Associates survey, both with review and approval by LDEQ.

In contrast, the EPA contractor specified a 7Q10 flow of 0.1 cfs (as the critical low flow) and a harmonic mean flow of 24.7 cfs (which corresponds to average tidal flow in a tidally influenced waterbody). These flow estimates were unsupported in the Draft TMDL Report in spite of the fact that they differ so greatly from the flows developed by the LDEQ engineering section and provided to EPA in 1994. A side-by-side comparison shows the large discrepancy in these flows:

	EPA Presumed Flow (cfs)	Flow Per LDEQ Engineering (cfs)
Critical Low Flow	0.1	121
Long term avg.	24.7	363

If EPA proceeds with any TMDLs for Bayou d'Inde, it must revise the critical low flow and average tidal flow data to comport with the LDEQ engineering determination. Without appropriate flow data for the receiving streams and utilizing inaccurate discharge rates from facilities, the calculated in-stream analyte concentrations are over-estimated by orders of magnitude.

Response

These flows are incorporated into the Final TMDL.

Comment 016/0024 PPG Industries, Inc.

Use of a mass balance approach that does not include hydrodynamic modeling represents such an oversimplification of the system that it cannot be scientifically defended. EPA has recognized the complexity of the Calcasieu Estuary system and has indicated that hydrodynamic modeling is an important component in establishing any TMDL/WLA for that system. In the Estuary Guidance Manual, where a peer review of prior modeling efforts on the Calcasieu Estuary associated with the development of a TMDL for dissolved oxygen was performed, it was stated: "The principal difficulty with the Calcasieu estuary is that it is so complex that virtually no model existing at the time of the study [1985] was fully equal to the task…...Future modeling efforts for this estuary should be directed to improving hydrodynamic simulation and estimates of waste loads." (p. 14-17, Emphasis added).

As EPA has already recognized, this level of complexity mandates sound hydrodynamic simulation and fate and transport modeling in order to develop acceptable TMDLs that are

scientifically valid. This modeling must include hydrodynamics and water column/sediment pollutant interactions.

Response

EPA agrees with the reviewer comments and encourages the development of better information on the hydraulics of the system. The continued lack of data and information on the hydraulic behavior of the system, however, cannot delay the development of TMDLs. Monitoring over time will help to assess whether the level of th protection provided by the TMDL is adequate.

Comment 016/0025 PPG Industries, Inc.

EPA's use of the mass balance approach to model toxic pollutants in the Calcasieu Estuary system is of special concern when projecting compliance with aquatic protection criteria because these have a short-term exposure basis. This mass balance approach simply does not work when applied to a water subsegment that is miles in length and that is tidally influenced. The hydrodynamics of a surface water body must be considered as these determine the transport of pollutants and affect the environmental fate of such. EPA should have used a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants.

Response

EPA is concerned that the methodology employed in the TMDL may not be sufficiently protective of water quality standards primarily because the tidal prism estimation of tidal dispersion is a maximum estimate of actual dispersion. Better information on the dynamics of the system can only improve the calculation of wasteload allocations.

Comment 016/0027 PPG Industries, Inc.

It is a fundamental tenet of the Estuary Guidance Manual that in developing a TMDL, data gathering efforts should be specifically designed with the data quality objectives of the selected modeling system to be used. While "off-the-shelf" data may be useful in assisting in the process of identifying pollutants for further evaluation, EPA should not use such data extensively in the TMDL process when the data quality objectives for the studies leading to the generation of such data were significantly different than the data quality objectives necessary for a scientifically sound TMDL.

Response

In many cases data may be used for multiple purposes if properly planned. While EPA agrees that the actions suggested in this comment are appropriate, considerable time and money has been devoted to obtaining a substantial amount of chemical data on the Calcasieu Estuary. Unfortunately, resources are not also available to obtain the data necessary to develop a fully calibrated water quality model.

Comment 016/0031 PPG Industries, Inc.

PPG was not able to discern what years of DMR data were used by the EPA contractor as such was not stated in the Draft TMDL Report. Further, it is unclear whether EPA used permit limits or whether they used average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA says both in the Executive Summary of the Draft TMDL Report, p. ES2. It is not clear what time period was reviewed and whether such time period is appropriate for this TMDL proceeding. The Draft TMDL Report does not indicate which years of facility data were reviewed or why the time period is deemed

sufficiently representative of normal plant operation. It is also unclear whether the data used is up-to-date.

PPG requests that EPA provide publicly accessible information to better describe the data it did use and then repropose this TMDL for comment to allow adequate public review of the data and assumptions used by EPA or its contractor.

Response

The data used for facility loads is explicitly described in the Final TMDL.

Comment 016/0032 PPG Industries, Inc.

EPA did not use appropriate facility flows. EPA's contractor erroneously used only the sum of PPG's internal outfalls 101 and 201 as the facility average flows. However, this estimate left out PPG's once through cooling water discharge, which is combined with the 101 and 201 flows and is discharged through Outfall 001. The appropriate average flow for PPG is the Outfall 001 flow. PPG is attaching, as Exhibit 5 a summary of its 2001 DMR flows for Outfall 001. This shows that the average daily flow is 154.8 MGD and that the maximum daily flow is 243.9 MGD. EPA should use these flows rather than those erroneously determined in the Draft TMDL report.

It should be noted that Outfall 001 flow rate is more than an order of magnitude greater than the sum of 101 and 201, so this is a significant issue for development of the appropriate TMDLs and WLAs.

Response

The wasteload allocations in the Draft and Final TMDL are based solely on process flows. Stormwater flows and pollutant contributions were not included. Once-through non-contact cooling water was also not included when determining wasteload allocations. This is done to address only those non-stormwater flows which are likely to contribute pollutants to the receiving water.

Comment 016/0034 PPG Industries, Inc.

Hexachlorobutadiene (HCBD) is not causing any current impairment of Bayou d'Inde and should be delisted. HCBD has not been detected by PPG in the water column in the Calcasieu Estuary, including Bayou d'Inde, since 1994. PPG tests water column data quarterly at each of the 11 fish monitoring stations from which fish samples are collected under the Calcasieu Estuary Biological Monitoring Program. Such water monitoring has been conducted for 12 years. The majority of these determinations were performed via EPA Methods 612 or 625 (SIM) with MDLs at 0.34 µg/L rather than those used by EPA in this TMDL analysis that used an MDL of 9 µg/L. Thus, even at a significantly lower detection limit than used by EPA, HCBD has not been found.

Response

A concentration of 9 µg/L is still well above Louisiana's acute and chronic aquatic life criteria and Louisiana's human health criteria, so nondetects at this level do not provide conclusive proof that HCBD is not a source of impairment for Bayou D'Inde. Given the analytical difficulties of quantifying HCBD at criterion levels, the removal of the fish advisory by the Louisiana Department of Health and Hospitals is the only evidence that could be used to remove HCBD as a pollutant of concern in Bayou D'Inde.

Comment 016/0036 PPG Industries, Inc.

Water column monitoring data is also well supported by years of HCBD fish tissue determinations throughout the estuary. PPG supplied eight quarters of fish testing data to EPA for use in this TMDL. Such data was from the Calcasieu Estuary Biological Monitoring Program, which is collected by CH2M Hill for LDEQ and LDHH and managed by PPG. The data supplied by PPG was used by EPA to develop Appendix Tables D-4 through D-6 of the Draft TMDL Report. However, PPG is not certain how EPA used this data, as these Tables appear to contain numerous errors when compared to the data originally supplied by PPG. PPG believes that EPA's contractor may have misaligned columns and/or put data in the wrong columns when preparing this chart. PPG is therefore supplying revised Tables D-4 through D-6 with the corrected data as Exhibit 6 to these comments.

Response

EPA's contractor apologizes for the error. The tables in the Final TMDL reflect this comment.

Similar Comments

016/0040 PPG Industries, Inc.
016/0047 PPG Industries, Inc.

Comment 016/0037 PPG Industries, Inc.

The Draft TMDL Report contains other obvious data errors as well. The Table 20 listing of "Existing" loads attributed to PPG for HCBD is in error. The mean and maximum loadings should indicate "ND" as the DMRs report zero values for non-detectable compliance monitoring, as instructed in Part I of PPG's NPDES Permit. PPG monitors and reports both internal outfalls and the final external outfall three times per week. Further, Appendix Table E-17 indicates that EPA's contractor erroneously determined that PPG's daily average and daily maximum loadings are higher than its permit limits. As noted, PPG's NPDES/LPDES permit monitoring shows that this is simply not the case, so the assumptions used by EPA for WLAs are invalid.

Given the above points, HCBD should clearly be delisted and no further TMDL activities are appropriate.

Response

The tables in Appendix E are revised to show loads by outfall. The number of nondetects are also indicated.

Similar Comments

016/0048 PPG Industries, Inc.

Comment 016/0038 PPG Industries, Inc.

EPA has proposed a TMDL for total PCBs for Bayou d'Inde. The Draft TMDL Report indicates that only 1 sample out of 27 water column samplings for PCBs in Bayou d'Inde showed detectable levels of PCBs. Without more supporting information concerning the data quality (general methodology, detection limits, selectivity of detection, quantification method) and given the difficulty of low level measurement, the use of this data point is questionable. EPA indicates that concentrations in fish tissue are indicative of water concentrations that may exceed the standard, but also states that none of the facilities permitted to discharge into this subsegment are permitted to discharge PCBs.

Response

The single exceedance is informational only--it is not used to select PCBs as a pollutant of concern. PCBs are selected as a pollutant of concern because of the fish advisory for Bayou D'Inde.

Comment 016/0045 PPG Industries, Inc.

Hexachlorobenzene (HCB) is not causing any current impairment of Bayou d'Inde and should be delisted. HCB has not been detected by PPG in the water column in the Calcasieu Estuary, including Bayou d'Inde, since 1994. PPG tests water column data quarterly at each of the 11 fish monitoring stations from which fish samples are collected under the Calcasieu Estuary Biological Monitoring Program. Such water monitoring has been conducted for 12 years. The majority of these determinations were performed via EPA Methods 612 or 625 (SIM) with MDLs at 0.05 µg/L, rather than those used by EPA in this TMDL analysis that used a higher MDL. Thus, even at a significantly lower detection limit than used by EPA, HCB has not been found.

Response

A concentration of 0.05 µg/L is above Louisiana's human health criteria, so nondetects at this level do not provide conclusive proof that HCB is not a source of impairment for Bayou D'Inde. Given the analytical difficulties of quantifying HCB at criterion levels, the removal of the fish advisory by the Louisiana Department of Health and Hospitals is the only evidence that could be used to remove HCB as a pollutant of concern in Bayou D'Inde.

Similar Comments

016/0049 PPG Industries, Inc.

Comment 016/0057 PPG Industries, Inc.

The Draft TMDL Report incorrectly indicated that mercury might be responsible for observed sediment toxicity in Bayou d'Inde. In fact, ChemRisk performed total mercury toxicity evaluations in sediment from lower Bayou d'Inde. These results are documented in a manuscript entitled "A Site-Specific Evaluation of Mercury Toxicity in Sediment," attached as Exhibit 11. The abstract of this study states:

Abstract. A site-specific maximum observed no-effect concentration was identified for mercury in sediments of the Calcasieu River estuary (Louisiana, USA), as an alternative to literature-based sediment quality assessment guidelines, which do not account for site-specific factors influencing mercury bioavailability and toxicity. Ten-day whole-sediment toxicity tests conducted under estuarine conditions (10 ppt salinity) assessed survival and growth (dry weight) of the amphipods Hyalella azteca and Leptocheirus plumulosus. A dilution study evaluated 29 sediment samples, including 11 analyzed for numerous chemical parameters. The maximum mercury concentration in a nontoxic sample was 2.8 mg/kg; however, toxicity associated with higher mercury concentrations appeared to be explained by other chemicals. A follow-up study was conducted, evaluating three sediment samples with mercury concentrations ranging from 0.3 to 4.1 mg/kg and relatively low concentrations of other co-contaminants. Results of this study indicated no toxicity attributable to mercury at the highest test concentration, indicating that the site-specific sediment effects threshold for mercury likely exceeds 4.1 mg/kg.

Response

This comment properly identifies some of the problems with TIEs. While they can be used to

identify categories of chemicals that may cause sediment toxicity, they cannot conclusively demonstrate that a specific chemical is not responsible. The phrase "however, toxicity associated with higher mercury concentrations appeared to be explained by other chemicals" is speculation similar to that attributed to EPA's contractor. The screen levels EPA has applied to assess sediment are more appropriate than testing two amphipod species in that they address a spectrum of species including those which may be more sensitive to the toxilogical effects of mercury.

Comment 016/0058 PPG Industries, Inc.

Additionally, EPA's Phase II study database of the upper Calcasieu Estuary, including Bayou d'Inde, includes methylmercury sediment data. Lower Bayou d'Inde methylmercury data range from 0.002-0.005 mg/Kg, somewhat lower than the reference areas chosen for the study.

Response

Total mercury concentrations in sediment were used in the TMDL assessment. This is appropriate since forms of mercury other than the methylated forms are of toxilogical significance to benthic organisms.

Comment 016/0060 PPG Industries, Inc.

The particulates currently settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. Such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.

Response

Monitoring for total and dissolved metals over time are designed to address this issue. This type of testing was beyond the scope of this TMDL project.

TOTAL MAXIMUM DAILY LOAD FOR TOXICS FOR THE CALCASIEU ESTUARY

Comments

Comments

Gulf Restoration Network **Comment: 001/0001** **Response: 001/0001**

According to a federal TMDL advisory committee formed in 1998, waters should only be removed from the state 303(d) list when (1) new data shows the listed water has attained water quality standards or (2) new information shows that the original listing was in error. The GRN believes that waters should only be removed from the 303(d) list when one of these two conditions is satisfied.

Gulf Restoration Network **Comment: 001/0002** **Response: 001/0002**

In addition, all information and data used to show that the water is currently meeting water quality standards must be provided to the public for review. Without this information, it is impossible for members of the public to make detailed, knowledgeable comments on the validity of the proposed delistings.

Gulf Restoration Network **Comment: 001/0003** **Response: 001/0003**

The GRN notes that only 4/20 of the proposed delistings were accompanied by information and data that are used to support the delisting proposals. In particular, subsegments 030301 (ammonia), 030302 (non-priority organics), 030306 (non-priority organics), 030901 (non-priority organics), 030901 (other inorganics), 030302 (priority organics), 030303 (priority organics), 030304 (priority organics), 030305 (priority organics), 030401 (priority organics), 030402 (priority organics), 081001 (nutrients), 081402 (organic enrichment/low DO), 081609 (organic enrichment/low DO), 080901 (phosphorus), and 080903 (phosphorus) were not accompanied with information or data that supports a delisting decision for the public to review.

Gulf Restoration Network **Comment: 001/0004** **Response: 001/0004**

Given that no supporting data or information was provided, or in any way referenced in the federal register notice for these water segment/pollutant combinations, the GRN can only assume that this data does not exist. Consequently, the justification for the delisting of the aforementioned segment/pollution combinations is unacceptable, and EPA Region 6 cannot approve the delistings. Until new information or data that supports these delistings is made available to the public for review, with an adequate opportunity for the public to comment, these segments should be considered impaired and TMDLs should be developed to address these pollutant concerns.

Gulf Restoration Network **Comment: 001/0005** **Response: 001/0005**

The only data sources that were included on EPA's website to support the delistings proposed by EPA were (1) ammonia data taken for three different waterbodies and (2) a draft report of Fish Tissue Dioxin Investigation for Dugdemona River. This information does not represent all the available information concerning levels of dioxin and priority organics in waters in the Calcasieu Basin. In particular, the following sources of data need to be considered before EPA approves these delistings:

(1) Data and information from EPA's own website, which document the severity of contamination from priority organics in subsegments 030302, 030303, 030304, and 030305 ;

(2) Studies undertaken by the Agency for Toxic Substances and Disease Registry, which analyze dioxin levels in seafood in the Calcasieu River Basin;

(3) Studies undertaken by the Environmental Protection Agency, in coordination with other federal and state

agencies, which analyze the level of contamination in sediments in the Calcasieu River and surrounding watershed ; and

(4) The National Coastal Condition Report, which documents problems with contaminated sediment, benthos, and fish in the Louisiana's coastal rivers and estuaries.

Gulf Restoration Network **Comment: 001/0006** **Response: 001/0006**

Before EPA can approve the delisting of any stream segment for priority organics, non-priority organics, or other organics, sediment and fish tissue sampling data need to be collected and considered. Because many of these organics are hydrophobic, they do not easily dissolve in the water column. Instead, these pollutants tend to build up in the sediment and, under certain conditions, may become available to be uptaken by fish and other aquatic life, as well as the humans who consume this fish. Thus, contamination of sediment and fish by priority organics is a serious health threat that must be considered when evaluating the quality of a water environment. The GRN strongly advises EPA to only delist waters for hydrophobic pollutants (e.g. priority organics and heavy metals such as mercury) that have been tested and proven clean for water column quality, sediment quality, and fish tissue quality. Without a comprehensive approach to water ecosystem sampling, many waters that pose significant public health threats will be removed from the 303(d) list and not receive the cleanup they deserve.

Gulf Restoration Network **Comment: 001/0007** **Response: 001/0007**

The state of Louisiana has not yet adopted numeric criteria that identify acceptable levels of nutrients (i.e., nitrates, phosphorus, and ammonia) in waterbodies throughout the state. Currently, only narrative nutrient criteria are incorporated in Louisiana's Water Quality Standards. This narrative standard is difficult to translate to numeric criteria that fully protect the designated uses of the waters of the state. The GRN, therefore, requests EPA to deny delistings for waters listed as impaired by high nutrient levels (including water segments 030301 (ammonia), 080102 (ammonia), 080901 (ammonia), 080905 (ammonia), 081001 (nutrients), 080901 (phosphorus), and 080903 (phosphorus)), until numeric nutrient criteria are adopted by the state in 2004, and adequate nutrient water quality data are collected that indicate these criteria are being met.

Louisiana Department of Environmental Quality **Comment: 002/0001** **Response: 002/0001**

It is inappropriate to use non-regulatory "targets" (sediment guidelines or others) as end-points for TMDLs.

Louisiana Department of Environmental Quality **Comment: 002/0002** **Response: 002/0002**

Incorrect flows were applied in some areas (e.g. harmonic mean was used rather than tidal flows).

Louisiana Department of Environmental Quality **Comment: 002/0003** **Response: 002/0003**

EPA's use of non-clean technique metals data is inappropriate. Metals data from the Superfund project should not have been used at all since clean sampling and analysis techniques were not used. When EPA did use these data, they were often not applied correctly. For example, Louisiana instream criteria are based on dissolved metals; yet EPA used both dissolved and total metals data to compare to the dissolved criteria. EPA's use of applying total metals to dissolved metals criteria in order to determine exceedances is flawed.

Louisiana Department of Environmental Quality **Comment: 002/0004** **Response: 002/0004**

LDEQ Ambient Network data should not have been used to justify TMDLs for the same reason as the Superfund data. The available LDEQ data were not collected and analyzed using clean

techniques. LDEQ uses these data as a screening tool to target more intensive sampling and analysis using clean techniques, not for justifying and developing TMDLs.

Louisiana Department of Environmental Quality Comment: 002/0005 Response: 002/0005

It is inappropriate to assume industries discharge a pollutant when it has not been included in their permit. EPA knows that when effluent limits are determined for each facility based on a number of factors, including the type of facility, types of waste-streams and effluent data submitted during the application process.

Louisiana Department of Environmental Quality Comment: 002/0006 Response: 002/0006

Monitoring schedules and locations for the different pollutants have been recommended for Louisiana throughout the document; Louisiana will continue its ambient and intensive monitoring programs according to established schedules and agreements.

Louisiana Department of Environmental Quality Comment: 002/0007 Response: 002/0007

DEQ's comments concerning specific TMDLs will indicate that EPA has made numerous errors in listing dischargers in the TMDL.

Louisiana Department of Environmental Quality Comment: 002/0008 Response: 002/0008

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. Neither LDEQ nor EPA has promulgated sediment criteria. Therefore, the use of non-regulatory sediment guidelines and screening values, as Region 6 has done in this report, is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

Louisiana Department of Environmental Quality Comment: 002/0009 Response: 002/0009

Many of these TMDLs are based on models using historical water quality data gathered at a single or small number of locations rather than survey data gathered at sites spaced throughout the waterbody.

Louisiana Department of Environmental Quality Comment: 002/0010 Response: 002/0010

The hydraulic information used was generally an average value or estimated value, not taken at the same time as the water quality data. The calibrations are inadequate due to the lack of appropriate hydrologic data and the paucity of water quality data.

Louisiana Department of Environmental Quality Comment: 002/0011 Response: 002/0011

LDEQ has reviewed the TMDLs published by EPA on March 29, 2002. One particularly troubling issue for LDEQ is the fact that numerous dischargers that should have been included in these TMDLs were not. This indicates a complete disregard for the discharger inventory LDEQ provided to EPA. At the least, the TMDLs should acknowledge all facilities present in the covered watershed(s) and present the decisions for including or not including them in the TMDL.

Louisiana Department of Environmental Quality Comment: 002/0012 Response: 002/0012

Bayou Verdine

Both of the listed dischargers, Conoco (LA 0003026) and Vista (LA0003336), currently discharge their process wastewater directly to the Calcasieu River and not to Bayou Verdine. Both facilities discharge some stormwater to Bayou Verdine. PPG discharges once-through non-contact cooling water, wash-down water, cooling tower blowdown, and stormwater to Bayou Verdine. Lyondell Chemical Worldwide discharges stormwater to Bayou Verdine.

Louisiana Department of Environmental Quality Comment: 002/0013 Response: 002/0013

Bayou d'Inde The TMDL lists 5 industrial dischargers:

Firestone Synthetic Rubber and Latex	LA0003824
Certainteed Products Corp	LA0041025
Equistar Chemical	LA0069850
Westlake Polymers	LA0071382

Discharging industries of significance, including the 5 above, are:

Air Liquide	LA0051730	Air separation
Westlake Polymers	LA0071382	Polyethylene mfg.
PPG Industries	LA0000761	Organic & inorganic chemicals
Equistar Chemical	LA0069850	Ethylene & propylene production
Firestone Synthetic Rubber and Latex	LA0003824	Synthetic rubber and latex
Certainteed Products Corp.	LA0041025	PVC product mfg.
Citgo Petro Corp.	LA0005941	Petroleum Refining
Praxair Inc	LA0100099	Hydrogen gas mfg.
Air Liquid	LA0053708	Cryogenic air separation
Tessenderlo Kerley Inc.	LA0047058	Compressed hydrogen production
W-H Holdings Inc.	LA0105155	Warehousing and wash racks
Cetco	LA0101869	Env remediation and sand blasting
Denmar Enterprises	LA0108596	Heavy equipment washing & refurbishing

Louisiana Department of Environmental Quality Comment: 002/0014 Response: 002/0014

Contraband Bayou

The TMDL lists:

City of Lake Charles WWTP "C"	LA0036366
City of Lake Charles WWTP "B"	LA0036358

Significant dischargers are:

City of Lake Charles WWTP "B" and "C"	LA0036366	Municipal wastewater treatment
City of Lake Charles Center St East WTP	LAG380006	
City of Lake Charles Center St West WTP	LAG380008	
City of Lake Charles McNeese St WTP	LAG380009	
City of Lake Charles Chennault WTP	LAG380009	
McNeese Univ. Farm Labs	LA0104850	Meats, equine, & breeding labs

The discharge from Plant B has been routed to Plant C and the permit voided.

Louisiana Department of Environmental Quality Comment: 002/0015 Response: 002/0015

Calcasieu River and Ship Channel – Saltwater Barrier to Moss Lake

The TMDL lists:

WR Grace	LA0001333
Basell USA	LA0003689
Lyondell Chemical World Wide	LA0005347
Citgo Petroleum	LA0005941
City of Lake Charles WWTP "A"	LA0036340
Calcasieu Refining	LA0052370
City of Sulphur WWTP	LA0067083
Westlake Petrochemicals	LA0082511
Westlake Styrene	LA0087157
Westlake Polymers	LA0103004

The TMDL list is complete except for the two facilities that were mistakenly put in Bayou Verdine, and one facility mistakenly put in Segment 030401:

Condea Vista Chemical	LA0003336
Conoco Lake Charles Refining	LA0003026
Louisiana Pigment	LA0080829

Louisiana Department of Environmental Quality Comment: 002/0016 Response: 002/0016

Lake Charles

The TMDL listed no dischargers. Our files include one significant discharger for non-contact cooling water only: Holnam Inc., FKA Ideal Cement, LA0003956.

Louisiana Department of Environmental Quality Comment: 002/0017 Response: 002/0017

Lower Calcasieu Estuary and Ship Channel

The TMDL lists:

Louisiana Pigment	LA0080829
Lake Charles Carbon	LA0003735

Significant dischargers are:

Cameron Parish Sewerage District 11	LA0039136
Reynolds Metals (Lake Charles Carbon)	LA0003735
Trunkline LNG	LA0055522

Louisiana Pigment is in Segment 030301, discharging to the Calcasieu River.

Louisiana Department of Environmental Quality Comment: 002/0018 Response: 002/0018

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. In using this approach, Region 6 has gone beyond the regulatory guidance under the TMDL regulations. While the Louisiana general water quality standards state that no substances shall be present in toxic amounts in water and sediments underlying said waters, they contain promulgated criteria only for water. The criteria for water are used to protect sediments. Neither LDEQ or EPA have promulgated sediment criteria therefore the use of non regulatory sediment guidelines or screening values as Region 6 has done in this report is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

Louisiana Department of Environmental Quality Comment: 002/0019 Response: 002/0019

The present status of the particular guidelines and screening values used in the report further support our contention that they are inappropriate for making assessments of Louisiana water quality standards or determining the need for TMDLs. As noted in the report, the EPA "Equilibrium Partitioning Sediment Guidelines (ESGs)" are "draft". They are draft guidelines only and have been in various stages of development for many years resulting in changing values and approaches. Although based on scientific studies, if this concept was appropriate for use in assessing Louisiana water quality standards and determining the need for TMDLs, EPA would have made ESGs final by now. But as noted in the report, they are still draft and under development and not appropriate or justified as a regulation for determining water use impairment or need for TMDLs.

Louisiana Department of Environmental Quality Comment: 002/0020 Response: 002/0020

The use of the National Oceanic and Atmospheric Administration's (NOAA) Effects Range Medium (ERM) sediment screening values is equally problematic. The ERM concept was developed from a wide range of sediment toxicity data from a variety of habitats across the nation but has not reached the proper level of scientific or regulatory documentation or acceptance to justify incorporation as a regulation for use in assessing water quality standards or justifying a TMDL. Indeed NOAA stresses in their publications developing ERMs that both

Effects Range Low (ERL) and ERM values "are not to be construed as NOAA standards or criteria". And it might equally be stated that they not be construed as LDEQ or EPA standards or criteria. In fact EPA has recognized this fact by denoting in the recently released Coastal Condition Report that, "these guidelines are still considered experimental and several publications have questioned their reliability in assessing sediment toxicity". It is obvious therefore that the NOAA ERL/ERM screening values are just that, screening values, and are to be used only as a screening tool for evaluating and comparing sediment concentrations between habitats in different regions of the nation and not as a definitive assessment of aquatic toxicity, water use attainment or the need for developing a TMDL.

Louisiana Department of Environmental Quality Comment: 002/0021 Response: 002/0021

There are further concerns with using sediment concentrations for determining water use impairment and the need for TMDLs. Most contaminants found in sediments today relate to historical conditions and discharges and are not representative of current discharge conditions. To develop expensive TMDLs for chemicals that are no longer discharged or no longer discharged into specific waterbodies is inappropriate, unjustified and a waste of valuable resources. We believe that is the case with most of the sediment chemicals EPA alleges are causing water use impairment and require TMDLs in the Lower Calcasieu Basin and Ship Channel.

Louisiana Department of Environmental Quality Comment: 002/0022 Response: 002/0022

The state has listed contaminated sediments in its 305(b)/303(d) process for only Bayous Verdine and d'Inde. The listings were done specifically for the historical problems with the chemicals hexachlorobenzene (HCB), hexachlorobutadiene (HCBD) and polychlorinated biphenyls (PCBs), which were reflected in an existing fish advisory, and not for the chemical substances in sediment as listed in the TMDL report.

Louisiana Department of Environmental Quality Comment: 002/0023 Response: 002/0023

Controls to reduce or eliminate these discharges have since been put in place. The LDEQ has not determined that the concentrations of DDT, methoxyclor, PAHs or any metallic ions are high enough in sediments to document water use impairment or to justify a TMDL.

Louisiana Department of Environmental Quality Comment: 002/0024 Response: 002/0024

As stated previously, the use of the sediment guidelines and screening values proposed in the report is completely inappropriate and not scientifically defensible for determining water use impairment of Louisiana waterbodies or to justify the need for TMDLs in Louisiana waterbodies. We further protest the use of draft and experimental sediment guidelines and screening values to determine water quality impairment and then use the water quality standard for TMDL development when the water quality standard is attained in the waterbody. This is certainly without precedent and totally unjustified.

Louisiana Department of Environmental Quality Comment: 002/0025 Response: 002/0025

Also, any listing of contaminated sediments and toxicity for the Calcasieu Ship Channel, subsegment 030301, based on LDEQ alleged data is in error. A complete check of LDEQ assessment records for 030301 clearly shows that EPA listed this subsegment for contaminated sediments and toxicity on the 303(d) list in error and it should be delisted. Documentation is submitted with these comments.

Louisiana Department of Environmental Quality Comment: 002/0025a Response: 002/0001
Once again, the use of NOAA ERM experimental screening values is totally inappropriate to determine the need for TMDLs in the Calcasieu Ship Channel.

Louisiana Department of Environmental Quality Comment: 002/0025b Response: 002/0025b
And it is equally unjustified to use the water quality criterion for developing a TMDL for a chemical or metal such as Region 6 has done with mercury when the mercury water quality criterion is met in the waterbody.

Louisiana Department of Environmental Quality Comment: 002/0026 Response: 002/0026
Subsegment 030301 was listed on the Court Ordered § 303(d) list for Cu and Hg in the water column and unspecified metals in sediments. It was not listed for Pb in the water column. Therefore, Pb should be removed from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0027 Response: 002/0027
Ambient water quality data for metals collected in 1997 and 1998 by LDEQ was found to be fully supporting of freshwater criteria for Cu, Hg, and Pb, and not supporting marine criteria for Cu. However, clean-technique metals data previously submitted by LDEQ was found to be fully supporting both freshwater criteria and marine water criteria for Cu. Therefore, EPA Region 6 should remove Cu and Hg from the § 303(d) list, and remove Cu, Hg, and Pb from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0028 Response: 002/0028
Subsegment 030303 was not listed on the Court Ordered § 303(d) list for any metals in the water column nor for sediment contamination with metals. Therefore, Cu should be removed from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0029 Response: 002/0029
Ambient water quality data for metals collected by LDEQ was found to be fully supporting of both freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0030 Response: 002/0030
Subsegment 030304 was listed on the Court Ordered § 303(d) list for Cu, but not for Hg. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Hg should be removed from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0031 Response: 002/0031
Subsegment 030305 was not listed on the Court Ordered § 303(d) list for any metal. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Cu should be removed from considered in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0032 Response: 002/0032
Ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.
Ambient water quality data for metals collected by LDEQ was found to be fully supporting of freshwater and marine criteria for both Cu and Hg. Therefore, EPA Region 6 should remove Cu and Hg from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0034 Response: 002/0034

Subsegment 030306 was listed on the Court Ordered § 303(d) list for unspecified metals and unspecified metals in sediments. However, ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Hg. Therefore, EPA Region 6 should remove Hg from consideration in the Calcasieu Toxics TMDL. Nickel was found to be fully supporting of freshwater criteria but not supporting marine criteria.

Louisiana Department of Environmental Quality Comment: 002/0035 Response: 002/0035

Subsegment 030901 was listed on the Court Ordered § 303(d) list for Cu in the water column and for unspecified metals in sediments. It was not listed for Hg or Ni in the water column. Therefore, Hg and Ni should be removed from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0036 Response: 002/0003

Ambient water quality data for metals collected by LDEQ from 1997-1999 was found to be fully supporting of freshwater criteria for Cu, Hg, and Ni, and not supporting marine criterion for Cu. However, clean-technique metals data previously submitted by LDEQ was found to be fully supporting both freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu, Hg, and Ni from the § 303(d) list and from consideration in the Calcasieu Toxics TMDL.

Louisiana Department of Environmental Quality Comment: 002/0037 Response: 002/0037

LDEQ's 2000 § 305(b) report found no metals criteria exceedances and, therefore, no metals were listed for any of the six water bodies in question in EPA Region 6's Calcasieu Toxics TMDL. A second review of metals data for the Calcasieu Estuary was conducted at this time for comments regarding the Calcasieu Toxics TMDL. Ambient water quality data collected by LDEQ, along with clean-technique metals data previously submitted by LDEQ came to the same conclusion as that reached for Louisiana's 2000 § 305(b) report. This review has shown that five of six water bodies considered by the Calcasieu Toxics TMDL (Upper Calcasieu (030301), Prien Lake (030303), Moss Lake (030304), Contraband Bayou (030305) and Bayou d'Inde (030901)) are fully supporting both fresh and marine criteria for the metals shown in Tables 1 and 2. The remaining water body, Bayou Verdine is not supporting marine criteria for nickel.

Louisiana Department of Environmental Quality Comment: 002/0038 Response: 002/0003

LDEQ believes that EPA Region 6's use of metals data from their Superfund project is inappropriate because clean sampling and clean lab analysis techniques were not used during data collection and analysis. Further, use of EPA's data was incorrect because Louisiana instream criteria are based on dissolved metals analysis; yet EPA used both dissolved and total metals data to compare to the dissolved metals criteria. As a result, not only is EPA's use of non-clean technique metals data inappropriate, EPA's use of applying total metals data to dissolved metals criteria in order to determine exceedances is flawed.

C-K Associates, Inc. Comment: 003/0001 Response: 003/0001

The Louisiana Department of Environmental Quality's (LDEQ's) 303(d) list is currently being updated by the LDEQ to accurately identify waterbodies and pollutants of concern which require inclusion on this list. Historical data used for this task in the past has been determined to be "not so" accurate and representative (i.e., metals data which did not employ field and laboratory "clean technique" procedures or analytical laboratory methods which were not used to achieve a certain minimum quantification level) of actual ambient conditions whereby waterbodies and/or pollutants (i.e., trace metals, organics) were placed on this list. This task has not been adequately completed and it is our opinion that calculating TMDLs before revision of the 303(d) list, for

which some waterbodies and pollutants of concern may not all together be needed, is inappropriate.

C-K Associates, Inc. **Comment: 003/0002** **Response: 003/0002**

The State's 303(d) list needs to be updated before TMDLs are calculated. TMDLs were calculated for hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, and hexachlorobenzene solely on the fact that they are on the 303(d) list even though available data indicates that the constituent is not present in the water body or that an inadequate analytical method was used which did not achieve a certain minimum quantification level.

C-K Associates, Inc. **Comment: 003/0003** **Response: 003/0003**

Recent studies have shown that statewide criteria for metals are inappropriately stringent for rivers and streams in southern Louisiana. These streams naturally exhibit low, but significant background, ambient concentrations of metals as a result of natural geochemical conditions in the watershed.

C-K Associates, Inc. **Comment: 003/0004** **Response: 003/0004**

The derivation of dissolved metals criteria set forth in the Louisiana Water Quality Standards (WQS) result in inappropriately and unrealistically low criteria for the protection of aquatic life because they do not account for the site-specific physical and chemical characteristics of the effluent and receiving water which determines the fate of the dissolved metal.

C-K Associates, Inc. **Comment: 003/0005** **Response: 003/0005**

In order for a metal to exhibit a toxic effect on aquatic organisms, the metal must be present in a bioavailable state. Certain water chemistry factors can change the partitioning of metal between the bioavailable and the non-bioavailable states, thereby affecting the toxicity of the metal. Relative to synthetic laboratory water, ambient receiving stream waters and wastewater effluents have significantly more complex water chemistries and therefore, have a greater capacity to assimilate dissolved metals, thus the potential to reducing the bioavailable concentration of a metal. The effect of this is a reduction in the toxicity of the metal in ambient receiving stream waters and wastewater effluents relative to synthetic laboratory water.

The EPA has recognized this phenomenon and published a guidance manual entitled Interim Guidance on Determinations and Use of Water-Effect Ratios for Metals, EPA 823-94-001, February 1994 in order for site-specific criteria to be developed and implemented that protect water quality. The effect of this is to raise statewide criteria to realistic levels based on a sound, scientific approach. Since the TMDLs calculated in this "draft" report were based on existing criteria, we believe it is prudent to evaluate existing criteria and modify criteria determined to be inappropriate and then calculate TMDLs rather than calculate TMDLs based on inappropriate criteria values.

C-K Associates, Inc. **Comment: 003/0006** **Response: 003/0006**

The methodology to determine pollutants of concern included several sources. Some of these sources are not appropriate and many valuable sources are not included which indicates a lack of research by the contractor. Specifically, C-K Associates, Inc. conducted a Trace Metals "Clean Technique" Sampling and Laboratory Analysis Study on Bayou d' Inde, Bayou Verdine and the Calcasieu River in 2000. This report including the data were submitted to the LDEQ in March 2001 and subsequently reformatted by the LDEQ and submitted to the EPA, Region 6 in August 2001. This study consisted of the collection and evaluation of "conventional" and "clean technique" data which were collected "side-by-side" in accordance with the EPA guidance

manual Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, EPA 821-R95-034, April 1995. Evaluation of the data indicated "clean technique" results were substantially lower than the "conventional" results. The ambient concentrations of dissolved copper obtained using "clean technique" monitoring clearly demonstrated that concentrations on Bayou d'Inde and the Calcasieu River did not exceed, or closely approach the marine numerical criteria established by the Louisiana WQS for copper.

C-K Associates, Inc. **Comment: 003/0007** **Response: 002/0003**

The findings of this study concluded that "clean technique" results are more technically accurate and precise than the "conventional" results and therefore more representative of the actual copper levels in Bayou d'Inde, Bayou Verdine, and the Calcasieu River. Based on this data, previous assessment of these waterbodies have been inaccurate, and therefore these waterbodies should be de-listed from the State's 303(d) list and no TMDL is necessary for copper on these waterbodies.

C-K Associates, Inc. **Comment: 003/0008** **Response: 003/0008**

The TMDL calculation method employed a mass-balance approach. The narrative section and appendices do not provide adequate documentation of where input variables came from or how calculations were performed.

C-K Associates, Inc. **Comment: 003/0009** **Response: 003/0009**

Louisiana does not have an aquatic life criterion for total copper as indicated in Table A-1. The aquatic life criterion for marine waters are expressed as a dissolved metal concentration (see LAC 33:1X.1113, Table 1).

Louisiana Chemical Association **Comment: 004/00.5** **Response: 004/00.5**

Many of the following comments reflect serious concerns with the extreme lack of scientific rigor in EPA's TMDL process. Like concerns have been identified and discussed in previous high-level scientific advisory groups, most notably in Assessing the TMDL Approach to Water Quality Management (National Research Council, National Academy Press, 2001) (the "NRC Report"). LCA strongly suggests that EPA incorporate the recommendations of this and other evaluations to assure that TMDL decisions are made on a sound technical basis.

Louisiana Chemical Association **Comment: 004/0001** **Response: 004/0001**

LCA submits that it is entirely inappropriate for EPA to establish TMDLs for pollutants which were not identified in the 303(d) list as causing or expected to cause violations of the applicable water quality standards. In particular, LCA submits that EPA inappropriately established TMDLs for pollutants which were not on the 303(d) list but for which EPA asserts there have been water quality criterion exceedances, ERM exceedances, ESG exceedances, fish advisories, etc. For example, as indicated below, EPA has established TMDLs for certain water quality limited segments for pollutants not on the 303(d) list.

Louisiana Chemical Association **Comment: 004/0002** **Response: 004/0002**

The State of Louisiana has primacy in determining whether to add waters to the state's 303(d) list, and the state should be given the opportunity to review any data relied upon by EPA to determine (i) whether the 303(d) list should be amended to include the above pollutants or (ii) whether the data show that no impairment due to these pollutants exists. By reproposing TMDLs for pollutants not on the state's 303(d) list, EPA has impermissibly usurped state authority. See, Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), and 40 C.F.R. 130.7.

Louisiana Chemical Association **Comment: 004/0003** **Response: 004/0003**

LCA further submits that to the extent EPA desires to establish TMDLs for pollutants not included on the current 303(d) list, EPA should first establish a revised 303(d) list pursuant to the authorities referenced in the previous paragraph. EPA should not unilaterally establish TMDLs for water quality limited segments absent first revising the 303(d) list to add the pollutants of concern.

Louisiana Chemical Association **Comment: 004/0004** **Response: 004/0001**

Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), allows the state (or EPA in the case where the state has failed to act) to establish TMDLs only where technology based effluent limitations are not stringent enough to implement any water quality standard applicable to such waters. In short, TMDLs are authorized only where the state water quality standards are not being met because technology based controls are insufficient. EPA is simply not authorized to establish a TMDL for a pollutant where there is no evidence of impairment. There is no evidence of impairment for a great number of pollutants for which EPA has proposed TMDLs for the Calcasieu Estuary.

Louisiana Chemical Association **Comment: 004/0005** **Response: 004/0005**

Where EPA's investigation of a pollutant shows that the state water quality standard for that pollutant is not being exceeded, then EPA must delist that waterbody for that pollutant on the 303(d) list. Indeed, EPA clearly has proposed to delist 20 waterbody/pollutant combinations in the Calcasieu Estuary and Ouachita River Basin for exactly that reason. See, 67ed. Reg. 15176, March 29, 2002.

Louisiana Chemical Association **Comment: 004/0006** **Response: 004/0002**

As the above pollutants were not on the 303(d) list, EPA was not required by law to develop TMDLs for such pollutants. See, 40 C.F.R 130.7(c) and (d). For EPA to develop TMDLs for pollutants not on the current 303(d) list, as here, is arbitrary, capricious, and legally impermissible under the Clean Water Act and regulations promulgated thereunder, as referenced above.

Louisiana Chemical Association **Comment: 004/0007** **Response: 004/0007**

EPA has proposed TMDLs for several of the pollutants based on the fact that the detection limit for such pollutants is lower than the relevant water quality standard. This is an inappropriate interpretation of the Clean Water Act. TMDLs are warranted only when there is evidence that a discharge has a reasonable potential to contribute to exceedance of a standard. It is not appropriate for EPA to adopt a TMDL simply because it presumes that substances do exist in the water and presumes further that these will be at levels above the standards. EPA cannot presume impairment without scientific basis. EPA should withdraw TMDLs where there is no detection of such pollutants using reliable data (such as clean and ultra-clean data where warranted). EPA should rely instead on 40 CFR 122.44(d)(1)(i) and (vi)(A) and (B) which require the permitting authority to impose water quality based effluent limits where the discharges from and individual facility have "reasonable potential" to exceed a state water quality standard. Under these rules, if the permitting authority has reason to believe that a pollutant will contribute to an exceedance of the standard, a site-specific limit may be set. This existing rule is fully protective of water quality without the existence of a TMDL.

Louisiana Chemical Association **Comment: 004/0008** **Response: 004/0008**

Although LDEQ indicated that HCB, HCBD and PCBs should remain on the 303(d)list, this

recommendation was solely due to the existence of a fish consumption advisory from the Louisiana Department of Health and Hospitals. There is no current evidence of impairment of Bayou d'Inde for these parameters even though the Department of Health and Hospitals is protectively continuing the advisory. In fact, water sampling has not detected HCB or HCBD for over 4 years.

Louisiana Chemical Association **Comment: 004/0009** **Response: 004/0009**

Further, PCBs are banned from manufacture and most uses under the federal Toxic Substances Control Act, so such regulations provide reasonable assurance that this pollutant will not be an ongoing issue. TMDLs, which address ongoing discharges, are simply unwarranted as they have no impact on water quality.

Louisiana Chemical Association **Comment: 004/0010** **Response: 004/0010**

EPA proposed TMDLs for metals without performing data gathering using clean techniques. This is an invalid scientific approach when EPA is clearly aware that use of data gathered using clean techniques would likely demonstrate that no impairment exists.

Louisiana Chemical Association **Comment: 004/0011** **Response: 004/0011**

On August 20, 2001, LDEQ provided "clean techniques" sampling data to EPA demonstrating that there were no exceedances of the aquatic copper criteria in Bayou D'Inde, Bayou Verdine, and the Calcasieu Ship Channel. (The original of this submittal is in EPA Region 6's files. LCA requests that EPA include the original submittal, or a copy thereof, in the official administrative record for this TMDL proceeding.) However, EPA's contractor apparently did not receive or did not consider this data for these waterbodies although similar data was used as a basis for delisting copper in other waterbodies. The data provided by LDEQ to EPA in August 2001 was developed from a report commissioned by PPG titled "A Final Report for Trace Metals "Clean Technique" Sampling and Laboratory Analysis, CK Associates, Inc., March 2001."

Louisiana Chemical Association **Comment: 004/0012** **Response: 004/0012**

EPA proposed TMDLs/WLAs for copper, mercury and nickel were based upon data collected and analyzed without use of "clean techniques." As noted above, data collected using clean techniques was already been provided to EPA by LDEQ in August 2001, but apparently was not considered in the study. This data showed that there is no exceedance of the aquatic copper criteria and that Bayou d'Inde should thus be delisted for copper. The "dirty" data used by the EPA contractor showed nickel detected above the criteria in less than 10% of the samples. In light of this data , Louisiana Water Quality Standards ("LWQS") indicate that clean techniques or ultra-clean techniques must be used when other data indicate that a criteria may be exceeded. LAC 33:IX.1113.C.6.f provides: The use of clean or ultra-clean techniques may be required to definitively assess ambient levels of some pollutants (e.g., EPA method 1669 for metals) or to assess such pollutants when numeric or narrative water quality standards are not being attained. Clean and ultra-clean techniques are defined in LAC33:IX.1105. The relevant definitions of "clean" and "ultra-clean" in LAC33:IX.1105 provide: Clean Techniques—those requirements (or practices for sample collection and handling) necessary to produce reliable analytical data in the microgram per liter (µg/L) or part per billion (ppb) range. Ultra-Clean Techniques—those requirements or practices necessary to produce reliable analytical data in the nanogram per liter (ng/L) or part per trillion (ppt) range.

Louisiana Chemical Association **Comment: 004/0013** **Response: 002/0003**

The aquatic criteria for copper and nickel are in the part per billion range while the aquatic

criteria for mercury are in the part per trillion range. Thus, the data used by the EPA contractor to form the basis for the TMDLs for these pollutants are simply not considered to be reliable data to establish standards in these part per billion and part per trillion ranges. EPA's contractor should have collected additional data for these parameters using clean or ultra-clean techniques as specified by the LWQS because such data is "necessary to produce reliable analytical data" in the ranges established by the standards and the TMDLs. The failure to do so is inexplicable given that only clean or ultra-clean techniques data is considered by the scientific community (and the LWQS) to be the type of data that will support an actual wasteload allocation and the attendant economic burdens that will be imposed on discharging entities.

Louisiana Chemical Association **Comment: 004/0014** **Response: 004/0014**

With respect to mercury, EPA did not use ultra-clean techniques. Further, while EPA apparently detected mercury in the ambient water, it has not yet identified any exceedance of the chronic aquatic protection standard because it did not perform any fish testing. LDEQ's aquatic protection criteria requires fish testing for implementation. LAC 33:IX.1113 Table 3 note 11. EPA data developed in Phase II of the Calcasieu Estuary Superfund Study support LCA's conclusion that there is no exceedance of the aquatic protection criteria. Thus, the TMDL for mercury should be withdrawn.

Louisiana Chemical Association **Comment: 004/0015** **Response: 002/0002**

EPA failed to use the correct flows for waterbodies that are tidally influenced. If a waterbody is tidally influenced, EPA must use the average or typical flow averaged over one tidal cycle irrespective of flow direction for dilution calculations. See, LAC 33:IX.1115, Table 2b. (For example, EPA did not use the average tidal flow for evaluation of human health criteria in Bayou D'Inde, even though Bayou D'Inde is tidally influenced.)

Louisiana Chemical Association **Comment: 004/0016** **Response: 004/0016**

The treatment of discharge data grossly over-estimated loadings in many cases by ignoring non-detected values in facilities' discharge monitoring reports and/or presuming that pollutants were present when "zero" values were reported for pollutant concentrations below the analyte method detection limit.

Louisiana Chemical Association **Comment: 004/0017** **Response: 004/0017**

EPA misused data from the LDEQ Ambient Water Quality Network. All "non-detects" ("ND"s) were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.

EPA misused data from the National Oceanic and Atmospheric Administration's Calcasieu database. All NDs were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.

Louisiana Chemical Association **Comment: 004/0019** **Response: 004/0019**

EPA may have inappropriately determined point source loadings. It is unclear whether EPA used permit limits or average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA states says both in the Executive Summary of the Draft Total Maximum Daily Load for Toxics for the Calcasieu Estuary (the "Draft TMDL Document"), p. ES2.

Louisiana Chemical Association **Comment: 004/0020** **Response: 004/0020**

Nothing in the Draft TMDL Document indicates which years of facility data were reviewed and

why that time period was deemed sufficiently representative of normal, authorized plant operations.

Louisiana Chemical Association **Comment: 004/0021** **Response: 004/0021**

EPA may have inappropriately determined nonpoint source contributions and failed to consider reductions in nonpoint source loadings.

Louisiana Chemical Association **Comment: 004/0022** **Response: 004/0022**

The TMDL mass balance methodology used by EPA is overly simplistic, particularly for a system as hydraulically complex as the Calcasieu Estuary. Such complexity requires fate and transport modeling to generate scientifically acceptable TMDLs. This modeling should include hydrodynamics and water column/sediment pollutant interactions. EPA used a mass balance approach to model toxic pollutants in the Calcasieu Estuary system. The mass balance approach is most problematic for simulating compliance with water quality criteria that have a short-term exposure basis, e.g., acute and chronic aquatic life criteria. A mass balance across an entire surface water subsegment that is miles in length and contains islands and looping channels (e.g., the Upper Calcasieu Estuary and Ship Channel) is inadequate for demonstrating compliance with water quality criteria. The mass balance analysis is especially problematic for aquatic life criteria because temporal-spatial concentration differences must be properly simulated to assure that wasteload allocations are protective, but not overly so. The water quality criteria and implementation methods of the LDEQ are designed to assure that the standards are met at all places in the waterbody, but the TMDL approach used by EPA fails to accomplish this objective.

Louisiana Chemical Association **Comment: 004/0023** **Response: 004/0023**

The hydrodynamics of a surface waterbody determine the transport of chemicals and particulates. As described in the Draft TMDL Document, the Calcasieu Estuary, with its ship channel, islands, lakes, and tributary bayous has very complex hydraulics and pollutant transport. Rather than justifying the simplifying assumption of a mass balance, this complexity demands development of a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants. The foundation of a TMDL is the ability to satisfactorily simulate the hydraulics of the surface waterbody of concern. This has not been done for the Proposed TMDLs.

Louisiana Chemical Association **Comment: 004/0024** **Response: 004/0024**

Another major deficiency of the TMDLs performed by EPA is the failure of the mass balance to account for pollutant fate including both water column-sediment interactions, partitioning of pollutants to solids, and processes such as biodegradation and volatilization. These processes are not considered in the Draft TMDL Document, but are necessary in order to develop technically supported wasteload allocations.

Louisiana Chemical Association **Comment: 004/0025** **Response: 004/0025**

EPA needs to correct errors in the segment flow.

Louisiana Chemical Association **Comment: 004/0026** **Response: 004/0026**

EPA needs to correct errors in facility outfall flow..

Louisiana Chemical Association **Comment: 004/0027** **Response: 004/0027**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations. EPA's method for estimating facility maximum discharge (for use with chronic toxicity pollutant of concern ("POC") TMDLs) is arbitrary and does not reflect

reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Louisiana Chemical Association **Comment: 004/0028** **Response: 004/0028**

Point Source Flow Information. EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors. These errors include:

Concoco--primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Sasol North America, Inc. (formerly CONDEA Vista)--permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).

Citgo--outfalls for CitCon portion of operations (001, 002, 012) to Bayou D'Inde (Segment 030901) were not included.

Lyondell--stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.

PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Louisiana Chemical Association **Comment: 004/0029** **Response: 004/0026**

EPA's estimates of mean flow for most major point-source discharge outfalls contain numerous significant errors. These errors include:

Citgo Calcasieu Ship Channel (Segment 030301) discharge--off by a factor of 5.

Lyondell Calcasieu Ship Channel (Segment 030301) discharge--off by a factor of 4.

PPG Bayou D'Inde (Segment 030901) discharge--off by a factor of 10.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of mean flows for each segment.

Louisiana Chemical Association **Comment: 004/0030** **Response: 004/0030**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors. EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Louisiana Chemical Association **Comment: 004/0031** **Response: 004/0031a**

EPA should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach. EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determined. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Louisiana Chemical Association **Comment: 004/0032** **Response: 002/0001**

Pollutants on the POC list that have no numeric criteria in Table 1 of LAC 33:IX.1131 have no legal status for a TMDL and should not be used as targets. Where a narrative standard is the basis for identification of a designated use impairment (i.e., inclusion of a pollutant on the 303(d) list), then EPA has the obligation to develop a scientifically-supported, site-specific numeric water quality criterion for each and all pollutants that can be correlated to the impairment. It is unacceptable to use pollutant concentrations presented in guidance as TMDL targets, because

these are not water quality standards and they have not been demonstrated to be the cause of toxicity at any specific location.

Louisiana Chemical Association **Comment: 004/0033** **Response: 004/0033**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper. LDEQ (in a letter to EPA dated August 20, 2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

Louisiana Chemical Association **Comment: 004/0034** **Response: 004/0034**

LDEQ (in a letter to EPA dated October 10, 2001) provided information clarifying the listings of "priority organics" and "non-priority organics" for the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901), and other segments. Based on this information LDEQ stated that the only POCs which are the suspected cause of waterbody impairment are: Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only). LDEQ stated that no other use impairments for organic POCs have been documented. LDEQ (in the same letter to EPA dated October 10, 2001) provided information clarifying the listings of "other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

Louisiana Chemical Association **Comment: 004/0035** **Response: 004/0035**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of the Calcasieu Estuary area which were not designed to support TMDL determinations. In the Draft TMDL Document, EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

- Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.
- Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.
- Focused Site Investigation, Bayou D'Inde, EPA, July 1996.
- LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996.
- Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.
- Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).
- Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case, these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs:

The sampling schemes--locations, depths, compositing, etc.--of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g., random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Louisiana Chemical Association **Comment: 004/0037** **Response: 004/0037**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data:

- Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Louisiana Chemical Association Comment: 004/0038 Response: 004/0038

The LDEQ information referred to under Comment 7.c. above--combined with the absence of data showing presence in segment water or sediment above reference levels--should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)
Bromoform, Bayou D'Inde (030901)
1,1,2,2-Tetrachloroethane, Bayou D'Inde (030901)

Louisiana Chemical Association Comment: 004/0039 Response: 002/0003

Water and sediment quality data in the studies relied upon by EPA were not developed using consistent data quality objectives appropriate for a TMDL process. The reference levels for POCs requires very low detection limits. There is no indication that the above studies used appropriate field and laboratory techniques necessary to assure the quality of these results, particularly a reasonable minimization of false positives at the reference level.

Louisiana Chemical Association Comment: 004/0040 Response: 004/0040

In the Draft TMDL Document, EPA does not address whether the above studies relied upon by EPA found the POCs under conditions consistent with application of the reference level--such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Louisiana Chemical Association Comment: 004/0041 Response: 004/0041

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Louisiana Chemical Association Comment: 004/0042 Response: 004/0042

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh water conditions.

Louisiana Chemical Association Comment: 004/0043 Response: 004/0043

Reference levels for fresh water must be adjusted for hardness.

Louisiana Chemical Association Comment: 004/0044 Response: 003/0004

Other factors affecting the application of water quality reference levels should be considered (e.g. using techniques similar to a water effects ratio study.)

Louisiana Chemical Association Comment: 004/0045 Response: 004/0045

Reference levels that are not appropriate to local biota should not be used.

Louisiana Chemical Association Comment: 004/0046 Response: 004/0046

Sediment reference levels should be adjusted based on sediment mineral type, soil type, AVS/SEM ratio, and other relevant characteristics. Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Louisiana Chemical Association Comment: 004/0047 Response: 004/0047

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Louisiana Chemical Association **Comment: 004/0048** **Response: 004/0034**

All subsegments except Bayou d'Inde should be delisted for priority organics (because the original listing covered only HCB, HCBD, and PCBs due to a fish advisory that has since been lifted). Thus, subsegments 030301, 030302, 030303, 030304, 030305, 030306, 030401, and 030402 are no longer listed for priority organics.

Louisiana Chemical Association **Comment: 004/0050** **Response: 004/0050**

Nonpriority organics - three subsegments (030302, 030306, and 030901) were originally listed for "nonpriority organics" and not for any specific pollutant. LDEQ indicated that this listing was intended to be a generic term for periodic oil spills. LDEQ indicated that because oil spills are episodic events more appropriately regulated through enforcement actions, they are not appropriate for TMDLs and that these subsegments were delisted for "nonpriority organics." With respect to EPA's proposed Draft TMDLs, this confirms that EPA is not authorized by the Clean Water Act nor the court ordered list to establish wasteload allocations for PAHs, methoxyclor or DDT based upon the generic listing for "nonpriority organics." Thus, EPA's sole asserted basis for imposing WLAs for these pollutants for Bayou Verdine (030306) and the Calcasieu River (030301) must rest on EPA's ability to establish WLAs solely based on contaminated sediments. As discussed below, LCA does not believe that EPA has this legal authority.

Other Inorganics - Bayou d'Inde (030901) was listed on the 303(d) list for "other inorganics". LDEQ discussed the meaning of this term as follows:

Other Inorganics

Subsegment 030901 – Bayou D'Inde – Headwaters to Calcasieu River

The term "other inorganics" was intended as a generic term for those non-metallic inorganic compounds that may occur in the water from brine discharges during oil and gas activities. No water quality sample was collected; therefore, no quantitative assessment was made. Non-metallic inorganic water quality parameters in brine discharges include chlorides, sulfates, total dissolved solids and salinity.

Since Bayou D'Inde is a natural estuarine waterbody frequently influenced by high salinity from the Gulf of Mexico, no water quality criteria for these parameters are set for the bayou in the Louisiana Water Quality Standards. The listing for "other inorganics" in subsegment 030901 was for general informational purposes and not a listing for impairment of water use by any specific parameters (Emphasis added.) Thus, it is clear that the term "other inorganics" does not include mercury or nickel. For this reason, EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for mercury and nickel for Bayou D'Inde.

Louisiana Chemical Association **Comment: 004/0051** **Response: 004/0051**

EPA has proposed TMDLs for lead for the Calcasieu River (030301) and for copper at Contraband Bayou (030305). EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for these pollutants at these water bodies as these substances are not on the court approved 303(d) list. Further, neither waterbody was listed for the generic category of "other inorganics." There is simply no basis for EPA to usurp LDEQ's authority to establish these TMDLS. Pursuant to section 303(d) of the CWA, LDEQ has primacy over these waters and such primacy has not been changed by the Consent Agreement.

Louisiana Chemical Association **Comment: 004/0052** **Response: 004/0052**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations. Interested parties in the Lake Charles area have demonstrated the willingness to undertake detailed sampling studies--e.g., using "clean techniques"--for specific POCs that had previously been identified in the 303(d) list (e.g., copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA's final determination on the Proposed TMDLs.

Louisiana Chemical Association **Comment: 004/0053** **Response: 004/0053**

EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination. As explained on page ES-1 of the Draft TMDL Document, EPA has used a simple screening method to select POCs:

> (i) pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; and
>
> (ii) pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples.

This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (e.g., formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs for TMDL development is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management. The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Louisiana Chemical Association **Comment: 004/0055** **Response: 004/0001**

EPA has not made use of statistical techniques for evaluating the full range of results for POCs but rather has arbitrarily chosen to evaluate only exceedances.

Louisiana Chemical Association **Comment: 004/0056** **Response: 004/0001**

A selection method based on finding "more than one exceedance" is arbitrary and has no sound scientific or statistical basis.

Louisiana Chemical Association **Comment: 004/0057** **Response: 004/0057**

To evaluate a set of results for comparison with a reference level, good scientific, statistical practice requires an appropriate estimate of central tendency--appropriate to the type distribution--and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Louisiana Chemical Association **Comment: 004/0058** **Response: 004/0058**

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Louisiana Chemical Association **Comment: 004/0059** **Response: 004/0059**

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.

Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions

in the estuary, contaminated sediments are probably undergoing active burial.

Louisiana Chemical Association **Comment: 004/0060** **Response: 004/0060**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to the water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Louisiana Chemical Association **Comment: 004/0061** **Response: 004/0061**

EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification--based on scientifically valid, statistically representative, segment-specific data--for using sediment conditions as a basis for inferring the need for water column POCs and TMDLs.

Louisiana Chemical Association **Comment: 004/0062** **Response: 004/0062**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Louisiana Chemical Association **Comment: 004/0063** **Response: 004/0063**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative

Louisiana Chemical Association **Comment: 004/0064** **Response: 004/0064**

ESGs and ERMs are not promulgated standards for protection of water quality and, absent a rigorous scientific justification, should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)
Mercury, Calcasieu Ship Channel (030301)
Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Louisiana Chemical Association **Comment: 004/0065** **Response: 004/0065**

Under Section 303 of the Clean Water Act and the TMDL process, EPA is not authorized to establish waste load allocations simply to address sediment. EPA may establish WLA's to ensure compliance with the state ambient water quality criteria in the water column. The touchstone under the Clean Water Act for a TMDL to be authorized is a finding that controls on point sources or non-point sources beyond technology based limitations are necessary to achieve the state water quality standard. Section 303 requires that more stringent, water quality- based discharge limits be imposed only where it is demonstrated that technology limits are insufficient to meet water quality standards in waterbody segment. The whole purpose of the TMDL is to determine what more stringent requirements should be applied to the effluent discharges of point

sources and non-point sources.
Where the EPA seeks to establish a WLA (which is to be translated into numerical or best management practices limits on point sources more stringent than technology based standards) solely due to the alleged presence of contaminated sediment, EPA must prove not only that the contaminated sediment is presently contributing to an exceedance of the ambient water quality criteria, but also that controls on the point sources or specified non-point sources will achieve the criteria. Where, as in the proposed TMDLs at issue in this proceeding, EPA has not demonstrated that the sediment is contributing to ambient water quality problems, it cannot be determined whether controls more stringent than technology based controls on point sources or non-point sources will assist in rectifying the problem.

Louisiana Chemical Association Comment: 004/0067 Response: 004/0067

The method used in the Draft TMDL Document to calculate wasteload allocations for sediment contaminants (PAHs, pesticides, etc.) has no scientific basis because it does not relate pollutant loads in the water column to concentrations in the sediment. EPA assumes in the draft TMDL that if the water quality criteria for organic chemicals and metals are achieved, the sediment targets will also be achieved. This assumption has no scientific foundation and is not supported by any technical analysis in the Draft TMDL Document.

Louisiana Chemical Association Comment: 004/0068 Response: 004/0068

If the sediment concentrations are due to historic discharges (before current treatment was installed), then there is no correlation between the current point source discharges and the sediment pollutant concentrations.
EPA must evaluate and determine the cause and effect between organic chemical and metal concentrations in point and nonpoint discharges, the water column, and sediments before it can perform the TMDL for sediments. It has not done this, so the Proposed TMDLs are fatally flawed with respect to the evaluation of sediments.

Louisiana Chemical Association Comment: 004/0070 Response: 004/0070

EPA has other legal authority to address contaminated sediments where the cause of the contamination is historic releases or other causes that will not be addressed by imposition of limitations on existing dischargers. The TMDL process is inappropriate and not legally authorized for the purpose of addressing contaminated sediments where such sediments have no impact on the ability of the water column to meet water quality criteria and/or where imposition of controls on existing dischargers has no impact on the sediments

Louisiana Chemical Association Comment: 004/0071 Response: 004/0071

Sediment quality guidance values and EPA's national water quality criteria cannot be used for a TMDL because they have not been adopted as provisions of LDEQ's water quality standards. EPA has used the LDEQ surface water quality standards (LAC 33:IX.1101-1123) as compliance targets for the Proposed TMDLs. The LDEQ criteria are appropriate for this purpose because they were adopted by LDEQ through formal rulemaking, including public comment, and have been approved by EPA.

Louisiana Chemical Association Comment: 004/0072 Response: 004/0072

EPA also used several other databases as TMDL targets for specific pollutants: (1) EPA national water quality criteria ("EPA WQC") (63 Fed. Reg. 68354, December 10, 1998); (2) effects range-median (ERM) values for sediments that were developed by the National Oceanic and Atmospheric Administration ("NOAA"); and EPA's equilibrium partitioning sediment

guidelines (ESG). None of these databases that were used as TMDL targets have been adopted as Louisiana water quality criteria. They have no legal standing and have not been subject to public review and comment through a rulemaking process at either the national level or in Louisiana. Therefore, they cannot be legally used as TMDL targets unless EPA shows in the TMDL that they are correlated to water column or sediment toxicity, or bioaccumulation in aquatic animals, to a sufficient extent that they can be used in a cause-effect relationship to develop wasteload allocations ("WLA") and load allocations ("LA") for point and nonpoint sources, respectively.

Louisiana Chemical Association **Comment: 004/0073** **Response: 004/0073**

Sediments can be listed as impaired based on measured toxicity and the LDEQ's narrative toxicity standard (LAC 33:IX.1113.B.5); however, a toxicity identification evaluation ("TIE") must be performed to identify the specific pollutant(s) causing the toxicity before a TMDL can be performed. EPA has not performed a TIE for sediments, or the water column, that identifies the pollutant or pollutants that are allegedly causing the measured toxicity.

Louisiana Chemical Association **Comment: 004/0074** **Response: 004/0074**

Neither has EPA presented in the Draft TMDL Document any scientific analysis that demonstrates that the EPA WQC, NOAA ERM, or EPA ESG values have any relationship to the measured sediment and water column toxicity identified in certain segments of the estuary. Therefore, the use of these "targets" that are based on numeric levels in EPA and NOAA guidance that has never undergone review and comment as substitute water quality standards for Louisiana is unlawful and technically unsupported.

Louisiana Chemical Association **Comment: 004/0075** **Response: 004/0062**

NOAA ERM concentrations are not appropriate for establishing site-specific sediment toxicity correlations or TMDL targets. NOAA developed its sediment quality guidelines, including the ERM values, to assist it in the identification of sediments that required additional study in its National Status and Trends Program. These sediment quality guidelines are not intended to be sediment criteria and should not be used for this purpose. NOAA's summary of its guidelines includes the following statement:

The SQGs were not promulgated as regulatory criteria or standards. They were not intended as cleanup or remediation targets, nor as discharge attainment targets. Nor were they intended as pass-fail criteria for dredged material disposal decisions or any other regulatory purpose. Rather, they were intended as informal (non-regulatory) guidelines for use in interpreting chemical data from analyses of sediments.

The NOAA SQGs cannot be used as de facto sediment quality criteria because they represent a range of aquatic organism species, sediment characteristics, and aquatic environments. The SQGs do not consider the bioavailabilty of pollutants that are influenced by local sediment and water chemistry. Likewise, the sensitivity of resident aquatic species is not reflected by the SQGs. Therefore, use of the NOAA SQGs as TMDL targets for certain pollutants found in sediments is not scientifically supported and cannot be the basis for the Proposed TMDLs.

EPA's SQGs are not sediment quality criteria and are not appropriate as TMDL targets. EPA's SQGs are based on the equilibrium partitioning concept. EPA originally proposed these values as sediment quality criteria but subsequently identified them as guidelines because they do not reflect site-specific conditions and bioavailability of pollutants with sufficient reliability to be used as numeric sediment quality criteria. This is true even though EPA considers the sediment organic content and acid volatile sulfides concentrations to predict the potential toxicity of

nonionic organic chemicals and metals, respectively. The EPA SQGs are intended to be used in the same way as the NOAA SQGs--to identify sediments that merit additional study to determine whether toxicity is present and, if so, to conduct the required site-specific studies to identify the causative pollutant(s). They are not sediment quality criteria and cannot be used as target concentrations for a TMDL.

In summary, the draft TMDL has not developed an adequate scientific basis for establishing TMDLs to address sediment toxicity. No site-specific analysis is provided in the draft TMDL to support a site-specific correlation between sediment toxicity and the EPA and NOAA SQGs. Louisiana has no sediment quality criteria. In order to use LDEQ's narrative toxicity standard to address sediments, a site-specific cause and effect correlation between sediment pollutant concentrations and sediment toxicity must be determined before protective concentration targets can be established for a TMDL (i.e., a narrative standard translator). Because the SQLs are not sediment criteria and both EPA and NOAA explicitly caution against using them as such, the SQLs must not be used as TMDL targets unless such a correlation can be shown with site data. Moreover, this correlation should be pollutant-by-pollutant in order to have scientific integrity for the TMDL process.

Louisiana Chemical Association **Comment: 004/0078** **Response: 004/0078**

Because EPA has not developed an acceptable narrative standard translator for sediment toxicity, the proposed TMDLs for sediment in the draft TMDL are not scientifically supported and should not be adopted. Instead, EPA should provide for a data collection program to conduct the necessary sediment toxicity identification evaluations (TIE) to determine the pollutants causing sediment toxicity and the appropriate pollutant concentration targets.

Louisiana Chemical Association **Comment: 004/0079** **Response: 004/0079**

As noted by EPA on page 15 of the Draft TMDL Document, a TMDL should "provide an opportunity to compare relative contributions from all sources and consider technical and economic tradeoffs between point and non-point sources." There is no evidence within the Draft TMDL Document that EPA actually considered "technical and economic tradeoffs between point and non-point sources."

LCA submits that EPA made no effort to allow increased use of best management practices to control discharges of zinc, copper, and lead from nonpoint sources so as to allow increased loadings of zinc, copper, and lead from point sources. See, e.g., (a) proposed TMDL for zinc for Bayou Verdine (030306), (b) proposed TMDL for copper for Bayou D'Inde (030901), (c) proposed TMDL for copper for Upper Calcasieu Estuary and Ship Channel (030301), and (d) proposed TMDL for lead for Upper Calcasieu Estuary and Ship Channel (030301). LCA submits that failure to consider such tradeoffs for the affected pollutants renders the relevant TMDLs arbitrary, capricious, and legally impermissible.

Louisiana Chemical Association **Comment: 004/0081** **Response: 004/0081**

It is technically incorrect to use nonpoint source loadings for aquatic life criteria that are evaluated at the 7Q10. There is no surface runoff from rain events when the 7Q10 occurs; therefore, there should be no nonpoint source loadings of pollutants under such flow condition. In the Draft TMDL Document, EPA uses a flow-based ratio method to estimate nonpoint source runoff contributions at critical low flow in the tributaries and estuary (page 14). No technical analysis is provided to support the conclusion that any surface runoff (i.e., nonpoint source flows) will occur coincident with the 7-day, 1-in-10-year low stream flows (7Q10). In fact, it is

logical to assume that there will be no surface runoff during the critical low flow periods for this basin. The potential for surface runoff can be evaluated by reviewing the stream flow records in the watershed to determine when the 7Q10 flow has most recently occurred and then collecting and evaluating precipitation records for the same time period. It is probable that even if there is precipitation somewhere within the watershed during the period when the 7Q10 occurs, it will be very limited in both amount and spatial distribution and will not contribute nonpoint source loadings of significance.

The Proposed TMDLs should be recalculated assuming that there is no nonpoint source loading for all pollutants that have aquatic life criteria as targets, i.e., those wasteload allocations that are based on the 7Q10.

Louisiana Chemical Association **Comment: 004/0083** **Response: 004/0083**

LCA submits that the 20% MOS used by EPA in the development of TMDLs in the Draft TMDL Document is overly conservative and inappropriate, especially in light of the conservative approach used by EPA in its modeling and projection methodologies. As noted by EPA in its "Guidance for Water Quality-Based Decisions: The TMDL Process," EPA 440/4-91-001 (April 1991):

The MOS is normally incorporated into the conservative assumptions used to develop TMDLs (generally within the calculations or models) and approved by EPA either individually or in State/EPA agreements. If the MOS needs to be larger than that which is allowed through the conservative assumptions, additional MOS can be added as a separate component of the TMDL . . . .

(Emphasis added.) The overly conservative approach used by EPA--in adding an additional margin of safety of 20% to the calculated TMDLs--renders the TMDLs arbitrary, capricious, and legally impermissible.

LCA further submits that margins of safety for TMDLs should be based on estimates of the uncertainty of the estimated wasteload and load allocations. EPA has done no analysis that justifies its arbitrary MOS of 20%. EPA has stated in the TMDL regulation that the MOS should be based on the estimated uncertainty in the TMDL predictions. While this regulation is not yet effective, this recommendation is both scientifically sound and good public policy. EPA should base any MOS on an uncertainty analysis of the TMDLs.

Louisiana Chemical Association **Comment: 004/0085** **Response: 004/0085**

A hydrodynamic model should have been used to estimate flows and dispersion in the estuary. Because of tidal dispersion, the water column-sediment interactions are very important in this estuary, and the failure to use a modeling approach that accounts for tidal dispersion and sediment transport is a fatal flaw in the Proposed TMDLs. EPA states that it evaluated the use of the WASP6 model to simulate pollutant transport and fate in the estuary and tributaries (Draft TMDL Document, page 16). EPA abandoned this effort and selected the mass balance approach because:

Although the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited. Because of these limitations, model results varied over a large range, depending on assumptions made about parameters for which there were no data. As a result, the use of the model as a quantitative tool to estimate allowable loads was not deemed appropriate.

This is not a justifiable reason to abandon the scientifically supported approach needed for a

TMDL of this importance and magnitude. Indeed, this statement indicates that because EPA was under a schedule set by court order, it abandoned the best available scientific tools to perform the TMDL in order to meet its schedule.

Louisiana Chemical Association **Comment: 004/0086** **Response: 004/0086**

TMDLs are routinely conducted by states and EPA using literature values for certain of the fate constants used in WASP6 and similar models. EPA has issued numerous guidance documents on selecting necessary coefficients for these models and performing sensitivity analyses of the results to better understand the reliability of model predictions., Models can also be parameterized using sensitivity analysis and/or optimization approaches. As a worst case simplification, pollutants that are modeled could be considered as conservative (i.e., not subject to biodegradation, chemical reactions, biodegradation or volatilization) in a model that simulates the hydrodynamics of the system. Even a conservative pollutant simulation approach using an appropriate mass transport model would be preferable to a mass balance. The mass balance approach does not allow any analysis of the precision and accuracy of the TMDL results, which is a fundamental concept that EPA included in the 2000 TMDL regulation.

The transport and dispersion of pollutants in the Calcasieu Estuary is complex and must be considered in any TMDL analysis. The basic hydrodynamics of the system can be represented by a number of models, including WASP6, and only requires fresh water inflows, tidal data, and the bathymetry of the estuary and tributaries (including the ship channel) to obtain realistic simulation. This information is readily available and should have been used to develop a model for determining pollutant transport in the tributaries and estuary (a previous water quality model developed by LDEQ for dissolved oxygen evaluations has sufficient hydraulic data to serve as a starting point).

EPA should redo the draft TMDL using an appropriate model to simulate the complex hydrodynamics of the Calcasieu Estuary. The hydrodynamic model should be calibrated and verified with tidal data and salinity data, both of which are available.

Once an acceptably calibrated hydrodynamic model is available, a water quality model using those hydrodynamics should be developed. The WASP6 model would be acceptable. Alternatively, other models could also be used if they represent the fate and transport processes that occur in the estuary. As a minimum, the water quality model should include chemical reactions, biodegradation, volatilization, and particulate attachment and sedimentation for organic chemicals and particulate partitioning and sedimentation for metals. It must also include sediment resuspension and transport, for reasons discussed elsewhere in these comments. The water quality model should be calibrated to the extent practical with available data. Where insufficient data are available, then sensitivity analyses should be performed to determine the uncertainty in the model predictions. All of this information is justified for a TMDL that is as complex and has as much potential impact on dischargers as this one does.

Louisiana Chemical Association **Comment: 004/0089** **Response: 004/0089**

EPA's statement that tidal dispersion at low flows is unimportant and can be ignored is not accurate for the main channel of the estuary. EPA states in the Draft TMDL Document that tidal dispersion is not important at low (critical) stream flows (Draft TMDL Document, page 18). Also, EPA states that no estimates of tidal dispersion are available to use in a model. Both of these statements are inaccurate.

Failure to account for tidal dispersion (which LDEQ considers in NPDES permitting actions) results in overly conservative estimates for discharges to the estuary and is another major

technical flaw in the TMDL evaluation. As stated in the previous comment, it is not true that a hydrodynamic model is impractical. Tidal records, salinity, bathymetry, and major inflow are all available and because basic hydraulics of estuarine systems can be reliably simulated with such models, they should be used to predict the effects of tidal dispersion.

Louisiana Chemical Association **Comment: 004/0091** **Response: 004/0091**

The TMDL incorrectly excludes partitioning of organic chemicals and metals to particulates and subsequent sedimentation and potential resuspension. EPA states that it did not include partitioning of organic chemicals and metals to particulates and subsequent sedimentation because:

(1) it has no estimates of particle density and sedimentation rates; and

(2) if metals and organic chemicals in particulates accumulate in contaminated sediments they will contribute to an existing impairment (Draft TMDL Document, page 18).

Both of these arguments for not dealing with this fate mechanism are unjustified.

Louisiana Chemical Association **Comment: 004/0092** **Response: 004/0092**

With respect to sedimentation rates, there are ample data in the technical literature that can be used to estimate such rates in tidally-affected surface waters. As discussed earlier, default rates for variables such as sedimentation of particulates can be used in a model and sensitivity analyses can be used to establish acceptable estimates for prediction of water column pollutant concentrations. The particulates settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. A simple calculation will show that if a point source is achieving a water quality-based effluent limit for a pollutant such as a metal, the concentration of the metal in any particulates that are discharged will typically be well below the elevated sediment concentrations reported in some segments of the Calcasieu Estuary. However, such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.

Louisiana Chemical Association **Comment: 004/0093** **Response: 004/0093**

A very important issue with respect to sediment-water column interaction and the fate of organic chemicals and metals in the Calcasieu Estuary is not evaluated by EPA (other than mentioning it) in the TMDL. Most if not all of the sediment contamination in the estuary and its tributaries is likely to be a legacy issue, from past discharges that were not treated as effectively as they are today. The existing discharges may not contribute to the existing sediment contamination and may actually be diluting sediment contaminant concentrations if they are having any effect at all. However, EPA did not evaluate any fate or transport mechanisms with respect to sediment contamination so there is no information or evaluation to determine if existing discharges are contributing to sediment pollutant concentrations. The absence of any scientific analysis of the cause and effect relationship between discharges and sediment

Louisiana Chemical Association **Comment: 004/0094** **Response: 004/0094**

EPA has proposed a TMDL for total PCBs for Bayou d'Inde. The Draft TMDL Report indicates that only 1 sample out of 27 water column samplings for PCBs in Bayou d'Inde showed detectable levels of PCBs. Without more supporting information concerning the data quality (general methodology, detection limits, selectivity of detection, quantification method) and given the difficulty of low level measurement, the use of this data point is questionable.

Louisiana Chemical Association **Comment: 004/0095** **Response: 004/0009**

EPA indicates that concentrations in fish tissue are indicative of water concentrations that may exceed the standard, but also states that none of the facilities permitted to discharge into this subsegment are permitted to discharge PCBs. EPA's contractor did not conduct any rigorous source analysis.

EPA has recognized that PCBs are ubiquitous in the environment due to widespread use in electrical equipment prior to the adoption of the Toxic Substances Control Act ("TSCA") restrictions on the manufacture and use of PCBs. The presence of PCBs in the environment is due to past releases, particularly from transformers, prior to the TSCA program. However, the TSCA program has banned their manufacture and phased out their use. For this reason, PCBs are often referred to as a "legacy" pollutant, one that has been banned and thus will naturally decrease in the environment over time.

Because the TSCA program provides the reasonable assurance that measures have been taken to prevent ongoing PCB contamination, limitations more stringent than technology based limitations for ongoing wastewater dischargers are not needed - they simply are not the solution to any PCB problem, if one exists. A finding that more-rigorous-than technology based limitations is the cornerstone requirement for enactment of a TMDL – and this requirement is not met. Instead, EPA should focus its efforts on ensuring compliance with TSCA requirements and the phase-out of use of PCB containing electrical equipment.

Louisiana Chemical Association **Comment: 004/0098** **Response: 004/0098**

Other TMDLs, such as that performed for the Flat Fork Creek in West Virginia, acknowledged that controls on ongoing sources would not be required and no WLA was proposed. Instead the TMDL recognized that PCB contamination was from nonpoint sources and that natural processes would decrease instream sediments and water column concentrations of PCBs. Thus, the action plan under the TMDL was to continue fish monitoring to confirm that PCB contamination was being reduced.

Louisiana Chemical Association **Comment: 004/0099** **Response: 004/0099**

In the case of the Calcasieu River, the fish tissue concentrations throughout the estuary, especially in less motile aquatic species, indicate the ubiquitous nature of PCBs. Further, comparison with nationally published data (EPA 1992) indicate the levels of PCBs found in the Calcasieu Estuary are typically encountered in other urbanized areas of the U. S. For these reasons, EPA should conduct further potential source analysis, including potential urban runoff, prior to taking any further action.

Louisiana Chemical Association **Comment: 004/0100** **Response: 004/0100**

It should also be noted that EPA has revised its human health criteria for total PCBs based upon changes in the IRIS database. In 1999 EPA revised the human health water quality criteria for PCBs in the National Toxics Rule. 64 Fed. Reg. 61182 (November 1999). The NTR calculates human health criteria for PCBs using the cancer slope factor entered in IRIS. Because better data became available as the result of new studies, IRIS updated the cancer potency factor. This updated cancer potency factor resulted in a revised EPA human health water quality criteria of 0.14 ug/L for protection of human health from consumption of aquatic organisms and water, and 0.15 ug/L for consumption of aquatic organisms only. Louisiana's human health water quality criteria of 0.01 ng/L is based on an outdated cancer slope factor and will likely be revised to reflect updated cancer potency data during the next triennial review.

Louisiana Chemical Association **Comment: 004/0101** **Response: 004/0101**

However, even if the human health water quality criteria is revised, which will necessitate a revision of any TMDL, it is highly unlikely that any proposed or future TMDL-derived effluent limitations will cause any decline in tissue concentrations A TMDL is simply not the appropriate vehicle to address historic PCB contamination.

Louisiana Chemical Association **Comment: 004/0102** **Response: 004/0102**

EPA must perform uncertainty analyses of its TMDLs in order to demonstrate the reliability and reasonableness of the wasteload allocations. In the Draft TMDL Document, EPA assumes that all of the impairments identified in the Calcasieu Estuary can be eliminated by control of point sources. In the Draft TMDL Document, EPA makes no attempt to estimate the uncertainty in the proposed wasteload allocations and load allocations. Estimates of uncertainty are essential to allow the regulated community and the general public to understand how effective the Proposed TMDLs will be in achieving the water quality objectives.

If an appropriate uncertainty analysis is conducted, it will allow identification of those portions of the TMDL that require more data collection and analysis to result in wasteload allocations and load allocations that will eliminate the impairments, but will not be so overly conservative that they cause excessive economic and social impacts.

Louisiana Chemical Association **Comment: 004/0103** **Response: 004/0014**

LDEQ's chronic criterion for mercury embodies a screening level based on tissue residues. It is not appropriate to use the LDEQ screening level as though it is a chronic aquatic life criterion that must be achieved at the critical low flow. In the Draft TMDL Document, EPA uses the Louisiana surface water chronic aquatic life criterion as the target for mercury TMDLs (Draft TMDL Document, Appendix A). This mercury criterion is actually a screening level and if it is exceeded in the water column, the standards require that fish tissue samples be analyzed for methyl mercury and compared to the Food and Drug Administration tissue action level of 1 mg/kg (footnote 11 to Table 1, LAC 33:IX.1113, as quoted in Footnote 4 to LCA's Comments). The standards specify that if fish tissues concentrations of methyl mercury exceed the FDA action level, LDEQ must initiate the necessary studies to establish a protective site-specific water quality criterion for mercury.

EPA has not performed any fish tissue testing and thus cannot even establish exceedances of the mercury screening level. Further, EPA data developed in Phase II of the Calcasieu Estuary Superfund--where fish tissue testing was done--support LCA's conclusion that there is no exceedance of the aquatic protection criteria. Thus, the TMDL for mercury should be withdrawn.

Louisiana Chemical Association **Comment: 004/0105** **Response: 003/0004**

If it is determined that a TMDL for copper, lead, nickel or zinc is legally authorized, which is denied, then the TMDL should indicate that site-specific aquatic life water quality criteria for copper, lead, nickel, and zinc may be appropriate for all or some of the waterbodies in the Calcasieu Estuary. If such site-specific criteria are appropriate, the Proposed TMDLs should be revised. Several states have identified reassessment of their water quality criteria using site-specific conditions as one of the first steps in their TMDL procedures. The reason for this is that aquatic life criteria that are based on EPA's national criteria are often overprotective when site-specific bioavailability of a pollutant is considered. This is especially true for metals. For example, in August 2000, Texas adopted site-specific aquatic life criteria for the Houston Ship Channel, side bays and tributaries, and San Jacinto Bay, which are estuarine systems with

hydraulic and biological characteristics that are similar to the Calcasieu Estuary. The revised copper criteria, which are based on the EPA's water effects ratio method for developing site-specific criteria, are greater than the statewide estuarine copper criteria, which are based on the EPA national criteria, by a factor ranging from 1.9-2.3. EPA Region 6 approved these site-specific copper criteria on February 27, 2002.

It is probable that the existing Louisiana statewide criteria for copper, lead, nickel and zinc in estuarine waters are also overprotective. The Proposed TMDLs should provide for development of site-specific aquatic life criteria for these metals and adjustment of wasteload allocations if such criteria are greater than the statewide criteria.

Louisiana Chemical Association **Comment: 004/0106** **Response: 004/0106**

The draft TMDL proposes wasteload allocations for certain pollutants that are lower than the applicable surface water criterion. This result conflicts with the NPDES regulations, because a discharge that is at a water quality criterion concentration cannot cause or contribute to an exceedance of that criterion. EPA applies its arbitrary MOS of 20% to each TMDL that it calculates, which results in wasteload allocations for some dischargers that are lower than the limits that are calculated with the applicable water quality criteria for zinc, mercury, and nickel. For example, EPA states that the zinc limit for Sasol that is calculated by applying the water quality criterion as an end of pipe limit (no mixing zone) is 1.95 lb/day (Draft TMDL Document, page 31). The proposed zinc TMDL for Sasol is 1.6 lb/day (Draft TMDL Document, Table 15). Thus, because of the 20% MOS applied by EPA, the allowable TMDL for Sasol is approximately 20% lower than the water quality criterion.

LCA believes that the proposed wasteload allocation for zinc, mercury, and nickel, are not consistent with EPA's NPDES regulations for water quality-based effluent limits (40 CFR 122.44(d)) because if the effluent concentrations are equal to the water quality criterion for a pollutant, the discharge cannot cause or contribute to an exceedance of the criterion because it cannot increase the ambient concentration above the criterion. A wasteload allocation that is set below the applicable criterion is inconsistent with EPA permitting regulations and is not scientifically justified. These TMDLs must be revised to set the wasteload allocations at concentrations no lower than the applicable water quality criteria.

Louisiana Chemical Association **Comment: 004/0107** **Response: 004/0107**

The analysis for calcium limits in Bayou Verdine has no scientific foundation and, in fact, no site-specific data were used to generate the wasteload allocation. The TMDL establishes proposed wasteload allocations for calcium, based on the assumption that calcium is causing sediment toxicity (Draft TMDL Document, pages 31-32). This assumption is based on an inconclusive TIE performed by EPA's contractor. In the Draft TMDL Document, EPA indicates that the TIE didn't reduce toxicity of the sediments significantly using a range of treatment and states that these results "suggest" an ion imbalance due to calcium is the cause of toxicity. A TMDL should not be based on a "suggestion" of the cause of toxicity.

Louisiana Chemical Association **Comment: 004/0108** **Response: 004/0108**

Once calcium was identified as the "suggested" target pollutant, the "criterion" was derived from water column data taken from the 1999-2000 EPA Superfund monitoring program (Draft TMDL Document, page 32). This value is incorrectly listed in Appendix A of the TMDL as a chronic water quality criterion. It has not been officially adopted by LDEQ as such. There are two fundamental problems with EPA's selection of a calcium target for the TMDL: (1) there is no

technical analysis to demonstrate that calcium in the water column has any correlation to calcium in the sediments; and (2) the calcium data used by EPA was taken from the entire surface water database for the Calcasieu Estuary TMDL and thus has no demonstrated relevance to the site-specific conditions in Bayou Verdine. In fact, there are no calcium data for Bayou Verdine in the EPA database. All of the data are taken from other areas of the estuary and are thus of questionable validity for projecting protective concentrations for the sediments in Bayou Verdine.

The TMDL for calcium in Bayou Verdine is based on a series of assumptions, none of which are supported by any scientific analysis. This TMDL should be deleted from the final TMDLs. It should be replaced by a sediment TIE program that when properly designed and executed, will identify the pollutant or pollutants that are causing the toxicity. EPA requires meeting this objective when an individual discharger performs a TIE--no less should be required of EPA before a TMDL is developed.

Louisiana Chemical Association **Comment: 004/0109** **Response: 004/0109**

EPA should provide water quality endpoints based on dissolved concentrations of POCs. LDEQ's water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Louisiana Chemical Association **Comment: 004/0110** **Response: 004/0110**

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments. LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

Louisiana Chemical Association **Comment: 004/0111** **Response: 004/0111**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. Other factors can affect water quality criteria for toxic POCs, and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific water effects ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Louisiana Chemical Association **Comment: 004/0112** **Response: 004/0112**

There are several pollutants for which TMDLs have been proposed which have been calculated to achieve existing state human health criteria - including TMDLs for HCB, HCBD and PCBs. These human health criteria are likely to be revised at the state's next triennial review because EPA has revised the cancer slope factors in IRIS upon which these criteria are based. EPA has already revised its human health criteria in 40 CFR 131.36 for these pollutants to account for the changes to the IRIS data. All three criteria were revised to slightly higher values. See 40 CFR 131.36. For HCBD, the new criteria is above achievable method detection limits and water quality monitoring data within the Calcasieu Basin has shown that there is no exceedance of this criteria. LCA requests that EPA delay completion of any Waste Load Allocations for these

criteria until the state completes this triennial review, or, in the alternative, that EPA specify in the response to comments that if LDEQ has proposed to amend these criteria at the time of any permit issuance, then the WLA can be adjusted pursuant to the new criteria.

Louisiana Chemical Association **Comment: 004/0113** **Response: 004/0113**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error. The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs. Alternatively, Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3).

The low flow estimate for Bayou D'Inde appears to be in error. Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above PPG Outfall No. 001, near the Bayou D'Inde, critical flow based on tide-cycle is reported to be 121 cfs (Ref 7).

The estimates for the low flows on the remaining segments also appear to be in error. Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.

The estimates for mean flows for the segments appear to be in error. The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1). Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error. LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).

The estimate for harmonic mean flow for Bayou D'Inde appears to be in error. LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7).

The estimates for harmonic mean flows on the remaining segments also appear to be in error. EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

Louisiana Chemical Association **Comment: 004/0121** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements. There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which

are offering “clean techniques” and both are out of state (Madison, Wisconsin and Seattle, Washington).

Louisiana Chemical Association **Comment: 004/0122** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of “generic” endpoints, and facility flows. Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of new information.

Louisiana Chemical Association **Comment: 004/0123** **Response: 004/0123**

EPA should eliminate sampling and testing of total metals. The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Louisiana Chemical Association **Comment: 004/0124** **Response: 004/0124**

EPA should eliminate the requirement for LDEQ to sample and monitor sediments. The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

Louisiana Chemical Association **Comment: 004/0125** **Response: 004/0125**

Facilities should be allowed to report loadings on a “net” basis for POCs with nonpoint source load allocations. Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. “Background” loads in segment water--including upstream, tributary, atmospheric, and nonpoint source loads--are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all “background” contributions from the facility’s measured final discharge load.

Louisiana Chemical Association **Comment: 004/0126** **Response: 004/0126**

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable, averaged basis. TMDL wasteload allocations should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

Louisiana Chemical Association **Comment: 004/0127** **Response: 004/0127**

Given the many identified limitations of the science in the TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as “provisional”. In its final determination on the Proposed TMDLs, EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly state that such TMDLs are provisional. In this section, EPA should set forth a process for prompt review and revision of the affected TMDLs upon obtaining new information. Such information could be generated either by EPA itself, LDEQ, or other interested parties. Finally, EPA should specifically acknowledge that future ambient water quality information may result in delisting of the affected waterbodies and/or POCs and rescinding of TMDLs.

Louisiana Chemical Association **Comment: 004/0128** **Response: 004/0128**

LCA notes that under the consent decree, effective April 1, 2002, entered into by the parties in those proceedings entitled "Sierra Club and Louisiana Environmental Action Network v. Gregg A. Cooke, Regional Administrator, Christine T. Whitman, Administrator, United States Environmental Protection Agency; and U.S. Environmental Protection Agency," Civil Action No. 96-0527, Section "S" (4) on the docket of the United States District Court for the Eastern District of Louisiana (the "Consent Decree), EPA agreed that for the waterbody/pollutant combinations in the Calcasieu Basin (including, without limitation, Waterbody Subsegments 030301, 030306, and 030901), TMDLs would be established by May 31, 2002, unless EPA received an extension of such deadline. LCA submits that the comments submitted in connection with the proposed TMDLs for the Calcasieu Basin justify a request by EPA to extend the deadline(s) for establishment of TMDLs for those waterbodies. LCA further submits that the proposed TMDLs for such waterbodies should not be finalized by EPA until EPA has had a reasonable opportunity to review, consider, and appropriately respond to the comments submitted on such proposed TMDLs. LCA thus requests EPA to take such action(s), as necessary, under the Consent Decree to obtain extension(s) of the May 31, 2002 deadline for establishment of TMDLs for such waterbodies.

Equistar **Comment: 005/0001** **Response: 004/0128**

It is highly recommended that EPA reopen the comment period in order to allow for all interested parties to comment, and that all comments and recommendations be addressed and incorporated into the TMDL determination process.

Equistar **Comment: 005/0002** **Response: 004/0035**

In general, sampling data used for identifying all POC's appears to be biased to localized contamination studies and therefore non-representative of a waterbody sub-segment. It is recommended that EPA use a more scientific and statistical approach to selecting POCs.

Equistar **Comment: 005/0003** **Response: 003/0002**

According to Tables 1 and 19 of the above-referenced draft TMDL document, there are two chemicals that were identified as "pollutants of concern" for Bayou D'Inde only because of their presence on EPA's 303(d) list. These were Tetrachloroethane and Bromoform. It is not obvious that there were concentrations of these pollutants above reference levels to support the initial listing of these chemicals. What was the specific basis for including these two pollutants on the 303(d) list (or its precursor lists)? Please provide and explain specific data used to support this.

Equistar **Comment: 005/0004** **Response: 005/0004**

According to the draft document, all major and minor dischargers to Bayou D'Inde would be required to test effluents for "chronic toxicity" at least quarterly to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing in-stream toxicity. It is recommended that facilities having previous chronic toxicity testing data be allowed to submit the data as evidence to achieve this demonstration. Quarterly toxicity analyses should not be necessary for those facilities whom have successfully performed this demonstration in the past and are currently continuing to monitor at a less frequent basis per their NPDES/LPDES water permits.

Equistar **Comment: 005/0005** **Response: 004/0011**

It appears that EPA did not address information provided by LDEQ for the de-listing of copper for several sub-segments, including Bayou D'Inde. It is recommended that the EPA incorporate

information submitted by LDEQ.

Equistar **Comment: 005/0006** **Response: 005/0006**

The document states that concentrations of Aroclor 1254 (a PCB) are higher in red drum from Bayou D'Inde than in other parts of the estuary, but that the concentrations are only based on two samples. It appears that more testing of the fish and water column is needed in order to identify the sources of this PCB contamination, prior to establishing TMDL's and WLA's for this pollutant.

Equistar **Comment: 005/0007** **Response: 005/0007**

The document states that only two of the five facilities that discharge to the bayou are permitted to discharge these pollutants. Each of the five facilities would be required to monitor effluents quarterly to demonstrate compliance with these waste load allocations. Our facility has several years of weekly analytical data, which demonstrates that this pollutant is not present in the outfall discharge water from the facility. Because of our previous demonstration, our current water permit has a less frequent measuring requirement of once per year. Subsequent analyses on a quarterly basis are not necessary. Quarterly analyses should not be required for those facilities whom have successfully performed this demonstration in the past and are currently continuing to monitor at a less frequent basis per their NPDES/LPDES water permits.

Equistar **Comment: 005/0008** **Response: 004/0033**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper.LDEQ (in a letter to EPA dated August 20,2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

Equistar **Comment: 005/0009** **Response: 004/0034**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" several Court-Ordered "categorical" impairments.
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LDEQ stated that no other use impairments for organic POCs have been documented.
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Equistar **Comment: 005/0010** **Response: 004/0035**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of Calcasieu Estuary area which were not designed to support TMDL determinations.
In the Draft TMDL EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.

Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996

Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs

The sampling schemes—locations, depths, compositing, etc—of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g. random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Equistar **Comment: 005/0012** **Response: 004/0037**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data.

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

4,4'-DDT, Bayou Verdine (030306)

Methoxychlor, Bayou Verdine (030306)

Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)

Zinc, Bayou Verdine (030306)

Calcium, Bayou Verdine (030306)

Equistar **Comment: 005/0013** **Response: 004/0038**

The LDEQ information referred to under 2a) above—combined with the absence of data showing presence in segment water or sediment above reference levels—should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)

Bromoform, Bayou D'Inde (030901)

1,1,2,2 Tetrachloroethane, Bayou D'Inde (030901)

Equistar **Comment: 005/0014** **Response: 002/0003**

Water and sediment quality data in these studies were not developed using consistent Data Quality Objectives (DQOs) appropriate for a TMDL process. The reference levels for POCs requires very low detection limits. There is no indication that the above studies used appropriate field and laboratory techniques necessary to assure the quality of these results, particularly a reasonable minimization of false positives at the reference level.

Equistar **Comment: 005/0015** **Response: 004/0040**

EPA's Draft TMDL does not address whether the above studies found the POCs under conditions consistent with application of the reference level—such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Equistar **Comment: 005/0016** **Response: 004/0041**

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Equistar **Comment: 005/0017** **Response: 004/0042**

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh conditions.

Equistar **Comment: 005/0018** **Response: 004/0043**

Reference levels for fresh water must adjusted for hardness.

Equistar **Comment: 005/0019** **Response: 003/0004**

Other factors affecting the application of water quality reference levels should be considered (e.g. using techniques similar to a Water Effects Ratio study.)

Equistar **Comment: 005/0020** **Response: 004/0045**

Reference levels that are not appropriate to local biota should no be used.

Equistar **Comment: 005/0021** **Response: 004/0046**

Sediment reference levels should be adjusted based on sediment mineral type, soil type, AVS/SEM ratio, and other relevant characteristics.

Equistar **Comment: 005/0022** **Response: 004/0047**

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Equistar **Comment: 005/0023** **Response: 004/0052**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations.

Interested parties in the Lake Charles area have demonstrated willingness to undertake detailed sampling studies—e.g., using "clean techniques"—for specific POCs that had previously been identified in the Court-Ordered List (e.g. copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA final determination of a TMDL.

Equistar **Comment: 005/0024** **Response: 004/0053**

EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination.

As explained on page ES-1 of the Draft TMDL, EPA has used a simple screening method to select POCs:

> Pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; or
>
> Pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples.

This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (i.e. formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management.

The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Equistar **Comment: 005/0026** **Response: 004/0001**

EPA has not made use of statistical techniques for evaluating the full range of results for POCs but rather has arbitrarily chosen to evaluate only exceedances.
A selection method based on finding "more than one exceedance" is arbitrary and has no sound scientific or statistical basis.

Equistar **Comment: 005/0028** **Response: 004/0057**

To evaluate a set of results for comparison with a reference level good scientific, statistical practice requires an appropriate estimate of central tendency—appropriate to the type distribution—and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Equistar **Comment: 005/0029** **Response: 004/0058**

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Equistar **Comment: 005/0030** **Response: 004/0059**

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.
Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

Equistar **Comment: 005/0031** **Response: 004/0060**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Equistar **Comment: 005/0032** **Response: 004/0061**

Even assuming sediment results are indicative of conditions at the water column interface, EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification—based on scientifically valid, statistically representative, segment-specific data—for using sediment conditions as a basis for inferring the need for a water column POCs and TMDLs.

Equistar **Comment: 005/0033** **Response: 004/0062**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. The EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Equistar **Comment: 005/0034** **Response: 004/0063**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

Equistar **Comment: 005/0035** **Response: 004/0064**

ESGs and ERMs are not promulgated standards for protection of water quality and absent a rigorous scientific justification should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)

Mercury, Calcasieu Ship Channel (030301)

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Equistar **Comment: 005/0036** **Response: 004/0109**

EPA should provide water quality endpoints based on dissolved concentrations of POCs.LDEQ's water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Equistar **Comment: 005/0037** **Response: 004/0110**

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments.LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

Equistar **Comment: 005/0038** **Response: 004/0111**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. (Table 2. Summary of POCs)

Other factors can affect water quality criteria for toxic POCs and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific Water Effects Ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Equistar **Comment: 005/0039** **Response: 004/0113**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error.The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref. 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs.

Alternatively Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs.
However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3)
The low flow estimate for Bayou D'Inde appears to be in error.
Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above the PPG canal (PPG Outfall No. 001) near the Bayou D'Inde critical flow based on tide-cycle is reported to be 121 cfs (Ref 7).
(Table 3. Summary of Segment Flow Estimates)
The estimates for the low flows on the remaining segments also appear to be in error.
Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.
The estimates for mean flows for the segments appear to be in error.
The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1) Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.
The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error.LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).
The estimate for harmonic mean flow for Bayou D'Inde appears to be in error.LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7)
The estimates for harmonic mean flows on the remaining segments also appear to be in error.EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

Equistar **Comment: 005/0047** **Response: 004/0028**

EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors.
Table 4 shows these errors include:

Concoco—Primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Condea Vista—Permit being finalized to move primary outflows to the Calcasieu Ship Channel (Segment 030301).

Citgo—Outfalls for CitCon portion of operations (001, 002, 012) are to Bayou D'Inde (Segment 030901).

Lyondell—Stormwater Outfalls 025, 026, and 032 are to Bayou Verdine (Segment 030306).

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Equistar **Comment: 005/0048** **Response: 004/0026**

EPA's estimates of mean flow for most major point-source discharge outfalls contain numerous

significant errors.
Table 4 shows these errors include:

Citgo Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 5.
Lyondell Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 4.
PPG Bayou D'Inde (Segment 030901) Discharge—off by a Factor of 10.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of mean flows for each segment.

Equistar **Comment: 005/0049** **Response: 004/0030**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors.
EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Equistar **Comment: 005/0050** **Response: 004/0031**

EPA's should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach.
EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determine. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Equistar **Comment: 005/0051** **Response: 004/0025**

EPA needs to correct errors in the segment flow.

Equistar **Comment: 005/0052** **Response: 004/0026**

EPA needs to correct errors in facility outfall flow.

Equistar **Comment: 005/0053** **Response: 005/0053**

EPA needs to determine if certain POC point source loadings are associated with point source stormwater outfalls and develop statistically valid segment flow estimates.
For some POCs, significant point source loads may be attributable to stormwater outfalls. In these cases, use of low flows for dilution are not reasonable since facility discharges of the POC would occur during periods when significantly higher stream flows would be present. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate segment flow estimates for stormwater events.

Equistar **Comment: 005/0054** **Response: 004/0027**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations.
EPA's method for estimating facility maximum discharge (for use with chronic toxicity POC TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Equistar **Comment: 005/0055** **Response: 005/0055**

Due the errors in locating discharge outfalls and estimating point-source flows EPA has not included allocations for all potential point sources.

Equistar **Comment: 005/0056** **Response: 005/0056**

PAHs may be present in petroleum refinery point-source discharges. EPA should include wasteload allocations for PAHs for all petroleum refineries.

Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.)

Allocations of PAHs should be provided to:

Conoco—Calcasieu Ship Channel (Segment 030301)
Citgo—Calcasieu Ship Channel (Segment 030301)
Citgo—Bayou D'Inde (Segment 030901)

Equistar **Comment: 005/0057** **Response: 005/0057**

Given the indeterminate level of POCs in point-source stormwater, and very low wasteload allocations for these POCs, EPA should include wasteload allocations for POCs for all major facilities.

No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point-source discharges of stormwater should receive an allocation of each POC.

Equistar **Comment: 005/0058** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements.

There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which are offering "clean techniques" and both are out of state (Madison, Wisconsin and Seattle, Washington).

Equistar **Comment: 005/0059** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of "generic" endpoints, and facility flows.

Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of a new information.

Equistar **Comment: 005/0060** **Response: 004/0123**

The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Equistar **Comment: 005/0061** **Response: 004/0124**

The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

Equistar **Comment: 005/0062** **Response: 004/0125**

Facilities should be allowed to report loadings on a "net" basis for POCs with non-point source load allocations.

Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. "Background" loads in segment water—including upstream, tributary, atmospheric, and non-point source loads—are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all "background" contributions from the facility's measured final discharge load.

Equistar **Comment: 005/0063** **Response: 004/0126**

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable, averaged basis.

TMDL WLAs should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

Lyondell Chemical Company **Comment: 006/0001** **Response: 006/0001**

Lyondell believes that in several instances, there are significant omissions in data that should have been considered in the development of these TMDLs. Further concerns are that much data demonstrating that water quality standards are not being exceeded seemed to be ignored and that EPA did not use the mixing zone flows required by state rules for determining flows, particularly for tidally influenced waters. In addition it appears that EPA's contractor used models and/or guidance that have not been accepted by the scientific community. Specific concerns are addressed in the Technical Comments report dated 4/26/02.

Lyondell Chemical Company **Comment: 006/0002** **Response: 004/0033**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper.

LDEQ (in a letter to EPA dated August 20,2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

Lyondell Chemical Company **Comment: 006/0003** **Response: 004/0034**

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Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only).

LDEQ stated that no other use impairments for organic POCs have been documented.

LDEQ (In the same letter to EPA dated October 10,2001) provided information clarifying the listings of "Other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

Lyondell Chemical Company **Comment: 006/0004** **Response: 004/0035**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of Calcasieu Estuary area which were not designed to support TMDL determinations.

In the Draft TMDL EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

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Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

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Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs.

Lyondell Chemical Company **Comment: 006/0005** **Response: 004/0035**

The sampling schemes—locations, depths, compositing, etc—of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g. random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Lyondell Chemical Company **Comment: 006/0006** **Response: 004/0037**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data.

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

4,4'-DDT, Bayou Verdine (030306)

Methoxychlor, Bayou Verdine (030306)

Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)

Zinc, Bayou Verdine (030306)

Calcium, Bayou Verdine (030306)

Lyondell Chemical Company **Comment: 006/0007** **Response: 004/0038**

The LDEQ information referred to under 2a) above—combined with the absence of data showing presence in segment water or sediment above reference levels—should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)

Bromoform, Bayou D'Inde (030901)

1,1,2,2 Tetrachloroethane, Bayou D'Inde (030901)

Lyondell Chemical Company **Comment: 006/0008** **Response: 002/0003**

Water and sediment quality data in these studies were not developed using consistent Data Quality Objectives (DQOs) appropriate for a TMDL process. The reference levels for POCs requires very low detection limits. There is no indication that the above studies used appropriate field and laboratory techniques necessary to assure the quality of these results, particularly a reasonable minimization of false positives at the reference level.

Lyondell Chemical Company **Comment: 006/0009** **Response: 004/0040**

EPA's Draft TMDL does not address whether the above studies found the POCs under conditions consistent with application of the reference level—such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Lyondell Chemical Company **Comment: 006/0010** **Response: 004/0041**

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Lyondell Chemical Company **Comment: 006/0011** **Response: 004/0042**

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh conditions.

Lyondell Chemical Company **Comment: 006/0012** **Response: 004/0043**

Reference levels for fresh water must adjusted for hardness.

Lyondell Chemical Company **Comment: 006/0013** **Response: 003/0004**

Other factors affecting the application of water quality reference levels should be considered (e.g. using techniques similar to a Water Effects Ratio study.)

Lyondell Chemical Company **Comment: 006/0014** **Response: 004/0045**

Reference levels that are not appropriate to local biota should not be used.

Lyondell Chemical Company **Comment: 006/0015** **Response: 004/0046**

Sediment reference levels should be adjusted based on sediment mineral type, soil type, AVS/SEM ratio, and other relevant characteristics.

Lyondell Chemical Company **Comment: 006/0016** **Response: 004/0047**

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Lyondell Chemical Company **Comment: 006/0017** **Response: 004/0052**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations.

Interested parties in the Lake Charles area have demonstrated willingness to undertake detailed sampling studies—e.g., using "clean techniques"—for specific POCs that had previously been identified in the Court-Ordered List (e.g. copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA final determination of a TMDL.

Lyondell Chemical Company **Comment: 006/0018** **Response: 004/0053**

EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination.

As explained on page ES-1 of the Draft TMDL, EPA has used a simple screening method to select POCs:

Pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; or

Pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples.

This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this

subsequent phase of investigation are then used for decision-making purposes (i.e. formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management.
The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Lyondell Chemical Company **Comment: 006/0020** **Response: 004/0001**

EPA has not made use of statistical techniques for evaluating the full range of results for POCs but rather has arbitrarily chosen to evaluate only exceedances.
A selection method based on finding "more than one exceedance" is arbitrary and has no sound scientific or statistical basis.

Lyondell Chemical Company **Comment: 006/0022** **Response: 004/0057**

To evaluate a set of results for comparison with a reference level good scientific, statistical practice requires an appropriate estimate of central tendency—appropriate to the type distribution—and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Lyondell Chemical Company **Comment: 006/0023** **Response: 004/0058**

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Lyondell Chemical Company **Comment: 006/0024** **Response: 004/0059**

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.
Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

Lyondell Chemical Company **Comment: 006/0025** **Response: 004/0060**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Lyondell Chemical Company **Comment: 006/0026** **Response: 004/0061**

Even assuming sediment results are indicative of conditions at the water column interface, EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification—based on scientifically valid, statistically representative, segment-specific data—for using sediment conditions as a basis for inferring the need for a water column POCs and TMDLs.

Lyondell Chemical Company **Comment: 006/0027** **Response: 004/0062**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. The EPA should remove the

following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Lyondell Chemical Company **Comment: 006/0028** **Response: 004/0063**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

Lyondell Chemical Company **Comment: 006/0029** **Response: 004/0064**

ESGs and ERMs are not promulgated standards for protection of water quality and absent a rigorous scientific justification should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)
Mercury, Calcasieu Ship Channel (030301)
Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Lyondell Chemical Company **Comment: 006/0030** **Response: 004/0109**

EPA should provide water quality endpoints based on dissolved concentrations of POCs.
LDEQ's water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Lyondell Chemical Company **Comment: 006/0031** **Response: 004/0110**

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments.
LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

Lyondell Chemical Company **Comment: 006/0032** **Response: 004/0111**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. (Table 2. Summary of POCs)
Other factors can affect water quality criteria for toxic POCs and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific Water Effects Ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Lyondell Chemical Company **Comment: 006/0033** **Response: 004/0113**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error.

The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref. 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs. Alternatively Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs.

However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3)

The low flow estimate for Bayou D'Inde appears to be in error.

Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above the PPG canal (PPG Outfall No. 001) near the Bayou D'Inde critical flow based on tide-cycle is reported to be 121 cfs (Ref 7).

(Table 3. Summary of Segment Flow Estimates)

The estimates for the low flows on the remaining segments also appear to be in error.

Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.

The estimates for mean flows for the segments appear to be in error.

The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1) Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error.

LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).

The estimate for harmonic mean flow for Bayou D'Inde appears to be in error.

LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7)

The estimates for harmonic mean flows on the remaining segments also appear to be in error.

EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

Lyondell Chemical Company **Comment: 006/0041** **Response: 004/0028**

EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors.

Table 4 shows these errors include:

Concoco—Primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Condea Vista—Permit being finalized to move primary outflows to the Calcasieu Ship Channel (Segment 030301).

Citgo—Outfalls for CitCon portion of operations (001, 002, 012) are to Bayou D'Inde (Segment 030901).

Lyondell—Stormwater Outfalls 025, 026, and 032 are to Bayou Verdine (Segment 030306).

PPG---Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Lyondell Chemical Company **Comment: 006/0042** **Response: 004/0026**

EPA's estimates of mean flow for most major point-source discharge outfalls contain numerous significant errors.

Table 4 shows these errors include:

Citgo Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 5.

Lyondell Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 4.

PPG Bayou D'Inde (Segment 030901) Discharge—off by a Factor of 10.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of mean flows for each segment.

Lyondell Chemical Company **Comment: 006/0043** **Response: 004/0030**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors.

EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Lyondell Chemical Company **Comment: 006/0044** **Response: 004/0031**

EPA's should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach.

EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determine. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Lyondell Chemical Company **Comment: 006/0045** **Response: 004/0025**

EPA needs to correct errors in the segment flow.

Lyondell Chemical Company **Comment: 006/0046** **Response: 004/0026**

EPA needs to correct errors in facility outfall flow.

Lyondell Chemical Company **Comment: 006/0047** **Response: 005/0053**

EPA needs to determine if certain POC point source loadings are associated with point source stormwater outfalls and develop statistically valid segment flow estimates.

For some POCs, significant point source loads may be attributable to stormwater outfalls. In these cases, use of low flows for dilution are not reasonable since facility discharges of the POC would occur during periods when significantly higher stream flows would be present. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate

segment flow estimates for stormwater events.

Lyondell Chemical Company **Comment: 006/0048** **Response: 004/0027**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations.

EPA's method for estimating facility maximum discharge (for use with chronic toxicity POC TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Lyondell Chemical Company **Comment: 006/0049** **Response: 005/0055**

Due the errors in locating discharge outfalls and estimating point-source flows EPA has not included allocations for all potential point sources.

Lyondell Chemical Company **Comment: 006/0050** **Response: 005/0056**

PAHs may be present in petroleum refinery point-source discharges. EPA should include wasteload allocations for PAHs for all petroleum refineries.

Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.)

Allocations of PAHs should be provided to:

Conoco—Calcasieu Ship Channel (Segment 030301)
Citgo—Calcasieu Ship Channel (Segment 030301)
Citgo—Bayou D'Inde (Segment 030901)

Lyondell Chemical Company **Comment: 006/0051** **Response: 005/0057**

Given the indeterminate level of POCs in point-source stormwater, and very low wasteload allocations for these POCs, EPA should include wasteload allocations for POCs for all major facilities.

No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point-source discharges of stormwater should receive an allocation of each POC.

Lyondell Chemical Company **Comment: 006/0052** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements.

There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which are offering "clean techniques" and both are out of state (Madison, Wisconsin and Seattle, Washington).

Lyondell Chemical Company **Comment: 006/0053** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of "generic" endpoints, and facility flows.

Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of a new information.

Lyondell Chemical Company **Comment: 006/0054** **Response: 004/0127**

Given the many identified limitations of the science in this TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as "provisional". EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly identify that such TMDLs are provisional. In this section EPA should set forth a process for prompt review and revision of the TMDL PA upon obtaining new information. Such information could be generated either by EPA itself, LDEQ or other interested parties.

Lyondell Chemical Company **Comment: 006/0055** **Response: 006/0055**

EPA should specifically acknowledge that future ambient water quality information will result in delisting of POCs and rescinding of TMDLs/

Lyondell Chemical Company **Comment: 006/0056** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements.

There is currently a significant lack of capacity for obtaining “clean techniques” laboratory analyses. There are currently only two LDEQ certified laboratories which are offering “clean techniques” and both are out of state (Madison, Wisconsin and Seattle, Washington).

Lyondell Chemical Company **Comment: 006/0057** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of “generic” endpoints, and facility flows.

Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of a new information.

Lyondell Chemical Company **Comment: 006/0058** **Response: 004/0123**

The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Lyondell Chemical Company **Comment: 006/0059** **Response: 004/0124**

The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

Lyondell Chemical Company **Comment: 006/0060** **Response: 004/0125**

Facilities should be allowed to report loadings on a “net” basis for POCs with non-point source load allocations.

Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. “Background” loads in segment water—including upstream, tributary, atmospheric, and non-point source loads—are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all “background” contributions from the facility’s measured final discharge load.

Lyondell Chemical Company **Comment: 006/0061** **Response: 004/0126**

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable,

averaged basis.
TMDL WLAs should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

Sasol North America, Inc. **Comment: 007/0001** **Response: 007/0001**

Sasol will soon receive an NPDES permit from EPA Region 6 that will authorize discharge through a high-rate diffuser into the upper Calcasieu Estuary (subsegment 030301) just upstream of the Clooney Island loop. The draft TMDL lists the Sasol discharge into Bayou Verdine. Upon issuance of the NPDES permit, the process wastewater will discharge to the Calcasieu River, except during emergencies or when maintenance is being performed on the effluent pipeline or diffuser.

Sasol North America, Inc. **Comment: 007/0002** **Response: 007/0002**

EPA exceeded its authority for the pollutants included in TMDL. Section 303(d) of the Clean Water Act is very clear that TMDLs are to be developed for pollutants that exceed water quality standards, not for ad hoc lists of pollutants generated from guidance.

Sasol North America, Inc. **Comment: 007/0003** **Response: 004/0022**

The TMDL mass balance methodology used by EPA is overly simplistic. A more rigorous analysis using fate and transport modeling, such as WASP6 and similar models, is considered necessary particularly for a system as hydraulically complex as the Calcasieu Estuary.

Sasol North America, Inc. **Comment: 007/0004** **Response: 004/0062**

The draft TMDL has not developed an adequate scientific basis for establishing TMDLs to address sediment toxicity.

Sasol North America, Inc. **Comment: 007/0005** **Response: 004/0022**

The TMDL mass balance methodology used by EPA is overly simplistic, particularly for a system as hydraulically complex as the Calcasieu Estuary. Such complexity requires fate and transport modeling to generate scientifically acceptable TMDLs. This modeling should include hydrodynamics and water column/sediment pollutant interactions. EPA used a mass balance approach to model toxic pollutants in the Calcasieu Estuary system. The mass balance approach is most problematic for simulating compliance with water quality criteria that have a short-term exposure basis, e.g., acute and chronic aquatic life criteria. A mass balance across an entire surface water subsegment that is miles in length and contains islands and looping channels (e.g., the Upper Calcasieu Estuary and Ship Channel) is inadequate for demonstrating compliance with water quality criteria. The mass balance analysis is especially problematic for aquatic life criteria because temporal-spatial concentration differences must be properly simulated to assure that waste load allocations are protective, but not overly so. The Louisiana Department of Environment Quality's (LDEQ) water quality criteria and implementation methods are designed to assure that the standards are met at all places in the water body, but the TMDL approach used by EPA fails to accomplish this objective.

Sasol North America, Inc. **Comment: 007/0006** **Response: 004/0023**

The hydrodynamics of a surface water body determine the transport of chemicals and particulates. As described in the draft TMDL, the Calcasieu Estuary, with its ship channel, islands, lakes, and tributary bayous has very complex hydraulics and pollutant transport. Rather than justifying the simplifying assumption of a mass balance, this complexity demands

development of a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants. The foundation of a TMDL is the ability to satisfactorily simulate the hydraulics of the surface water body of concern. This has not been done for the draft TMDL.

Sasol North America, Inc. **Comment: 007/0007** **Response: 004/0024**

Another major deficiency of the TMDL performed by EPA is the failure of the mass balance to account for pollutant fate including both water column-sediment interactions, partitioning of pollutants to solids, and processes such as biodegradation and volatilization. These processes are not considered in this TMDL, but are necessary in order to develop technically supported waste load allocations.

Sasol North America, Inc. **Comment: 007/0008** **Response: 002/0008**

EPA must not use a list of "pollutants of concern" (POC) as the target pollutants for TMDLs. Section 303(d) of the Clean Water Act is very clear that TMDLs are to be performed for pollutants that exceed water quality standards, not for ad hoc lists of pollutants generated from guidance.

Section 303(d)(1)(A) of the Clean Water Act (CWA) requires that:

"Each State shall identify those waters or parts thereof within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters."

Section 303(d)(1)(C) requires that:

"Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation."

Section 304(a)(2) of the CWA establishes the procedures that states must follow to adopt water quality criteria and standards to protect designated uses. Pollutants identified under section 304(a)(2), as identified in section 303(d)(1)(C), are those pollutants specifically identified in a state's water quality standards. In the case of narrative standards for toxic pollutants, a scientifically based translator must be developed by the state to implement the standard.

Sasol North America, Inc. **Comment: 007/0009** **Response: 002/0001**

The draft TMDL uses pollutant targets based on its POC list. Pollutants on the POC list that have no numeric criteria in Table 1 of LAC 33:1131 have no legal status for the TMDL and should not be used as targets. Where a narrative standard is the basis for identification of a designated use impairment (i.e. on the section 303(d) list), then EPA has the obligation to develop a scientifically-supported site-specific numeric water quality criterion for each and all pollutants that can be correlated to the impairment. It is unacceptable to use pollutant concentrations presented in guidance as TMDL targets, because these are not water quality standards and they have not been demonstrated to be the cause of toxicity at any specific location.

Sasol North America, Inc. **Comment: 007/0010** **Response: 004/0071**

Sediment quality guidance values and EPA's national water quality criteria cannot be used for a TMDL because they have not been adopted as provisions of the LDEQ's water quality standards. EPA has used the LDEQ surface water quality standards (LAC 33:IX.1101-1123) as compliance targets for the TMDL. The LDEQ criteria are appropriate for this purpose because they were adopted by LDEQ through formal rulemaking, including public comment, and have been approved by EPA.

Sasol North America, Inc. **Comment: 007/0011** **Response: 004/0072**

The EPA also used several other databases as TMDL targets for specific pollutants: (1) EPA national water quality criteria (EPA WQC) (63 Fed. Reg. 68354, December 10, 1998); (2) effects range-median (ERM) values for sediments that were developed by the National Oceanic and Atmospheric Administration (NOAA); and EPA's equilibrium partitioning sediment guidelines (ESG). None of these databases that were used as TMDL targets have been adopted as Louisiana water quality criteria. They have no legal standing and have not been subject to public review and comment through a rulemaking process at either the national level or in Louisiana. Therefore, they cannot be legally used as TMDL targets unless the TMDL shows that they are correlated to water column or sediment toxicity, or bioaccumulation in aquatic animals, to a sufficient extent that they can be used in a cause-effect relationship to develop waste load allocations (WLA) and load allocations (LA) for point and non-point sources, respectively.

Sasol North America, Inc. **Comment: 007/0012** **Response: 004/0073**

Sediments can be listed as impaired based on measured toxicity and the LDEQ's narrative toxicity standard (LAC 33:IX.1113.B.5); however, a toxicity identification evaluation (TIE) must be performed to identify the specific pollutant(s) causing the toxicity before a TMDL can be performed. EPA has not performed a TIE for sediments, or the water column, that identifies the pollutant or pollutants that are allegedly causing the measured toxicity. Neither have they presented in the draft TMDL any scientific analysis that demonstrates that the EPA WQC, NOAA ERM, or EPA ESG values have any relationship to the measured sediment and water column toxicity identified in certain segments of the estuary. Therefore, the use of these "targets" that are based on numeric levels in EPA and NOAA guidance that has never undergone review and comment as substitute water quality standards for Louisiana is unlawful and technically unsupported.

Sasol North America, Inc. **Comment: 007/0013** **Response: 004/0062**

NOAA ERM concentrations are not appropriate for establishing site-specific sediment toxicity correlations or TMDL targets. NOAA developed its sediment quality guidelines, including the ERM values, to assist it in the identification of sediments that required additional study in its National Status and Trends Program. These sediment quality guidelines are not intended to be sediment criteria and should not be used for this purpose. NOAA's summary of its guidelines includes the following statement:

"The SQGs were not promulgated as regulatory criteria or standards. They were not intended as cleanup or remediation targets, nor as discharge attainment targets. Nor were they intended as pass-fail criteria for dredged material disposal decisions or any other regulatory purpose. Rather, they were intended as informal (non-regulatory) guidelines for use in interpreting chemical data from analyses of sediments."

The NOAA SQGs cannot be used as de facto sediment quality criteria because they represent a range of aquatic organism species, sediment characteristics, and aquatic environments. The SQGs do not consider the bioavailabilty of pollutants that are influenced by local sediment and water chemistry. Likewise, the sensitivity of resident aquatic species is not reflected by the SQGs. Therefore, use of the NOAA SQGs as TMDL targets for certain pollutants found in sediments is not scientifically supported and cannot be the basis for the draft TMDLs.

EPA's SQGs are not sediment quality criteria and are not appropriate as TMDL targets.EPA's SQGs are based on the equilibrium partitioning concept. EPA originally proposed these values as sediment quality criteria but subsequently has identified them as guidelines because they do not

reflect site-specific conditions and bioavailability of pollutants with sufficient reliability to be used as numeric sediment quality criteria. This is true even though they consider the sediment organic content and acid volatile sulfides concentrations to predict the potential toxicity of nonionic organic chemicals and metals, respectively. The EPA SQGs are intended to be used in the same way as the NOAA SQGs — to identify sediments that merit additional study to determine whether toxicity is present and, if so, to conduct the required site-specific studies to identify the causative pollutant(s). They are not sediment quality criteria and cannot be used as target concentrations for a TMDL.

In summary, the draft TMDL has not developed an adequate scientific basis for establishing TMDLs to address sediment toxicity.

No site-specific analysis is provided in the draft TMDL to support a site-specific correlation between sediment toxicity and the EPA and NOAA SQGs. Louisiana has no sediment quality criteria. In order to use LDEQ's narrative toxicity standard to address sediments, a site-specific cause and effect correlation between sediment pollutant concentrations and sediment toxicity must be determined before protective concentration targets can be established for a TMDL (i.e., a narrative standard translator). Because the SQLs are not sediment criteria and both EPA and NOAA explicitly caution against using them as such, the SQLs must not be used as TMDL targets unless such a correlation can be shown with site data. Moreover, this correlation should be pollutant-by-pollutant in order to have scientific integrity for the TMDL process.

Sasol North America, Inc. **Comment: 007/0016** **Response: 004/0078**

Because EPA has not developed an acceptable narrative standard translator for sediment toxicity, the proposed TMDLs for sediment in the draft TMDL are not scientifically supported and should not be adopted. Instead, EPA should provide for a data collection program to conduct the necessary sediment toxicity identification evaluations (TIE) to determine the pollutants causing sediment toxicity and the appropriate pollutant concentration targets.

Sasol North America, Inc. **Comment: 007/0017** **Response: 007/0017**

Assuming zero loadings for anthropogenic pollutants in upstream flows and tributaries is appropriate.

The draft TMDL assumes that the background concentrations of anthropogenic pollutants is zero. Sasol agrees that this assumption is appropriate and it should be included in the final TMDL methodology. This assumption is also justified for the polynuclear aromatic hydrocarbons (PAH) which, although not strictly limited to anthropogenic sources, are not typically found in surface waters at significant concentrations when they originate from natural sources.

Sasol North America, Inc. **Comment: 007/0018** **Response: 004/0081**

It is technically incorrect to use non-point source loadings for aquatic life criteria that are evaluated at the 7Q10. There will be no surface runoff from rain events when the 7Q10 occurs; therefore there should be no non-point source loadings of pollutants under this flow condition. The draft TMDL uses a flow-based ratio method to estimate non-point source runoff contributions at critical low flow in the tributaries and estuary (draft TMDL, page 14). No technical analysis is provided to support that any surface runoff (i.e., non-point source flows) will occur coincident with the 7-day, 1-in-10-year low stream flows (7Q10). In fact, it is logical to assume that there will be no surface runoff during the critical low flow periods for this basin. The potential for surface runoff can be evaluated by reviewing the stream flow records in the

watershed to determine when the 7Q10 flow has most recently occurred and then collecting and evaluating precipitation records for the same time period. It is probable that even if there is precipitation somewhere within the watershed during the period when the 7Q10 occurs, it will be very limited in both amount and spatial distribution and will not contribute non-point source loadings of significance. The TMDL should be recalculated assuming that there is no non-point source loading for all pollutants that have aquatic life criteria as targets, i.e., those waste load allocations that are based on the 7Q10. It is appropriate to use the annual average non-point source loading for annual loading estimates, where such loads are used for the TMDL.

Sasol North America, Inc. **Comment: 007/0019** **Response: 007/0019**

EPA used one atmospheric deposition station to estimate the potential mercury contribution by atmospheric sources. There are other EPA databases that should be consulted to determine the importance of this source of mercury. In the draft TMDL, EPA used a single atmospheric deposition station located within the Calcasieu Estuary watershed to estimate the contribution of atmospheric mercury to the surface water loading of this chemical. The estimated rate of mercury deposition used in the TMDL was 10.6 µg/m2 per year (draft TMDL, page 15). In the TMDL that EPA Region 4 performed on the Savannah River, it used the RELMAP model from EPA's 1997 Mercury Study Report to Congress to estimate wet and dry deposition rates for mercury. The estimated annual wet deposition rate for the entire Savannah River basin was 12.2 µg/m2 and the annual dry rate was 8.22 µg/m2 for a total deposition rate of 20.42 µg/m2. This is almost twice the rate used for the Calcasieu Estuary.

Sasol North America, Inc. **Comment: 007/0020** **Response: 007/0020**

If EPA has underestimated the atmospheric deposition rate for mercury, it may have overestimated the importance of the contribution of mercury by point sources to any measured fish tissue concentrations. In other locations, such as the Savannah River TMDL, atmospheric deposition is estimated to constitute well over 90% of the mercury that enters surface waters. In such cases, additional controls on point sources are ineffective at improving water quality and are extremely costly. EPA should reevaluate its estimates of atmospheric deposition in the Calcasieu Estuary watershed using all available and relevant databases.

Sasol North America, Inc. **Comment: 007/0021** **Response: 007/0021**

It appears that EPA has only estimated the contribution of atmospheric mercury deposition due to direct deposition on the surface of the waterbodies. If this is the case, it has significantly underestimated the mercury loading due to atmospheric deposition.

EPA has recently published its Mercury Maps study, which quantitatively links atmospheric deposition of mercury to fish tissue concentrations. This EPA study indicates that greater than 75% reduction in atmospheric deposition of mercury could be required in the Calcasieu Estuary in order to achieve acceptable fish tissue concentrations. The Mercury Maps study and the Savannah River TMDL both consider the atmospheric deposition of mercury on the entire watershed, with subsequent discharge to the surface water during runoff events. This source of mercury is several orders of magnitude greater than the atmospheric deposition of mercury on the water surface. If EPA only estimated the deposition of mercury on the water surfaces of the Calcasieu Estuary, it has significantly underestimated the mercury loadings from this source.

Sasol North America, Inc. **Comment: 007/0022** **Response: 007/0022**

If EPA has underestimated the atmospheric deposition rate of mercury for the draft TMDL, it will overestimate the required reductions in effluent mercury from point sources. The result is

that point sources are faced with possible mercury waste load allocations that may be both unachievable and unnecessary. If atmospheric deposition of mercury is the cause of impaired surface water quality, which EPA has indicated is likely to be true in the majority of watersheds in the country, then assigning very low effluent loadings of mercury to point sources will not eliminate the impairment but will place an undue burden on points sources that have little or no contribution to the impairment.

EPA should reevaluate its atmospheric mercury deposition estimates and should not establish numeric mercury allocations to point sources unless it demonstrates that they are causing and/or contributing to the impairment.

Sasol North America, Inc. **Comment: 007/0023** **Response: 007/0023**

There will be essentially no atmospheric deposition of the volatile organic pollutants reported in the toxics release inventory. Therefore, it is inappropriate to include the loadings for these pollutants in the non-point source loading terms. EPA used the toxics release inventory (TRI) data for facilities in the watershed to estimate the potential for organic chemicals to enter the watershed by atmospheric deposition (draft TMDL, page 14). These data are provided in Appendix B of the report. Ultimately, EPA did not use any of the TRI data for organic chemicals to calculate atmospheric deposition. This decision is appropriate because most of the reported compounds are gases at atmospheric temperature and pressure and will have a very low potential to enter surface water by wet or dry deposition.

Sasol North America, Inc. **Comment: 007/0024** **Response: 004/0085**

A hydrodynamic model should have been used to estimate flows and dispersion in the estuary. Because of tidal dispersion the water column-sediment interactions are very important in this estuary, and the failure to use a modeling approach that accounts for tidal dispersion and sediment transport is a fatal flaw in the TMDL.

EPA states that it evaluated the use of the WASP6 model to simulate pollutant transport and fate in the estuary and tributaries (draft TMDL, page 16). It abandoned this effort and selected the mass balance approach because:

"Although the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited. Because of these limitations, model results varied over a large range, depending on assumptions made about parameters for which there were no data. As a result, the use of the model as a quantitative tool to estimate allowable loads was not deemed appropriate."

This is not a justifiable reason to abandon the scientifically supported approach needed for a TMDL of this importance and magnitude. Indeed, this statement indicates that because EPA was under a schedule set by Court Order, it abandoned the best available scientific tools to perform the TMDL in order to meet its schedule.

Sasol North America, Inc. **Comment: 007/0025** **Response: 004/0086**

TMDLs are routinely conducted by states and EPA using literature values for certain of the fate constants used in WASP6 and similar models. EPA has issued numerous guidance documents on selecting necessary coefficients for these models and performing sensitivity analyses of the results to better understand the reliability of model predictions. , Models can also be parameterized using sensitivity analysis and/or optimization approaches. As a worst case simplification, pollutants that are modeled could be considered as conservative (i.e., not subject

to biodegradation, chemical reactions, biodegradation or volatilization) in a model that simulates the hydrodynamics of the system. Even a conservative pollutant simulation approach using an appropriate mass transport model would be preferable to a mass balance. The mass balance approach does not allow any analysis of the precision and accuracy of the TMDL results, which is a fundamental concept that EPA included in the 2000 TMDL regulation.

The transport and dispersion of pollutants in the Calcasieu Estuary is complex and must be considered in any TMDL analysis. The basic hydrodynamics of the system can be represented by a number of models, including WASP6, and only requires fresh water inflows, tidal data, and the bathymetry of the estuary and tributaries (including the ship channel) to obtain realistic simulation. This information is readily available and should have been used to develop a model for determining pollutant transport in the tributaries and estuary (a previous water quality model developed by LDEQ for dissolved oxygen evaluations has sufficient hydraulic data to serve as a starting point).

EPA should redo the draft TMDL using an appropriate model to simulate the complex hydrodynamics of the Calcasieu Estuary. The hydrodynamic model should be calibrated and verified with tidal data and salinity data, both of which are available.

Once an acceptably calibrated hydrodynamic model is available, a water quality model using those hydrodynamics should be developed. The WASP6 model would be acceptable. Alternatively, other models could also be used if they represent the fate and transport processes that occur in the estuary. As a minimum, the water quality model should include chemical reactions, biodegradation, volatilization, and particulate attachment and sedimentation for organic chemicals and particulate partitioning and sedimentation for metals. It must also include sediment resuspension and transport, for reasons discussed later in these comments. The water quality model should be calibrated to the extent practical with available data. Where insufficient data are available, then sensitivity analyses should be performed to determine the uncertainty in the model predictions. All of this information is justified for a TMDL that is as complex and has as much potential impact on dischargers as this one does.

Sasol North America, Inc. **Comment: 007/0026** **Response: 004/0089**

EPA's statement that tidal dispersion at low flows is unimportant and can be ignored is not accurate for the main channel of the estuary.

PA states in the draft TMDL report that tidal dispersion is not important at low (critical) stream flows (draft TMDL, page 18). Also, EPA states that no estimates of tidal dispersion are available to use in a model. Both of these statements are inaccurate. Failure to account for tidal dispersion (which LDEQ considers in NPDES permitting actions) results in over-conservative estimates for discharges to the estuary and is another major technical flaw in the TMDL evaluation. As stated in the previous comment, it is not true that a hydrodynamic model is impractical. Tidal records, salinity, bathymetry, and major inflow are all available and because basic hydraulics of estuarine systems can be reliably simulated with such models, they should be used to predict the effects of tidal dispersion.

Sasol North America, Inc. **Comment: 007/0027** **Response: 004/0091**

The TMDL incorrectly excludes partitioning of organic chemicals and metals to particulates and subsequent sedimentation and potential resuspension.

EPA states that it did not include partitioning of organic chemicals and metals to particulates and subsequent sedimentation because: (1) it has no estimates of particle density and sedimentation rates; and (2) if metals and organic chemicals in particulates accumulate in contaminated

sediments they will contribute to an existing impairment (draft TMDL, page 18). Both of these arguments for not dealing with this fate mechanism are unjustified.
With respect to sedimentation rates, there are ample data in the technical literature that can be used to estimate such rates in tidally-affected surface waters. As discussed earlier, default rates for variables such as sedimentation of particulates can be used in a model and sensitivity analyses can be used to establish acceptable estimates for prediction of water column pollutant concentrations. The particulates settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. A simple calculation will show that if a point source is achieving a water quality-based effluent limit (WQBEL) for a pollutant such as a metal, the concentration of the metal in any particulates that are discharged will typically be well below the elevated sediment concentrations reported in some segments of the Calcasieu Estuary. However, such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.
A very important issue with respect to sediment-water column interaction and the fate of organic chemicals and metals in the Calcasieu Estuary is not evaluated by EPA (other than mentioning it) in the TMDL. Most if not all of the sediment contamination in the estuary and its tributaries is likely to be a legacy issue, from past discharges that were not treated as effectively as they are today. The existing discharges may not contribute to the existing sediment contamination and may actually be diluting sediment contaminant concentrations if they are having any effect at all. However, EPA did not evaluate any fate or transport mechanisms with respect to sediment contamination so there is no information or evaluation to determine if existing discharges are contributing to sediment pollutant concentrations. The absence of any scientific analysis of the cause and effect relationship between discharges and sediment contaminants results in a scientifically flawed TMDL.

Sasol North America, Inc. **Comment: 007/0028** **Response: 004/0067**

The method used in the draft TMDL to calculate waste load allocations for sediment contaminants (PAHs, pesticides, etc.) has no scientific basis because it does not relate pollutant loads in the water column to concentrations in the sediment.
EPA assumes in the draft TMDL that if the water quality criteria for organic chemicals and metals are achieved, the sediment targets will also be achieved. This assumption has no scientific foundation and is not supported by any technical analysis in the draft TMDL report. If the sediment concentrations are due to historic discharges (before current treatment was installed), then there is no correlation between the current point source discharges and the sediment pollutant concentrations. As described in the preceding comment, EPA must evaluate and determine the cause and effect between organic chemical and metal concentrations in point and non-point discharges, the water column, and sediments before it can perform the TMDL for sediments. It has not done this so the draft TMDL is fatally flawed with respect to the evaluation of sediments.

Sasol North America, Inc. **Comment: 007/0029** **Response: 004/0083**

Margins of safety for TMDLs should be based on estimates of the uncertainty of the estimated waste load and load allocations. EPA has done no analysis that justifies its MOS of 20%.
The draft TMDL uses an arbitrarily specified margin of safety (MOS) of 20% (draft TMDL, page 20). EPA has stated in the TMDL regulation that the MOS should be based on the estimated

uncertainty in the TMDL predictions. While this regulation is not yet effective, this recommendation is both scientifically sound and good public policy. EPA should base the MOS on an uncertainty analysis of the TMDLs.

Sasol North America, Inc. **Comment: 007/0030** **Response: 004/0102**

EPA must perform uncertainty analyses of its TMDLs in order to demonstrate the reliability and reasonableness of the waste load allocations.

The draft TMDL assumes that all of the impairments identified in the Calcasieu Estuary can be eliminated by control of point sources. The draft TMDL prepared by EPA makes no attempt to estimate the uncertainty in the proposed waste load allocations and load allocations. Estimates of uncertainty are essential to allow the regulated community and the general public to understand how effective the proposed TMDLs will be in achieving the water quality objectives.

If an appropriate uncertainty analysis is conducted, it will allow identification of those portions of the TMDL that require more data collection and analysis to result in waste load allocations and load allocations that will eliminate the impairments, but will not be so overly conservative that they cause excessive economic and social impacts.

Sasol North America, Inc. **Comment: 007/0031** **Response: 004/0014**

LDEQ's chronic criterion for mercury is not a water quality standard, but rather is a screening level based on tissue residues. It is not appropriate to use the LDEQ screening level as though it is a chronic aquatic life criterion that must be achieved at the critical low flow.

The draft TMDL uses the Louisiana surface water chronic aquatic life criterion as the target for mercury TMDLs (draft TMDL, Appendix A). This mercury criterion is actually a screening level and if it is exceeded in the water column, the standards require that fish tissue samples be analyzed for methyl mercury and compared to the Food and Drug Administration tissue action level of 1 mg/kg (footnote 11 to Table 1, LAC 33:IX.1113). The standards specify that if fish tissues concentrations of methyl mercury exceed the FDA action level, LDEQ must initiate the necessary studies to establish a protective site-specific water quality criterion for mercury. Because the LDEQ mercury criterion is not a water quality standard, but rather is a trigger to determine when a water quality criterion is required for a specific site, it cannot be used as a TMDL target. Moreover, because it is based on bioaccumulation (i.e., tissue concentrations), it should not be applied as though it were an aquatic life criterion that must be achieved at critical low flow (7Q10). It is actually a human health criterion (it relates to the FDA action level of methyl mercury) and thus any derived mercury water quality criterion and TMDL target should be applied at the harmonic mean flow, which is used as the exposure basis for bioaccumulative pollutants.

The TMDLs for mercury in all subsegments of the Calcasieu Estuary are inconsistent with regulatory requirements because they are not based on a numeric water quality criterion that has been developed as required by LAC 33:1113, Table 1, footnote 11. EPA must develop a site-specific mercury criterion using the methodology prescribed in the Louisiana water quality standards to use as a TMDL target, and should apply this site-specific criterion as a long-term average (i.e., using the harmonic mean flow).

Sasol North America, Inc. **Comment: 007/0032** **Response: 003/0004**

The TMDL should indicate that site-specific aquatic life water quality criteria for copper, lead, nickel, and zinc may be appropriate for the Calcasieu Estuary. If such site-specific criteria are appropriate, the TMDL should be revised.

Several states have identified reassessment of their water quality criteria using site-specific conditions as one of the first steps in their TMDL procedures. The reason for this is that aquatic life criteria that are based on EPA's national criteria are often overprotective when site-specific bioavailability of a pollutant is considered. This is especially true for metals. For example, in August 2000, Texas adopted site-specific aquatic life criteria for the Houston Ship Channel, side bays and tributaries, and San Jacinto Bay, which are estuarine systems with hydraulic and biological characteristics that are similar to the Calcasieu Estuary. The revised copper criteria, which are based on the EPA's water effects ratio (WER) method for developing site-specific criteria, are greater than the statewide estuarine copper criteria that are based on the EPA national criteria by a factor ranging from 1.9-2.3. EPA Region 6 approved these site-specific copper criteria on February 27, 2002.

It is probable that the existing Louisiana statewide criteria for copper, lead, nickel and zinc in estuarine waters are also overprotective. The draft TMDL should provide for development of site-specific aquatic life criteria for these metals and adjustment of waste load allocations if such criteria are greater than the statewide criteria.

Sasol North America, Inc. **Comment: 007/0033** **Response: 002/0012**

The draft TMDL incorrectly locates the Sasol and Conoco treated process water discharges. Both Sasol and the Conoco refinery historically discharged treated process effluent and storm water to Bayou Verdine. However, in the early 1990's both companies made plans and constructed outfall lines and high-rate diffusers that discharge to the Upper Calcasieu Estuary (subsegment 030301), just upstream of the Clooney Island Loop. These discharge locations have been approved by both the LDEQ and EPA Region 6. Because of delays in issuing a final NPDES permit, Sasol's discharge to the Calcasieu Estuary will not begin until May or June 2002. Conoco's discharge to the estuary began earlier. The draft TMDL evaluates both of these treated discharges as though they are still to Bayou Verdine (draft TMDL, page 24). The TMDL must be revised to relocate these discharges to subsegment 030301 and delete them from Bayou Verdine.

Sasol North America, Inc. **Comment: 007/0034** **Response: 004/0062**

EPA's identification of pollutants of concern (POC) for Bayou Verdine based on sediment quality targets is not technically justified and is not lawful.

Thirteen of eighteen of the POC identified for Bayou Verdine are based on EPA and NOAA SQGs (draft TMDL, Table 5). As discussed previously in these comments, these SQGs are not sediment quality criteria and have no legal status as Louisiana water quality criteria. Furthermore, EPA has not shown that any of the SQGs are scientifically appropriate translators of LDEQ's narrative toxicity standard. Therefore, TMDLs should not be developed for any of the 13 pollutants listed in Table 5 for Bayou Verdine sediment toxicity until scientifically based site-specific sediment concentration targets are developed.

Sasol North America, Inc. **Comment: 007/0035** **Response: 004/0106**

The draft TMDL proposes wasteload allocations for certain pollutants that are lower than the applicable surface water criterion. This result conflicts with the NPDES regulations, because a discharge that is at a water quality criterion concentration cannot cause or contribute to an exceedance of that criterion.

EPA applies its arbitrary MOS of 20% to each TMDL that it calculates, which results in waste load allocations for Sasol and Conoco that are lower than the limits that are calculated with the

applicable water quality criteria for zinc, mercury, and nickel. For example, EPA states that the zinc limit for Sasol that is calculated by applying the water quality criterion as an end of pipe limit (no mixing zone) is 1.95 lb/day (draft TMDL, page 31). The proposed zinc TMDL for Sasol is 1.6 lb/day (draft TMDL, Table 15). Thus, because of the 20% MOS applied by EPA, the allowable TMDL for Sasol is approximately 20% lower than the water quality criterion.
Sasol believes that the proposed waste load allocation for zinc, and for mercury and nickel, are not consistent with EPA's NPDES regulations for water quality-based effluent limits (40 CFR 122.44(d)) because if the effluent concentrations are equal to the water quality criterion for a pollutant, the discharge cannot cause or contribute to an exceedance of the criterion because it cannot increase the ambient concentration above the criterion. A waste load allocation that is set below the applicable criterion is inconsistent with EPA permitting regulations and is not scientifically justified. These TMDLs must be revised to set the waste load allocations at concentrations no lower than the applicable water quality criteria.

Sasol North America, Inc. **Comment: 007/0036** **Response: 004/0107**

The analysis for calcium limits in Bayou Verdine has no scientific foundation and, in fact, no site-specific data were used to generate the waste load allocation.
The TMDL establishes proposed waste load allocations for calcium, based on the assumption that calcium is causing sediment toxicity (draft TMDL, pages 31-32). This assumption is based on an inconclusive TIE performed by EPA's contractor. The draft TMDL indicates that the TIE didn't reduce toxicity of the sediments significantly using a range of treatment, and states that these results "suggest" an ion imbalance due to calcium is the cause of toxicity. A TMDL should not be based on a "suggestion" of the cause of toxicity.

Sasol North America, Inc. **Comment: 007/0037** **Response: 004/0108**

Once calcium was identified as the "suggested" target pollutant, the "criterion" was derived from water column data taken from the 1999-2000 EPA Superfund monitoring program (draft TMDL, page 32). This value is incorrectly listed in Appendix A of the TMDL as a chronic water quality criterion. It has not been officially adopted by LDEQ as such. There are two fundamental problems with EPA's selection of a calcium target for the TMDL: (1) there is no technical analysis to demonstrate that calcium in the water column has any correlation to calcium in the sediments; and (2) the calcium data used by EPA was taken from the entire surface water database for the Calcasieu Estuary TMDL and thus has no demonstrated relevance to the site-specific conditions in Bayou Verdine. In fact, there are no calcium data for Bayou Verdine in the EPA database. All of the data are taken from other areas of the estuary and are thus of questionable validity for projecting protective concentrations for the sediments in Bayou Verdine.
The TMDL for calcium in Bayou Verdine is based on a series of assumptions, none of which are supported by any scientific analysis. This TMDL should be deleted from the final TMDL. It should be replaced by a sediment TIE program that when properly designed and executed, will identify the pollutant or pollutants that are causing the toxicity. EPA requires meeting this objective when an individual discharger performs a TIE — no less should be required of EPA before a TMDL is developed.

Sasol North America, Inc. **Comment: 007/0038** **Response: 002/0012**

The Sasol and Conoco refinery dischargers should be added to the list of point sources for the Upper Calcasieu Estuary and Ship Channel subsegment.

As indicated earlier in these comments, the discharge from Sasol's Outfall 001 should be relocated from Bayou Verdine to the Upper Calcasieu Estuary and Ship Channel. The high-rate diffuser is located on the north side of the estuary at a distance of approximately 2000 feet upstream of the Clooney Island Loop. The Conoco diffuser is located 250 m downstream of the Sasol diffuser.

W.R. Grace & Co. **Comment: 008/0001** **Response: 008/0001**

W. R. Grace & Co. agrees with the recommended delisting of ammonia as causing any toxic impairment to segment 030301 of the Calcasieu Estuary, where the W. R. Grace & Co. plant discharges. Ammonia has always been a monitored parameter of the plant water permit and is reported on the monthly Discharge Monitoring Report (DMR). Ammonia is a raw material for the plant, being used in almost all the units.

W.R. Grace & Co. **Comment: 008/0002** **Response: 008/0002**

Copper, mercury, benzo(a)anthracene and benzo(a)pyrene are not used directly in any of the plant processes. Also, these compounds are not known to be in any of the raw materials or ancillary chemicals used in the plant processes. The last effluent priority pollutant scan (see attached) showed the concentrations for these four chemicals to be below the Minimum Quantification Level (MQL) for each test, which supports the fact that these chemicals are not used in the plant processes. Therefore, W. R. Grace & Co. believes these four chemicals are not discharged by the plant, and a wasteload allocation for them is not warranted.
Therefore, based on plant operations and effluent test data, W. R. Grace & Co. respectfully requests that the W. R. Grace & Co. name be removed from each list of plants receiving wasteload allocations for copper, mercury, benzo(a)anthracene and benzo(a)pyrene. The final TMDL for toxics in the Calcasieu Estuary would show our draft wasteload allocation going to the remaining plants on the list.

Citgo Petroleum Corporation **Comment: 009/0001** **Response: 004/0002**

The State of Louisiana has primacy in determining whether to add waters to the state's 303(d) list, and the state should be given the opportunity to review any data relied upon by EPA to determine (i) whether the 303(d) list should be amended to include the above pollutants or (ii) whether the data show that no impairment due to these pollutants exists. By reproposing TMDLs for pollutants not on the state's 303(d) list, EPA has impermissibly usurped state authority. See, Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d),

Citgo Petroleum Corporation **Comment: 009/0002** **Response: 004/0003**

LCA further submits that to the extent EPA desires to establish TMDLs for pollutants not included on the current 303(d) list, EPA should first establish a revised 303(d) list pursuant to the authorities referenced in the previous paragraph. EPA should not unilaterally establish TMDLs for water quality limited segments absent first revising the 303(d) list to add the pollutants of concern.

Citgo Petroleum Corporation **Comment: 009/0003** **Response: 004/0001**

Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), allows the state (or EPA in the case where the state has failed to act) to establish TMDLs only where technology based effluent limitations are not stringent enough to implement any water quality standard applicable to such waters. In short, TMDLs are authorized only where the state water quality standards are not being met because technology based controls are insufficient. EPA is simply not authorized to establish a TMDL for a pollutant where there is no evidence of impairment. There is no evidence

of impairment for a great number of pollutants for which EPA has proposed TMDLs for the Calcasieu Estuary.

Citgo Petroleum Corporation **Comment: 009/0004** **Response: 004/0005**

Where EPA's investigation of a pollutant shows that the state water quality standard for that pollutant is not being exceeded, then EPA must delist that waterbody for that pollutant on the 303(d) list. Indeed, EPA clearly has proposed to delist 20 waterbody/pollutant combinations in the Calcasieu Estuary and Ouachita River Basin for exactly that reason. See, 67ed. Reg. 15176, March 29, 2002.

Citgo Petroleum Corporation **Comment: 009/0005** **Response: 004/0002**

As the above pollutants were not on the 303(d) list, EPA was not required by law to develop TMDLs for such pollutants. See, 40 C.F.R 130.7(c) and (d). For EPA to develop TMDLs for pollutants not on the current 303(d) list, as here, is arbitrary, capricious, and legally impermissible under the Clean Water Act and regulations promulgated thereunder, as referenced above.

Citgo Petroleum Corporation **Comment: 009/0006** **Response: 004/0007**

EPA has proposed TMDLs for several of the pollutants based on the fact that the detection limit for such pollutants is lower than the relevant water quality standard. This is an inappropriate interpretation of the Clean Water Act. TMDLs are warranted only when there is evidence that a discharge has a reasonable potential to contribute to exceedance of a standard. It is not appropriate for EPA to adopt a TMDL simply because it presumes that substances do exist in the water and presumes further that these will be at levels above the standards. EPA cannot presume impairment without scientific basis. EPA should withdraw TMDLs where there is no detection of such pollutants using reliable data (such as clean and ultra-clean data where warranted). EPA should rely instead on 40 CFR 122.44(d)(1)(i) and (vi)(A) and (B) which require the permitting authority to impose water quality based effluent limits where the discharges from and individual facility have "reasonable potential" to exceed a state water quality standard. Under these rules, if the permitting authority has reason to believe that a pollutant will contribute to an exceedance of the standard, a site-specific limit may be set. This existing rule is fully protective of water quality without the existence of a TMDL.

Citgo Petroleum Corporation **Comment: 009/0007** **Response: 004/0008**

Although LDEQ indicated that HCB, HCBD and PCBs should remain on the 303(d)list, this recommendation was solely due to the existence of a fish consumption advisory from the Louisiana Department of Health and Hospitals. There is no current evidence of impairment of Bayou d'Inde for these parameters even though the Department of Health and Hospitals is protectively continuing the advisory. In fact, water sampling has not detected HCB or HCBD for over 4 years.

Citgo Petroleum Corporation **Comment: 009/0008** **Response: 004/0009**

Further, PCBs are banned from manufacture and most uses under the federal Toxic Substances Control Act, so such regulations provide reasonable assurance that this pollutant will not be an ongoing issue. TMDLs, which address ongoing discharges, are simply unwarranted as they have no impact on water quality.

Citgo Petroleum Corporation **Comment: 009/0009** **Response: 004/0010**

EPA proposed TMDLs for metals without performing data gathering using clean techniques.

This is an invalid scientific approach when EPA is clearly aware that use of data gathered using clean techniques would likely demonstrate that no impairment exists.

Citgo Petroleum Corporation **Comment: 009/0010** **Response: 002/0003**

On August 20, 2001, LDEQ provided "clean techniques" sampling data to EPA demonstrating that there were no exceedances of the aquatic copper criteria in Bayou D'Inde, Bayou Verdine, and the Calcasieu Ship Channel. (The original of this submittal is in EPA Region 6's files. LCA requests that EPA include the original submittal, or a copy thereof, in the official administrative record for this TMDL proceeding.) However, EPA's contractor apparently did not receive or did not consider this data for these waterbodies although similar data was used as a basis for delisting copper in other waterbodies. The data provided by LDEQ to EPA in August 2001 was developed from a report commissioned by PPG titled "A Final Report for Trace Metals "Clean Technique" Sampling and Laboratory Analysis, CK Associates, Inc., March 2001."

Citgo Petroleum Corporation **Comment: 009/0011** **Response: 004/0012**

EPA proposed TMDLs/WLAs for copper, mercury and nickel were based upon data collected and analyzed without use of "clean techniques." As noted above, data collected using clean techniques was already been provided to EPA by LDEQ in August 2001, but apparently was not considered in the study. This data showed that there is no exceedance of the aquatic copper criteria and that Bayou d'Inde should thus be delisted for copper. The "dirty" data used by the EPA contractor showed nickel detected above the criteria in less than 10% of the samples. In light of this data , Louisiana Water Quality Standards ("LWQS") indicate that clean techniques or ultra-clean techniques must be used when other data indicate that a criteria may be exceeded. LAC 33:IX.1113.C.6.f provides: The use of clean or ultra-clean techniques may be required to definitively assess ambient levels of some pollutants (e.g., EPA method 1669 for metals) or to assess such pollutants when numeric or narrative water quality standards are not being attained. Clean and ultra-clean techniques are defined in LAC33:IX.1105. The relevant definitions of "clean" and "ultra-clean" in LAC33:IX.1105 provide: Clean Techniques—those requirements (or practices for sample collection and handling) necessary to produce reliable analytical data in the microgram per liter (µg/L) or part per billion (ppb) range. Ultra-Clean Techniques—those requirements or practices necessary to produce reliable analytical data in the nanogram per liter (ng/L) or part per trillion (ppt) range.

Citgo Petroleum Corporation **Comment: 009/0012** **Response: 002/0003**

The aquatic criteria for copper and nickel are in the part per billion range while the aquatic criteria for mercury are in the part per trillion range. Thus, the data used by the EPA contractor to form the basis for the TMDLs for these pollutants are simply not considered to be reliable data to establish standards in these part per billion and part per trillion ranges. EPA's contractor should have collected additional data for these parameters using clean or ultra-clean techniques as specified by the LWQS because such data is "necessary to produce reliable analytical data" in the ranges established by the standards and the TMDLs. The failure to do so is inexplicable given that only clean or ultra-clean techniques data is considered by the scientific community (and the LWQS) to be the type of data that will support an actual wasteload allocation and the attendant economic burdens that will be imposed on discharging

Citgo Petroleum Corporation **Comment: 009/0013** **Response: 004/0014**

With respect to mercury, EPA did not use ultra-clean techniques. Further, while EPA apparently detected mercury in the ambient water, it has not yet identified any exceedance of the chronic

aquatic protection standard because it did not perform any fish testing. LDEQ's aquatic protection criteria requires fish testing for implementation. LAC 33:IX.1113 Table 3 note 11. EPA data developed in Phase II of the Calcasieu Estuary Superfund Study support LCA's conclusion that there is no exceedance of the aquatic protection criteria. Thus, the TMDL for mercury should be withdrawn.

Citgo Petroleum Corporation **Comment: 009/0014** **Response: 002/0002**

EPA failed to use the correct flows for waterbodies that are tidally influenced. If a waterbody is tidally influenced, EPA must use the average or typical flow averaged over one tidal cycle irrespective of flow direction for dilution calculations. See, LAC 33:IX.1115, Table 2b. (For example, EPA did not use the average tidal flow for evaluation of human health criteria in Bayou D'Inde, even though Bayou D'Inde is tidally influenced.)

Citgo Petroleum Corporation **Comment: 009/0015** **Response: 004/0016**

The treatment of discharge data grossly over-estimated loadings in many cases by ignoring non-detected values in facilities' discharge monitoring reports and/or presuming that pollutants were present when "zero" values were reported for pollutant concentrations below the analyte method detection limit.

Citgo Petroleum Corporation **Comment: 009/0016** **Response: 004/0017**

EPA misused data from the LDEQ Ambient Water Quality Network. All "non-detects" ("ND"s) were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.
EPA misused data from the National Oceanic and Atmospheric Administration's Calcasieu database. All NDs were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.

Citgo Petroleum Corporation **Comment: 009/0018** **Response: 004/0019**

EPA may have inappropriately determined point source loadings. It is unclear whether EPA used permit limits or average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA states says both in the Executive Summary of the Draft Total Maximum Daily Load for Toxics for the Calcasieu Estuary (the "Draft TMDL Document"), p. ES2.

Citgo Petroleum Corporation **Comment: 009/0019** **Response: 004/0020**

Further, nothing in the Draft TMDL Document indicates which years of facility data were reviewed and why that time period was deemed sufficiently representative of normal, authorized plant operations.

Citgo Petroleum Corporation **Comment: 009/0020** **Response: 004/0021**

EPA may have inappropriately determined nonpoint source contributions and failed to consider reductions in nonpoint source loadings.

Citgo Petroleum Corporation **Comment: 009/0021** **Response: 004/0022**

The TMDL mass balance methodology used by EPA is overly simplistic, particularly for a system as hydraulically complex as the Calcasieu Estuary. Such complexity requires fate and transport modeling to generate scientifically acceptable TMDLs. This modeling should include hydrodynamics and water column/sediment pollutant interactions. EPA used a mass balance approach to model toxic pollutants in the Calcasieu Estuary system. The mass balance approach is most problematic for simulating compliance with water quality criteria that have a short-term

exposure basis, e.g., acute and chronic aquatic life criteria. A mass balance across an entire surface water subsegment that is miles in length and contains islands and looping channels (e.g., the Upper Calcasieu Estuary and Ship Channel) is inadequate for demonstrating compliance with water quality criteria. The mass balance analysis is especially problematic for aquatic life criteria because temporal-spatial concentration differences must be properly simulated to assure that wasteload allocations are protective, but not overly so. The water quality criteria and implementation methods of the LDEQ are designed to assure that the standards are met at all places in the waterbody, but the TMDL approach used by EPA fails to accomplish this objective.

Citgo Petroleum Corporation **Comment: 009/0022** **Response: 004/0023**

The hydrodynamics of a surface waterbody determine the transport of chemicals and particulates. As described in the Draft TMDL Document, the Calcasieu Estuary, with its ship channel, islands, lakes, and tributary bayous has very complex hydraulics and pollutant transport. Rather than justifying the simplifying assumption of a mass balance, this complexity demands development of a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants. The foundation of a TMDL is the ability to satisfactorily simulate the hydraulics of the surface waterbody of concern. This has not been done for the Proposed TMDLs.

Citgo Petroleum Corporation **Comment: 009/0023** **Response: 004/0024**

Another major deficiency of the TMDLs performed by EPA is the failure of the mass balance to account for pollutant fate including both water column-sediment interactions, partitioning of pollutants to solids, and processes such as biodegradation and volatilization. These processes are not considered in the Draft TMDL Document, but are necessary in order to develop technically supported wasteload allocations.

Citgo Petroleum Corporation **Comment: 009/0024** **Response: 004/0025**

EPA needs to correct errors in the segment flow.

Citgo Petroleum Corporation **Comment: 009/0026** **Response: 004/0026**

EPA needs to correct errors in facility outfall flow.

Citgo Petroleum Corporation **Comment: 009/0027** **Response: 004/0027**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations. EPA's method for estimating facility maximum discharge (for use with chronic toxicity pollutant of concern ("POC") TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Citgo Petroleum Corporation **Comment: 009/0028** **Response: 002/0013**

In the Draft TMDL Document, EPA has failed to account for the fact that CITGO's outfalls for the CitCon portion of its operations (Outfalls 001, 002, 012) are Bayou D'Inde (Segment 030901). Thus, EPA has erroneously failed to provide wasteload allocations to CITGO with respect to such discharges.

Citgo Petroleum Corporation **Comment: 009/0029** **Response: 009/0029**

In the Draft TMDL Document, EPA has used incorrect estimates of mean flow for CITGO's point source discharge outfalls. The TMDL Draft Document reflects the following flows for CITGO into the Upper Calcasieu Estuary and Ship Channel (030301): average, 11.30 MGD;

max 15.00 MGD. The correct flows for such discharge are: average 50.12 MGD; max, 62.60 MGD. Thus, the flow data used by EPA is off by a factor of 5. This flow information was obtained from CITGO's DMR's for the year 2001.

Citgo Petroleum Corporation **Comment: 009/0030** **Response: 004/0030**

The TMDL Draft Document reflects the following flows for CITGO into Bayou D'Inde (030901): average, 0.0 MGD; max, 0.0 MGD. The correct flows for such discharge are: average, 5.13 MGD; max 9.24 MGD. Thus, the flow data used by EPA is clearly incorrect.

Citgo Petroleum Corporation **Comment: 009/0031** **Response: 009/0031**

EPA's information on the location of several other major point-source discharge outfalls contain numerous significant errors. These errors include:

Conoco--Primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Condea Vista--Permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).

Lyondell--Stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.

PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Citgo Petroleum Corporation **Comment: 009/0032** **Response: 004/0026**

EPA's estimates of mean flow for most major point-source discharge outfalls contain numerous significant errors. These errors include:

Lyondell Calcasieu Ship Channel (Segment 030301) discharge--off by a factor of 4

PPG Bayou D'Inde (Segment 030901) discharge--off by a factor of 10.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of mean flows for each segment.

Citgo Petroleum Corporation **Comment: 009/0033** **Response: 004/0030**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors. EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Citgo Petroleum Corporation **Comment: 009/0034** **Response: 004/0031**

EPA should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach. EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determined. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Citgo Petroleum Corporation **Comment: 009/0035** **Response: 002/0001**

Pollutants of Concern ("POCs"). In the Draft TMDL Document, EPA uses pollutant targets based on its POC list.

Pollutants on the POC list that have no numeric criteria in Table 1 of LAC33:IX.1131 have no legal status for a TMDL and should not be used as targets. Where a narrative standard is the basis for identification of a designated use impairment (i.e., inclusion of a pollutant on the 303(d)

list), then EPA has the obligation to develop a scientifically-supported, site-specific numeric water quality criterion for each and all pollutants that can be correlated to the impairment. It is unacceptable to use pollutant concentrations presented in guidance as TMDL targets, because these are not water quality standards and they have not been demonstrated to be the cause of toxicity at any specific location.

Citgo Petroleum Corporation **Comment: 009/0036** **Response: 004/0033**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper. LDEQ (in a letter to EPA dated August 20, 2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

Citgo Petroleum Corporation **Comment: 009/0037** **Response: 004/0034**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" several court-ordered "categorical" impairments.

LDEQ (in a letter to EPA dated October 10, 2001) provided information clarifying the listings of "priority organics" and "non-priority organics" for the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901), and other segments. Based on this information LDEQ stated that the only POCs which are the suspected cause of waterbody impairment are: Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only). LDEQ stated that no other use impairments for organic POCs have been documented. DEQ (in the same letter to EPA dated October 10, 2001) provided information clarifying the listings of "other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

Citgo Petroleum Corporation **Comment: 009/0038** **Response: 004/0035**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of the Calcasieu Estuary area which were not designed to support TMDL determinations. In the Draft TMDL Document, EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

- Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.
- Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.
- Focused Site Investigation, Bayou D'Inde, EPA, July 1996.
- LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996.
- Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.
- Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).
- Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case, these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs:

Citgo Petroleum Corporation **Comment: 009/0039** **Response: 004/0035**

The sampling schemes--locations, depths, compositing, etc.--of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically

representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g., random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Citgo Petroleum Corporation **Comment: 009/0040** **Response: 004/0037**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Citgo Petroleum Corporation **Comment: 009/0041** **Response: 004/0038**

The LDEQ information referred to under Comment 7.c. above--combined with the absence of data showing presence in segment water or sediment above reference levels--should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)
Bromoform, Bayou D'Inde (030901)
1,1, 2, 2 Tetrachloroethane, Bayou D'Inde (030901)

Citgo Petroleum Corporation **Comment: 009/0042** **Response: 002/0003**

Water and sediment quality data in the studies relied upon by EPA were not developed using consistent data quality objectives appropriate for a TMDL process. The reference levels for POCs requires very low detection limits. There is no indication that the above studies used appropriate field and laboratory techniques necessary to assure the quality of these results, particularly a reasonable minimization of false positives at the reference level.

Citgo Petroleum Corporation **Comment: 009/0043** **Response: 004/0040**

In the Draft TMDL Document, EPA does not address whether the above studies relied upon by EPA found the POCs under conditions consistent with application of the reference level--such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Citgo Petroleum Corporation **Comment: 009/0044** **Response: 004/0041**

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Citgo Petroleum Corporation **Comment: 009/0045** **Response: 004/0042**

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh water conditions.

Citgo Petroleum Corporation **Comment: 009/0046** **Response: 004/0043**

Reference levels for fresh water must be adjusted for hardness.

Citgo Petroleum Corporation **Comment: 009/0047** **Response: 003/0004**

Other factors affecting the application of water quality reference levels should be considered (e.g. using techniques similar to a water effects ratio study.)

Citgo Petroleum Corporation **Comment: 009/0048** **Response: 004/0045**

Reference levels that are not appropriate to local biota should not be used.

Citgo Petroleum Corporation **Comment: 009/0049** **Response: 004/0046**

Sediment reference levels should be adjusted based on sediment mineral type, soil type,

AVS/SEM ratio, and other relevant characteristics.

Citgo Petroleum Corporation **Comment: 009/0050** **Response: 004/0047**

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Citgo Petroleum Corporation **Comment: 009/0051** **Response: 004/0050**

Other Inorganics - Bayou d'Inde (030901) was listed on the 303(d) list for "other inorganics". LDEQ discussed the meaning of this term as follows:

Other Inorganics

Subsegment 030901 – Bayou D'Inde – Headwaters to Calcasieu River

The term "other inorganics" was intended as a generic term for those non-metallic inorganic compounds that may occur in the water from brine discharges during oil and gas activities. No water quality sample was collected; therefore, no quantitative assessment was made. Non-metallic inorganic water quality parameters in brine discharges include chlorides, sulfates, total dissolved solids and salinity.

Since Bayou D'Inde is a natural estuarine waterbody frequently influenced by high salinity from the Gulf of Mexico, no water quality criteria for these parameters are set for the bayou in the Louisiana Water Quality Standards. The listing for "other inorganics" in subsegment 030901 was for general informational purposes and not a listing for impairment of water use by any specific parameter.

(Emphasis added.) Thus, it is clear that the term "other inorganics" does not include mercury or nickel. For this reason, EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for mercury and nickel for Bayou D'Inde.

Citgo Petroleum Corporation **Comment: 009/0052** **Response: 004/0034**

The October 10, 2001 letter from the LDEQ to EPA Region 6 as described above, made these recommendations for what pollutants should be de-listed and which should be retained:

De-list priority organics as a suspected cause of impairment for subsegments 030301, 030302, 030303, 030304, 040405, 030306, 030401, and 030402. Subsegment 030901 will remain on the list for priority organics because of a fish consumption advisory for HCB, HCBD, and PCBs.

De-list non-priority organics as a suspected cause from subsegments 030302, 030306, and 030901.

De-list other inorganics as a suspected cause from subsegment 030901.

For these reasons, EPA should have de-listed bromoform, tetrachloroethane and copper from the 3039d) list for Bayou D'Inde (and as noted above, mercury and nickel have never been on the list, so TMDLs should not be developed.

Citgo Petroleum Corporation **Comment: 009/0053** **Response: 004/0052**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations. Interested parties in the Lake Charles area have demonstrated the willingness to undertake detailed sampling studies--e.g., using "clean techniques"--for specific POCs that had previously been identified in the 303(d) list (e.g., copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA's final determination on the Proposed TMDLs.

Citgo Petroleum Corporation **Comment: 009/0054** **Response: 004/0053**

EPA's "flagging method" for identifying POCs from previous investigation data is not

appropriate for a final TMDL determination. As explained on page ES-1 of the Draft TMDL Document, EPA has used a simple screening method to select POCs:

(i) pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; and

(ii) pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples.

This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (e.g., formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs for TMDL development is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management. The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Citgo Petroleum Corporation **Comment: 009/0056** **Response: 004/0001**

EPA has not made use of statistical techniques for evaluating the full range of results for POCs but rather has arbitrarily chosen to evaluate only exceedances.

A selection method based on finding "more than one exceedance" is arbitrary and has no sound scientific or statistical basis.

Citgo Petroleum Corporation **Comment: 009/0058** **Response: 004/0057**

To evaluate a set of results for comparison with a reference level, good scientific, statistical practice requires an appropriate estimate of central tendency--appropriate to the type distribution--and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Citgo Petroleum Corporation **Comment: 009/0059** **Response: 004/0058**

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Citgo Petroleum Corporation **Comment: 009/0060** **Response: 004/0059**

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.

Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

Citgo Petroleum Corporation **Comment: 009/0061** **Response: 004/0060**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to the water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Citgo Petroleum Corporation **Comment: 009/0062** **Response: 004/0061**

EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification--based on scientifically valid,

statistically representative, segment-specific data--for using sediment conditions as a basis for inferring the need for water column POCs and TMDLs.

Citgo Petroleum Corporation **Comment: 009/0063** **Response: 004/0062**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Citgo Petroleum Corporation **Comment: 009/0064** **Response: 004/0063**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

Citgo Petroleum Corporation **Comment: 009/0065** **Response: 004/0064**

ESGs and ERMs are not promulgated standards for protection of water quality and, absent a rigorous scientific justification, should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)
Mercury, Calcasieu Ship Channel (030301)
Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Citgo Petroleum Corporation **Comment: 009/0066** **Response: 004/0071**

Sediment quality guidance values and EPA's national water quality criteria cannot be used for a TMDL because they have not been adopted as provisions of LDEQ's water quality standards. EPA has used the LDEQ surface water quality standards (LAC 33:IX.1101-1123) as compliance targets for the Proposed TMDLs. The LDEQ criteria are appropriate for this purpose because they were adopted by LDEQ through formal rulemaking, including public comment, and have been approved by EPA.

Citgo Petroleum Corporation **Comment: 009/0067** **Response: 004/0072**

EPA also used several other databases as TMDL targets for specific pollutants: (1) EPA national water quality criteria ("EPA WQC") (63 Fed. Reg. 68354, December 10, 1998); (2) effects range-median (ERM) values for sediments that were developed by the National Oceanic and Atmospheric Administration ("NOAA"); and EPA's equilibrium partitioning sediment guidelines (ESG). None of these databases that were used as TMDL targets have been adopted as Louisiana water quality criteria. They have no legal standing and have not been subject to public review and comment through a rulemaking process at either the national level or in Louisiana. Therefore, they cannot be legally used as TMDL targets unless EPA shows in the TMDL that they are correlated to water column or sediment toxicity, or bioaccumulation in aquatic animals, to a sufficient extent that they can be used in a cause-effect relationship to develop wasteload allocations ("WLA") and load allocations ("LA") for point and nonpoint sources, respectively.

Citgo Petroleum Corporation **Comment: 009/0068** **Response: 004/0073**

Sediments can be listed as impaired based on measured toxicity and the LDEQ's narrative

toxicity standard (LAC 33:IX.1113.B.5); however, a toxicity identification evaluation ("TIE") must be performed to identify the specific pollutant(s) causing the toxicity before a TMDL can be performed. EPA has not performed a TIE for sediments, or the water column, that identifies the pollutant or pollutants that are allegedly causing the measured toxicity.

Citgo Petroleum Corporation **Comment: 009/0069** **Response: 004/0074**

Neither has EPA presented in the Draft TMDL Document any scientific analysis that demonstrates that the EPA WQC, NOAA ERM, or EPA ESG values have any relationship to the measured sediment and water column toxicity identified in certain segments of the estuary. Therefore, the use of these "targets" that are based on numeric levels in EPA and NOAA guidance that has never undergone review and comment as substitute water quality standards for Louisiana is unlawful and technically unsupported.

Citgo Petroleum Corporation **Comment: 009/0070** **Response: 004/0062**

NOAA ERM concentrations are not appropriate for establishing site-specific sediment toxicity correlations or TMDL targets. NOAA developed its sediment quality guidelines, including the ERM values, to assist it in the identification of sediments that required additional study in its National Status and Trends Program. These sediment quality guidelines are not intended to be sediment criteria and should not be used for this purpose. NOAA's summary of its guidelines includes the following statement:

The SQGs were not promulgated as regulatory criteria or standards. They were not intended as cleanup or remediation targets, nor as discharge attainment targets. Nor were they intended as pass-fail criteria for dredged material disposal decisions or any other regulatory purpose. Rather, they were intended as informal (non-regulatory) guidelines for use in interpreting chemical data from analyses of sediments.

The NOAA SQGs cannot be used as de facto sediment quality criteria because they represent a range of aquatic organism species, sediment characteristics, and aquatic environments. The SQGs do not consider the bioavailabilty of pollutants that are influenced by local sediment and water chemistry. Likewise, the sensitivity of resident aquatic species is not reflected by the SQGs. Therefore, use of the NOAA SQGs as TMDL targets for certain pollutants found in sediments is not scientifically supported and cannot be the basis for the Proposed TMDLs.

EPA's SQGs are not sediment quality criteria and are not appropriate as TMDL targets. EPA's SQGs are based on the equilibrium partitioning concept. EPA originally proposed these values as sediment quality criteria but subsequently identified them as guidelines because they do not reflect site-specific conditions and bioavailability of pollutants with sufficient reliability to be used as numeric sediment quality criteria. This is true even though EPA considers the sediment organic content and acid volatile sulfides concentrations to predict the potential toxicity of nonionic organic chemicals and metals, respectively. The EPA SQGs are intended to be used in the same way as the NOAA SQGs--to identify sediments that merit additional study to determine whether toxicity is present and, if so, to conduct the required site-specific studies to identify the causative pollutant(s). They are not sediment quality criteria and cannot be used as target concentrations for a TMDL.

In summary, the draft TMDL has not developed an adequate scientific basis for establishing TMDLs to address sediment toxicity. No site-specific analysis is provided in the draft TMDL to support a site-specific correlation between sediment toxicity and the EPA and NOAA SQGs. Louisiana has no sediment quality criteria. In order to use LDEQ's narrative toxicity standard to address sediments, a site-specific cause and effect correlation between sediment pollutant

concentrations and sediment toxicity must be determined before protective concentration targets can be established for a TMDL (i.e., a narrative standard translator). Because the SQLs are not sediment criteria and both EPA and NOAA explicitly caution against using them as such, the SQLs must not be used as TMDL targets unless such a correlation can be shown with site data. Moreover, this correlation should be pollutant-by-pollutant in order to have scientific integrity for the TMDL process.

Citgo Petroleum Corporation **Comment: 009/0073** **Response: 004/0078**

Because EPA has not developed an acceptable narrative standard translator for sediment toxicity, the proposed TMDLs for sediment in the draft TMDL are not scientifically supported and should not be adopted. Instead, EPA should provide for a data collection program to conduct the necessary sediment toxicity identification evaluations (TIE) to determine the pollutants causing sediment toxicity and the appropriate pollutant concentration targets.

Citgo Petroleum Corporation **Comment: 009/0074** **Response: 004/0079**

As noted by EPA on page 15 of the Draft TMDL Document, a TMDL should "provide an opportunity to compare relative contributions from all sources and consider technical and economic tradeoffs between point and non-point sources." There is no evidence within the Draft TMDL Document that EPA actually considered "technical and economic tradeoffs between point and non-point sources."

LCA submits that EPA made no effort to allow increased use of best management practices to control discharges of zinc, copper, and lead from nonpoint sources so as to allow increased loadings of zinc, copper, and lead from point sources. See, e.g., (a) proposed TMDL for zinc for Bayou Verdine (030306), (b) proposed TMDL for copper for Bayou D'Inde (030901), (c) proposed TMDL for copper for Upper Calcasieu Estuary and Ship Channel (030301), and (d) proposed TMDL for lead for Upper Calcasieu Estuary and Ship Channel (030301). LCA submits that failure to consider such tradeoffs for the affected pollutants renders the relevant TMDLs arbitrary, capricious, and legally impermissible.

Citgo Petroleum Corporation **Comment: 009/0076** **Response: 004/0081**

It is technically incorrect to use nonpoint source loadings for aquatic life criteria that are evaluated at the 7Q10. There is no surface runoff from rain events when the 7Q10 occurs; therefore, there should be no nonpoint source loadings of pollutants under such flow condition. In the Draft TMDL Document, EPA uses a flow-based ratio method to estimate nonpoint source runoff contributions at critical low flow in the tributaries and estuary (page 14). No technical analysis is provided to support the conclusion that any surface runoff (i.e., nonpoint source flows) will occur coincident with the 7-day, 1-in-10-year low stream flows (7Q10). In fact, it is logical to assume that there will be no surface runoff during the critical low flow periods for this basin. The potential for surface runoff can be evaluated by reviewing the stream flow records in the watershed to determine when the 7Q10 flow has most recently occurred and then collecting and evaluating precipitation records for the same time period. It is probable that even if there is precipitation somewhere within the watershed during the period when the 7Q10 occurs, it will be very limited in both amount and spatial distribution and will not contribute nonpoint source loadings of significance.

The Proposed TMDLs should be recalculated assuming that there is no nonpoint source loading for all pollutants that have aquatic life criteria as targets, i.e., those wasteload allocations that are based on the 7Q10.

Citgo Petroleum Corporation **Comment: 009/0078** **Response: 004/0083**

LCA submits that the 20% MOS used by EPA in the development of TMDLs in the Draft TMDL Document is overly conservative and inappropriate, especially in light of the conservative approach used by EPA in its modeling and projection methodologies. As noted by EPA in its "Guidance for Water Quality-Based Decisions: The TMDL Process," EPA 440/4-91-001 (April 1991):

> "The MOS is normally incorporated into the conservative assumptions used to develop TMDLs (generally within the calculations or models) and approved by EPA either individually or in State/EPA agreements. If the MOS needs to be larger than that which is allowed through the conservative assumptions, additional MOS can be added as a separate component of the TMDL …" (Emphasis added.)

The overly conservative approach used by EPA--in adding an additional margin of safety of 20% to the calculated TMDLs--renders the TMDLs arbitrary, capricious, and legally impermissible.

Citgo Petroleum Corporation **Comment: 009/0080** **Response: 004/0085**

A hydrodynamic model should have been used to estimate flows and dispersion in the estuary. Because of tidal dispersion, the water column-sediment interactions are very important in this estuary, and the failure to use a modeling approach that accounts for tidal dispersion and sediment transport is a fatal flaw in the Proposed TMDLs. EPA states that it evaluated the use of the WASP6 model to simulate pollutant transport and fate in the estuary and tributaries (Draft TMDL Document, page 16). EPA abandoned this effort and selected the mass balance approach because:

Although the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited. Because of these limitations, model results varied over a large range, depending on assumptions made about parameters for which there were no data. As a result, the use of the model as a quantitative tool to estimate allowable loads was not deemed appropriate.

This is not a justifiable reason to abandon the scientifically supported approach needed for a TMDL of this importance and magnitude. Indeed, this statement indicates that because EPA was under a schedule set by court order, it abandoned the best available scientific tools to perform the TMDL in order to meet its schedule.

Citgo Petroleum Corporation **Comment: 009/0080** **Response: 004/0083**

LCA further submits that margins of safety for TMDLs should be based on estimates of the uncertainty of the estimated wasteload and load allocations. EPA has done no analysis that justifies its arbitrary MOS of 20%. EPA has stated in the TMDL regulation that the MOS should be based on the estimated uncertainty in the TMDL predictions. While this regulation is not yet effective, this recommendation is both scientifically sound and good public policy. EPA should base any MOS on an uncertainty analysis of the of the TMDLs.

Citgo Petroleum Corporation **Comment: 009/0081** **Response: 004/0086**

TMDLs are routinely conducted by states and EPA using literature values for certain of the fate constants used in WASP6 and similar models. EPA has issued numerous guidance documents on selecting necessary coefficients for these models and performing sensitivity analyses of the results to better understand the reliability of model predictions. Models can also be parameterized using sensitivity analysis and/or optimization approaches. As a worst case simplification, pollutants that are modeled could be considered as conservative (i.e., not subject to biodegradation, chemical reactions, biodegradation or volatilization) in a model that simulates

the hydrodynamics of the system. Even a conservative pollutant simulation approach using an appropriate mass transport model would be preferable to a mass balance. The mass balance approach does not allow any analysis of the precision and accuracy of the TMDL results, which is a fundamental concept that EPA included in the 2000 TMDL regulation.

The transport and dispersion of pollutants in the Calcasieu Estuary is complex and must be considered in any TMDL analysis. The basic hydrodynamics of the system can be represented by a number of models, including WASP6, and only requires fresh water inflows, tidal data, and the bathymetry of the estuary and tributaries (including the ship channel) to obtain realistic simulation. This information is readily available and should have been used to develop a model for determining pollutant transport in the tributaries and estuary (a previous water quality model developed by LDEQ for dissolved oxygen evaluations has sufficient hydraulic data to serve as a starting point).

EPA should redo the draft TMDL using an appropriate model to simulate the complex hydrodynamics of the Calcasieu Estuary. The hydrodynamic model should be calibrated and verified with tidal data and salinity data, both of which are available.

Once an acceptably calibrated hydrodynamic model is available, a water quality model using those hydrodynamics should be developed. The WASP6 model would be acceptable. Alternatively, other models could also be used if they represent the fate and transport processes that occur in the estuary. As a minimum, the water quality model should include chemical reactions, biodegradation, volatilization, and particulate attachment and sedimentation for organic chemicals and particulate partitioning and sedimentation for metals. It must also include sediment resuspension and transport, for reasons discussed elsewhere in these comments. The water quality model should be calibrated to the extent practical with available data. Where insufficient data are available, then sensitivity analyses should be performed to determine the uncertainty in the model predictions. All of this information is justified for a TMDL that is as complex and has as much potential impact on dischargers as this one does.

Citgo Petroleum Corporation **Comment: 009/0084** **Response: 004/0089**

EPA's statement that tidal dispersion at low flows is unimportant and can be ignored is not accurate for the main channel of the estuary. EPA states in the Draft TMDL Document that tidal dispersion is not important at low (critical) stream flows (Draft TMDL Document, page 18). Also, EPA states that no estimates of tidal dispersion are available to use in a model. Both of these statements are inaccurate.

Failure to account for tidal dispersion (which LDEQ considers in NPDES permitting actions) results in overly conservative estimates for discharges to the estuary and is another major technical flaw in the TMDL evaluation. As stated in the previous comment, it is not true that a hydrodynamic model is impractical. Tidal records, salinity, bathymetry, and major inflow are all available and because basic hydraulics of estuarine systems can be reliably simulated with such models, they should be used to predict the effects of tidal dispersion.

Citgo Petroleum Corporation **Comment: 009/0086** **Response: 004/0091**

The TMDL incorrectly excludes partitioning of organic chemicals and metals to particulates and subsequent sedimentation and potential resuspension. EPA states that it did not include partitioning of organic chemicals and metals to particulates and subsequent sedimentation because:(1) it has no estimates of particle density and sedimentation rates; and (2) if metals and organic chemicals in particulates accumulate in contaminated sediments they will contribute to an existing impairment (Draft TMDL Document, page 18). Both of these arguments for not

dealing with this fate mechanism are unjustified.

Citgo Petroleum Corporation **Comment: 009/0087** **Response: 004/0092**

With respect to sedimentation rates, there are ample data in the technical literature that can be used to estimate such rates in tidally-affected surface waters. As discussed earlier, default rates for variables such as sedimentation of particulates can be used in a model and sensitivity analyses can be used to establish acceptable estimates for prediction of water column pollutant concentrations. The particulates settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. A simple calculation will show that if a point source is achieving a water quality-based effluent limit for a pollutant such as a metal, the concentration of the metal in any particulates that are discharged will typically be well below the elevated sediment concentrations reported in some segments of the Calcasieu Estuary. However, such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.

Citgo Petroleum Corporation **Comment: 009/0088** **Response: 004/0093**

A very important issue with respect to sediment-water column interaction and the fate of organic chemicals and metals in the Calcasieu Estuary is not evaluated by EPA (other than mentioning it) in the TMDL. Most if not all of the sediment contamination in the estuary and its tributaries is likely to be a legacy issue, from past discharges that were not treated as effectively as they are today. The existing discharges may not contribute to the existing sediment contamination and may actually be diluting sediment contaminant concentrations if they are having any effect at all. However, EPA did not evaluate any fate or transport mechanisms with respect to sediment contamination so there is no information or evaluation to determine if existing discharges are contributing to sediment pollutant concentrations. The absence of any scientific analysis of the cause and effect relationship between discharges and sediment contaminants results in a scientifically flawed TMDL.

Citgo Petroleum Corporation **Comment: 009/0089** **Response: 004/0067**

The method used in the Draft TMDL Document to calculate wasteload allocations for sediment contaminants (PAHs, pesticides, etc.) has no scientific basis because it does not relate pollutant loads in the water column to concentrations in the sediment. EPA assumes in the draft TMDL that if the water quality criteria for organic chemicals and metals are achieved, the sediment targets will also be achieved. This assumption has no scientific foundation and is not supported by any technical analysis in the Draft TMDL Document. If the sediment concentrations are due to historic discharges (before current treatment was installed), then there is no correlation between the current point source discharges and the sediment pollution concentrations. As described in the preceding comment, EPA must evaluate and determine the cause and effect between organic chemical and metal concentrations in point and nonpoint discharges, the water column, and sediments before it can perform the TMDL for sediments. It has not done this, so the Proposed are fatally flawed with respect to the evaluation of sediments.

Citgo Petroleum Corporation **Comment: 009/0090** **Response: 004/0102**

EPA must perform uncertainty analyses of its TMDLs in order to demonstrate the reliability and reasonableness of the wasteload allocations. In the Draft TMDL Document, EPA assumes that all of the impairments identified in the Calcasieu Estuary can be eliminated by control of point

sources. In the Draft TMDL Document, EPA makes no attempt to estimate the uncertainty in the proposed wasteload allocations and load allocations. Estimates of uncertainty are essential to allow the regulated community and the general public to understand how effective the Proposed TMDLs will be in achieving the water quality objectives.

If an appropriate uncertainty analysis is conducted, it will allow identification of those portions of the TMDL that require more data collection and analysis to result in wasteload allocations and load allocations that will eliminate the impairments, but will not be so overly conservative that they cause excessive economic and social impacts.

Citgo Petroleum Corporation **Comment: 009/0091** **Response: 004/0014**

LDEQ's chronic criterion for mercury embodies a screening level based on tissue residues. It is not appropriate to use the LDEQ screening level as though it is a chronic aquatic life criterion that must be achieved at the critical low flow. In the Draft TMDL Document, EPA uses the Louisiana surface water chronic aquatic life criterion as the target for mercury TMDLs (Draft TMDL Document, Appendix A). This mercury criterion is actually a screening level and if it is exceeded in the water column, the standards require that fish tissue samples be analyzed for methyl mercury and compared to the Food and Drug Administration tissue action level of 1 mg/kg (footnote 11 to Table 1, LAC 33:IX.1113, as quoted in Footnote 4 to LCA's Comments). The standards specify that if fish tissues concentrations of methyl mercury exceed the FDA action level, LDEQ must initiate the necessary studies to establish a protective site-specific water quality criterion for mercury.

EPA has not performed any fish tissue testing and thus cannot even establish exceedances of the mercury screening level. Further, EPA data developed in Phase II of the Calcasieu Estuary Superfund--where fish tissue testing was done--support LCA's conclusion that there is no exceedance of the aquatic protection criteria. Thus, the TMDL for mercury should be withdrawn.

Citgo Petroleum Corporation **Comment: 009/0093** **Response: 003/0004**

If it is determined that a TMDL for copper, lead, nickel or zinc is legally authorized, which is denied, then the TMDL should indicate that site-specific aquatic life water quality criteria for copper, lead, nickel, and zinc may be appropriate for all or some of the waterbodies in the Calcasieu Estuary. If such site-specific criteria are appropriate, the Proposed TMDLs should be revised.

Several states have identified reassessment of their water quality criteria using site-specific conditions as one of the first steps in their TMDL procedures. The reason for this is that aquatic life criteria that are based on EPA's national criteria are often overprotective when site-specific bioavailability of a pollutant is considered. This is especially true for metals. For example, in August 2000, Texas adopted site-specific aquatic life criteria for the Houston Ship Channel, side bays and tributaries, and San Jacinto Bay, which are estuarine systems with hydraulic and biological characteristics that are similar to the Calcasieu Estuary. The revised copper criteria, which are based on the EPA's water effects ratio method for developing site-specific criteria, are greater than the statewide estuarine copper criteria, which are based on the EPA national criteria, by a factor ranging from 1.9-2.3. EPA Region 6 approved these site-specific copper criteria on February 27, 2002.

It is probable that the existing Louisiana statewide criteria for copper, lead, nickel and zinc in estuarine waters are also overprotective. The Proposed TMDLs should provide for development of site-specific aquatic life criteria for these metals and adjustment of wasteload allocations if such criteria are greater than the statewide criteria.

Citgo Petroleum Corporation **Comment: 009/0094** **Response: 004/0106**

The draft TMDL proposes wasteload allocations for certain pollutants that are lower than the applicable surface water criterion. This result conflicts with the NPDES regulations, because a discharge that is at a water quality criterion concentration cannot cause or contribute to an exceedance of that criterion. EPA applies its arbitrary MOS of 20% to each TMDL that it calculates, which results in wasteload allocations for some dischargers that are lower than the limits that are calculated with the applicable water quality criteria for zinc, mercury, and nickel. For example, EPA states that the zinc limit for Sasol that is calculated by applying the water quality criterion as an end of pipe limit (no mixing zone) is 1.95 lb/day (Draft TMDL Document, page 31). The proposed zinc TMDL for Sasol is 1.6 lb/day (Draft TMDL Document, Table 15). Thus, because of the 20% MOS applied by EPA, the allowable TMDL for Sasol is approximately 20% lower than the water quality criterion.

LCA believes that the proposed wasteload allocation for zinc, mercury, and nickel, are not consistent with EPA's NPDES regulations for water quality-based effluent limits (40 CFR 122.44(d)) because if the effluent concentrations are equal to the water quality criterion for a pollutant, the discharge cannot cause or contribute to an exceedance of the criterion because it cannot increase the ambient concentration above the criterion. A wasteload allocation that is set below the applicable criterion is inconsistent with EPA permitting regulations and is not scientifically justified. These TMDLs must be revised to set the wasteload allocations at concentrations no lower than the applicable water quality criteria.

Citgo Petroleum Corporation **Comment: 009/0095** **Response: 002/0013**

Because of the errors in locating discharge outfalls and estimating point source flows EPA has not included locations for all potential point sources, including CITGO (with respect to Bayou D'Inde (030901)).

Citgo Petroleum Corporation **Comment: 009/0096** **Response: 005/0056**

PAH's may be present in petroleum refinery point-source discharges, such as CITGO's. EPA should include waste load allocations for PAHs for all petroleum refineries. Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.) Allocations of PAHs should be provided to:

CITGO--Calcasieu Ship Channel (Segment 030301)
CITGO--Bayou D'Inde (Segment 030901)
Conoco--Calcasieu Ship Channel (Segment 030301).

Citgo Petroleum Corporation **Comment: 009/0097** **Response: 005/0057**

Given the intermediate level of POCs in point-source stormwater, the presence of some POCs naturally in stormwater (e.g., nickel) and very low waste load allocations for these POCs, EPA should waste load allocations for POCs for all major facilities, including CITGO. No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point source discharges of stormwater, including CITGO, should receive an allocation of each POC.

Citgo Petroleum Corporation **Comment: 009/0098** **Response: 004/0109**

EPA should provide water quality endpoints based on dissolved concentrations of POCs. LDEQ's water quality standards are specifically promulgated as dissolved standards since

chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Citgo Petroleum Corporation **Comment: 009/0099** **Response: 004/0111**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. Other factors can affect water quality criteria for toxic POCs ,and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific water effects ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Citgo Petroleum Corporation **Comment: 009/0100** **Response: 004/0113**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error. The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs. Alternatively, Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3).

The low flow estimate for Bayou D'Inde appears to be in error. Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above PPG Outfall No. 001, near the Bayou D'Inde, critical flow based on tide-cycle is reported to be 121 cfs (Ref 7).

The estimates for mean flows for the segments appear to be in error. The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1). Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error. LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).

The estimate for harmonic mean flow for Bayou D'Inde appears to be in error. LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7).

Citgo Petroleum Corporation **Comment: 009/0105** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements. There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which

are offering “clean techniques” and both are out of state (Madison, Wisconsin and Seattle, Washington).

Citgo Petroleum Corporation **Comment: 009/0106** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of “generic” endpoints, and facility flows. Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of new information.

Citgo Petroleum Corporation **Comment: 009/0107** **Response: 004/0123**

EPA should eliminate sampling and testing of total metals. The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Citgo Petroleum Corporation **Comment: 009/0108** **Response: 004/0124**

EPA should eliminate the requirement for LDEQ to sample and monitor sediments. The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

Citgo Petroleum Corporation **Comment: 009/0109** **Response: 004/0125**

Facilities should be allowed to report loadings on a “net” basis for POCs with nonpoint source load allocations. Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. “Background” loads in segment water--including upstream, tributary, atmospheric, and nonpoint source loads--are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all “background” contributions from the facility’s measured final discharge load.

Citgo Petroleum Corporation **Comment: 009/0110** **Response: 004/0126**

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable, averaged basis. TMDL wasteload allocations should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

Citgo Petroleum Corporation **Comment: 009/0111** **Response: 004/0127**

Given the many identified limitations of the science in the TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as “provisional”. In its final determination on the Proposed TMDLs, EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly state that such TMDLs are provisional. In this section, EPA should set forth a process for prompt review and revision of the affected TMDLs upon obtaining new information. Such information could be generated either by EPA itself, LDEQ, or other interested parties. Finally, EPA should specifically acknowledge that future ambient water quality information may result in delisting of the affected waterbodies and/or POCs and rescinding of TMDLs.

Citgo Petroleum Corporation **Comment: 009/0112** **Response: 004/0128**

LCA notes that under the consent decree, effective April 1, 2002, entered into by the parties in those proceedings entitled "Sierra Club and Louisiana Environmental Action Network v. Gregg A. Cooke, Regional Administrator, Christine T. Whitman, Administrator, United States Environmental Protection Agency; and U.S. Environmental Protection Agency," Civil Action No. 96-0527, Section "S" (4) on the docket of the United States District Court for the Eastern District of Louisiana (the "Consent Decree), EPA agreed that for the waterbody/pollutant combinations in the Calcasieu Basin (including, without limitation, Waterbody Subsegments 030301, 030306, and 030901), TMDLs would be established by May 31, 2002, unless EPA received an extension of such deadline. LCA submits that the comments submitted in connection with the proposed TMDLs for the Calcasieu Basin justify a request by EPA to extend the deadline(s) for establishment of TMDLs for those waterbodies. LCA further submits that the proposed TMDLs for such waterbodies should not be finalized by EPA until EPA has had a reasonable opportunity to review, consider, and appropriately respond to the comments submitted on such proposed TMDLs. LCA thus requests EPA to take such action(s), as necessary, under the Consent Decree to obtain extension(s) of the May 31, 2002 deadline for establishment of TMDLs for such waterbodies.

RESTORE **Comment: 012/0001** **Response: 012/0001**

EPA and NOAA were supposed to have, last month, released the results of comprehensive analyses they have been doing on fish tissue. Those results are late, we are told, because of some sort of laboratory or interpretation delay.

Surely those two brand new datasets might have made it possible for everyone to more efficiently construct and comment on Calcasieu TMDLs and the proposed determinations of non-necessities.

RESTORE **Comment: 012/0002** **Response: 012/0002**

Your own Region 6 website has a section on the Calcasieu Estuary in which a massive amount of data is available showing that there is serious contamination of various types in the most heavily utilized sections of the river. RESTORE believes that it is imperative that you take another look at your proposals in order to properly restore the ecosystem and prudently protect the public health.

RESTORE **Comment: 012/0003** **Response: 012/0003**

Subsegment 030301 -- dioxins and other priority organics seem to have been omitted. We think they should be added. See attached Marplot sheets for PCD_T4 and Total Chlorobenzenes.

RESTORE **Comment: 012/0004** **Response: 012/0004**

See also the attached sheet for B2ETHXPHTH (bis-ethylhexylphthalate, BEHP). The presence of BEHP in the heavily utilized recreational areas such as Prien Lake is especially disturbing given the building evidence of that molecule's hormone disrupting effects even at low levels.

RESTORE **Comment: 012/0005** **Response: 012/0005**

On of the background elements in our concerns is the fact that there are strong mechanisms for resuspension of contaminated sediments throughout this river system, mechanisms such as winds across shallow lakes, tugboats slugging through the shallow bayous, and supertankers grinding up the main Ship Channel. Those contaminated sediments are encountered by aquatic biota, children wading on the local parks beaches, water skiers, kneeboarders, wave runners, and other swimmers. The toxic chemicals adherent to the suspended clay particles often have more affinity

for skin oils than for clay and are therefore easily transferred through dermal absorption into the human system.

RESTORE **Comment: 012/0006** **Response: 012/0006**

Look at another Marplot from your website, the one showing the number of ERMs Exceeded (ERM = Effects Range Median, an indication of the potency of the overall contamination situation).

Notice that the graphic is saturated with multiple exceedances at most locations in the central part of the study area.

In order to get these waters back to fishable and swimmable conditions(which we had hoped would be accomplished by 1983, one of the goals of the Clean Water Act if we recall correctly), there must be TMDLs that are meaningful, not convenient.

RESTORE **Comment: 012/0007** **Response: 012/0007**

It is unwise to say that a TMDL for priority organics is not needed in Segment 030302 Lake Charles when we can see the needs from the chlorobenzene and ERM Marplots.

RESTORE **Comment: 012/0008** **Response: 012/0008**

It is unwise to say that Priority Organics TMDLs are not needed in 030303 Prien Lake, 030304 Moss Lake, and 030305 Contraband Bayou when we can see the needs from the same Marplots as above and the BEHP Marplot.

RESTORE **Comment: 012/0009** **Response: 012/0009**

It is unwise to delete non-priority and other organics from segments 030302 Lake Charles, 030306 Bayou Verdine, and 030309 Bayou D'Inde since may of those molecules likely contribute to the mobility, solvency, biotic uptake, and dermal absorption of the more dangerous organics.

Louisiana Mid-Continent Oil & Gas Association **Comment: 013/0001** **Response: 013/0001**

Mid-Continent is extremely disappointed that the EPA did not timely grant Mid-Continent's (dated April 12, 2002) and others' requests to extend the comment deadline. This in spite of gross errors identified in the document and significant legal issues that require significant time to address. The following are Mid-Continent's best effort to address the areas of major concern in the time allotted.

Louisiana Mid-Continent Oil & Gas Association **Comment: 013/0002** **Response: 013/0002**

Table 3 (Page 8) shows the Conoco, Inc. refinery discharging to both Bayou Verdine and the Calcasieu River. It is Mid-Continent's understanding, however, that Conoco no longer discharges process waters to Bayou Verdine and has not done so for several years. In spite of this, the EPA calculates TMDLs for Conoco for Bayou Verdine. Conoco does discharge to the Calcasieu River (Upper Calcasieu Estuary and Ship Channel – Segment 030301), but EPA fails to include the discharge for Conoco in the TMDL calculations for this segment (begins on Page 55). It is Mid-Continent's understanding that this concern is also true for Sasol North America, Inc.'s (identified in the document as Condea Vista) discharge as well which is about to also be changed to the Calcasieu River.

The TMDLs for both Bayou Verdine and the Calcasieu Estuary must be reperformed to account for these changes. It not, one can argue that neither facility could discharge into the Calcasieu River since no wasteload allocation was provided.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0003 Response: 013/0003

Table 3 (Page 8) shows discharges from Citgo Petroleum into both Bayou D'Inde and the Calcasieu River. This is correct. The refinery complex discharges into the Calcasieu River while an auxiliary facility discharges into Bayou D'Inde.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0004 Response: 013/0004

The report states that Segment 030901 does not include all of Bayou D'Inde and part of the bayou is included in Segment 030301. Mid-Continent wants to ensure that the Citgo discharges are properly accounted for in the analysis.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0005 Response: 013/0005

If the Citgo discharge is actually into Segment 030901, then the EPA does not allocate a wasteload for the Citgo facility into Bayou D'Inde. Mid-Continent requests that the EPA confirm this situation. The EPA would have to reperform the TMDL calculation to account for the discharge.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0007 Response: 013/0007

Mid-Continent wants to ensure that the EPA properly characterizes the potential constituents found in wastewater discharges and accounts for these in the TMDL analysis. In September 2001, the EPA published a Research and Development document (EPA-600/R-01-066) entitled "Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing and Combustion". In Table 7-3 of this document, EPA lists several trace metals and trace organics found in a "typical" refinery wastewater. These include:

Arsenic
Chromium
Copper
Mercury
Nickel
Selenium
Zinc
Benzene
Toluene
Ethylbenzene
Acenaphthene
Benz[a]anthracene
Benzo[a]pyrene
Chrysene
Phenanthrene
Pyrene
2,4-Dimethylphenol

The identified sources of this data are two American Petroleum Institute (API) documents and an EPA document. These include:

API Publication No. 4296 (1978)
API Publication No. 4336 (1981)
EPA Document EPA/440/1-82/014 (NTIS PB 83-172569) (1982)

Mid-Continent requests that all of these documents be made part of the record for this

rulemaking action.
If the EPA is required to calculate a TMDL for one of these constituents and a refinery discharge is involved, then the EPA must include an allocation for that discharge point.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0008 Response: 013/0008

The Louisiana Department of Environmental Quality (DEQ) provided compelling data during the TMDL process justifying "delisting" of several waterbody impairments. Mid-Continent is disappointed that the EPA did not give great weight to this information in the development of the TMDLs. In the response to comment period, Mid-Continent urges the EPA to give serious consideration of this information and therefore remove the constituents from the TMDL listing or make other appropriate adjustments.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0009 Response: 004/0035

The EPA cites numerous sources as the information to determine whether a waterbody is impaired and therefore subject to a TMDL evaluation. Some of this data is over ten years old and much of it, particularly the sediment data, was performed to identify potential areas of high localized contamination. These samples are not random statistical samples and therefore not a true indication of the overall contribution contaminated sediments may have on water quality. The use of localized "hot spots" grossly over predicts the extent of the potential contribution of contaminated sediments to water quality. In many cases, the contaminated sediment data is the only justification EPA presents to declare the waterbody is impaired and therefore subject to TMDL analysis.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0010 Response: 004/0010

Mid-Continent is also concerned about EPA's treatment of the data. In recent water quality analysis and TMDL development, the DEQ has relied on "clean techniques" for determining constituent concentrations. This is actually required by DEQ rules. This due to the fact that the limits of concern are very low and any outside contamination could result in a false result. Much of the data relied upon by EPA in this report is from sampling that did not meet such stringent quality control processes. When such "clean" data was available, EPA either ignored the findings or did not give it proper consideration. EPA appears to follow the philosophy that more poorer-quality data is better than less higher-quality data. As a result, the EPA analysis identifies more impairment than probably actually exists.
Mid-Continent believes the Calcasieu Estuary TMDL process development was not based on sound statistical and analytical bases and therefore is flawed. The EPA should reperform the analysis using only the highest quality data available. If more data is needed, then it should be collected.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0011 Response: 004/0060

The EPA does not present information whether the sediment data relied upon actually interacts with the water column. As stated previously, some of this data is several years old. In at least one of the TMDLs (PAHs for Bayou Verdine), EPA acknowledges that sediment concentrations "would decline as loads decline and additional sediment is deposited on top of existing contaminated sediment." EPA fails to acknowledge this phenomenon throughout the TMDL document for all streams and constituents. Most of the identified contamination is a result of past practices, which are currently undergoing and will continue to undergo active burial. It is not appropriate to select pollutants of concern based on these past historical discharges. Mid-Continent recommends that the EPA remove those pollutants of concern that EPA selected solely

on sediment contamination data.
The only approved compliance targets for TMDL development are those contained in the DEQ surface water quality standards. These have been adopted through the formal notice and comment procedures by the state's Administrative Procedures Act.
EPA however uses several other databases for TMDL targets that are not listed in DEQ regulations and have not been through the rulemaking approval process. These include EPA's national water quality criteria, NOAA's effects range-median values, and EPA's equilibrium partitioning sediment guidelines. These can not be used as TMDL targets when EPA can demonstrate that they correlated to the DEQ's numeric or narrative toxicity standard (LAC 33:IX.1113.B.5.). The document provides no such correlation and therefore these databases can not be used.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0013 Response: 004/0002

Mid-Continent believes it is outside EPA's authority to establish TMDLs for pollutants not identified in the 303(d) list. Authority to determine the waterbodies and pollutants of concern for the 303(d) list belongs to the states. In this instance, however, the EPA has usurped Louisiana's authority by skipping the 303(d) listing process and proceeding directly to TMDL development. If the EPA believes certain segments and/or pollutants should be added to the 303(d) list, the EPA should first submit this information to the DEQ for review. If, and only if, the state concurs with this recommendation and the 303(d) list is amended, should EPA proceed with TMDL development.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0014 Response: 004/0025

Several of the stream segment flow estimates appear to be in error.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0015 Response: 004/0041

The TMDL end points selected should be based only on "dissolved" concentrations of pollutants of concern. It is not clear whether the data used by EPA is based on "dissolved" or "total" concentrations. Note: DEQ's water quality standards are based on "dissolved" concentrations.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0016 Response: 013/0016

Some wasteload allocation concentrations are lower than the applicable surface water criterion. EPA is only authorized to regulate to a concentration that would cause or contribute to an exceedances of the criterion. Concentrations less than the criterion can not have such an impact.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0017 Response: 004/0089

EPA failed to account for tidal dispersion flows in the estuary which can have a significant impact on TMDL calculation.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0018 Response: 004/0083

EPA uses a generic 20% margin of safety for all segments regardless of the appropriateness of that value for the individual segment. Margins of safety should be segment-specific based on the level of unknown information (e.g. other sources). A blanket 20% is arbitrary and capricious.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0019 Response: 004/0079

The EPA imposed the load reduction only on point sources and did not impose any limits on nonpoint sources. EPA did not show any evidence that it weighed the technical and/or economic tradeoffs between controlling point and nonpoint sources.

Louisiana Mid-Continent Oil & Gas Association Comment: 013/0020 Response: 004/0022

The mass balance approach for calculating the TMDLs is overly simplistic and not appropriate

for a complex, tidally influenced area such as the Calcasieu Estuary.

Conoco Inc. **Comment: 014/0001** **Response: 014/0001**

Conoco requests that EPA (1) establish wasteload allocations for Conoco in the Calcasieu River; and (2) conclude that TMDLs are not necessary for occasional discharges into Bayou Verdine or establish wasteload allocations for Conoco's intermittent discharges into Bayou Verdine based upon annual average rather than a daily load.

Conoco Inc. **Comment: 014/0002** **Response: 002/0012**

The proposed TMDLs assigned wasteload allocations to Conoco in Bayou Verdine (segment 030306) only. Please note, however, that Conoco typically discharges its treated industrial effluent to the Calcasieu River pursuant to permit no LA0003026, issued by EPA in 1997. This permit authorizes Conoco to discharge treated process wastewater, utility waste water, process area stormwater runoff, and hydrostatic test water into the Calcasieu River via Conoco's Outfall 001, which is equipped with a diffuser.

Conoco Inc. **Comment: 014/0003** **Response: 014/0003**

There are two additional outfalls that were permitted to discharge effluent other than non-contact stormwater runoff into Bayou Verdine. However, these outfalls may discharge only on a temporary basis, under unusual conditions that amount to emergency bypasses. Outfall 002 is permitted for "emergency discharge of process area stormwater and hydrostatic test water" and Outfall 005 is permitted to discharge into Bayou Verdine only when discharge from Outfall 001 is "not possible due to pipeline maintenance or pump repair." In addition, there are a number of non-contact stormwater runoff outfalls that discharge into both Bayou Verdine and the Calcasieu River.

Conoco Inc. **Comment: 014/0004** **Response: 014/0004**

Conoco therefore requests that EPA re-calculate wasteload allocations for the Calcasieu River and assign Conoco's discharge a wasteload allocation based on accurate, up-to-date information about Conoco's flow rates.

Conoco Inc. **Comment: 014/0005** **Response: 014/0005**

Further, Conoco urges EPA to reconsider the necessity of TMDLs in the Bayou Verdine. As indicated in comments provided by Sasol, Inc., (formerly CONDEA Vista), Sasol's discharge is anticipated to move to the Calcasieu River, with the consequence that there will be no more daily loading into the Bayou Verdine. Since the only future discharges into the Bayou Verdine will be related to isolated events such as maintenance on each facility's primary outfall or severe rainfall conditions, EPA should reconsider whether it is necessary to establish TMDLs for all of Bayou Verdine. If EPA concludes that some sort of load limitation is necessary, then EPA should consider establishing annual pound limitations rather than daily load requirements.

Conoco Inc. **Comment: 014/0006** **Response: 014/0006**

Further, as described in detail in Section IV of the attached technical comments, it appears that other data presumably imported from PCS also may be inaccurate. Most significantly, it appears that other facilities discharge outfalls have been mis-located and the flow data for Conoco and other has been underestimated. Since LDEQ has been delegated authority to administer the NPDES program in Louisiana, it may be more appropriate for EPA to collect source assessment data from LDEQ than to rely on PCS.

Conoco Inc. **Comment: 014/0007** **Response: 014/0007**

Finally, Conoco anticipates that changing the incorrect assumptions about its discharge location and clarifying possible incorrect assumptions about flow rates and effluent loading will result in the assignment of fundamentally different TMDLs and wasteload allocations. Accordingly, Conoco requests that TMDLs be re-proposed for the Calcasieu River Basin in order to afford interested persons notice and opportunity to comment on what we anticipate will be entirely new TMDLs and wasteload allocations.

Conoco Inc. **Comment: 014/0008** **Response: 014/0008**

Finally, in addition to the points made above and in Conoco's attached technical comments, Conoco concurs with the comments submitted by Louisiana Mid-Continent Oil and Gas Association (Mid-Continent) and Sasol North America, Inc. In the interest of both brevity and time (since Conoco shares Mid-Continent's dismay that the requested extension of time was not granted), Conoco adopts the points made in each of these comments as our own, except to the extent of any conflict with specific statements made herein.

Conoco Inc. **Comment: 014/0009** **Response: 002/0018**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations.

Section 303(d) of the Clean Water Act establishes the required process for designating TMDLs. First, Section 303(d)(1)(A) directs the State to identify waters for which applicable water quality standards cannot be achieved using point source effluent limitations based on best practicable control technology and/or secondary treatment. For each "listed" water, Section 303(d)(1)(C) requires each State to establish total maximum daily loads "for those pollutants which the Administrator identifies under section 304(a)(2) for such calculation." (emphasis added) Section 304(a)(2) refers to the procedures the states must follow in adopting water quality criteria and standard. To the extent that EPA currently proposes TMDLs for "pollutants of concern" based on guidance or criteria other than LDEQ water quality standards, the draft TMDL amounts to ad hoc adoption of water quality standards without due process of law.

Conoco Inc. **Comment: 014/0010** **Response: 004/0052**

Interested parties in the Lake Charles area have demonstrated willingness to undertake detailed sampling studies--e.g., using "clean techniques" -- for specific POCs that had previously been identified in the Court-Ordered List (e.g. copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA final determination of a TMDL.

Conoco Inc. **Comment: 014/0011** **Response: 004/0033**

EPA has not addressed information submitted by LDEQ which provides a basis for “delisting” copper.

LDEQ (in a letter to EPA dated August 20,2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D’Inde (030901).

Conoco Inc. **Comment: 014/0012** **Response: 004/0034**

EPA has not addressed information submitted by LDEQ which provides a basis for “delisting” several Court-Ordered “categorical” impairments.

LDEQ (in a letter to EPA dated October 10,2001) provided information clarifying the listings of

"Priority organics" and "Non-priority organics" for the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901), and other segments. Based on this information LDEQ stated that the only POCs which are suspected cause of waterbody impairment are:

Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only).

LDEQ stated that no other use impairments for organic POCs have been documented.
LDEQ (In the same letter to EPA dated October 10,2001) provided information clarifying the listings of "Other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

Conoco Inc. **Comment: 014/0013** **Response: 004/0035**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of Calcasieu Estuary area which were not designed to support TMDL determinations.
In the Draft TMDL EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.

Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996

Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of The Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs
The sampling schemes—locations, depths, compositing, etc—of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g. random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Conoco Inc. **Comment: 014/0015** **Response: 004/0037**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data.

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

4,4'-DDT, Bayou Verdine (030306)

Methoxychlor, Bayou Verdine (030306)

Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)

Zinc, Bayou Verdine (030306)

Calcium, Bayou Verdine (030306)

Conoco Inc. **Comment: 014/0016** **Response: 004/0038**

The LDEQ information referred to under 2a) above—combined with the absence of data showing presence in segment water or sediment above reference levels—should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)

Bromoform, Bayou D'Inde (030901)

1,1,2,2 Tetrachloroethane, Bayou D'Inde (030901)

Conoco Inc. **Comment: 014/0017** **Response: 002/0003**

Water and sediment quality data in these studies were not developed using consistent Data Quality Objectives (DQOs) appropriate for a TMDL process. The reference levels for POCs requires very low detection limits. There is no indication that the above studies used appropriate field and laboratory techniques necessary to assure the quality of these results, particularly a reasonable minimization of false positives at the reference level.

Conoco Inc. **Comment: 014/0018** **Response: 004/0040**

EPA's Draft TMDL does not address whether the above studies found the POCs under conditions consistent with application of the reference level—such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Conoco Inc. **Comment: 014/0019** **Response: 004/0041**

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Conoco Inc. **Comment: 014/0020** **Response: 004/0042**

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh conditions.

Conoco Inc. **Comment: 014/0021** **Response: 004/0043**

Reference levels for fresh water must adjusted for hardness.

Conoco Inc. **Comment: 014/0022** **Response: 003/0004**

Other factors affecting the application of water quality reference levels should be considered (e.g. using techniques similar to a Water Effects Ratio study.)

Conoco Inc. **Comment: 014/0023** **Response: 004/0045**

Reference levels that are not appropriate to local biota should not be used.

Conoco Inc. **Comment: 014/0024** **Response: 004/0046**

Sediment reference levels should be adjusted based on sediment mineral type, soil type, AVS/SEM ratio, and other relevant characteristics.

Conoco Inc. **Comment: 014/0025** **Response: 004/0047**

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Conoco Inc. **Comment: 014/0026** **Response: 004/0053**

5. EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination.

As explained on page ES-1 of the Draft TMDL, EPA has used a simple screening method to select POCs:

Pollutants with more than one exceedance of chronic water quality criteria, or with the mean of

detected values exceeding human health criteria; or
Pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples. This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (i.e. formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management.
The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Conoco Inc. **Comment: 014/0028** **Response: 004/0001**

EPA has not made use of statistical techniques for evaluating the full range of results for POCs but rather has arbitrarily chosen to evaluate only exceedances.
A selection method based on finding "more than one exceedance" is arbitrary and has no sound scientific or statistical basis.

Conoco Inc. **Comment: 014/0030** **Response: 004/0057**

To evaluate a set of results for comparison with a reference level good scientific, statistical practice requires an appropriate estimate of central tendency—appropriate to the type distribution—and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Conoco Inc. **Comment: 014/0031** **Response: 004/0058**

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Conoco Inc. **Comment: 014/0032** **Response: 004/0059**

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.
Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

Conoco Inc. **Comment: 014/0033** **Response: 004/0060**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Conoco Inc. **Comment: 014/0034** **Response: 004/0061**

Even assuming sediment results are indicative of conditions at the water column interface, EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification—based on scientifically valid, statistically representative, segment-specific data—for using sediment conditions as a basis for inferring the

need for a water column POCs and TMDLs.

Conoco Inc. **Comment: 014/0035** **Response: 004/0062**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. The EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Conoco Inc. **Comment: 014/0036** **Response: 004/0063**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

Conoco Inc. **Comment: 014/0037** **Response: 004/0064**

ESGs and ERMs are not promulgated standards for protection of water quality and absent a rigorous scientific justification should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)
Mercury, Calcasieu Ship Channel (030301)
Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Conoco Inc. **Comment: 014/0038** **Response: 004/0109**

EPA should provide water quality endpoints based on dissolved concentrations of POCs. LDEQ's water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Conoco Inc. **Comment: 014/0039** **Response: 004/0110**

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments.

LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

Conoco Inc. **Comment: 014/0040** **Response: 004/0111**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. (Table 2. Summary of POCs)

Other factors can affect water quality criteria for toxic POCs and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific Water Effects Ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Conoco Inc. **Comment: 014/0041** **Response: 004/0113**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error.

The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref. 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs. Alternatively Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs.

However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3)

The low flow estimate for Bayou D'Inde appears to be in error.

Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above the PPG canal (PPG Outfall No. 001) near the Bayou D'Inde critical flow based on tide-cycle is reported to be 121 cfs (Ref 7). (Table 3. Summary of Segment Flow Estimates)

The estimates for the low flows on the remaining segments also appear to be in error.

Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.

The estimates for mean flows for the segments appear to be in error.

The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1) Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean appears to be in error.

LDEQ has provided an estimate of the harmonic mean flow in the Calcasieu Ship Channel at Louisiana Pigment of 5,750 cfs. LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs.

EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

Conoco Inc. **Comment: 014/0047** **Response: 004/0028**

EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors.

These errors include:

Concoco--primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Sasol North America, Inc. (formerly CONDEA Vista)--permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).

Citgo--outfalls for CitCon portion of operations (001, 002, 012) to Bayou D'Inde (Segment 030901) were not included.

Lyondell--stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.

PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Conoco Inc. **Comment: 014/0048** **Response: 004/0026**

EPA's estimates of mean flow for most major point-source discharge outfalls contain numerous significant errors.

EPA failed to include any estimated flow for Conoco in the Calcasieu River, and the flow rates attributed to Conoco assumed Bayou Verdine discharge are inaccurate. Based on Conoco's mean flow reported in monthly Discharge Monitoring Reports submitted in 2001, Conoco's current mean flow of treated industrial process water ranges from .39-5.5 mgd, with a maximum flow reported in 2001 of 10.19 mgd (note that these values include intermittent discharge from outfall 002 into Bayou Verdine). Conoco is also aware of errors in flow rates attributed to other major dischargers.

Citgo Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 5.

Lyondell Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 4.

PPG Bayou D'Inde (Segment 030901) Discharge—off by a Factor of 10.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of mean flows for each segment.

Conoco Inc. **Comment: 014/0049** **Response: 004/0030**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors.

EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Conoco Inc. **Comment: 014/0050** **Response: 004/0031**

EPA's should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach.

EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determine. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Conoco Inc. **Comment: 014/0051** **Response: 014/0051**

The treatment of nondetected values in assessing loads of existing point sources has no sound

technical basis. In assessing loads of various pollutants of concern that are currently contributed by point sources, EPA treated nondetected values differently, depending on the reporting convention that was used by the facility reporting the data. If the facility reported a nondetected value as "<" the relevant detection limit, EPA assumed the pollutant of concern actually was present at a concentration of one-half the detection limit, and used that value in calculating loads. However, EPA does not provide a technical justification to support this excessively conservative assumption, which has been critiqued as "having no theoretical basis" (Helsel and Hirsch, 1993). If the nondetected analyte was reported as zero, EPA did not include a value of one-half the detection limit in its load calculations. However, zero values were disregarded in the calculations of average and daily loads. EPA does not provide a technical basis for treating these values differently, nor does EPA provide a technical justification for either of the approaches selected for treating nondetect values.

Conoco Inc. **Comment: 014/0052** **Response: 004/0022**

As detailed in comments submitted by Sasol and the Louisiana Mid-Continent Oil & Gas Association (LMOGA), the mass balance model is inappropriate and technically inadequate for use in calculating TMDLs for the Calcasieu Estuary. In addition, however, there are several concerns with the application of the mass balance model to calculate TMDLs.

Conoco Inc. **Comment: 014/0053** **Response: 004/0025**

EPA needs to correct errors in the segment flow.

Conoco Inc. **Comment: 014/0054** **Response: 004/0026**

EPA needs to correct errors in facility outfall flow.

Conoco Inc. **Comment: 014/0055** **Response: 005/0053**

EPA needs to determine if certain POC point source loadings are associated with point source stormwater outfalls and develop statistically valid segment flow estimates.

For some POCs, significant point source loads may be attributable to stormwater outfalls. In these cases, use of low flows for dilution are not reasonable since facility discharges of the POC would occur during periods when significantly higher stream flows would be present. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate segment flow estimates for stormwater events.

Conoco Inc. **Comment: 014/0056** **Response: 004/0027**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations.

EPA's method for estimating facility maximum discharge (for use with chronic toxicity POC TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Conoco Inc. **Comment: 014/0057** **Response: 005/0055**

Due the errors in locating discharge outfalls and estimating point-source flows EPA has not included allocations for all potential point sources.

Conoco Inc. **Comment: 014/0058** **Response: 005/0056**

PAHs may be present in petroleum refinery point-source discharges. EPA should include wasteload allocations for PAHs for all petroleum refineries.

Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.)
Allocations of PAHs should be provided to:

Conoco—Calcasieu Ship Channel (Segment 030301)
Citgo—Calcasieu Ship Channel (Segment 030301)
Citgo—Bayou D'Inde (Segment 030901)

Conoco Inc. **Comment: 014/0059** **Response: 005/0057**

Given the indeterminate level of POCs in point-source stormwater, and very low wasteload allocations for these POCs, EPA should include wasteload allocations for POCs for all major facilities.
No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point-source discharges of stormwater should receive an allocation of each POC.

Conoco Inc. **Comment: 014/0060** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements.
There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which are offering "clean techniques" and both are out of state (Madison, Wisconsin and Seattle, Washington).

Conoco Inc. **Comment: 014/0061** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of "generic" endpoints, and facility flows.
Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of a new information.

Conoco Inc. **Comment: 014/0062** **Response: 004/0127**

Given the many identified limitations of the science in this TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as "provisional". EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly identify that such TMDLs are provisional. In this section EPA should set forth a process for prompt review and revision of the TMDL PA upon obtaining new information. Such information could be generated either by EPA itself, LDEQ or other interested parties.

Conoco Inc. **Comment: 014/0063** **Response: 006/0055**

EPA should specifically acknowledge that future ambient water quality information will result in delisting of POCs and rescinding of TMDLs.

Conoco Inc. **Comment: 014/0064** **Response: 004/0123**

Eliminate sampling and testing of total metals—dissolved only
The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Conoco Inc. **Comment: 014/0065** **Response: 004/0124**

Eliminate requirement for LDEQ to sample and monitor sediments.

The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

Conoco Inc. **Comment: 014/0066** **Response: 004/0125**

Facilities should be allowed to report loadings on a "net" basis for POCs with non-point source load allocations.

Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. "Background" loads in segment water—including upstream, tributary, atmospheric, and non-point source loads—are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all "background" contributions from the facility's measured final discharge load.

Conoco Inc. **Comment: 014/0067** **Response: 004/0126**

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable, averaged basis.

TMDL WLAs should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

Firestone Polymers **Comment: 015/0001** **Response: 015/0001**

Firestone is concerned with the methodology SAIC used to identify pollutants of concern (POC) for each segment of the estuary. The attached comments summarize most of our concerns, however, Firestone wants to emphasize the following. SAIC used screening criteria to identify POCs for final TMDL determination. This is not appropriate. In several cases for Bayou d'Inde, a substance was not detected in any media of concern or it was not detected at concentrations exceeding Louisiana standards, yet based on the screening criteria, the substance was retained as a POC. Furthermore, several substances were detected at extremely low frequency and their presence is not statistically significant. Based on this lack of scientific foundation, Firestone requests that EPA rely on more rigorous, scientific, and risk- based criteria for including substances in the TMDL rather than the simple screening criteria that were used. Alternatively, there is insufficient analytical justification provided or demonstrated for the inclusion of the POCs.

Firestone Polymers **Comment: 015/0002** **Response: 015/0002**

In the TMDL, the Firestone facility has been assigned waste load allocations and/or testing requirements for the following compounds: hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, copper, hexachlorobenzene and nickel. Firestone has no knowledge of these substances entering our facility in our raw materials with the exception of nickel. Furthermore, Firestone has no knowledge of the significant presence of these substances at our facility, with the exception of nickel and copper. After consulting with our scientists, we feel confident that there are no mechanisms for forming the listed halogenated organic chemicals in all manufacturing processes used at the facility. The only copper at the facility is a very minor amount of the metallic form in piping and equipment. Firestone incorporates by reference all monitoring data and reports and NPDES/LPDES permit submittals on file with EPA and the

Louisiana State Department of Environmental Quality. Therefore, we request that TMDLs and testing requirements for Firestone be removed for the following chemicals: hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, copper and hexachlorobenzene.

Firestone Polymers **Comment: 015/0003** **Response: 015/0003**

The TMDL requires that all testing be conducted using "clean techniques". It is Firestone's understanding that this analytical technique is available from only two laboratories nationwide. Industry should not be held to a higher standard than EPA with respect to its analysis. Thus, Firestone requests that for any scientifically valid TMDLs, the required analysis be consistent with Clean Water Act methodologies.

Firestone Polymers **Comment: 015/0004** **Response: 015/0004**

The waste load allocations for the TMDLs are proportioned based on volumetric flow rates from the facilities. The amount of a pollutant of concern (POC) discharged by a facility usually is totally unrelated to the volume of water discharged from the facility. Therefore, each allocation should be proportioned based on mass flow rate of each POC. Moreover, since this method would result in the same percent reduction of POCs for all of the contributing facilities, this is the only representative and equitable approach. Otherwise, those facilities that discharge large amounts of water and not necessarily a large amount of POC would get a disproportionate allocation of a TMDL. Thus, Firestone requests that each TMDL allocation be based on mass flow rate for each substance.

Firestone Polymers **Comment: 015/0005** **Response: 015/0005**

The volumetric flow rates used to set the TMDLs for Firestone's waste allocation are not accurate. The last year that Firestone recorded storm water flow rates for every event during the entire year was 1998. Using the 1998 storm water flow data for outfalls 003 and 004 along with 2001 effluent data for outfall 001, the following flow rates are obtained (See Table 1 in Hard Copy): Thus, Firestone requests that all calculations using facility flow rates from Firestone Polymers be recalculated using the more current volumes.

Firestone Polymers **Comment: 015/0006** **Response: 015/0006**

The "lower reaches of Bayou D'Inde" (Segment 030901) should be divided into two segments. POC exceedances, hydrology, watersheds and industrial discharge flows in the lower reaches of Bayou D'Inde vary considerably between the upper and lower half. The water body should be divided into two segments at Hwy 108 or where Maple Fork joins Bayou D'Inde. The lower portion of this segment contains the vast majority of exceedances, the largest discharger by far and different hydrology where Bayou D'Inde fans into a marsh as it joins Calcasieu River. The Draft TMDL report shows that 85% of the average industrial discharge is in the lower Bayou D'Inde. Thus, Firestone requests that EPA divide "the lower reaches of Bayou d'Inde" into two segments (Middle Bayou d'Inde and Lower Bayou d'Inde) at the Hwy 108 bridge.

Firestone Polymers **Comment: 015/0007** **Response: 004/0128**

The thirty (30) day time period allotted for comments is inadequate and not feasible for Firestone to review and evaluate the draft study and make complete comments due to the volume of information required to be reviewed in an evaluation of the draft study and due to the technical complexities of the issues. Thus, Firestone requests an additional 90 days to review and provide comments to the TMDL. In addition, because of the large amount of issues and comments on the draft TMDL, Firestone requests that any revised TMDL be issued in draft form again for additional public comment before becoming final.

Firestone Polymers **Comment: 015/0008** **Response: 004/0033**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper.

LDEQ (in a letter to EPA dated August 20,2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

Firestone Polymers **Comment: 015/0009** **Response: 004/0034**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" several Court-Ordered "categorical" impairments.

LDEQ (in a letter to EPA dated October 10,2001) provided information clarifying the listings of "Priority organics" and "Non-priority organics" for the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901), and other segments. Based on this information LDEQ stated that the only POCs which are suspected cause of waterbody impairment are:

Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only).

LDEQ stated that no other use impairments for organic POCs have been documented.

LDEQ (In the same letter to EPA dated October 10,2001) provided information clarifying the listings of "Other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

Firestone Polymers **Comment: 015/0010** **Response: 004/0035**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of Calcasieu Estuary area which were not designed to support TMDL determinations.

In the Draft TMDL EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.

Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996

Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs.

Firestone Polymers **Comment: 015/0011** **Response: 004/0035**

The sampling schemes—locations, depths, compositing, etc—of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling

scheme (e.g. random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

Firestone Polymers **Comment: 015/0012** **Response: 004/0037**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data.

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)
4,4'-DDT, Bayou Verdine (030306)
Methoxychlor, Bayou Verdine (030306)
Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)
Zinc, Bayou Verdine (030306)
Calcium, Bayou Verdine (030306)

Firestone Polymers **Comment: 015/0013** **Response: 004/0038**

The LDEQ information referred to under 2a) above—combined with the absence of data showing presence in segment water or sediment above reference levels—should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)
Bromoform, Bayou D'Inde (030901)
1,1,2,2 Tetrachloroethane, Bayou D'Inde (030901)

Firestone Polymers **Comment: 015/0014** **Response: 002/0003**

Water and sediment quality data in these studies were not developed using consistent Data Quality Objectives (DQOs) appropriate for a TMDL process. The reference levels for POCs requires very low detection limits. There is no indication that the above studies used appropriate field and laboratory techniques necessary to assure the quality of these results, particularly a reasonable minimization of false positives at the reference level.

Firestone Polymers **Comment: 015/0015** **Response: 004/0040**

EPA's Draft TMDL does not address whether the above studies found the POCs under conditions consistent with application of the reference level—such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

Firestone Polymers **Comment: 015/0016** **Response: 004/0041**

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

Firestone Polymers **Comment: 015/0017** **Response: 004/0042**

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh conditions.

Firestone Polymers **Comment: 015/0018** **Response: 004/0043**

Reference levels for fresh water must adjusted for hardness.

Firestone Polymers **Comment: 015/0019** **Response: 003/0004**

Other factors affecting the application of water quality reference levels should be considered (e.g. using techniques similar to a Water Effects Ratio study.)

Firestone Polymers **Comment: 015/0020** **Response: 004/0045**

Reference levels that are not appropriate to local biota should no be used.

Firestone Polymers **Comment: 015/0021** **Response: 004/0046**

Sediment reference levels should be adjusted based on sediment mineral type, soil type,

AVS/SEM ratio, and other relevant characteristics.

Firestone Polymers **Comment: 015/0022** **Response: 004/0047**

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

Firestone Polymers **Comment: 015/0023** **Response: 004/0052**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations.

Interested parties in the Lake Charles area have demonstrated willingness to undertake detailed sampling studies—e.g., using "clean techniques"—for specific POCs that had previously been identified in the Court-Ordered List (e.g. copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA final determination of a TMDL.

Firestone Polymers **Comment: 015/0024** **Response: 004/0053**

EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination.

As explained on page ES-1 of the Draft TMDL, EPA has used a simple screening method to select POCs:

Pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; or

Pollutants with sediment concentrations exceeding ESGs or ERMs for 10% or more of samples.

This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (i.e. formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management.

The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

Firestone Polymers **Comment: 015/0026** **Response: 004/0001**

EPA has not made use of statistical techniques for evaluating the full range of results for POCs but rather has arbitrarily chosen to evaluate only exceedances.

Firestone Polymers **Comment: 015/0027** **Response: 004/0001**

A selection method based on finding "more than one exceedance" is arbitrary and has no sound scientific or statistical basis.

Firestone Polymers **Comment: 015/0028** **Response: 004/0057**

To evaluate a set of results for comparison with a reference level good scientific, statistical practice requires an appropriate estimate of central tendency—appropriate to the type distribution—and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

Firestone Polymers **Comment: 015/0029** **Response: 004/0058**

Good scientific practice also requires that nondetect values be assigned a surrogate value

consistent with the data quality and general nature of the evaluation. Calculation of the "mean of detected values" is not appropriate since it biases the evaluation.

Firestone Polymers **Comment: 015/0030** **Response: 004/0059**

EPA's use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.

Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

Firestone Polymers **Comment: 015/0031** **Response: 004/0060**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

Firestone Polymers **Comment: 015/0032** **Response: 004/0061**

Even assuming sediment results are indicative of conditions at the water column interface, EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification—based on scientifically valid, statistically representative, segment-specific data—for using sediment conditions as a basis for inferring the need for a water column POCs and TMDLs.

Firestone Polymers **Comment: 015/0033** **Response: 004/0062**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. The EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

4,4'-DDT, Bayou Verdine (030306)

Methoxychlor, Bayou Verdine (030306)

Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)

Zinc, Bayou Verdine (030306)

Calcium, Bayou Verdine (030306)

Firestone Polymers **Comment: 015/0034** **Response: 004/0063**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

Firestone Polymers **Comment: 015/0035** **Response: 004/0064**

ESGs and ERMs are not promulgated standards for protection of water quality and absent a rigorous scientific justification should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)

Mercury, Calcasieu Ship Channel (030301)

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

Firestone Polymers **Comment: 015/0036** **Response: 004/0109**

EPA should provide water quality endpoints based on dissolved concentrations of POCs.
LDEQ's water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

Firestone Polymers **Comment: 015/0037** **Response: 004/0110**

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments.
LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. As noted in Comment I.3.e) above, EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

Firestone Polymers **Comment: 015/0038** **Response: 004/0111**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. (Table 2. Summary of POCs)
Other factors can affect water quality criteria for toxic POCs and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific Water Effects Ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

Firestone Polymers **Comment: 015/0039** **Response: 004/0113**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

Firestone Polymers **Comment: 015/0040** **Response: 004/0113**

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error.
The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref. 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs.
Alternatively Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs.
However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3)
The low flow estimate for Bayou D'Inde appears to be in error.
Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of

7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above the PPG canal (PPG Outfall No. 001) near the Bayou D'Inde critical flow based on tide-cycle is reported to be 121 cfs (Ref 7). (Table 3. Summary of Segment Flow Estimates)

The estimates for the low flows on the remaining segments also appear to be in error.

Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.

The estimates for mean flows for the segments appear to be in error.

The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1) Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error.

LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).

The estimate for harmonic mean flow for Bayou D'Inde appears to be in error.

LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7)

The estimates for harmonic mean flows on the remaining segments also appear to be in error.

EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

Firestone Polymers **Comment: 015/0047** **Response: 004/0028**

EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors.

Table 4 shows these errors include:

Concoco—Primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Condea Vista—Permit being finalized to move primary outflows to the Calcasieu Ship Channel (Segment 030301).

Citgo—Outfalls for CitCon portion of operations (001, 002, 012) are to Bayou D'Inde (Segment 030901).

Lyondell—Stormwater Outfalls 025, 026, and 032 are to Bayou Verdine (Segment 030306).

PPG---Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

Firestone Polymers **Comment: 015/0047** **Response: 004/0026**

EPA's estimates of mean flow for most major point-source discharge outfalls contain numerous significant errors.

Table 4 shows these errors include:

Citgo Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 5.

Lyondell Calcasieu Ship Channel (Segment 030301) Discharge—off by a Factor of 4.

PPG Bayou D'Inde (Segment 030901) Discharge—off by a Factor of 10.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of mean flows for each segment.

Firestone Polymers **Comment: 015/0049** **Response: 004/0030**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors.

EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

Firestone Polymers **Comment: 015/0050** **Response: 004/0031**

EPA's should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach.

EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determine. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

Firestone Polymers **Comment: 015/0051** **Response: 004/0025**

EPA needs to correct errors in the segment flow.

Firestone Polymers **Comment: 015/0052** **Response: 004/0026**

EPA needs to correct errors in facility outfall flow.

Firestone Polymers **Comment: 015/0053** **Response: 005/0053**

EPA needs to determine if certain POC point source loadings are associated with point source stormwater outfalls and develop statistically valid segment flow estimates.

For some POCs, significant point source loads may be attributable to stormwater outfalls. In these cases, use of low flows for dilution are not reasonable since facility discharges of the POC would occur during periods when significantly higher stream flows would be present. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate segment flow estimates for stormwater events.

Firestone Polymers **Comment: 015/0054** **Response: 004/0027**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance calculations.

EPA's method for estimating facility maximum discharge (for use with chronic toxicity POC TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

Firestone Polymers **Comment: 015/0055** **Response: 005/0055**

Due the errors in locating discharge outfalls and estimating point-source flows EPA has not included allocations for all potential point sources.

Firestone Polymers **Comment: 015/0056** **Response: 005/0056**

PAHs may be present in petroleum refinery point-source discharges. EPA should include wasteload allocations for PAHs for all petroleum refineries.

Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.) Allocations of PAHs should be provided to:

Conoco—Calcasieu Ship Channel (Segment 030301)

Citgo—Calcasieu Ship Channel (Segment 030301)

Citgo—Bayou D'Inde (Segment 030901)

Firestone Polymers **Comment: 015/0057** **Response: 005/0057**

Given the indeterminate level of POCs in point-source stormwater, and very low wasteload allocations for these POCs, EPA should include wasteload allocations for POCs for all major facilities.

No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point-source discharges of stormwater should receive an allocation of each POC.

Firestone Polymers **Comment: 015/0058** **Response: 004/0121**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements.

There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are currently only two LDEQ certified laboratories which are offering "clean techniques" and both are out of state (Madison, Wisconsin and Seattle, Washington).

Firestone Polymers **Comment: 015/0059** **Response: 004/0122**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of "generic" endpoints, and facility flows.

Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of a new information.

Firestone Polymers **Comment: 015/0060** **Response: 004/0127**

Given the many identified limitations of the science in this TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as "provisional". EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly identify that such TMDLs are provisional. In this section EPA should set forth a process for prompt review and revision of the TMDL PA upon obtaining new information. Such information could be generated either by EPA itself, LDEQ or other interested parties.

Firestone Polymers **Comment: 015/0061** **Response: 006/0055**

EPA should specifically acknowledge that future ambient water quality information will result in delisting of POCs and rescinding of TMDLs.

Firestone Polymers **Comment: 015/0062** **Response: 004/0123**

Eliminate sampling and testing of total metals—dissolved only

The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

Firestone Polymers **Comment: 015/0063** **Response: 004/0124**

Eliminate requirement for LDEQ to sample and monitor sediments.

The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

Firestone Polymers **Comment: 015/0064** **Response: 004/0125**

Facilities should be allowed to report loadings on a "net" basis for POCs with non-point source load allocations.

Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. "Background" loads in segment water—including upstream, tributary, atmospheric, and non-point source loads—are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all "background" contributions from the facility's measured final discharge load.

PPG Industries, Inc. **Comment: 016/0001** **Response: 004/0128**

PPG Industries, Inc. requests that EPA extend the period for public comment on the proposed TMDLs for the following waterbody segments of the Calcasieu River basin: 030301, Calcasieu River & Ship Channel --Saltwater Barrier to Moss Lake (includes Coon Island and Clooney Island Loops); 030306, Bayou Verdine, and 030901, Bayou D'Inde. The TMDLs were proposed in 67 Federal Register 15196, March 31, 2002. The notice indicated that the deadline for public comment is April 29, 2002. PPG requests that this deadline be extended by 60 days, until June 28, 2002, because the current 30-day public comment period is inadequate to allow the regulated community sufficient time to review this proposal.

PPG Industries, Inc. **Comment: 016/0002** **Response: 016/0002**

The proposal actually referenced a draft TMDL report available on the EPA Region 6 website, but the appendices containing the supporting data were not available on the website. While we have ordered these, we have not yet received the supporting data. In addition, our preliminary review indicates that there appear to be factual errors omissions in the data upon which the proposal is based as well as potential legal errors in the methodology for determining TMDLs.

PPG Industries, Inc. **Comment: 016/0003** **Response: 016/0003**

In addition, we have concerns that EPA is proposing TMDLs for pollutants even where data demonstrate that the state numeric water quality standards are not being exceeded.

PPG Industries, Inc. **Comment: 016/0004** **Response: 004/0128**

The proposed TMDLs, if implemented, would have significant economic impact on PPG. EPA's rules provide for "a minimum" of a 30 day public comment period. It is our understanding that EPA is not subject to a current court imposed deadline to finalize these TMDLs. Further, in similar circumstances in other parts of the country, EPA has extended the public comment deadline (or due to extensive comments, has revised and reproposed TMDLs.) Due to the complex issues involved and the significant potential consequences of adoption of the TMDLs, we believe that more than a minimum amount of time is justified.

PPG Industries, Inc. **Comment: 016/0005** **Response: 002/0035**

It was not appropriate to establish a TMDL/WLA for nickel and mercury when these were not on the state's 303(d) list.

EPA has proposed TMDLs and WLAs for Bayou D'Inde for two pollutants that were not on the 1999 303(d) list. See DRAFT TMDL for Toxics for The Calcasieu Estuary, SAIC December 2001 ("Draft TMDL Report"), p. 3, Table 1. These two pollutants are mercury and nickel. Because these two parameters were not on the 303(d) list, EPA is not required by law to develop TMDLs for these and should not do so. Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d)(1) provides:

> Each State shall identify those waters or parts thereof within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters.
>
> Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. Pollutants identified under section 304(a)(2), as identified in section 303(d)(1)(C), are those pollutants specifically identified in a state's water quality standards.

PPG Industries, Inc. **Comment: 016/0006** **Response: 004/0002**

Further, the State of Louisiana has primacy over whether to add waters to the 303(d) list and the state should be given the opportunity to review such additional data to determine whether the 303(d) list should be amended to include these or whether the data show that no impairment due to these pollutants exists. By proposing TMDLs for parameters not on the state 303(d) list, EPA has usurped the state authority.

PPG Industries, Inc. **Comment: 016/0007** **Response: 004/0050**

Other Inorganics - Bayou d'Inde (030901) was listed on the 303(d) list for "other inorganics". LDEQ discussed the meaning of this term as follows:

Other Inorganics

Subsegment 030901 – Bayou D'Inde – Headwaters to Calcasieu River

The term "other inorganics" was intended as a generic term for those non-metallic inorganic compounds that may occur in the water from brine discharges during oil and gas activities. No water quality sample was collected; therefore, no quantitative assessment was made. Non-metallic inorganic water quality parameters in brine discharges include chlorides, sulfates, total dissolved solids and salinity.

> Since Bayou D'Inde is a natural estuarine waterbody frequently influenced by high salinity from the Gulf of Mexico, no water quality criteria for these parameters are set for the bayou in the Louisiana Water Quality Standards. The listing for "other inorganics" in subsegment 030901 was for general informational purposes and not a listing for impairment of water use by any specific parameter. (Emphasis added.)

Thus, it is clear that the term "other inorganics" does not include mercury or nickel. For this reason, EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for mercury and nickel for Bayou D'Inde.

PPG Industries, Inc. **Comment: 016/0008** **Response: 004/0001**

EPA should not establish TMDLs/WLAs for pollutants where there is no evidence of impairment.

Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), allows the state (or EPA in the case where the state has failed to act) to establish TMDLs only where technology based effluent limitations are not stringent enough to implement any water quality standard applicable to such waters. In short, TMDLs are authorized only where the state water quality standards are not

being met because technology based controls are insufficient. EPA is simply not authorized to establish a TMDL for a pollutant when state water quality criteria are already being achieved.

PPG Industries, Inc. **Comment: 016/0009** **Response: 004/0005**

There is no evidence of water quality criteria exceedances for a great number of pollutants for which EPA has proposed TMDLs for the Calcasieu Estuary. Where EPA's investigation of a pollutant shows that the state water quality standard for that pollutant is not being exceeded, then EPA must delist that waterbody for that pollutant on the 303(d) list. Indeed, EPA clearly has proposed to delist 20 waterbody/pollutant combinations in the Calcasieu Estuary and Ouachita River Basin for exactly that reason. See 67 Fed. Reg. 15176, March 29, 2002.

PPG Industries, Inc. **Comment: 016/0010** **Response: 004/0034**

The Louisiana Department of Environmental Quality has requested that Bayou d'Inde be delisted for all pollutants except HCB, HCBD, and PCBs. Louisiana LDEQ has provided data to EPA indicating that it believes that delisting is supported for most of the pollutants currently on the 303(d) list. The October 10, 2001 letter from the Louisiana Department of Environmental Quality to EPA Region 6, attached as Exhibit 1, made these recommendations for what pollutants should be delisted and which should be retained:

> 1) Delist priority organics as a suspected cause [of impairment] for subsegments 030301, 030302, 030303, 030304, 030305, 030306, 030401, and 030402. Subsegment 03901 will remain on the list [303(d) list] for priority organics because of a fish consumption advisory for HCB, HCBD and PCBs.
>
> 2) Delist non-priority organics as a suspected cause from subsegments 030302, 030306, and 030901[Bayou d'Inde].
>
> 3) Delist other inorganics as a suspected cause from subsegment 030901[Bayou d'Inde].

For these reasons, EPA should have delisted bromoform, tetrachloroethane and copper from the 303(d) list for Bayou d'Inde (and as noted above, mercury and nickel have never been on the list, so TMDLs should not be developed).

PPG Industries, Inc. **Comment: 016/0011** **Response: 003/0002**

EPA's own data indicate that bromoform and tetrachloroethane do not exceed the standards. Further, as discussed in Section II.B. of these comments, EPA had data clearly demonstrating that the state human health water quality criteria for bromoform and tetrachloroethane are met and that there is no reasonable potential for these criteria to be exceeded. Thus, EPA should delist these two compounds for Bayou d'Inde.

PPG Industries, Inc. **Comment: 016/0012** **Response: 002/0003**

EPA's data are inadequate to show any exceedance of the copper, mercury or nickel criteria and there is evidence demonstrating that there is no exceedance.

On August 20, 2001, LDEQ provided "clean techniques" sampling data to EPA demonstrating that there were no exceedances of the aquatic copper criteria in Bayou d'Inde, Bayou Verdine, and the Calcasieu Ship Channel. However, EPA's contractor apparently did not receive or did not consider this data for these waterbodies although similar data was used as a basis for delisting copper in other waterbodies in the Calcasieu Basin and other Louisiana waterbodies. The data provided by LDEQ to EPA in August 2001 was developed from a report commissioned by PPG titled "A Final Report for Trace Metals 'Clean Technique' Sampling and Laboratory Analysis, CK Associates, Inc., March 2001." A copy of this report is attached as Exhibit 3.

PPG Industries, Inc. **Comment: 016/0013** **Response: 002/0003**

EPA proposed TMDLs/WLAs for copper, mercury and nickel were based upon data collected

and analyzed without use of "clean techniques." As noted above, data collected using clean techniques was already been provided to EPA by LDEQ in August 2001, but apparently was not considered in the study. This data showed that there is no exceedance of the aquatic copper criteria and that Bayou d'Inde should thus be delisted for copper. The "dirty" data used by the EPA contractor showed nickel detected above the criteria in less than 10% of the samples. In light of this data , Louisiana Water Quality Standards indicate that clean techniques or ultra-clean techniques must be used when other data indicate that a criteria may be exceeded. LAC 33:IX.1113.C.6.f provides:

> f. The use of clean or ultra-clean techniques may be required to definitively assess ambient levels of some pollutants (e.g., EPA method 1669 for metals) or to assess such pollutants when numeric or narrative water quality standards are not being attained. Clean and ultra-clean techniques are defined in LAC 33:IX.1105. (Emphasis added.)

The relevant definitions of "clean" and "ultra-clean" in LAC 33:IX.1105 provide:

> Clean Techniques—those requirements (or practices for sample collection and handling) necessary to produce reliable analytical data in the microgram per liter (µg/L) or part per billion (ppb) range.
>
> Ultra-Clean Techniques—those requirements or practices necessary to produce reliable analytical data in the nanogram per liter (ng/L) or part per trillion (ppt) range.

The aquatic criteria for copper and nickel are in the part per billion range while the aquatic criteria for mercury are in the part per trillion range. Thus, the data used by the EPA contractor to form the basis for the TMDLs for these pollutants are simply not considered to be reliable data to establish standards in these part per billion and part per trillion ranges.

PPG Industries, Inc. Comment: 016/0015 Response: 004/0012

EPA's contractor should have collected additional data for these parameters using clean or ultra-clean techniques as specified by the LWQS because such data is "necessary to produce reliable analytical data" in the ranges established by the standards and the TMDLs. The failure to do so is inexplicable given that only clean or ultra-clean techniques data is considered by the scientific community (and the LWQS) to be the type of data that will support an actual waste load allocation and the attendant economic burdens that will be imposed on discharging entities.

PPG Industries, Inc. Comment: 016/0016 Response: 004/0014

With respect to mercury, EPA did not use ultra-clean techniques. Further, while EPA apparently detected mercury in the ambient water, it has not yet identified any exceedance of the chronic aquatic protection standard because it did not perform any fish testing. As will be discussed in Section II.B., however, LDEQ's aquatic protection criteria requires fish testing for implementation-LAC 33:IX.1113 Table 3 note 11. PPG is presenting with these comments a summary of a study of mercury levels in fish from the Calcasieu Estuary waterbodies performed for PPG by their contractors over a period of twelve years. This study demonstrates that there is no exceedance of the state aquatic protection criteria. Further, EPA data developed in Phase II of the Calcasieu Estuary Superfund Study support PPG's conclusion that there is no exceedance of the aquatic protection criteria. Finally, there is no seafood consumption advisory for mercury in the estuary. Thus, the TMDL for mercury should be withdrawn.

PPG Industries, Inc. Comment: 016/0017 Response: 004/0008

Although Louisiana LDEQ indicated that HCB, HCBD and PCBs should remain on the 303(d) list, this recommendation was solely due to the existence of a fish consumption advisory from the Louisiana Department of Health and Hospitals (LDHH). As will be discussed in Section II.B. of these comments, there is no current evidence of impairment of Bayou d'Inde for these

parameters even though the LDHH is protectively continuing the advisory. In fact, PCBs are banned from manufacture and most uses under the federal Toxic Substances Control Act, so such regulations provide reasonable assurance that this pollutant will not be an ongoing issue. TMDLs, which address current discharges, are simply unwarranted, as current discharges have no impact on water quality with respect to these pollutants.

PPG Industries, Inc. **Comment: 016/0018** **Response: 004/0007**

EPA's contractor has proposed TMDLs (and corresponding WLAs) for several of these pollutants based on the fact that the detection limit for such pollutants is lower than the relevant water quality standard. This is an inappropriate interpretation of the Clean Water Act. TMDLs are warranted only when there is evidence that a discharge has a reasonable potential to contribute to exceedance of a standard. It is not appropriate for EPA to adopt a TMDL simply because it presumes that substances do exist in the water and presumes further that these will be at levels above the standards. EPA should not presume impairment without scientific basis. EPA should withdraw TMDL/WLAs where there is no detection of such pollutants using reliable data (such as clean and ultra-clean data where warranted). EPA should rely instead on 40 CFR 122.44(d)(1)(i) and (vi)(A) and (B) which require the permitting authority to impose water quality based effluent limits where the discharges from an individual facility have "reasonable potential" to exceed a state water quality standard. Under these rules, if the permitting authority has reason to believe that a pollutant will contribute to an exceedance of the standard, a site-specific permit limit may be set. This existing rule is fully protective of water quality without the existence of a TMDL.

PPG Industries, Inc. **Comment: 016/0019** **Response: 002/0002**

EPA did not treat Bayou d'Inde as a tidally influenced waterbody.
Although Bayou d'Inde has been recognized by EPA many times to be tidally influenced and that such tidal influence is extremely important to the wasteload allocation process, EPA's contractor indicated in the Draft TMDL Report that tidal dispersion is "not important" at low stream flows. (Draft TMDL Report, p. 18). Not only is the contractor's statement completely without scientific basis, it is contrary to the Louisiana Water Quality Standards. Under LAC 33:IX.1115, entitled "Application of Standards", it is specified that human health criteria are to be applied through consideration of the average tidal cycle for tidally influenced waters and that aquatic criteria are to be applied at one third of the average tidal cycle which is representative of the critical low flow.

PPG Industries, Inc. **Comment: 016/0020** **Response: 004/0089**

EPA's contractor indicated that no estimates of tidal dispersion were available to use in a model. This statement is simply incorrect. Not only are reliable hydrodynamic models available, but there is also a wealth of data available to use as input to such models. Such data include: tidal records, salinity, bathymetry, and inflow. Thus, EPA must reassess Bayou d'Inde using appropriate tidal dispersion analysis.

PPG Industries, Inc. **Comment: 016/0021** **Response: 016/0021**

EPA's contractor grossly underestimated flows for Bayou d'Inde. The average tidal flow for Bayou d'Inde is 363 cfs according to a memorandum from Max J. Forbes, Jr., LDEQ Engineering Section to LDEQ and EPA permitting staff members. A copy of this memorandum is attached as Exhibit 4. The critical low flow, in accordance with the LWQS, LAC 33:IX.1115, is one-third of the average tidal flow or 121 cfs. Id. The basis for these determinations was a

Woodward and Clyde survey and a CK Associates survey, both with review and approval by LDEQ.

In contrast, the EPA contractor specified a 7Q10 flow of 0.1 cfs (as the critical low flow) and a harmonic mean flow of 24.7 cfs (which corresponds to average tidal flow in a tidally influenced waterbody). These flow estimates were unsupported in the Draft TMDL Report in spite of the fact that they differ so greatly from the flows developed by the LDEQ engineering section and provided to EPA in 1994. A side-by-side comparison shows the large discrepancy in these flows:

	EPA Presumed Flow (cfs)	Flow Per LDEQ Engineering (cfs)
Critical Low Flow	0.1	121
Long term avg.	24.7	363

If EPA proceeds with any TMDLs for Bayou d'Inde, it must revise the critical low flow and average tidal flow data to comport with the LDEQ engineering determination. Without appropriate flow data for the receiving streams and utilizing inaccurate discharge rates from facilities, the calculated in-stream analyte concentrations are over-estimated by orders of magnitude.

PPG Industries, Inc. **Comment: 016/0022** **Response: 004/0022**

EPA's use of a mass balance methodology was inappropriate for the Calcasieu Estuary.

EPA's Technical Guidance Manual for Performing Waste Load Allocations, Book III: Estuaries (EPA-823-R-92-005) (hereafter "Estuary Guidance Manual") recommends that a mass balance approach be used only as an initial step in establishing TMDLs/WLAs – prior to more refined modeling. Despite this guidance, EPA used such a mass balance approach for the final TMDLs found in this proposal rather than using it as only an initial screening tool. It is implied by EPA's contractor that this approach was chosen essentially because the contractor did not have time to do more. The time limitation, however, was self-imposed through a settlement agreement entered into between EPA and citizens groups in Sierra Club et al. vs. Clifford, Regional Administrator, EPA et al., Civil Action Number 96-0527, Section "S". Further, an agreed settlement imposed deadline should not, in any case, be a basis for abandoning the appropriate scientific approach for establishing a TMDL.

PPG Industries, Inc. **Comment: 016/0023** **Response: 004/0085**

EPA's contractor indicated in the Draft TMDL Report (p. 16) that it considered use of the WASP6 model but did not go forward with it because "[a]lthough the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited."

Data are not "extremely limited" in the Calcasieu Estuary. It is one of the most studied spots within EPA Region 6. In other localities, EPA and the states (or their contractors) have been able to address data gaps by using literature values for some of the constants. In addition, EPA guidance documents addressing selection of appropriate coefficients for these models are available. Finally, even if data for fate of pollutants is lacking, use of a model making conservative fate assumptions model could be used. Such a simplistic model would still be preferable to the mass balance approach used here.

PPG Industries, Inc. **Comment: 016/0024** **Response: 016/0024**

Use of a mass balance approach that does not include hydrodynamic modeling represents such an oversimplification of the system that it cannot be scientifically defended. EPA has recognized the complexity of the Calcasieu Estuary system and has indicated that hydrodynamic modeling is an

important component in establishing any TMDL/WLA for that system. In the Estuary Guidance Manual, where a peer review of prior modeling efforts on the Calcasieu Estuary associated with the development of a TMDL for dissolved oxygen was performed, it was stated:

> "The principal difficulty with the Calcasieu estuary is that it is so complex that virtually no model existing at the time of the study [1985] was fully equal to the task…...Future modeling efforts for this estuary should be directed to improving hydrodynamic simulation and estimates of waste loads." (p. 14-17, Emphasis added).

As EPA has already recognized, this level of complexity mandates sound hydrodynamic simulation and fate and transport modeling in order to develop acceptable TMDLs that are scientifically valid. This modeling must include hydrodynamics and water column/sediment pollutant interactions.

PPG Industries, Inc. **Comment: 016/0025** **Response: 016/0025**

EPA's use of the mass balance approach to model toxic pollutants in the Calcasieu Estuary system is of special concern when projecting compliance with aquatic protection criteria because these have a short-term exposure basis. This mass balance approach simply does not work when applied to a water subsegment that is miles in length and that is tidally influenced. The hydrodynamics of a surface water body must be considered as these determine the transport of pollutants and affect the environmental fate of such. EPA should have used a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants.

PPG Industries, Inc. **Comment: 016/0026** **Response: 004/0086**

As recommended in the Estuary Guidance Manual by the peer reviewers who reviewed an early model for the Calcasieu Estuary, hydrodynamic modeling must be developed for any system this complex in order for the TMDL to have validity. One of these reviewers stated: "good hydrodynamic models exist for virtually all types of estuarine systems." (p. 14-14) Thus, there is no readily apparent reason for not using such a model. Further, such hydrodynamic models should be calibrated and verified appropriately. Next, a water quality model should be developed which accounts for pollutant fate in the estuarine environment. The mass balance approach used by EPA's contractor did not address fate at all and thus, does not represent a realistic, scientifically valid process. Mechanisms affecting fate, such as biodegradation, volatilization, water column-sediment interactions, partitioning of pollutants to solids were simply ignored. Again, use of a mass balance approach is not scientifically valid for establishing a TMDL, although it may be useful as a general screening tool. EPA should complete the process by developing a modeling regime that incorporates both hydrodynamic and fate considerations prior to establishing any final TMDLs.

PPG Industries, Inc. **Comment: 016/0027** **Response: 016/0027**

It is a fundamental tenet of the Estuary Guidance Manual that in developing a TMDL, data gathering efforts should be specifically designed with the data quality objectives of the selected modeling system to be used. While "off-the-shelf" data may be useful in assisting in the process of identifying pollutants for further evaluation, EPA should not use such data extensively in the TMDL process when the data quality objectives for the studies leading to the generation of such data were significantly different than the data quality objectives necessary for a scientifically sound TMDL.

PPG Industries, Inc. **Comment: 016/0028** **Response: 004/0035**

In the case of the TMDLs proposed for Bayou d'Inde, it is difficult to discern exactly what data and what data quality objectives were used by EPA's contractor, as they are not well described in

the Draft TMDL Report. It is clear, however, that a least some of the data used by EPA's contractor did not meet appropriate data quality objectives for a TMDL.

EPA's contractor used the following reports as a source of data for this TMDL proposal:

Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.

Bayou d'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996

Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

These reports were conducted for very different purposes than are relevant for a TMDL and WLA. In many cases, they are screening type studies and in all cases, they are spatially and temporally limited water or sediment quality investigations. They were in no way meant to address ongoing wastewater discharges. They are not statistically representative of any area beyond the small areas at issue. They were focused on known or likely areas of contamination to identify needs for future studies. In many cases, the sediment samples were collected from depths that are not relevant to water column concentrations, yet EPA's contractor gave no analysis where sediment data was used to identify the depths of the samples.

For these reasons, EPA should reevaluate the data used and make its decisions concerning data quality objectives transparent so that it is clear whether there are any problems with use of such data in formulating TMDLs/WLAs. EPA should use only such data that meets data quality objectives consistent with development of a TMDL. This should be accomplished prior to any final TMDLs being promulgated.

PPG Industries, Inc. **Comment: 016/0030** **Response: 004/0016**

EPA grossly over-estimated loadings in many cases by ignoring non-detected values in facilities' DMRs.

PPG's NPDES/LPDES permit states that "zero" values should be reported for HCB and HCBD for any concentration below the analyte MDL. EPA's contractor apparently excluded values reported as non-detect or zero from its database. This may be why EPA's contractor apparently presumed, as shown in Appendix Table E-17, that PPG's average daily and maximum daily discharges of HCB and HCBD exceed PPG's permit limits. (The same error is found with respect to Westlake's anticipated discharges on Appendix E.) PPG routinely monitors these parameters and has achieved nearly 100% compliance with permit limits. No data exist to justify the EPA contractor's presumption that PPG's average and maximum loading exceed permit limits.

PPG Industries, Inc. **Comment: 016/0031** **Response: 016/0031**

PPG was not able to discern what years of DMR data were used by the EPA contractor as such was not stated in the Draft TMDL Report. Further, it is unclear whether EPA used permit limits or whether they used average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA says both in the Executive Summary of the Draft TMDL Report, p. ES2.

It is not clear what time period was reviewed and whether such time period is appropriate for this

TMDL proceeding. The Draft TMDL Report does not indicate which years of facility data were reviewed or why the time period is deemed sufficiently representative of normal plant operation. It is also unclear whether the data used is up-to-date.
PPG requests that EPA provide publicly accessible information to better describe the data it did use and then repropose this TMDL for comment to allow adequate public review of the data and assumptions used by EPA or its contractor.

PPG Industries, Inc. **Comment: 016/0032** **Response: 016/0032**

EPA did not use appropriate facility flows.
EPA's contractor erroneously used only the sum of PPG's internal outfalls 101 and 201 as the facility average flows. However, this estimate left out PPG's once through cooling water discharge, which is combined with the 101 and 201 flows and is discharged through Outfall 001. The appropriate average flow for PPG is the Outfall 001 flow. PPG is attaching, as Exhibit 5 a summary of its 2001 DMR flows for Outfall 001. This shows that the average daily flow is 154.8 MGD and that the maximum daily flow is 243.9 MGD. EPA should use these flows rather than those erroneously determined in the Draft TMDL report.
It should be noted that Outfall 001 flow rate is more than an order of magnitude greater than the sum of 101 and 201, so this is a significant issue for development of the appropriate TMDLs and WLAs.

PPG Industries, Inc. **Comment: 016/0033** **Response: 004/0017**

EPA misused data from the LDEQ Ambient Water Quality Network and NOAA's Calcasieu database.
This section implies a strong bias in the use of data in that all "non-detects" (ND) were ignored. In several instances, the majority of data entries were 'ND". Further, EPA's contractor inappropriately used only the mean of detected values to compare to state water quality criteria.

PPG Industries, Inc. **Comment: 016/0034** **Response: 016/0034**

Hexachlorobutadiene (HCBD) is not causing any current impairment of Bayou d'Inde and should be delisted. HCBD has not been detected by PPG in the water column in the Calcasieu Estuary, including Bayou d'Inde, since 1994. PPG tests water column data quarterly at each of the 11 fish monitoring stations from which fish samples are collected under the Calcasieu Estuary Biological Monitoring Program. Such water monitoring has been conducted for 12 years. The majority of these determinations were performed via EPA Methods 612 or 625 (SIM) with MDLs at 0.34 ug/L rather than those used by EPA in this TMDL analysis that used an MDL of 9 ug/L. Thus, even at a significantly lower detection limit than used by EPA, HCBD has not been found.

PPG Industries, Inc. **Comment: 016/0035** **Response: 004/0112**

Although the current state HCBD water quality criterion of 0.11 ug/L is below the detection limit, it is based on old EPA water quality criteria. Since the state criterion was developed, more recent studies led IRIS to adjust the cancer slope factors for HCBD. As a result, the revised EPA guidance recommends raising the criteria to 50 ug/L. See 62 Fed. Reg. 42160. Because LDEQ uses the same basis for establishing the water quality criteria as does EPA, it is anticipated that LDEQ will revise its water quality criterion for HCBD to incorporate this more recent scientific data at its next scheduled triennial review. The new EPA criterion is above the detection limits used by both PPG and EPA. Thus, it is clear that there is no current exceedance of any level posing any human health concern.

PPG Industries, Inc. **Comment: 016/0036** **Response: 016/0036**

Water column monitoring data is also well supported by years of HCBD fish tissue determinations throughout the estuary. PPG supplied eight quarters of fish testing data to EPA for use in this TMDL. Such data was from the Calcasieu Estuary Biological Monitoring Program, which is collected by CH2M Hill for LDEQ and LDHH and managed by PPG. The data supplied by PPG was used by EPA to develop Appendix Tables D-4 through D-6 of the Draft TMDL Report. However, PPG is not certain how EPA used this data, as these Tables appear to contain numerous errors when compared to the data originally supplied by PPG. PPG believes that EPA's contractor may have misaligned columns and/or put data in the wrong columns when preparing this chart. PPG is therefore supplying revised Tables D-4 through D-6 with the corrected data as Exhibit 6 to these comments.

PPG Industries, Inc. **Comment: 016/0037** **Response: 016/0037**

The Draft TMDL Report contains other obvious data errors as well. The Table 20 listing of "Existing" loads attributed to PPG for HCBD is in error. The mean and maximum loadings should indicate "ND" as the DMRs report zero values for non-detectable compliance monitoring, as instructed in Part I of PPG's NPDES Permit. PPG monitors and reports both internal outfalls and the final external outfall three times per week. Further, Appendix Table E-17 indicates that EPA's contractor erroneously determined that PPG's daily average and daily maximum loadings are higher than its permit limits. As noted, PPG's NPDES/LPDES permit monitoring shows that this is simply not the case, so the assumptions used by EPA for WLAs are invalid.
Given the above points, HCBD should clearly be delisted and no further TMDL activities are appropriate.

PPG Industries, Inc. **Comment: 016/0038** **Response: 016/0038**

EPA has proposed a TMDL for total PCBs for Bayou d'Inde. The Draft TMDL Report indicates that only 1 sample out of 27 water column samplings for PCBs in Bayou d'Inde showed detectable levels of PCBs. Without more supporting information concerning the data quality (general methodology, detection limits, selectivity of detection, quantification method) and given the difficulty of low level measurement, the use of this data point is questionable. EPA indicates that concentrations in fish tissue are indicative of water concentrations that may exceed the standard, but also states that none of the facilities permitted to discharge into this subsegment are permitted to discharge PCBs.

PPG Industries, Inc. **Comment: 016/0039** **Response: 004/0009**

PPG believes that it is inappropriate to establish TMDLs for PCBs because such will have no impact on PCB levels in the water column. PCBs are ubiquitous in the environment due to widespread use in electrical equipment prior to the adoption of the Toxic Substances Control Act ("TSCA") restrictions on the manufacture and use of PCBs. The presence of PCBs in the environment is due to past releases, particularly from transformers, prior to the TSCA program. However, the TSCA program has banned their manufacture and phased out their use. Thus, TSCA provides the reasonable assurance that measures have been and will be taken to address PCB contamination. Standards for ongoing wastewater dischargers beyond technology based effluent guidelines are not needed as they are not the solution to any PCB problem. This is the cornerstone requirement for enactment of a TMDL – and this requirement is not met. Instead, EPA should focus its efforts on ensuring compliance with TSCA requirements and the phase-out of use of PCB containing electrical equipment.

The fish tissue concentrations throughout the estuary, especially in less motile aquatic species, indicate the ubiquitous nature of PCBs. Further, comparison with nationally published data (EPA 1992) indicate the levels of PCBs found in the Calcasieu Estuary are typically encountered in other urbanized areas of the U. S.

PPG Industries, Inc. **Comment: 016/0040** **Response: 016/0036**

It should be noted that the data presented in the Draft TMDL Report, Appendix Tables D-7 through D-9 contain the same errors as were discussed above with respect to HCBD data in fish tissues. For this reason, PPG has included revised Tables D-7 through D-9 with Exhibit 6. These revised tables show the most recent eight calendar quarter monitoring data.

PPG Industries, Inc. **Comment: 016/0041** **Response: 004/0100**

It should also be noted that EPA has revised its human health criteria for total PCBs based upon changes in the IRIS database. In 1999 EPA revised the human health water quality criteria for PCBs in the National Toxics Rule. 64 Fed. Reg. 61182 (November 1999). The NTR calculates human health criteria for PCBs using the cancer slope factor entered in IRIS. Because better data became available as the result of new studies, IRIS updated the cancer potency factor. This updated cancer potency factor resulted in a revised EPA human health water quality criteria of 0.14 ug/L for protection of human health from consumption of aquatic organisms and water, and 0.15 ug/L for consumption of aquatic organisms only. Louisiana's human health water quality criteria of 0.01 ng/L is based on an outdated cancer slope factor and will likely be revised to reflect updated cancer potency data during the next triennial review.

However, even if the human health water quality criteria is revised, which will necessitate a revision of any TMDL, it is highly unlikely that any proposed or future TMDL-derived effluent limitations will cause any decline in tissue concentrations. A TMDL is simply not the appropriate vehicle to address PCB contamination.

PPG Industries, Inc. **Comment: 016/0042** **Response: 003/0002**

There is no evidence that 1,1,2,2-tetrachloroethane is causing any impairment as it has not been detected in Bayou d'Inde in at least the last ten years. EPA is proposing a TMDL for tetrachloroethane simply because it was on LDEQ's 303(d) list as a result of being detected once in the late 1980's in Bayou d'Inde and because the current standard is slightly below the detection limit. However, in its letter of October 10, 2001 to EPA attached as Exhibit 1, LDEQ requested that Bayou d'Inde continue on the 303(d) list only for HCB, HCBD and PCBs. EPA should delist Bayou d'Inde for this pollutant because EPA has no reason to believe that there is any reasonable potential for this pollutant to exceed the standard.

There is no evidence that bromoform is causing any impairment. In fact, EPA's own data indicate that "Bromoform is detected in water (Appendix Table B-33), but concentrations do not exceed the human health water quality criterion of 34.7 ug/L." (Draft TMDL Report p.42) EPA further acknowledges that the standard is above the detection limits. In its letter of October 10, 2001 to EPA attached as Exhibit 1, LDEQ requested that Bayou d'Inde continue on the 303(d) list only for HCB, HCBD and PCBs. EPA should delist Bayou d'Inde for this pollutant because EPA has no reason to believe that there is any reasonable potential for this pollutant to exceed the standard.

Based on the evidence reviewed in this section, there is no valid reason for not delisting bromoform from this basin subsegment. EPA has delisted other pollutants in other segments for exactly the same reasons.

PPG Industries, Inc. **Comment: 016/0044** **Response: 002/0003**

EPA did not use clean techniques for data acquisition for copper in this TMDL despite the fact that the Louisiana Water Quality Standards indicate that clean techniques data is required to assess compliance with criteria when such criteria are in the part per billion range, as is the aquatic criteria for copper. EPA was provided with copper data for Bayou d'Inde acquired through use of clean techniques but apparently did not consider it in this TMDL process. See Exhibit 2 attached to these comments. These data were apparently overlooked and hence, not used in the evaluation of copper. These data clearly refute the early, traditional techniques for water column evaluation and should be used as the basis for the delisting copper from this subsegment. None of the clean techniques dissolved copper values obtained from Bayou d'Inde exceeded the marine acute or chronic criteria. The data provided by LDEQ to EPA in August 2001 was developed from a report commissioned by PPG titled "A Final Report for Trace Metals 'Clean Technique' Sampling and Laboratory Analysis, CK Associates, Inc., March 2001." A copy of this report is attached as Exhibit 3. This report, together with LDEQ's August 20, 2001 report provide evidence that EPA should remove copper from the 303(d) list and withdraw the proposed TMDL for copper, not only on Bayou d'Inde, but also on Bayou Verdine and the Calcasieu Ship Channel/Coon Island Reach subsegment.

PPG Industries, Inc. **Comment: 016/0045** **Response: 016/0045**

Hexachlorobenzene (HCB) is not causing any current impairment of Bayou d'Inde and should be delisted. HCB has not been detected by PPG in the water column in the Calcasieu Estuary, including Bayou d'Inde, since 1994. PPG tests water column data quarterly at each of the 11 fish monitoring stations from which fish samples are collected under the Calcasieu Estuary Biological Monitoring Program. Such water monitoring has been conducted for 12 years. The majority of these determinations were performed via EPA Methods 612 or 625 (SIM) with MDLs at 0.05 ug/L. rather than those used by EPA in this TMDL analysis that used a higher MDL. Thus, even at a significantly lower detection limit than used by EPA, HCB has not been found.

PPG Industries, Inc. **Comment: 016/0046** **Response: 004/0112**

Although the current state HCB water quality criterion of 0.25 ng/L is below the detection limit, it is based on old EPA water quality criteria. Since the state criterion was developed, more recent studies led IRIS to adjust the cancer slope factors for HCB. As a result, the revised EPA guidance recommends raising the criteria to 0.77 ng/L. See 57 Fed. Reg. 60848. Because LDEQ uses the same basis for establishing the water quality criteria as does EPA, it is anticipated that LDEQ will revise its water quality criterion for HCB to incorporate this more recent scientific data at its next scheduled triennial review. The new criterion is still below the MDLs used by both PPG and EPA; however, testing by PPG and EPA have not detected any HCB in recent years.

PPG Industries, Inc. **Comment: 016/0047** **Response: 016/0036**

PPG believes that the years' worth of HCB fish tissue determinations throughout the estuary support the fact that HCB levels have been declining. Further, such data confirm that water quality levels are at the standards. PPG supplied eight quarters of such fish testing data to EPA for use in this TMDL. Such data was from the Calcasieu Estuary Biological Monitoring Program, which is collected by CH2Mhill for LDEQ and LDHH and managed by PPG. The data supplied by PPG was used by EPA to develop Appendix Tables D-1 through D-3 of the Draft

TMDL Report. However, PPG is not certain how EPA used this data, as these tables appear to contain numerous errors when compared to the data originally supplied by PPG. PPG believes that EPA's contractor may have misaligned columns and/or put data in the wrong columns when preparing these tables. PPG is therefore supplying revised Tables D-1 through D-3 with the corrected data. These revised tables are included within Exhibit 6 to these comments.

PPG Industries, Inc. **Comment: 016/0048** **Response: 016/0037**

The Draft TMDL Report contains other obvious data errors as well. The Table 28 listing of "Existing" loads attributed to PPG for HCB is in error. The mean and maximum loadings should indicate "ND" as the DMRs report zero values for non-detectable compliance monitoring, as instructed in Part I of PPG's NPDES/LPDES Permit. PPG monitors and reports both internal outfalls and the final external outfall three times per week. Further Appendix Table E-17 indicates that EPA's contractor erroneously determined that PPG's daily average and daily maximum loadings are higher than its permit limits. As noted, PPG's NPDES/LPDES permit monitoring shows that this is simply not the case, so the assumptions used by EPA for WLAs are invalid.

PPG Industries, Inc. **Comment: 016/0049** **Response: 016/0045**

Given that there is no evidence of impairment from HCB, HCB should be delisted. As evidenced by the declining values shown through fish tissue testing and the EPA contractor's conclusion that the fish tissue data confirms the water is at or near the criterion, any HCB contamination has been addressed, and regulation of ongoing wastewater discharges pursuant to a TMDL/WLA is not appropriate.

PPG Industries, Inc. **Comment: 016/0050** **Response: 002/0035**

Mercury was not on the 303(d) list; therefore, EPA should not develop a TMDL for mercury. Louisiana LDEQ has never added mercury to the 303(d) list; thus, it is inappropriate for EPA to propose a TMDL for mercury. As noted above, Louisiana LDEQ specifically confirmed in its October 10, 2001 letter to EPA, attached as Exhibit 1, that the 303(d) listing for "other inorganics" for Bayou d'Inde did not apply to specific metals. EPA cannot propose a TMDL for mercury under the Clean Water Act under these circumstances.

PPG Industries, Inc. **Comment: 016/0051** **Response: 004/0014**

EPA proposed a TMDL for mercury because it detected total mercury dissolved in the water column in 13 of 16 samples. However, the Louisiana chronic aquatic water quality criteria for mercury requires that if total mercury is detected in the water column, that is only an indicator, and to determine if there is an exceedance of the standard, fish testing is required. LAC 33:IX.1115. Table 1, note 11. Specifically, this rule provides:

> If the four-day average concentration for total mercury exceeds 0.012 µg/L in freshwater or 0.025 µg/L in saltwater more than once in a three-year period, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methylmercury exceeds the FDA action level (1.0 mg/kg). If the FDA action level is exceeded, the state must notify the appropriate EPA Regional Administrator, initiate a revision of its mercury criterion in its water quality standards so as to protect designated uses, and take other appropriate action such as issuance of a fish consumption advisory for the affected area.(Emphasis added.)

This criteria was adopted based on the recognition that methylmercury is the form of mercury that poses toxicity concerns for fish (and humans). EPA has not performed any fish testing. PPG has conducted testing of the edible portion of aquatic species of concern since 1989. PPG is attaching the results of this fish testing as Exhibit 7. The data confirm that there is no exceedance of the chronic aquatic criteria and that a TMDL is not necessary. This testing program was

conducted for PPG by CH2M Hill quarterly at 11 stations throughout Bayou d'Inde, Bayou Verdine, and the Calcasieu River. The locations of these stations are shown on Exhibit 8. The report attached as Exhibit 7 provides the data in several formats. Table 1 is a summary for the first two quarters of 2001. Table 2 presents the same information averaged by station for each species. Table 3 presents the average concentrations by study year for the study area. Table 4 presents the average mercury concentrations by study year for Bayou d'Inde related stations. And Table 5 provides a summary table showing average concentrations for each species, at each station, for each monitoring year since the program began in 1989.

Similar results were obtained by the EPA Estuary Phase II study, attached as Exhibit 9. This data, "Fall 2000 Human Health Fish Data Summary – EPA Phase II Estuary Study" was apparently not considered in the preparation of this TMDL. Exhibit 9 confirms that there is no exceedance of the state's chronic aquatic criteria for mercury and that the TMDL should be withdrawn.

These studies indicate that mercury in fish and shellfish tissues, although within acceptable criteria, is higher in the upper and middle Bayou d'Inde area, compared to lower portions of the Estuary. This is especially true in the upper reach of Bayou d'Inde where the water is fresher and originates from urban and agricultural runoff. The sparse data contained in Appendix Tables D-10 through D-12, attributed to NOAA, indicate largemouth bass to be the only elevated measurements. Some methylation may be occurring in this freshwater region. The average mercury tissue concentration in the lower portion of Bayou d'Inde from a much larger sample database collected by PPG from the period 1989 to present, however, is 0.208 mg/Kg (ppm), lower than similar areas within Louisiana. Using EPA's "Gold Book" marine species bioaccumulation factor (BAF) of 85,000 and the average tissue value for the lower Bayou d'Inde area, a methylmercury instream concentration is calculated to be 0.002 ug/L (ppb). This value is clearly an order of magnitude lower than the Louisiana marine aquatic protection criterion of 0.025 ug/L (Note that this section of the Draft TMDL incorrectly references the marine criterion as "copper of 4.4 ug/L" rather than the mercury criteria.)

The mercury concentrations in Bayou d'Inde compare favorably to the National Mean Mercury Concentrations in Tissues of Selected Fish Species, as shown on the chart attached as Exhibit 10.

PPG Industries, Inc. **Comment: 016/0054** **Response: 004/0012**

It should also be noted that the mercury water column data used in the Draft TMDL Report were obtained without benefit of ultra-clean techniques sampling or analyses. Further, the analytical methodology used, traditional cold vapor atomic absorption (CVAA-EPA Method 245.1), is inappropriate for the determination of low level, ambient water mercury concentrations. Not only is the MDL elevated, but also the method is prone to positive interferences, especially in saline matrices. In order to assess compliance with the mercury criteria, which is in the part per trillion range, EPA must use ultra-clean techniques for sampling per the LWQS requirements discussed above. Further, EPA should use analytical methods such as EPA 1631b or 200.8 which would be appropriate for water quality criteria comparisons.

PPG Industries, Inc. **Comment: 016/0055** **Response: 002/0035**

EPA proposed a TMDL for nickel for the chronic aquatic life criteria, although EPA's contractor detected nickel in dissolved water concentrations in excess of the acute standard in only 2 of 36 samples (less than 10%). As noted above, EPA did not use clean techniques for data acquisition for nickel in gathering this data despite the fact that the Louisiana Water Quality Standards indicate that clean techniques data is required to assess compliance with criteria when such

criteria are in the part per billion range, as is the aquatic criteria for nickel. It is scientifically invalid for EPA to propose a TMDL based on this limited data. Per LWQS, EPA must gather nickel data using clean techniques to determine whether there is any evidence of impairment of the standard. In light of the extensive history in other areas of the estuary and state where use of clean techniques have confirmed no exceedance of the nickel criteria, it is likely that this result will apply to further analysis of Bayou d'Inde as well. PPG would be willing to share in the cost of any clean techniques data gathering effort.

As noted above, because nickel is not on the 303(d) list in any case, EPA should withdraw the proposed TMDL until such further data gathering and evaluation is complete. Based on these observations, a TMDL for nickel is not justified for Bayou d'Inde at this time.

PPG Industries, Inc. **Comment: 016/0057** **Response: 016/0057**

The Draft TMDL Report erroneously speculated that mercury might be responsible for sediment toxicity in Bayou d'Inde.

The Draft TMDL Report indicated that mercury might be responsible for observed sediment toxicity in Bayou d'Inde. This statement was speculative and was not supported by any direct evidence. In fact, ChemRisk performed total mercury toxicity evaluations in sediment from lower Bayou d'Inde. These results are documented in a manuscript entitled "A Site-Specific Evaluation of Mercury Toxicity in Sediment," attached as Exhibit 11. The abstract of this study states:

Abstract. A site-specific maximum observed no-effect concentration was identified for mercury in sediments of the Calcasieu River estuary (Louisiana, USA), as an alternative to literature-based sediment quality assessment guidelines, which do not account for site-specific factors influencing mercury bioavailability and toxicity. Ten-day whole-sediment toxicity tests conducted under estuarine conditions (10 ppt salinity) assessed survival and growth (dry weight) of the amphipods Hyalella azteca and Leptocheirus plumulosus. A dilution study evaluated 29 sediment samples, including 11 analyzed for numerous chemical parameters. The maximum mercury concentration in a nontoxic sample was 2.8 mg/kg; however, toxicity associated with higher mercury concentrations appeared to be explained by other chemicals. A follow-up study was conducted, evaluating three sediment samples with mercury concentrations ranging from 0.3 to 4.1 mg/kg and relatively low concentrations of other co-contaminants. Results of this study indicated no toxicity attributable to mercury at the highest test concentration, indicating that the site-specific sediment effects threshold for mercury likely exceeds 4.1 mg/kg.

PPG Industries, Inc. **Comment: 016/0058** **Response: 016/0058**

Additionally, EPA's Phase II study database of the upper Calcasieu Estuary, including Bayou d'Inde, includes methylmercury sediment data. Lower Bayou d'Inde methylmercury data range from 0.002-0.005 mg/Kg, somewhat lower than the reference areas chosen for the study.

PPG Industries, Inc. **Comment: 016/0059** **Response: 004/0024**

EPA's contractor did not consider partitioning of organic chemicals and metals to particulates and subsequent sedimentation and potential resuspension.

EPA states that it did not include partitioning of organic chemicals and metals to particulates and subsequent sedimentation because: (1) it has no estimates of particle density and sedimentation rates; and (2) if metals and organic chemicals in particulates accumulate in contaminated sediments they will contribute to an existing impairment (draft TMDL, page 18). Both of these arguments for not dealing with this fate mechanism are unjustified. With respect to

sedimentation rates, there are ample data in the technical literature that can be used to estimate such rates in tidally-affected surface waters. As discussed earlier, default rates for variables such as sedimentation of particulates can be used in a model and sensitivity analyses can be used to establish acceptable estimates for prediction of water column pollutant concentrations.

PPG Industries, Inc. **Comment: 016/0060** **Response: 016/0060**

The particulates currently settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. Such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.

PPG Industries, Inc. **Comment: 016/0061** **Response: 004/0093**

A very important issue with respect to sediment-water column interaction and the fate of organic chemicals and metals in the Calcasieu Estuary is not evaluated by EPA (other than mentioning it) in the TMDL. The existing discharges may not contribute to the existing sediment contamination and may actually be diluting sediment contaminant concentrations if they are having any effect at all. However, EPA did not evaluate any fate or transport mechanisms with respect to sediment contamination so there is no information or evaluation to determine if existing discharges are contributing to sediment pollutant concentrations. The absence of any scientific analysis of the cause and effect relationship between discharges and sediment contaminants results in a scientifically flawed TMDL.

PPG Industries, Inc. **Comment: 016/0062** **Response: 004/0062**

NOAA ERM concentrations are not appropriate for establishing site-specific sediment toxicity correlations or TMDL targets.

NOAA developed its sediment quality guidelines, including the ERM values, to assist it in the identification of sediments that required additional study in its National Status and Trends Program. These sediment quality guidelines are not intended to be sediment criteria and should not be used for this purpose. NOAA's summary of its guidelines includes the following statement: "The SQGs were not promulgated as regulatory criteria or standards. They were not intended as cleanup or remediation targets, or as discharge attainment targets. Nor were they intended as pass-fail criteria for dredged material disposal decisions or any other regulatory purpose. Rather, they were intended as informal (non-regulatory) guidelines for use in interpreting chemical data from analyses of sediments." The NOAA SQGs cannot be used as de facto sediment quality criteria because they represent a range of aquatic organism species, sediment characteristics, and aquatic environments. The SQGs do not consider the bioavailability of pollutants that are influenced by local sediment and water chemistry. Likewise, the sensitivity of resident aquatic species is not reflected by the SQGs. Therefore, use of the NOAA SQGs as TMDL targets for certain pollutants found in sediments is not scientifically supported and cannot be the basis for the draft TMDLs.

EPA's SQGs are not sediment quality criteria and are not appropriate as TMDL targets.

EPA's SQGs are based on the equilibrium partitioning concept. 12 EPA originally proposed these values as sediment quality criteria but subsequently has identified them as guidelines because they do not reflect site-specific conditions and bioavailability of pollutants with sufficient reliability to be used as numeric sediment quality criteria. This is true even though they

consider the sediment organic content and acid volatile sulfides concentrations to predict the potential toxicity of nonionic organic chemicals and metals, respectively. The EPA SQGs are intended to be used in the same way as the NOAA SQGs — to identify sediments that merit additional study to determine whether toxicity is present and, if so, to conduct the required site-specific studies to identify the causative pollutant(s). They are not sediment quality criteria and cannot be used as target concentrations for a TMDL.

PPG Industries, Inc. **Comment: 016/0064** **Response: 004/0081**

EPA should not have allocated copper and nickel load allocations attributable to non-point sources when establishing the TMDLs.

The TMDLs for copper and nickel are both to implement the state aquatic protection criteria. EPA's contractor assumed loadings from nonpoint sources for these parameters. Doing so is technically incorrect for evaluation of aquatic life criteria when the evaluation of compliance with such criteria is at a critical low flow, such as the 7Q10 used in this TMDL proceeding. Obviously, there will be no surface runoff from rain events at the same time the critical low flow occurs; if it were raining there would be no low flow. Thus, there should be no presumption of non-point source loadings of these pollutants under this flow condition.

Although this is a logical conclusion, if the EPA contractor wanted to support such conclusion, then surface runoff can be evaluated by reviewing the stream flow records in the watershed to determine when the 7Q10 flow has most recently occurred and then collecting and evaluating precipitation records for the same time period. It is probable that even if there is precipitation somewhere within the watershed during the period when the 7Q10 occurs, it will be very limited in both amount and spatial distribution and will not contribute non-point source loadings of significance. The TMDL should be recalculated assuming that there is no non-point source loading for all pollutants that have aquatic life criteria as targets, i.e., those waste load allocations that are based on the critical low flow.

PPG Industries, Inc. **Comment: 016/0066** **Response: 004/0083**

EPA's contractor should not arbitrarily assign a 20% margin of safety.

Margins of safety for TMDLs should be based on estimates of the uncertainty of the estimated waste load and load allocations. EPA's contractor did not perform any analysis to justify its 20% margin of safety. (Draft TMDL Report, page 20). EPA has stated in the TMDL regulation (65 Fed. Reg. 43668, July 11, 2000) that the MOS should be based on the estimated uncertainty in the TMDL predictions. While this regulation is not yet in effect, EPA should base the margin of safety on an uncertainty analysis of the TMDLs.

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April 26, 2002

Ms. Ellen Caldwell
U.S. EPA, Region VI (6WQ-CA)
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Comments
Bayou Lafourche TMDLs for Dissolved Oxygen and Nutrients
Subsegment 080904

Dear Ms. Caldwell:

International Paper respectfully submits the following comments to the Draft TMDL Report referenced above:

1. USEPA's modeling of the impact of organic enrichment (CBODu) and nutrients is made extremely difficult by the lack of adequate data for hydrologic and water quality characteristics. Proper calibration of the model is not possible. The level of uncertainty associated with the TMDL calculation is somewhat addressed in the sensitivity analysis. *However, the sensitivity analysis results are not even interpreted or discussed!* Furthermore, there is no discussion of whether the assumed values for many key parameters (e.g. SOD, kinetic coefficients) are reasonable, given the results of more detailed model calibrations for other similar watersheds. Given the obvious limitations of this modeling application, the resulting TMDLs should be clearly qualified as **provisional.**

Response: *As discussed in the response to LDEQ's General Comment No. 1 above, these TMDLs were based on the most appropriate water quality and hydraulics data that could be obtained with available resources. In general, the coefficients in this model were consistent with and similar to values used in more detailed model calibrations in surrounding areas. Although it would be ideal to have more data for developing these TMDLs, the amount of data that was available and the level of detail of the modeling were considered acceptable for developing TMDLs for this subsegment. There is no provision for provisional TMDLs in the CWA or EPA's regulations.*

INTERNATIONAL PAPER

2. USEPA should include a section specifically providing for prompt review and revision of the TMDL by USEPA upon obtaining new information and updating of the modeling effort. Such information and model update could be generated either by USEPA itself, LDEQ, or other interested parties.

Response: *EPA agrees that a TMDL can be revised if additional information is obtained that indicates that a revision is warranted. The process for revising a draft TMDL is discussed in Section 8 of the report. Assessing and revising an existing TMDL is discussed in Chapter 3 of EPA's 1991 document titled "Guidance for Water Quality-Based Decisions: The TMDL Process" (Chapter 3 can be obtained at www.epa.gov/OWOW/tmdl/decisions/dec3.html).*

3. Finally USEPA should acknowledge that future ambient water quality information could result in delisting of the segment and rescinding of the TMDL.

Response: *Collection of future ambient water quality data would be helpful for implementation of the TMDL, but the TMDL would not be rescinded even if the data showed the subsegment to be meeting standards.*

Paper appreciates the opportunity to comment and if there are any questions, please contact Mr. Kernan Banker at the Louisiana Mill (318-556-1466).

Yours very truly,

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GREG VAN VOORHIS, MANAGER
LOUISIANA MILL

GVV/kmb

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LOUISIANA MILL (318) 281-1211

April 26, 2002

Ms. Ellen Caldwell
U.S. EPA, Region VI (6 WQ-CA)
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Final Draft
Dioxin TMDL for Tisdale Brake,
Staulkinghead Creek, Little Bayou Boeuf,
Wham Brake, and Bayou Lafourche
Subsegments 080912, 080900, 080904

International Paper respectfully submits the following comments to the Draft TMDL Report referenced above.

COMMENT
We object to the use of an estimated harmonic mean flow value as the basis for establishing the pollutant load allocation for dioxin in Staulkinghead Creek. Because the Louisiana Department of Environmental Quality (LDEQ) has designated Staulkinghead Creek Segment (080912) intermittent, it is our belief that using the receiving stream long-term average flow is more appropriate for this purpose.

Specifically, based upon recommendations contained in a use attainability analysis conducted by the LDEQ in 1994, Staulkinghead Creek was declared intermittent (Attachment A). The designated uses and water quality standards for this stream segment were modified accordingly (i.e., secondary contact recreation and limited aquatic life and wildlife use). We submit that this provides the basis for using an alternative to the 7Q10 statistic for establishing WQBELs for Staulkinghead Creek, as authorized by Louisiana Administrative Code (LAC) 33: IX. 111 5.C.7. a, b, and c:

a. Chronic aquatic life criteria apply outside the mixing zone, beginning at the edge. The 7Q10 is specified in Table 2a with the intention of limiting 7-day average concentration exceedences to no more than once every 10 years.

b. In perennial flowing streams (Table 2b, Categories 1 and 2), harmonic mean flow is specified for human health protection against carcinogens, and the 7Q10 is specified for human health protection against non-carcinogens.

c. These specified flows will not be appropriate under some circumstances, and

alternative formulations will be required to determine appropriate effluent limitations for equivalent protection of human health and aquatic life uses of the stream. These exceptions may include, but are not limited to (emphasis added), seasonally variable effluent discharge rates, hold and release treatment systems, and effluent dominated sites. The office may approve an alternative which is protective of designated uses, to be determined on a case-by-case basis."

For Staulkinghead Creek, an alternative to the harmonic mean flow statistic for human health protection is clearly appropriate. We submit that the only appropriate statistic in this case is the long-term average (LTA). The Draft TMDL Report (Draft Report) references a study prepared by Woodward Clyde Consultants (WCC) in 1991 as the source for the statement that no stream gauge exists in Staulkinghead Creek. However, the Draft Report fails to mention that the purpose of the WCC report was to evaluate low flow conditions in order to establish a dilution flow value for Staulkinghead Creek. The report concluded that statistically, the LTA value was the most appropriate flow for that purpose.

In the 1994 LDEQ use attainability analysis, the only fish species collected in Staulkinghead Creek was mosquitofish (Gambusia affinis , a species tolerant of low flow and poor water quality conditions. Because higher trophic-level species are not present within the immediate vicinity (and probably not for some distance downstream), the potential for biomagnification in this area is reduced. This, in addition to the intermittent natural conditions, supports the use of the LTA value for calculating the pollutant load allocation for dioxin.

Last year, the United States Court of Appeals for the Fifth Circuit ruled that intermittent streams do not qualify as navigable waters, and as such, are not subject to regulation under the Clean Water Act (Rice v. *Harken Exploration Co.).* We suggest that it may be altogether inappropriate to establish a TMDL for Staulkinghead Creek, and instead, focus on the discharge from Wham Brake. This is supported by the fact that the fish consumption advisory issued by the Louisiana Department of Health and Hospitals (LDHH) only addressed Bayou Lafourche and Wham Brake.

Response*: EPA has evaluated the information provided; however, the estimated harmonic mean flow must be used per Louisiana regulations.*

COMMENT
Five additional comments concerning the draft are:

1. On p. 2-1 summertime overtopping of Wham Brake has only occurred twice in the past 30 years. Therefore the phrase "once every few years at most" should be removed.

Response*: The phrase will be removed.*

2. a.) USEPA should present the MOS as the percentage reduction of the

load in this case 25%; and

b.) a 20% reduction (or an 80% multiplying factor) is consistent with other TMDLs for Louisiana streams (including fish advisory driven TMDLs for mercury) USEPA should use an MOS of 20%.

***Response**: In response to discussions with the EPA Region 6 and LDEQ, Parsons will recalculate the TMDL based on a 20% MOS.*

3. USEPA's recommendation of fish sampling in Staulkinghead Creek (p. 5-3) is inappropriate given the LDEQ stream study.

***Response**: Fish tissue data is lacking for this stream. EPA considers the sampling to be reasonable and relevant since the stream represents the immediate receiving water for the facility discharge. The TMDL indicates that a one-time sampling of fish would be appropriate to evaluate the presence or absence of bioaccumulation, assuming an adequate fishery is present to sample. This data will be weighted along with data for fish tissue in Wham Brake and Bayou Lafourche in deciding whether to revise, continue or discontinue the fish tissue sampling program.*

4. USEPA should acknowledge that in the future, upon LDHH lifting of the fish consumption advisory for dioxin, the segment will be delisted and the TMDL rescinded.

***Response**: Fish consumption advisories are rescinded once the state determines that the risk to human health is not significant. However, TMDLs are not typically rescinded once they are established for a waterbody, even when the waterbody is delisted. In the future, determinations could be made on the need to revise or update the TMDL to reflect current conditions.*

5. The year provided on pp. ES-2 and 5-3 for which the Louisiana Mill modified its process to become ECF should be changed from 1998 to 1994.

***Response**: EPA acknowledges the error. The change has been made.*

Yours very truly,

INTERNATIONAL PAPER
PRINTING & COMMUNICATIONS PAPERS

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VIA FEDERAL EXPRESS

May 9, 2002

Ms. Ellen Caldwell
Water Quality Protection Division
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Dear Ms. Caldwell:

Re: TMDL for Atrazine in Big Creek (Subsegment 080903)

On March 6, 2002, EPA announced the availability for comment of the administrative record file and TMDL calculations for waters listed in the Calcasieu and Ouachita River Basins under Section 303(d) of the Clean Water Act (67 Fed. Reg. 15196). This record includes a TMDL for atrazine in Big Creek (Subsegment 080903). Our review of this TMDL, entitled "Total Maximum Daily Load (TMDL) for Selected Pesticides in the Ouachita River Basin" (hereinafter the "TIVIDL"), shows that EPA used the draft atrazine chronic water quality standard of 12.0 pg/I as the basis for (1) determining that atrazine contributed to the non-attainment of designated uses in Big Creek, and (2) setting a non-point source load allocation for Big Creek. Such an approach is not consistent with applicable federal (§1 22.44(d)) or state (LAC 33:IX:1 1 13.C.6) regulations and it fails to account for the ongoing public participation process wherein Syngenta submitted extensive comments to EPA on the validity of the draft atrazine criteria in January 2002 (comments enclosed). Information and analyses contained in those comments demonstrate that much less restrictive criteria should be applied in reviewing the need for or establishing a TMDL in this instance.

We understand that the proposed Big Creek atrazine TMDL did not consider the public comments submitted on the draft criteria, although the comments were directly relevant to the preliminary decision to apply the 12 ug/l chronic criteria. Discussions with Regional Counsel David Gillespie indicate that because the relevant information was timely submitted to EPA, well in advance of the close of the comment period, such information would be addressed in this TMDL process. Based upon both site-specific and general information contained in our January 2002 comments, the proposed TMDL is

unnecessarily restrictive and should be withdrawn. Because the appropriate instream criteria is well above the measured data, Big Creek uses are not adversely affected by atrazine and the 303(d) listing should be revised to exclude atrazine as contributing to use impairment. Our specific comments on the TMDL are provided below.

***Response**: EPA believes that the public notice and comment period provided for these TMDLs was adequate. After the draft was proposed for public comment, EPA region 6 received and considered Syngenta's comments on the draft criteria document. Thus, EPA believes that it has appropriately responded to the comments received. However, EPA will continue to accept information submitted regarding potential errors in the TMDL, and/or to meet with parties to discuss potential errors. If the Agency determines that errors were made, it will issue a correction notice or revise the TMDL, as appropriate.*

1. Application of EPA Draft Criteria is Inappropriate

EPA evaluated compliance with designated uses based on its Draft Criteria for Atrazine of 12 pg/l. This chronic criterion should not have been used because it is under public comment, subject to change, and does not represent a final EPA decision. Federal regulations (40 CFR §1 22.44(d)) require that EPA or the state establish limits necessary to meet Louisiana's narrative criteria for water quality using EPA's published criteria. EPA has not published its final atrazine criteria because the public comment process is ongoing. Until the review is complete, it is premature to assume that the criteria represent the technically correct maximum allowable in-stream concentration. It is clearly inappropriate to use the draft atrazine chronic criterion as the basis for this TMDL without considering the relevant comments submitted on the draft criteria and other relevant site-specific information.

As documented in the detailed comments, the draft criteria were developed using toxicity data that are suspect and/or inapplicable to Louisiana's receiving waters. In the first case, the draft water quality standard was driven by the toxicity test results for midges. The midge LC50 was far more sensitive than any other organism (by a factor of four at 720 pg/1). Syngenta commented that the midge results were based on toxicity tests using organisms in the first instar. The *Guidelines* for *Deriving Numerical* National Water Quality Criteria for the Protection of Aquatic Organisms *and Their* Uses (USEPA 1985) (hereinafter the *"Guidelines') specifically* state that for midges, only the 2 nd and 3rd instar should be used in acute testing. Therefore, the test results for first instar should not have been used to generate an acute or chronic water quality criteria. If the first instar toxicity data are removed from the midge database, as specifically required by EPA's criteria derivation *Guidelines,* the next lowest LC50 would be significantly greater than the value used to establish the acute and chronic criteria in the draft atrazine criteria (3000 pg/1).

Second, the draft chronic criterion of 12 pg/I was derived from the midge LC50 (720 pg/1) and the final fish acute/chronic ratio of **56.86.** The final fish acute/chronic ratio was driven by the test results for brook trout (with the highest ACR of any organism in the atrazine database at 71.33). Brook trout are not native to Louisiana receiving waters and cannot survive there due to natural, ambient conditions. Consequently, pursuant to the applicable state narrative criteria procedures, the brook trout data should have been excluded from atrazine criteria calculations for Louisiana waters. If the trout ACR was excluded and all of the relevant data were used, the resulting chronic criterion would be significantly greater (about a factor of 4) than the proposed chronic criterion.

Syngenta conducted a static midge study in January 2002 and was unable to replicate the test results from the 1976 Macek study. The new study data indicate concentration up to 20X higher do not cause acute toxicity. Given the significance of these findings, Syngenta is presently (May 2002) conducting a flow-through test with the midge using EPA Office of Pesticide Program protocols. Upon completion, a report will be provided to your regional office and to **EPA/OW and OPP** in Washington, DC.

In summary, the TMDL should not have used the draft chronic atrazine criterion, as it is not technically justified and does not reflect the latest information on midge sensitivity. Application of the draft criterion is particularly inappropriate given that it depended upon the results from the midge tests, which deviated from EPA's own criteria derivation guidelines and the new data confirm that substantially higher exposures are acceptable. Even if the midge data were acceptable, as used in the draft criteria, the chronic criterion relied on the ACR for trout, an organism not found in Louisiana. At a minimum, the chronic criterion should be recalculated without the trout ACR and using all of the relevant ACR data which would produce a chronic criteria of at least 50 pg/l.

Response: *The commenter asserts because the proposed value in the draft atrazine document was based on species not indigenous to Louisiana waters that the target number is invalid. EPA develops ambient water quality criteria to protect aquatic life in general. The toxicity data from a number of individual species that have been tested is used to derive criteria that provide protection for all species, most of which have not been tested. EPA believes that these tested species, whether they exist in a given location or not, represent the sensitivity of the many untested species which do exist in that location.*

A determination to evaluate the avaliable data to address the commenters point would be a state determination. We have been in contact with LDEQ and LDAF

and they have expressed that the concerns have merit and deserve study. However, this will require time and cannot be completed before this TMDL is due. EPA is willing to work with the appropriate State agencies and Syngenta to make a determination of the appropriateness of the species included in the draft criteria document. If a modification to the TMDL target is appropriate, the TMDL can be revised to reflect this new value.

2. Numeric Target Based on Louisiana Regulations

Given that the final federal atrazine criteria have not been published, EPA should have developed a numeric target based on LAC 33:IX.1 1 13.C.6.b using the lowest LC50 and an application factor of 0.05 for chronic criteria, as described in Appendix B-2 of the TMIDL. The lowest LC50 value for atrazine, identified in the draft water quality criteria development document, was 720 pg/I for midges (a questionable value under review, which is likely to increase as discussed above). Based on the midge LC50, a numeric target for atrazine of 36 pg/I should have been used to assess designated use impairment. This target is three times higher than the draft chronic criterion.

In summary, the evaluation for designated use impairment due to atrazine contained in the TMIDL should have been based on a numeric target in accordance with Louisiana regulations. If the midge results contained in the atrazine database were appropriate and are not supplemented by the latest studies, the resulting numeric target would be 36 pg/l, a concentration also significantly greater than the draft criterion. Based upon the length of the studies used to derive the chronic endpoints, at least a 30-day averaging period should have been used to apply this criteria.

Response: *In this instance, EPA is choosing and defending a TMDL target. EPA is not taking final action on the EPA draft criterion or implementing a State criterion. The language refered to in LAC 33:IX.113.C.6.b is specifically for development of statewide numeric water quality criteria that are adopted by the State of Louisiana. EPA is not establishing a State water quality criterion in this case, but is using the most reasonable information available to apply the State narrative water quality criterion and establish a quantitative target for this TMDL. In order to meet the court-ordered schedule for development of TMDLs, EPA worked with LDEQ and LDAF to develop numerical targets for several pesticides/herbicide compounds for which no numeric water quality criterion had yet been developed. Because EPA is not attempting to develop a criterion number for atrazine, EPA is not compelled to use the method outlined in LAC 33:IX.1113.C.6.b. EPA has discussed this matter with LDEQ and the agencies agree that, in this case, use of the EPA's draft ambient water quality criteria value*

is not inconsistent with state water quality standards. EPA notes that previously, in a similar situation for diazinon, the agencies agreed to use an EPA draft criteria document to establish the quantitative TMDL target. No comments adverse to using this approach for the diazinon TMDL were received. LDEQ does maintain, however, that a TMDL should only be developed using a promulgated State water quality criterion. It is EPA's position that these TMDLs are an interpretation of the State's adopted, and EPA approved, narrative water quality criterion for toxics. EPA regulations at 40 CFR 130.7(b)(3) require that for purposes of listing impaired waters "all standards including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements" must be considered.

3. Delisting for Atrazine Supported by Data

The TMIDL identifies a maximum concentration of 21.32 pg/I for atrazine in Big Creek *(see* TMIDL Table 2 @ 7). This concentration is 40% less than the numeric target of 36 pg/I derived using the questionable midge results. The data confirm that atrazine is not contributing to use impairment in the Ouachita River Basin or in Big Creek as all ambient values are much less than any appropriately derived chronic criteria. Therefore, the water body should be considered fully supporting of designated uses with regard to atrazine. Given this fact, atrazine should be removed from the 303(d) listing for pesticides in the Ouachita River Basin. This delisting is supported by the data collected by EPA, USGS, and LIDEQ.

Response: *The proposed target has not been revised at this time, so the original assessment that the waterbody is impaired remains valid.*

4. Localized Concentration Provision Unlawful

The TMDL includes a provision to control localized loads so that the numeric target for atrazine (12 pg/1) is not exceeded anywhere in the watershed *(see T*MDL @ 21). The derivation of the appropriate criteria is clearly sensitive to the type of organisms to be protected and the duration of exposure that may occur. For example, if fish do not reasonably inhabit an area (e.g., intermittent stream) then a much higher exposure level would be considered acceptable. This provision regarding localized concentrations is unlawful and inappropriate because nothing in the record shows that water quality standards are appropriate to all locations such as intermittent streams. Other organisms, such as trout, will clearly not be present at any location. The site-specific objectives contained in the TMDL only apply to a specific location. EPA cannot claim the numeric objective applies to all sub ecosystems within the watershed under a narrative

criteria implementation framework. The Agency must consider site-specific factors including type of organism present, habitat, duration and magnitude of exposure, etc. before it can apply the numeric target to localized regions.

Since the factors identified above have not been considered, except at the confluence of Big Creek and the Boeuf River, the provision concerning localized concentrations should be removed from the TMDL.

Response: *Pursuant to 40 CFR 131.4(a), states are responsible for reviewing, establishing, and revising water quality standards. Title 33, Part IX, Louisiana Surface Water Quality Standards, §1113.B - General Criteria states: "Except where specifically exempted elsewhere in these standards, the general criteria shall apply at all times to the surface waters of the state, including wetlands, whether they are identified in the standards or not. General criteria specifically apply to human activities . . . ." Therefore, the narrative criteria for toxic substances, which is listed under general criteria, applies to all waters of the state including intermittent streams.*

The regulation LAC 33:IX.1113.B.5, Toxic Substances, reads as follows. "No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life."

5. Margin of Safety Arbitrary

The TMDL includes an explicit margin of safety of 20%. Given the fact that there are no point sources within the drainage area, urban land use is less than 1% in the drainage area for Big Creek, and atrazine is a restricted-use pesticide, the only contribution of load (by definition) comes from non-point sources that are included in the load allocation. The term "non-point" encompasses all loading sources of atrazine within the watershed. Furthermore, the TMDL did not use a model to predict fate characteristics, but rather calculated a load, based on flow in Big Creek, that would not exceed the numeric target. There is no "uncertainty' regarding this calculation. Thus, it is not apparent why any safety factor would be required to adopt this TMDL.

Since all sources of atrazine are addressed by the TMDL, there is no uncertainty in calculating a flow-based TMDL, and the margin of safety should be deleted as unnecessary.

Response: *MOS is established to allow for several items including, modeling uncertainties, data inadequacies, and safety. EPA applied the typical LDEQ MOS as outlined in the Louisiana TMDL Technical Procedures (LTP) manual. The LTP manual states that "procedures and standards of practice for toxic pollutants are not yet fully developed: however, most sections of the LTP are equally applicable to toxic pollutants." LDEQ has typically reserved an explicit MOS of twenty (20%) for nonconservative pollutants.*

In summary, the proposed TMDL for atrazine should be withdrawn in light of the information submitted in response to the draft criteria proposal, the fact that brook trout do not inhabit Big Creek, and later studies confirming that midges are far less sensitive than reported in the draft criteria document. All of the alternative criteria calculations produce an in-stream objective far greater than current ambient conditions. *Under these circumstances, Big Creek should be delisted for atrazine*

Sincerely

Dennis P. Tierney, Ph.D.
Environmental Stewardship
and Regulatory Policy

0508CI DT [BB-LETTERS]

Enclosure

cc: Emelise Cormier
Louisiana Department of Environmental Quality
Larry LeJune
Louisiana Department of Agriculture and Forestry

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May 1, 2002

Ms. Ellen Caldwell
Environmental Protection Specialist
Water Quality Protection Division
U. S. Environmental Protection Agency Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: **Comments on Proposed TMDLs for Louisiana Waterbodies,**
Federal Register Notice: Volume 67, Number 61, pages 15196-15198 (3/29/2002)

Dear Ms. Caldwell:

Through this letter the Louisiana State University AgCenter would like to submit official comments on the TMDLs posted for dissolved oxygen, turbidity, total suspended solids, total dissolved solids, nutrients, and fecal coliform in the above referenced *Federal Register.* Due to the large number of waterbodies listed for the various TMDLs, we will restrict our comment to categories and detail our comments by stream segments.

Fecal coliform: **Contraband Bayou, Turkey Creek, Middle Fork BayouD'Arbonne, Little River, Clear Lake, Bayou Macon, and Bayou Chauvin**
For Clear Lake, the TMDL document states that there is no data on the bacteria populations in the lake. We recommend that the TMDL be developed once sufficient data are collected. With the exception of Contraband Bayou, all of the
other streams are rural and mostly drain wooded or agricultural areas with low population densities and relatively few livestock. Research conducted at the LSU Agricultural Center has shown large populations of fecal coliforms a runoff from grassy and wooded areas with no presence of livestock or manure applications. These bacterial populations may reach or exceed 9,000 cfu's/100 ml and must be considered background or natural populations for which a TMDL may not need to be written. The natural versus man made portions of the bacterial populations in these streams must be determined before a TMDL can be developed. Contraband Bayou drains part of urban influenced Lake Charles and may receive its bacterial contamination from storm sewer surges or urban storm water. We concur that the standard may not be achievable, therefore we suggest that the standard be revised to reflect these conditions.

Response: EPA appreciates your comments. TMDLs must be written to comply with currently adopted state water quality standards. Establishing water quality standards is a State function. Your comments will be forwarded to the Louisiana Department of Environmental Quality for

consideration during the next standards review process.

Oxygen and Nutrients: **Joes Bayou, Ouachita River, Tensas River, Corney Bayou, Clear Lake, Black River, Bayou LaFourche, Bayou de L'Outre, and Bayou Bonne Idee** In many of these streams the data are limited, covers a brief period, and/or was collected 10 to 20 years ago. Samples taken twice a month over a 180 day period are not the same as once a month over a full year, and cannot be represented as a years sampling. In a number of waterbodies, the characteristics of the stream were derived using data from representative waterbodies. Data from representative streams are not the same as data from the named stream. Again we request that all of the DO standards for Louisiana streams in low profile areas be reexamined and set at appropriate levels and not an arbitrary numeric standard of 5 mg/l.

Response: *Your comments concerning data limitations are noted. EPA agrees that data from the stream under consideration is ideal. However, where data is limited the use of representative watersheds for establishing certain parameters is a long-standing and accepted practice. Establishing water quality standards is a State function. Your comments will be forwarded to the Louisiana Department of Environmental Quality for consideration during the next standards review process.*

Turbidity, Siltation, and Suspended Solids: **Ouachita River Basin13 Subsegments and English Bayou.**
Most of the soils in the Ouachita drainage have significant clay and silt contents. When fine particles in these substrates are suspended in water they tend to remain in suspension for long periods of time. The reductions in nonpoint source loading called for in many of the subsegments exceed 80% and appear to be unachievable; therefore we suggest that the standard be revisited.

Response: *Your comment concerning clay particles is valid and we agree that in areas with high silt and clay contents that turbidity values may be influenced by these particles. This is an area that deserves additional study. Establishing water quality standards is a State function. Your comments will be forwarded to the Louisiana Department of Environmental Quality for consideration during the next standards review process.*

I would like to thank you for your consideration in reviewing these comments. We at the LSU AgCenter take the condition of Louisiana's surface waters seriously. The audiences that we serve, both rural and urban, depend on a clean water for their health, prosperity, and recreation. As our population grows, the demands on that supply and its quality increase. We again offer our support and assistance in achieving this goal.

Again, thank you for allowing us to submit formal comments, and please feel free to call upon us if we can be of any additional assistance.

Sincerely,

William B. Richardson, Chancellor and Chalkley Family Endowed Chair