

mouth of Gum Creek has been removed by previous rulemaking by ADEQ in 2004.)

2. Lion has operated an oil refinery, storage, and distribution center in El Dorado, Union County, Arkansas since 1922. Current refinery capacity is approximately 70,000 barrels/day (bpd).

3. Storm water runoff and treated process wastewater are discharged from various outfalls at the facility as authorized by the Arkansas Department of Environmental Quality (ADEQ) under Lion's National Pollutant Discharge Elimination System (NPDES) Permit No. AR0000647 (the "Permit.") The facility has one treated process wastewater outfall (Outfall 001) and six storm water outfalls (Outfalls 002, 003, 004, 005, 006/007), all of which discharge to Loutre Creek. Outfalls 002, 003 and 004 are storm water only outfalls which discharge on a regular basis during storm events. Outfalls 005, 006 and 007 contain storm water commingled with treated process wastewater. Outfalls 005 and 006 are emergency overflow outfalls from holding ponds located in the facility and contain the commingled storm water. Outfall 005 is an emergency overflow outfall as shown in the Spill Prevention Countermeasure (SPCC) Pond, and Outfall 006 is an emergency overflow outfall on the Main Holding Pond (Main Pond.) Outfall 007 is a controlled storm water discharge from the Main Pond, which has potential to discharge storm water commingled with process wastewater. Due to the close proximity of the outfalls with one another, they are treated as one with regards to in stream mineral concentrations and the proposed rulemaking changes for Loutre Creek and Bayou de Loutre.

4. In 2003, Lion entered into a Consent Decree with EPA and ADEQ which required Lion to install a wet scrubber at the facility to reduce SO₂ air emissions. The wet scrubber was installed and operational on the facility's Cat Cracker in March 2004. The use of the scrubber

converts the SO₂ to sodium sulfate in a water solution, which is captured in the process waste water. The waste water treatment is not designed to remove dissolved minerals such as sodium sulfate, and since there is no economical treatment technology available for the removal of dissolved minerals, the result is an increase of approximately 1500-2000 ppm TDS to the Outfall 001 discharge in the form of sodium sulfate. In addition, in order to meet the new and more stringent sulfur standards for Tier 2 fuels as mandated by EPA regulations, Lion recently installed a new diesel hydrotreater and a gasoline hydrotreater. These regulatory-required modifications contribute additional TDS to the process waste water. As a result of the increasing need for domestic fuel supplies and limited domestic refinery capacity, Lion also anticipates increased production at the facility from 70,000 bpd to 85,000 bpd, which will result in a proportional increase to TDS. As part of the upgrade, it is anticipated that the Cat Cracker capacity will be expanded from its current capacity of 20,000 bpd to 25,000 bpd, therefore sulfate and TDS from the scrubber will increase proportionately. In order to account for these increases, the instream criteria are being proposed as the 95 percentile of the historical data plus 20%.

Historical toxicity testing in 100% whole effluent from primary discharge Outfall 001 effluent demonstrate that it consistently passes the lethality endpoints of the applicable critical dilution over the last five years. Prior to that time, the storm water did not indicate a potential for toxicity in the discharges; the dissolved mineral concentrations show no adverse effect on the aquatic life communities of the affected watercourses.

According to ADEQ Regulation No. 2, the critical flow for mineral criteria is the harmonic mean flow or 4 CFS. Since there is limited flow data for Bayou de Loutre, a harmonic

mean flow could not be determined and the 4 CFS default for small streams was utilized in the mass balance modeling. The 4 CFS flows were applied for each watershed along with the default background concentration for each dissolved mineral as stipulated in the ADEQ CPP document.

At the request of ADEQ, the Louisiana Department of Environmental Quality (LDEQ) was briefed on this rulemaking due to consideration of its potential affect on Louisiana's water quality standards (LWQS). The critical flow utilized by LDEQ in applying its dissolved minerals water quality criteria is the long term average (LTA) flow and not the harmonic mean or 4 CFS utilized by Arkansas. This proposed rulemaking modifies only existing sulfate criteria and does not propose modifications to the existing Arkansas criteria for chlorides or TDS in Bayou de Loutre downstream of the mouth of Boggy Creek. In order to determine the potential effect of this rulemaking on the Louisiana sulfate standard, in its WQS study Lion determined the long term flow condition for Bayou de Loutre and applied it along with the projected facility loadings and background flows, 4 CFS, and eco-region default concentrations. Lion found that the projected IWCs for Bayou de Loutre from the Arkansas/Louisiana state line would maintain the state standard at the prorated long term average flow. This information was provided to LDEQ; and LDEQ provided documentation that supported Bayou de Loutre's compliance with Louisiana's existing dissolved mineral standard. As a result, LDEQ found that there was no reason to expect the proposed rulemaking to have a negative impact on their continued compliance with the dissolved mineral standard.

5. The effluent limitations for chloride sulfate and TDS in the Permit are based upon the maintenance of the designated, but not existing, domestic water supply use for the applicable Arkansas WQS as follows:

Ecoregion criteria for the Loutre Creek Segment

- Chloride 14 mg/L
- Sulfate 31 mg/L
- TDS 123 mg/L

Stream dissolved minerals criteria for Bayou de Loutre from Loutre Creek to the discharge for the City of El Dorado South Facility

- Chloride 250 mg/L
- Sulfate 90 mg/L
- TDS 500 mg/L

Stream dissolved minerals criteria for Bayou de Loutre from the discharge from the City of El Dorado-South downstream to the mouth of Gum Creek

- Sulfate 90 mg/L
- TDS 500 mg/L

Stream dissolved minerals criteria for Bayou de Loutre from the mouth of Gum Creek downstream to the state line;

- Sulfate 90 mg/L

6. Pursuant to APCEC Regulation No. 2, the watercourses at issue herein are assigned the following designated uses:

Loutre Creek

- Secondary Contact Recreation
- Perennial and Seasonal Gulf Coastal Fishery
- Domestic, industrial and agricultural supply

Bayou de Loutre (above Gum Creek)

- Primary and Secondary Contact Recreation
- Perennial and Seasonal Gulf Coastal Fishery
- Domestic, industrial and agricultural water supply.

Bayou de Loutre (below Gum Creek)

- Primary and Secondary Contact Recreation
- Seasonal and Perennial Gulf Coastal Fishery
- Industrial and agricultural water supply (as documented in ADEQ's Regulation No. 2, domestic water supply use does not exist for this water segment.)

These designated uses are existing uses with the exception of the domestic water supply use.

7. Through this Petition, Lion is requesting the following amendments to APCEC

Regulation No. 2:

- a. modify the dissolved minerals criteria for the Loutre Creek Segment as follows:
 - Chloride from 14 mg/L to 256 mg/L
 - Sulfate from 31 mg/L to 997 mg/L
 - TDS from 123 mg/L to 1756 mg/L
- b. modify the dissolved minerals criteria for Bayou de Loutre from Loutre Creek to the discharge from the City of El Dorado South Facility as follows:
 - Chloride from 250 mg/L to 264 mg/L
 - Sulfate from 90 mg/L to 635 mg/L
 - TDS from 500 mg/L to 1236 mg/L
- c. modify the dissolved minerals criteria for Bayou de Loutre from the discharge from the City of El Dorado South downstream to the mouth of Gum Creek as follows:
 - Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 431 mg/L
 - TDS from 500 mg/L to 966 mg/L
- d. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Gum Creek downstream to the mouth of Boggy Creek as follows:
 - Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 345 mg/L
 - TDS from 750 mg/L to 780 mg/L
- e. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Boggy Creek downstream to the mouth of Hibank Creek as follows:
 - Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 296 mg/L
 - TDS: NO CHANGE
- f. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Hibank Creek downstream to the mouth of Mill Creek as follows:
 - Chloride: NO CHANGE

- Sulfate from 90 mg/L to 263 mg/L
 - TDS: NO CHANGE
- g. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Mill Creek downstream to the mouth of Buckaloo Branch as follows:
- Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 237 mg/L
 - TDS: NO CHANGE
- h. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Buckaloo Branch downstream to the mouth of Bear Creek as follows:
- Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 216 mg/L
 - TDS: NO CHANGE
- i. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Bear Creek to the final segment of Bayou de Loutre as follows:
- Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 198 mg/L
 - TDS: NO CHANGE
- j. modify the dissolved minerals criteria for Bayou de Loutre (Final Segment) to the Arkansas/Louisiana State Line as follows:
- Chloride: NO CHANGE
 - Sulfate from 90 mg/L to 171 mg/L
 - TDS: NO CHANGE

In addition, the designated domestic water supply use be removed from the following locations:

- Loutre Creek from Hwy 15 South (upstream terminus) to its confluence with Bayou de Loutre (see Figure 6.1).
- Bayou de Loutre from the mouth of Loutre Creek to the mouth of Gum Creek (Figure 1.2). As presented in the background information, the domestic water supply use for Bayou de Loutre downstream of the mouth of Gum Creek has been removed by previous rule making (ADEQ, 2004).

8. A black-lined version of the specific changes which are requested to Regulation

No. 2 is attached hereto as Exhibit "A" and is incorporated herein.

9. On October 3, 2006, Lion submitted to ADEQ a document entitled *Section 2.306 Site Specific Water Quality Study* in support of this Petition (hereinafter “the Study”). The Study is filed contemporaneously herewith as Exhibit “E.” This document fully satisfies the information requirements of Section 2.306 of Regulation No. 2 for Site Specific Criteria for amending Regulation No. 2.

10. This Petition is supported by the following facts:

- According to state resource agencies, the domestic water supply use designation for Loutre Creek was assigned by default, is not an existing use, and not attainable use due to the natural, ephemeral and low flow conditions which prevent the attainment of such use.
- The aquatic life field studies conducted in May 2005 show that, despite the fact that the affected watercourses are seasonal wet weather tributaries with small watersheds which limit the development of biotic communities, the designated aquatic life use and the biological integrity of the watercourses are being maintained downstream of the discharge.
- Recent process and air emission control equipment (scrubbers) have been added to the facility in response to the Consent Decree to control air emissions; and hydrotreaters have been installed in order for the facility to meet newer and more stringent environmental sulfur standards for Tier 2 fuels. The required equipment has been responsible for the recent increase in sulfates and TDS in the treated waste water discharged through Outfall 001.
- As a result of the increasing need for domestic fuel supplies and limited refinery

capacity, Lion anticipates increased production at the facility which will result in a proportional increase to TDS and sulfate. In order to account for the increases in sulfates and TDS due to installation of the required equipment and anticipated increase in production, the instream criteria are being proposed as the 95 percentile of the historical data plus 20%.

- Historical toxicity testing in 100% whole effluent from primary discharge Outfall 001 effluent demonstrate that it consistently passes the lethality endpoints of the applicable critical dilution over the last five years; and toxicity testing on the storm water outfalls has not been required during the past five years. Prior to that time, the storm water did not indicate a potential for toxicity in the discharges; the dissolved mineral concentrations show no adverse effect on the aquatic life communities of the affected watercourses.
- There is no current economically feasible treatment technology for the removal of chloride, sulfate, and TDS. Ion exchange and reverse osmosis treatment technologies do exist; however, these methods are not cost effective on a large scale basis, are prohibitively expensive, and generate concentrated brine which is environmentally difficult to dispose of. Such treatment technology is not required to meet the existing uses and would not add any significant environmental protection.
- Modification to the mineral criteria will not preclude the attainment of other designated and attainable uses.
- The critical flow for mineral criteria is the harmonic mean flow or 4 CFS. Since

there is limited flow data for Bayou de Loutre, a harmonic mean flow could not be determined and the 4 CFS default for small streams was utilized in the mass balance modeling.

- LDEQ does not expect the proposed rulemaking to have a negative impact on Louisiana's continued compliance with the dissolved mineral standard.

11. The Questionnaire for Filing Proposed Rules and Regulations with the Arkansas Legislative Council and Joint Interim Committee is attached hereto as Exhibit "B", with an Executive Summary attachment, and is incorporated herein.

12. The Financial Impact Statement is attached hereto as Exhibit "C" and is incorporated herein.

13. The Economic Impact/Environmental Benefit Analysis is attached hereto as Exhibit "D" and is incorporated herein.

14. Lion has reviewed Executive Order 05-04 and has determined that the request herein does not affect small business for the following reasons: (a) there are no commercial operations located on or adjacent to the affected watercourses which use the waters; (b) while this rulemaking will increase the loadings for sulfate and TDS of the affected watercourses, these increases are primarily a result of Lion's recent required improvements in air emissions control equipment; and will set the WQS at a level reflective of current concentrations in the stream segments. Therefore, there will be no impact to any agricultural or business usage of the affected watercourses as a result of the increase; and (c) the aquatic life studies of the affected stream segments demonstrate maintenance of designated fishery use. Therefore no economic impact analysis by the Arkansas Department of Economic Development is required.

15. Documentation supporting the changes requested by paragraph 7 above has been reviewed by the Arkansas Natural Resources Commission (ANRC) and the Arkansas Department of Health and Human Services (ADHHS). The ANRC has provided documentation that the requested changes do not conflict with the Arkansas Water Plan. The ADHHS has provided documentation that neither Loutre Creek or Bayou de Loutre above Gum Creek, have been approved as, or are being considered as, domestic water sources. Copies of these agencies' documentation are attached hereto as Exhibit "F" and incorporated herein.


16. The Minute Order to initiate rulemaking is attached hereto as Exhibit "G" and is incorporated herein.

WHEREFORE, Lion Oil Company, requests that the Commission initiate a rulemaking to amend Regulation No. 2 in the manner requested in Paragraph 7, above.

Respectfully submitted

CHISENHALL, NESTRUD & JULIAN, P.A.
400 West Capitol, Suite 2840
Little Rock, AR 72201
Telephone: 501-372-5800
Facsimile: 501-372-4941

By:



Charles R. Nestrud, AR Bar 77095
Ann P. Faitz, AR Bar 86058

CERTIFICATE OF SERVICE

I, Ann P. Faitz, state that I have, on this 13th day of October, 2006, hand-delivered a copy of the foregoing Petition to Initiate Third-Party Rulemaking to Amend Regulation No. 2 to Ms. Ellen Carpenter, Arkansas Department of Environmental Quality, 8001 National Drive, Little Rock, AR 72219.



Ann P. Faitz