

# APPENDIX

20.14 Texas Commission on Environmental Quality, Consolidated Air Quality Permit

## Section 1 - Document

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY****AIR QUALITY PERMIT***A PERMIT IS HEREBY ISSUED TO***KMCO Port Arthur, Inc., d.b.a. KMTEX***AUTHORIZING THE CONSTRUCTION AND OPERATION OF***Custom Chemical Processing Plant***LOCATED AT Port Arthur, Jefferson County, Texas***LATITUDE 29° 49' 40" LONGITUDE 093° 57' 45"**

- 1. Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code § 116.116 (30 TAC § 116.116)]
- 2. Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the TCAA, including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10% of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120(a), (b) and (c)]
- 3. Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
- 4. Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify to the Office of Permitting, Remediation, and Registration the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
- 5. Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]

7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]

8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)]

9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with § 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC § 116.115(b)(2)(G)]

10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition are applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]

11. This permit may be appealed pursuant to 30 TAC § 50.139.

12. This permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]

13. There may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]

14. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in TCAA § 382.003(3) or violate TCAA § 382.085, as codified in the Texas Health and Safety Code. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.

PERMIT 74398Glenn Shankle

Date: December 29, 2005 Executive Director

Texas Commission on Environmental Quality

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## Section 1 - Document

### SPECIAL CONDITIONS

Permit Number 74398

#### EMISSION STANDARDS

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and the facilities covered by this permit are authorized to emit subject to the emission rate (ER) limits on that table and other operating conditions specified in this permit.

#### OPERATIONAL LIMITATIONS

2. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subparts A, Kb, VV, NNN, and RRR on Standards of Performance for New Stationary Sources promulgated for Volatile Organic Liquid Storage Vessels, for Equipment Leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI), for VOC Emissions from SOCMI Distillation Operations, and for VOC Emissions from SOCMI Reactor Processes.

3. These facilities shall comply with all applicable requirements of the EPA regulations in 40 CFR Part 61, Subparts A, VV, BB, and Y on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for Equipment Leaks, for Benzene Emissions from Benzene Transfer Operations, and for Emissions from Benzene Storage Vessels.

4. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

5. Fuel gas used in the combustion units associated with this permit (Emission Point Nos. [EPNs] H-1, H-2, B-1, and B-2) shall be limited to pipeline-quality, sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet.

6. The Flare (EPN FLR-1) shall be designed and operated in accordance with the following

requirements:

A. The combined fuel gas and waste streams to each flare tip shall meet the 40 CFR § 60.18 specifications for minimum net heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Flare testing per 40 CFR § 60.18(f) may be requested by the Texas Commission on Environmental Quality (TCEQ) Houston Regional Office to demonstrate compliance with this condition.

B. Each flare shall be operated with a flame present at all times and have a constant pilot flame. The pilot flame shall be monitored by a thermocouple or an infrared monitor.

C. Each flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.

D. The permit holder shall install a calorimeter in the vent stream as near as possible to the flare inlet such that the total heating value to the flare is measured. The calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare in Btu/standard cubic feet of the gas. A gas chromatograph may be used in lieu of the calorimeter. Readings shall be taken and recorded at least once every 15 minutes.

The calorimeter shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a rolling 12-month period.

7. Each tank truck filled shall pass annual leak-tight testing as follows:

A. The permittee shall not allow any tank truck to be filled or emptied unless the tank being filled or emptied has passed a leak-tight test within the last year as evidenced by a prominently displayed certification affixed near the Department of Transportation certification plate which shows:

(1) The date the tank truck last passed the leak-tight test required by this condition, and

(2) The identification number of the tank truck.

#### LEAK DETECTION AND REPAIR PROGRAM

8. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - Intensive Directed Maintenance - 28MID - except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute (psia) at 68° F or (2) operating pressure is at least 5 kilopascals (0.725 pound per square inch) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall

conform to applicable American National Standards Institute, American Petroleum Institute (API), American Society of Mechanical Engineers, or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by Title 30 Texas Administrative Code (30 TAC) Chapter 115, shall be identified in a list to be made available upon request.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a) - (b).

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump and compressor seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, compressor seals, and pump seals found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable

effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

I. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

J. The percent of valves leaking used in paragraph I shall be determined using the following formula:

$$(V_l + V_s) \times 100/V_t = V_p$$

Where:

$V_l$  = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

$V_s$  = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

$V_t$  = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor valves.

$V_p$  = the percentage of leaking valves for the monitoring period.

K. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard, or an applicable NESHAPS and does not constitute approval of alternative standards for these regulations.

9. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or another air stripping method approved by the TCEQ Executive

Director.

Cooling water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity, but no later than the next scheduled shutdown of the process unit in which the leak occurs.

Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds one ppmw. The VOC concentrations above one ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded.

10. Facility operations are limited to the handling of those chemicals appearing on the Approved Chemicals List (ACL). New compounds may be added through the use of the procedure below, 30 TAC Chapter 106, or 30 TAC Chapter 116.

A. Short-term (pounds per hour) and annual (tons per year) emissions shall be calculated for each chemical at each affected source; ERs shall be calculated in accordance with the methods documented in the amendment application dated January 20, 2005. The calculated ERs shall not exceed the maximum allowable ER at any emission point.

B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Section.

C. The total emissions of any compound from all emission points in this permit must satisfy one of the following conditions:

(1) The total maximum ER from all sources is less than 0.04 lb/hr and the ESL greater than 2 ug/m<sup>3</sup>; or

$$(2) (ER/ESL)_N \leq (ER/ESL)_E$$

$(ER/ESL)_N$  = maximum hourly ER of new compound(s) divided by its ESL

$(ER/ESL)_E$  = the highest ratio of any previously authorized compounds hourly ER divided by its ESL)

D. The permit holder shall maintain records of the information below and the demonstrations in steps A through C above. The following documentation is required for each compound:

(1) Chemical name(s), composition, and chemical abstract registry number if available;

(2) True vapor pressure at maximum hourly and annual average storage temperature;

(3) Molecular weight;

(4) Storage tanks, loading areas, and fugitive areas where the material is to be handled and the emission control device to be utilized;

(5) Date new compound handling commenced;

(6) Material Safety Data Sheet; and

(7) Maximum concentration of the chemical in mole percent (or in weight percent for fugitive areas) in the affected facilities.

11. For each approved chemical, Attachment A indicates the control method and additional handling restrictions for that chemical. Each chemical shall be controlled and handled in accordance with these specifications. Chemicals accepted in accordance with paragraph C of Special Condition No. 10 shall be controlled as required by Attachment A for a chemical in the same chemical family with an equal or higher toxicity rating ( $[ER/ESL]_N$ ). Mixtures of chemicals shall be subject to the most stringent handling restrictions specified for any of the chemical constituents present in concentrations greater than 0.5 percent by volume. Mixtures of chemicals requiring different control methods shall be routed to the appropriate sequence of control devices. Records of column and reactor charge rates shall be maintained on-site for a period of two years.

12. During loading operations the facility shall employ closed-loop vapor balancing to a control device to control emissions of compounds with an aggregate partial pressure less than or equal to 0.5 psia at the maximum operating temperature.

13. Halogenated VOC streams shall vent through a carbon adsorption system (CAS) consisting of at least two activated carbon canisters that are connected in series.

A. The CAS shall be sampled daily to determine breakthrough of VOC. The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during loading. Daily testing is not required if no loading takes place within the sampling interval.

B. The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), or a TCEQ-approved alternative detector. The instrument/FID must meet all requirements specified in § 8.1 of EPA Method 21 (40 CFR Part 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows:

(1) Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be dichloromethane at a concentration within  $\pm 10$  percent of 100 ppmv, and certified by the manufacturer to be  $\pm 2$  percent accurate. Calibration error for the zero and span calibration gas checks must be less than  $\pm 5$  percent of the span calibration gas value before sampling may be conducted.

(2) The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.

(3) During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least five minutes, recording one-minute averages, during loading.

C. Breakthrough shall be defined as the highest one minute average measured VOC concentration at or exceeding 100 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second

canister and a fresh canister shall be placed as the new final polishing canister before the next loading session. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

D. Records of the CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:

- (1) Sample time and date;
- (2) Monitoring results (ppmv);
- (3) Corrective action taken including the time and date of that action; and
- (4) Process operations occurring at the time of sampling.

14. Tanks are approved to store the liquids on the ACL, Attachment 1 or in accordance with Special Condition No. 10.

Storage tanks are subject to the following requirements. The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, August 11, 1989) to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.

F. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

15. Storage tank vents and loading operations will be controlled in accordance with the approved control methods specified on Attachment A for each chemical handled. Regardless of the control method indicated on Attachment A, all storage tank vents will be controlled if (1) the VOC being stored has an aggregate partial pressure of greater than or equal to 0.5 psia at the maximum expected operating temperature and, (2) the storage tank capacity is greater than or equal to 25,000 gallons.

16. The caustic scrubbing system shall maintain a solution pH greater than eight. The pH of the scrubbing liquid shall be continuously monitored on the exiting the side of the absorber tower. Process controls on the scrubber will automatically add caustic as needed to maintain a minimum monitored pH of 8.0 standard units. The scrubber shall vent to the flare. The caustic circulation rate shall be at least 5 gallons per minute. The pH and the circulation rate of the scrubbing solution shall be recorded at least once per day.

17. Before loading a marine vessel with a VOC which has a vapor pressure equal to or greater than 0.5 psia under actual storage conditions, the owner or operator of the marine terminal shall verify that the marine vessel has passed an annual vapor tightness test as specified in 40 CFR § 63.565(c) (September 19, 1995) or 40 CFR § 61.304(f) (October 17, 2000).

Dated \_\_\_\_\_

## Headers

SPECIAL CONDITIONS

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SPECIAL CONDITIONS

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## Section 1 - Document

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 74398

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## AIR CONTAMINANTS DATA

Emission Source Air Contaminant Emission Rates\*Point No. (1) Name (2) Name (3) lb/hr TPY\*\*B-1 Boiler 1 NO<sub>x</sub> 0.49 2.15

CO 0.41 1.80

VOC 0.03 0.12

SO<sub>2</sub> 0.01 0.01PM<sub>10</sub> 0.04 0.16B-2 Boiler 2 NO<sub>x</sub> 1.18 5.15

CO 0.99 4.33

VOC 0.06 0.28

SO<sub>2</sub> 0.01 0.03

PM<sub>10</sub> 0.09 0.39H-1 Heater 1 NO<sub>x</sub> 1.96 8.59

CO 1.65 7.21

VOC 0.11 0.47

SO<sub>2</sub> 0.01 0.05PM<sub>10</sub> 0.15 0.65H-2 Heater 2 NO<sub>x</sub> 2.45 10.74

CO 2.06 9.02

VOC 0.13 0.59

SO<sub>2</sub> 0.01 0.06PM<sub>10</sub> 0.19 0.82H-3 Heater 3 NO<sub>x</sub> 1.18 5.15

CO 0.99 4.33

VOC 0.06 0.28

SO<sub>2</sub> 0.01 0.03PM<sub>10</sub> 0.09 0.39FLR-1 Flare NO<sub>x</sub> 20.12 4.87

CO 51.06 12.36

VOC 159.23 17.12

SO<sub>2</sub> 0.01 0.01

F-1 Fugitives (4) VOC 1.55 6.81

TT-W West Tank Truck  
Loading VOC 26.01 (5)

NaOH 0.01 (5)

H<sub>2</sub>SO<sub>4</sub> 0.01 (5)

TT-E East Tank Truck  
Loading VOC 6.50 (5)

NaOH 0.01 (5)

H<sub>2</sub>SO<sub>4</sub> 0.01 (5)

TT-399 North Tank Truck  
Loading VOC 6.50 (5)

NaOH 0.01 (5)

H<sub>2</sub>SO<sub>4</sub> 0.01 (5)

RC-1 Rail Car Loading VOC 13.00 (5)

NaOH 0.01 (5)

H<sub>2</sub>SO<sub>4</sub> 0.01 (5)

Annual Rail Car/ VOC 8.95

Tank Truck Loading Emissions NaOH 0.02

H<sub>2</sub>SO<sub>4</sub> 0.02

Storage Tank Emission Cap VOC 94.86 8.95

(EPNs T-100, T-200, T-300, NaOH 0.01 0.01

T-400, T-500, and T-600) H<sub>2</sub>SO<sub>4</sub> 0.01 0.01

BRG-1 Barge Loading VOC 22.76 3.78

NaOH 0.01 0.01

H<sub>2</sub>SO<sub>4</sub> 0.01 0.01

CT-1 Cooling System VOC 1.04 4.54 Water

(1) Emission point identification - either specific equipment designation or emission point number from a plot plan.

(2) Specific point source names. For fugitive sources use area name or fugitive source name.

(3) NO<sub>x</sub> - total oxides of nitrogen

CO - carbon monoxide

VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

SO<sub>2</sub> - sulfur dioxide

PM<sub>10</sub> - particulate matter (PM) equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.

NaOH - sodium hydroxide

H<sub>2</sub>SO<sub>4</sub> - sulfuric acid

(4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

(5) Emission rates subject to EPN "Annual Rail Car/Tank Truck Loading Emissions."

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

\_\_\_ Hrs/day \_\_\_ Days/week \_\_\_\_\_ Weeks/year or 8,760 Hrs/year

\*\* Compliance with annual emission limits is based on a rolling 12-month period.

Dated December 29, 2005

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### EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

#### AIR CONTAMINANTS DATA

Emission Source Air Contaminant Emission Rates\*

Point No. (1) Name (2) Name (3) lb/hr TPY\*\*

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## Section 1 - Document

**Construction Permit****Review Analysis & Technical Review**

Company: **Kmco Port Arthur Inc DBA Kmtex**  
 City: **Port Arthur**  
 County: **Jefferson**  
 Project Type: **CRVW**  
 Project Reviewer: **Mr. Bryan Osborne**  
 Facility Name: **Custom Chemical Processing Plant**

Permit No.: **74398**  
 Record No.: **112316**  
 Account No.: **JE-0318-G**  
 Regulated Entity No.: **RN100640283**  
 Customer Reference No.: **CN600350730**

**Authorization Checklist**

Will a new policy/precedent be established? (ED signature required if yes) No

Is a state or local official opposed to the permit?(ED signature required if yes) No

If yes, please provide name and title of official:

Is waste or tire derived fuel involved? (ED signature required if yes) No

Are waste management facilities involved?(ED signature required if yes) No

Will action on this application be posted on the Executive Director's agenda? Yes

Have any changes to the application or subsequent proposals been required to increase protection of public health and the environment during the review? No

**Project Overview**

KMCO Port Arthur, Inc. (KMTEX) operates a custom chemical processing facility in Jefferson County. The facility is currently authorized by several Standard Exemptions and Permits by Rule. KMTEX seeks to authorize the facility with a NSR permit. Facility emissions from distillation/reaction, storage, and loading/unloading are as follows:

**Pollutant lb/hr tpy**

VOC 331.85 47.48

CO 57.16 39.05

NOx 27.37 36.64

SO<sub>2</sub> 0.04 0.19

PM<sub>10</sub> 0.55 2.42

**Compliance History**

In compliance with 30 TAC Chapter 60, a compliance history report was prepared on:

**October 1, 2004**

Was an evaluation for Federal Orders conducted on this company?

**Yes**

Was the application received after September 1, 2002?

**Yes**

If yes, what was the site rating? **4.58 AVERAGE** Company rating? **4.58 AVERAGE**

Is the permit recommended to be denied or has the permit changed on the basis of compliance history or rating?

**No**

**Public Notice Information**

§39.403 Public notification required?

**Yes**

A. Date application received: November 30, 2004 Date Administrative Complete:

**January 7, 2005**

B. Small Business source?

**No**

§39.418 C. Date 1st Public Notice /Admin Complete/Legislators letters mailed:

**January 7, 2005**

§39.603 D. Pollutants: **PM<sub>10</sub>, SO<sub>2</sub>, NOx, CO, and VOC**

E. Date Published: **January 26, 2005** in *The Port Arthur News*

Date Affidavits/Copies received: **February 7, 2005**

F. Bilingual notice required?

**Yes**

Language: **Spanish**

Date Published: **January 28, 2005** in *El Perico*

Date Affidavits/Copies received: **February 7, 2005**

§39.604 G. Certification of Sign Posting / Application availability

**March 7, 2005**

H. Public Comments Received? **No**

**Emission Controls**

§116.111(a)(2)(G) Is the facility expected to perform as represented in the application?

**Yes**

§116.140 Permit Fee: **\$ 8,400** Fee certification provided?

**Yes**

**Sampling and Testing**

§116.111(a)(2)(A)(i) Are the emissions expected to comply with all TCEQ air quality rules and regulations, and the intent of the Texas Clean Air Act?

**Yes**

§116.111(a)(2)(B) Will emissions be measured?

**Yes**

Method: **Engineering Calculations**

**Federal Program Applicability**

§116.111(a)(2)(D) Compliance with applicable NSPS expected?

**Yes**

Subparts **A, Kb, VV, NNN and RRR**

§116.111(a)(2)(E) Compliance with applicable NESHAP expected?

**Yes**

Subparts **Y, BB and J**

§116.111(a)(2)(F) Compliance with applicable MACT expected?

N/A

§116.111(a)(2)(H) Is nonattainment review required?

No

A. Is the site located in a nonattainment area?

Yes

B. Is the site a federal major source for a nonattainment pollutant?

No

C. Is the project a federal major source for a nonattainment pollutant by itself?

No

116.111(a)(2)(I) Is PSD applicable?

No

A. Is the site a federal major source (100/250 tons/yr)?

No

B. Is the project a federal major source by itself?

No

C. Is the project a federal major modification?

No

**Mass Cap and Trade Applicability**

§116.111(a)(2)(L) Is Mass Cap and Trade applicable?

No

Did the proposed facility, group of facilities, or account obtain allowances to operate?

N/A

**Title V Applicability**

§122.10(13)(A) Is the site a major source under FCAA Section 112(b)?

No

(i). The site emits 10 tons or more of any single HAP?

No

(ii). The site emits 25 tons or more of a combination

No

§122.10(13)(C) Does the site emit 100 tons or more of any air pollutant?

No

§122.10(13)(D) Is the site a non-attainment major source?

No

### Request for Comments

Region: 10 Reviewed by: no comments

### Process Description

KMTEX operates a bulk chemical processing and storage facility. Chemicals are unloaded to the facility via tank trucks, rail cars, or barges. Chemicals are sent to fixed roof storage tanks until needed, then piped to distillation units for purification. Product is shipped out of the facility via tank trucks, rail cars, and barge loading or is sent back to storage until it can be transferred.

There are 94 existing storage tanks on site with 24 more to be constructed. Tanks are grouped into six separate series based upon physical proximity and chemical family storage. These six tank series are assigned EPNs instead of each tank. KMTEX seeks flexibility in storing chemicals with similar physical properties. Halogenated VOCs are routed to a CAS unit, inorganics are routed to a scrubber, VOCs with vapor pressures < 0.5 psia are not controlled, VOCs with vapor pressures > 0.5 psia are routed to the flare. An emissions cap for uncontrolled emissions from the storage tanks has been set at 95 lb/hr and 9 tpy.

### Sources, Controls, Source Reduction and BACT [§116.111(a)(2)(C)]

#### Storage Tanks:

All tanks on site are fixed roof. Depending on the chemical being stored, the tanks have different methods of control. Non-halogenated VOCs are controlled by a flare that meets the requirements of 40 CFR 60.18. Halogenated VOCs are routed to a Carbon Adsorption System (CAS). Inorganic compounds containing nitrogen or sulfur are scrubbed with caustic. Emissions from compounds with vapor pressures < 0.5 psia are not controlled. BACT is applied.

KMTEX requests flexibility in chemical storage. As a bulk storage facility, the approved chemical list is quite substantial, however a possibility exists that a chemical or chemical mixture may need to be stored that has not been previously approved. As the tanks are all grouped in similar proximity to the property line, are all controlled by the flare (or alternative control based on chemical type), and each tank group is designed to store chemicals with similar properties, the standard chemical flexibility language was slightly modified to allow the emission rate (ER) to be replaced with a molecular weight/vapor pressure (MW x VP) calculation. This method is still protective of GLC values at the property line due to tank placement and thoroughness of the approved chemical list. BACT is applied.

#### Scrubber:

Sulfurous and nitrogenous compounds are scrubbed in a counterflow packed tower absorber. The scrubber uses a blend of caustic, sodium hypochlorite, and sodium bisulfite to remove 98% of the organics. The scrubber will maintain a maximum temperature of 100 deg F and a minimum flow rate of 5 gpm. The scrubber outlet vent is routed to the flare. BACT is applied.

#### Loading/Unloading:

All tank trucks, rail cars, and barges operate under pressure. Tank trucks will be annually leak checked. Vapors generated during loading from chemicals with vapor pressures < 0.5psia will be vapor balanced with the associated storage tank which vents to a control device or to a control device if the storage tank is uncontrolled. Control credit was not used for loading vapor balanced back to uncontrolled tanks. BACT is applied.

Carbon Adsorption:

Two CAS canisters are installed in series. A FID equipped vapor analyzer monitors for a 100ppm breakthrough concentration inbetween the first and second canisters. When 100ppm is achieved, the second canister becomes the primary control device and the spent canister is replaced. The vapor analyzer will be calibrated with methylene chloride as the reference gas. Exhaust from the CAS will be vented to the flare. BACT is applied.

Flare:

The KMTEX flare is an air assisted, smokeless flare equipped with a continuously burning pilot and supplemental natural gas fuel. The pilot flame and net heating value of the gas shall be monitored. The flare meets the requirements of 40 CFR 60.18. BACT is applied.

Fugitives:

KMTEX uses the 28MID standard for leak detection and repair. BACT is applied.

Cooling Tower:

Cooling water is non-contact with process. Cooling water will be monitored monthly with an approved air-stripping process. BACT is applied.

Boilers and Heaters:

All Boilers/Heaters are < 40 MM Btu. NOx emissions are calculated based on a 0.10 lb/MMBtu emission factor. BACT is applied.

**Impacts Evaluation**

1. Was modeling done? **Yes** Type? **Refined**

2. Will GLC of any air contaminant cause violation of NAAQS?

**No**

3. Is this a sensitive location with respect to nuisance?

**No**

4. Is the site within 3000 feet of any school?

**No**

5. Toxics Evaluation: **No risk to public health. See attached TARA memo.**

**Miscellaneous**

1. Is applicant in agreement with special conditions?

**Yes**

Company representative?

Phil Evans

2. Emission reductions from source reduction or pollution prevention

N/A

3. Emissions reductions resulting from the application of BACT required by state rules, avoidance of potential impacts problems, and voluntary reductions

N/A

4. Other permit(s) affected by this action?

N/A

Project Reviewer Date Team Leader/Section Manager/Backup Date

## Headers

### *Review Analysis & Technical Review*

Permit No. 74398

Regulated Entity No. RN100640283

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## **APPENDIX**

**20.15**

**Texas Commission on Environmental Quality, Modeling Audit - KMCO Port  
Arthur, INC., DBA KMTEX**

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## Section 1 - Document

**Texas Commission On Environmental Quality**

interoffice memorandum

To: Bryan Osborne Date: September 15, 2005

Chemical Section

Thru: Robert Opiela, Team Leader

Emissions Banking/Modeling Team (EBMT)

From: Keith Zimmermann, P.E., Beth Echels, Kimberly Krause

EBMT

Subject: Modeling Audit - KMCO Port Arthur, INC., DBA KMTEX

1.0 Project Identification Information.

Permit Application Number: 74398

Regulated Entity Number: RN100640283

Customer Reference Number: CN600350730

Nearest City, County: Port Arthur, Jefferson County

Modeling Report: Submitted by The WCM Group, Inc., June 2005, on behalf of KMCO Port Arthur, INC., DBA KMTEX.

2.0 Report Summary. The modeling analysis is acceptable. The results are summarized below.

The GLCni, as given by the consultant, is a boat ramp just south of the property.

Table 1. Sitewide Modeling Results for Health Effects				
Pollutant	ESL	Industrial Land	Industrial Water GLCmax	GLCni

	( $\mu\text{g}/\text{m}^3$ )	GLCmax ( $\mu\text{g}/\text{m}^3$ )	( $\mu\text{g}/\text{m}^3$ )	( $\mu\text{g}/\text{m}^3$ )
2,3-Butanediol	500	361	512	81
2-Methyl Piperidine	40	75	35	7
2-Pyrrolidone	140	149	113	22
Acetic acid	250	285	92	27
Acetic anhydride	200	206	76	18
Acetonitrile	340	555	136	59
Acetophenone	490	413	711	104
Acrylic acid	60	118	49	11
Allyl acetate	150	218	81	20
Allyl alcohol	48	96	45	8
Benzaldehyde	22	41	24	3
Benzene	75	148	63	12
Benzylamine	10	20	7	2
Butyl toluene	60	119	51	10
Butyric acid	18	35	14	3
C12-C20 alpha olefins	1000	630	1091	159
Caproic acid	29	28	34	5
Chloroacetic acid	12	18	9	1
Cresol, m-	5	10	5	1
Cresol, p-	5	10	5	1
Crotonaldehyde	9	17	12	1
Crude Oil	100	196	53	20
Cyclohexene	600	1172	238	131
Decyl alcohol	40	41	35	7
Diallyl alcohol	50	99	33	10
Diallyl phthalate	50	58	93	14
Dicyclohexene	604	1203	240	134
Dicyclopentadiene	31	62	25	6
Diesel fuel	1000	724	1524	219
Diethylamine	150	260	69	27
Diethylene glycol monoethyl ether	1500	1633	1221	236
Diisopropyl amine	210	418	89	46
Diphenyl oxide	8	10	4	1
Epichlorhydrin	19	32	18	3
Ethanolamine	75	145	82	18
Ethyl Acrylate	5	11	6	1
Ethyl mercaptan	0.8	5	2.6	0.3
Ethyl n-butyrate	39	76	23	8
Ethyl n-valerate (ethyl isovalerate)	27	46	18	4
Ethyl propionate	130	210	45	23
Ethyl toluene	1250	2083	1216	283
Ethylene glycol	260	312	298	51
Ethylene glycol monobutyl ether	240	281	78	17
Ethylene glycol monoethyl ether	180	272	106	23
Ethylene oxide	20	35	23	3
Ethyleneimine	9	18	8	1

Fatty acids (C5-C12)	1000	1095	1184	198
Fatty alcohols (C6-C20)	100	114	64	14
Formamide	180	232	171	31
Formic acid	90	130	27	14
Fuel oil	1000	690	1424	205
Gasoline	3500	4316	747	499
Heptene	16	32	19	2
Hexamethyleneimine	100	184	53	19
Hexane, n-	1760	2048	391	232
Hexene	70	136	64	11
Hexyl alcohol	42	71	28	6
Isoamyl alcohol (3-methyl-1-butanol)	150	295	125	23
Isobutyl aldehyde (isobutyraldehyde)	138	151	42	16
Isobutyl formate	100	179	46	19
Isopropyl ether	71	96	32	9
Kerosene	1000	1561	2503	388
Maleic acid	14	26	15	2
Maleic anhydride	10	20	9	2
Mesitylene	1250	1843	1064	244
Methyl acrylonitrile	27	52	20	5
Methyl benzoate	160	275	132	26
Methyl esters (C6-C18)	100	148	83	18
Methyl isoamyl ketone (5-methyl-2-hexanone)	56	109	29	12
Methyl n-amyl ketone (2-heptanone)	94	181	71	16
Methyl n-butyl ketone (2-hexanone)	40	78	31	7
Methyl p-cresol	5	10	5	1
Methylamine	60	69	40	5
Methyl-t-butyl ether	450	899	164	103
Morpholine	40	77	25	8
Naphthalene	440	340	583	85
n-Butyl benzene	2740	2404	3666	568
Nitric acid	52	64	20	6
Nonane	10500	7358	12951	1891
Octene	20	40	19	3
Octyl alcohol	11	22	15	3
Olefins (C15-C24)	100	148	83	18
Oleic acid	100	114	131	22
Piperidine	36	60	27	5
Propionaldehyde	21	42	24	3
Propionic acid	100	177	71	14
Pyridine	69	130	33	14
Pyrrole	21	42	12	4

Quinoline	5	10	5	1
sec-Amyl acetate	11	19	8	1
Styrene	110	208	71	20
Tall Oil (fatty acid)	100	137	77	17
t-Butylamine	12	23	14	2
Triethylamine	40	45	27	4
Undecane	1303	895	1352	212
Valeraldehyde	98	106	46	9
Valeric acid	3	6	2	0
Vinyl cyclohexene	4	7	8	1
Vinylidene Chloride	40	57	29	5

3.0 Land Use. Rural dispersion coefficients and flat terrain were used in the modeling analysis. These options are consistent with aerial photos and area maps.

4.0 Modeling Emissions Inventory. The modeled emission point parameters and rates were consistent with the modeling report.

5.0 Building Wake Effects (Downwash). The Building Profile Input (BPIP) (Version 04112) and BPIP-PRIME (Version 04274) were used to generate downwash parameters. With the exception of several structures represented with zero height, the modeled building dimensions are consistent with the plot plan and the aerial photos. The structures represented with zero height had no impact on the modeling results.

#### 6.0 Meteorological Data.

Surface Station and ID: Beaumont-Port Arthur, Texas (Station #: 12917)

Upper Air Station and ID: Lake Charles, Louisiana (Station #: 03937)

Meteorological Dataset: 1988

Anemometer Height: 10 meters

7.0 Receptor Grid. The modeled receptor grid was adequate to capture representative maximum ground-level concentrations for the generic modeling.

8.0 Model Used and Modeling Techniques. ISCST3 (Version 02035) was used for the initial modeling. ISC-PRIME (Version 04269) was used for the receptors that were identified as potential cavity receptors.

The consultant determined the worst-case generic impacts over land, water, and the non-industrial receptors for each source. The worst-case impacts were scaled for specific constituents and summed regardless of location or time. This is a conservative approach.

## Headers

Bryan Osborne

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September 15, 2005

Modeling Audit - KMCO Port Arthur, INC., DBA KMTEX

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# APPENDIX

20.16

**Texas Commission on Environmental Quality, Flare Acceptance Letter**

Bryan W. Shaw, Ph.D., *Chairman*  
Buddy Garcia, *Commissioner*  
Carlos Rubinstein, *Commissioner*  
Mark R. Vickery, P.G., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 21, 2012

MR DAVID JONES  
HSSE COORDINATOR  
KMTEX LTD  
PO BOX 1421  
PORT ARTHUR TX 77641-1421

Standard Permit Registration Number:	101287	Renewal Date: March 21, 2022
Location:	2450 Gulfway Dr	
City/County:	Port Arthur, Jefferson County	
Project Description/Unit:	Vacuum Distillation Facility	
Regulated Entity Number:	RN100640283	
Customer Reference Number:	CN604008565	
New or Existing Site:	Existing	
Affected Permit (if applicable):	NSR Permit No. 74398	
Standard Permit Type:	Pollution Control Project	

KMTEX, Ltd. has registered the emissions associated with the flare replacement at the Vacuum Distillation Facility under the standard permit listed above as authorized by the Commissioners pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602). Emissions for this flare replacement will maintain the allowable emissions represented in the NSR Permit No. 74398. KMTEX Ltd. will have up to 12 months from the initial start up to test the new flare and update the emissions associated with this pollution control standard permit. For rule information see [www.tceq.texas.gov/permitting/air/nav/standard.html](http://www.tceq.texas.gov/permitting/air/nav/standard.html). You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit should be consolidated into the affected facilities' permit(s) at the next amendment or renewal.

No planned MSS emissions have been represented or reviewed for this registration and none will be authorized.

As of July 1, 2008, all analytical data generated by a mobile or stationary laboratory in support of compliance with air permits must be obtained from a NELAC (National Environmental Laboratory Accreditation Conference) accredited laboratory under the Texas Laboratory Accreditation Program or meet one of several exemptions. Specific information concerning which laboratories must be accredited and which are exempt may be found in 30 TAC § 25.4 and § 25.6.

For additional information regarding the laboratory accreditation program and a list of accredited laboratories and their fields of accreditation, please see the following Web site:

[www.tceq.texas.gov/compliance/compliance\\_support/qa/env\\_lab\\_accreditation.html](http://www.tceq.texas.gov/compliance/compliance_support/qa/env_lab_accreditation.html)

For questions regarding the accreditation program, you may contact the Texas Laboratory Accreditation Program at (512) 239-3754 or by email at [labprgms@tceq.texas.gov](mailto:labprgms@tceq.texas.gov).

Mr. David Jones  
Page 2  
March 21, 2012

Re: Standard Permit Registration Number 101287

The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements.

If you have questions, please contact Mr. Kevin Whitenight at (512) 239-4334. This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

A handwritten signature in black ink, appearing to read "Anne M. Inman". The signature is fluid and cursive, with a large initial "A" and "I".

Anne M. Inman, P.E., Manager  
Rule Registrations Section  
Air Permits Division  
Texas Commission on Environmental Quality

cc: Air Section Manager, Region 10 - Beaumont

Project Number: 174924.