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Mayor

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CITY OF HAMMOND

RONALD L. NOVAK
Director

PART 70 OPERATING PERMIT RENEWAL

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY**

and

**HAMMOND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AIR POLLUTION CONTROL DIVISION**

**Explorer Pipeline Company
3737 Michigan Street
Hammond, Indiana 46323**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T089-15442-00214	
Issued By: Original signed by: _____ Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: <u>May 24, 2004</u>
Issued By: Original signed by: _____ Ronald L. Novak, Director Hammond Department of Environmental Management	Expiration Date: <u>May 24, 2009</u>

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and Hammond Department of Environmental Management (HDEM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary Refined Petroleum Pipelines operation.

Responsible Official: Timothy C. Felt, President and CEO
Source Address: 3737 Michigan Street, Hammond, Indiana 46323
Mailing Address: P.O. Box 2057, Hammond, Indiana 46323
General Source Phone Number: (219) 989-8262
SIC Code: 4613 – Refined Petroleum Pipelines
County Location: Lake County

Source Location Status: Attainment/Unclassifiable for CO,
Primary Nonattainment for SO₂,
Attainment for PM₁₀, and
Severe Nonattainment for Ozone

Source Status: Part 70 Permit Program
Major Source under PSD and Emission Offset Rules
Major Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following permitted emission units and pollution control devices:

- (a) One (1) Packed Tower Air Stripper, identified as (Air Stripper) Air 1 used for the removal of volatile organic compounds (VOCs) from contaminated water drawn off the bottom of refined petroleum storage tanks. The maximum volume of contaminated water treated is not to exceed 600 gallons/hour. The tower's stack is 25 ft. high and 1 ft. in diameter with a discharge flowrate of 500 ACFM.
- (b) Ten (10) volatile organic liquid (gasoline, distillate, jet kerosene, or transmix) storage tanks, identified as tanks No. 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691. Tank specifications are as follows:
 - (1) Storage Tank No. 622 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (2) Storage Tank No. 623 has a capacity of 3,412,290 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (3) Storage Tank No. 632 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.

- (4) Storage Tank No. 633 has a capacity of 5,063,730 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (5) Storage Tank No. 636 has a capacity of 3,412,290 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (6) Storage Tank No. 639 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
 - (7) Storage Tank No. 652 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
 - (8) Storage Tank No. 653 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
 - (9) Storage Tank No. 690 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.
 - (10) Storage Tank No. 691 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.
- (c) Four (4) volatile organic liquid (distillate or jet kerosene) storage tanks, identified as tanks No. 654, 656, 660, and 673. Tank specifications are as follows:
- (1) Storage Tank No. 654 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.005 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
 - (2) Storage Tank No. 656 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.005 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
 - (3) Storage Tank No. 660 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.006 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
 - (4) Storage Tank No. 673 has a capacity of 9,135,000 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.006 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) The following VOC and HAP storage containers: vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (c) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs.
- (d) On-site fire and emergency response training approved by the department.
- (e) Emergency gasoline generators not exceeding 110 horsepower.
- (f) Other emergency equipment as follows: stationary fire pumps.
- (g) Other activities or categories not previously identified:

Insignificant thresholds: Activities with emissions equal to or less than thresholds require listing only.

Lead (Pb) = 0.6 ton/year or 3.29 lbs/day	Carbon Monoxide (CO) = 25 lbs/day
Sulfur Dioxide (SO ₂) = 5 lbs/hour or 25 lbs/day	Particulate Matter (PM) = 5 lbs/hour or 25 lbs/day
Nitrogen Oxides (NO _x) = 5 lbs/hour or 25 lbs/day	Volatile Organic Compounds (VOC) = 3 lbs/hour or 15 lbs/day

Some PM emissions result from the traffic movement on the roads inside the Hammond station. The roads inside the Hammond station are closed to public access and the only traffic movement on these roads results from limited in-plant maintenance traffic. The roads at the Hammond station have a gravel base and the speed limit on the roads inside the Hammond station is 15 mph. Under these conditions the PM emissions which result from traffic movement are assumed to be less than 5 lbs/hour and, hence, considered insignificant.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because it is a major source, as defined in 326 IAC 2-7-1(22).

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

B.3 Enforceability [326 IAC 2-7-7]

- (a) Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, HDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.
- (b) Unless otherwise stated, all terms and conditions in this permit that are local requirements, including any provisions designed to limit the source's potential to emit, are enforceable by HDEM.

B.4 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

- (a) The Permittee shall furnish to IDEM, OAQ and HDEM, within a reasonable time, any information that IDEM, OAQ and HDEM may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ and HDEM copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U.S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined in 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than April 15 of each year to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ and HDEM on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ and HDEM may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)]
[326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain Preventive Maintenance Plans (PMPs) including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.
- (c) A copy of the PMPs shall be submitted to IDEM, OAQ and HDEM upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ and HDEM. IDEM, OAQ and HDEM may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ and HDEM within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

IDEM

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

HDEM

Telephone Number: 219-853-6306

Facsimile Number: 219-853-6343

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification, which shall be submitted by the Permittee, does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
 - (e) IDEM, OAQ and HDEM may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) be revised in response to an emergency.
 - (f) Failure to notify IDEM, OAQ and HDEM by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
 - (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement, IDEM, OAQ or HDEM shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.
- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
- (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
 - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
 - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
 - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ or HDEM has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ or HDEM has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either
- (1) incorporated as originally stated,

(2) revised, or

(3) deleted

by this permit.

(b) All previous registrations and permits are superseded by this permit.

B.14 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ or HDEM determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ or HDEM to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ or HDEM at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ and HDEM may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-4]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and HDEM, and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(40) and 326 IAC 2-7-1(21). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

- (b) Timely Submittal of Permit Renewal [326 IAC 2-7-4(a)(1)(D)]

- (1) A timely renewal application is one that is:

- (A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
- (B) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ and HDEM on or before the date it is due.

- (2) If IDEM, OAQ or HDEM, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

- (c) Right to Operate After Application for Renewal [326 IAC 2-7-3]

If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ and HDEM, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ and HDEM, any additional information identified as being needed to process the application.

- (d) United States Environmental Protection Agency Authority [326 IAC 2-7-8(e)]

If IDEM, OAQ and HDEM fails to act in a timely way on a Part 70 permit renewal, the U.S. EPA may invoke its authority under Section 505(e) of the Clean Air Act to terminate or revoke and reissue a Part 70 permit.

B.17 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)]
[326 IAC 2-7-12 (b)(2)]

(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;
- (3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-7-20(b), (c), or (e) and makes such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ and HDEM in the notices specified in 326 IAC 2-7- 20(b)(1), (c)(1), and (e)(2).

- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

B.21 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-7-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, HDEM and U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, IN 46320

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)] [326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ and HDEM within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ and HDEM the applicable fee is due April 1 of each year.
- (b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314]

Notwithstanding the conditions of this permit that state specific methods that may be used to demonstrate compliance with, or a violation of, applicable requirements, any person (including the Permittee) may also use other credible evidence to demonstrate compliance with, or a violation of, any term or condition of this permit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.

C.3 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2. 326 IAC 9-1-2 is not federally enforceable.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18][40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:

- (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ and HDEM not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ and HDEM, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within thirty (30) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, equipment cannot be installed and operated within thirty (30) days, the Permittee may extend the compliance schedule related to the equipment for an additional thirty (30) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

in writing, prior to the end of the initial thirty (30) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.11 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) The Permittee may request the IDEM, OAQ or HDEM approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on March 31, 1997. The Permittee submitted an update to its ERP on February 29, 2000.
- (b) Upon direct notification by IDEM, OAQ or HDEM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68 is present at a source in more than a threshold quantity, the source must comply with the applicable requirements of 40 CFR 68.

C.14 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. If a Permittee is required to have an Operation, Maintenance and Monitoring (OMM) Plan under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions. A CRP shall be submitted to IDEM, OAQ and HDEM upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:

- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
- (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan to include such response steps taken.

The OMM Plan shall be submitted within the time frames specified by the applicable 40 CFR 60/63 requirement.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be ten (10) days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down. The notification shall also include the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered a deviation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when, in accordance with Section D, response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

- (a) In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), the Permittee shall submit by July 1 an emission statement covering the previous calendar year as follows:
 - (1) starting in 2004 and every three (3) years thereafter, and
 - (2) any year not already required under (1) if the source emits volatile organic compounds or oxides of nitrogen into the ambient air at levels equal to or greater than twenty-five (25) tons during the previous calendar year.
- (b) The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:
 - (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
 - (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

The emission statement does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

- (c) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ and HDEM on or before the date it is due.

C.17 Annual Emission Inventory [Hammond Ordinance No. 7102]

The Permittee shall submit an annual emission inventory containing production information for each permitted unit. The submittal should cover the twelve (12) consecutive month time period starting January 1 and ending December 31. The production information should include a description of the material stored in each tank and the throughput for the calendar year. The emission inventory must be received by July 1 of each year. A valid emission statement satisfying the requirements of Condition C.16 shall be considered an acceptable emission inventory. This is a local requirement only. The emission inventory must be submitted to:

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

The emission inventory does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

C.18 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required monitoring data, reports and support information required by this Permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or HDEM makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner and HDEM within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

- (a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ and HDEM on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (e) Reporting periods are based on calendar years.

Stratospheric Ozone Protection

C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Packed Tower Air Stripper

One (1) Packed Tower Air Stripper, identified as (Air Stripper) Air 1 used for the removal of volatile organic compounds (VOCs) from contaminated water drawn off the bottom of refined petroleum storage tanks. The maximum volume of contaminated water treated is not to exceed 600 gallons/hour. The tower's stack is 25 ft. high and 1 ft. in diameter with a discharge flowrate of 500 ACFM.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Volatile Organic Compounds (VOC) [Hammond Ordinance No. 3522 as amended]

Pursuant to Construction Permit No. 328 issued on November 19, 1991 and Operation Permit No. 00826 issued on March 6, 1997, the total VOC emissions from the Packed Tower Air Stripper shall be limited to 0.320 lbs/hr and 1.402 TPY.

D.1.2 Hazardous Air Pollutants (HAPs) [Hammond Ordinance No. 3522 as amended]

Pursuant to Construction Permit No. 328 issued on November 19, 1991 and Operation Permit No. 00826 issued on March 6, 1997, the Benzene emissions from the Packed Tower Air Stripper shall be limited to 0.144 lbs/hr and 0.631 TPY.

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

- (a) A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control equipment.
- (b) The Preventive Maintenance Plan shall not only include information on the Packed Tower Air Stripper but also its support tanks, pumps, piping, and other associated equipment.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.4 Monitoring

The influent and effluent from the air stripper shall be analyzed for total VOC and Benzene once during each month the air stripper was operated.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.5 Record Keeping Requirements

To document compliance with condition D.1.1, D.1.2, and D.1.4, the Permittee shall keep the following records:

- (a) Records of the analyses performed on the influent and effluent water samples.
- (b) The volume (in gallons) of contaminated water processed through the Packed Tower Air Stripper per day.
- (c) The operating hours of the Packed Tower Air Stripper per day.

D.1.6 Reporting Requirements

Within thirty (30) days after the end of each calendar year, the Permittee shall submit a report to the Hammond Department of Environmental Management containing the following information:

- (a) The results of the analyses performed on the influent and effluent water samples from the Packed Tower Air Stripper.

- (b) The volume (in gallons) of contaminated water processed through the Packed Tower Air Stripper per month.
- (c) The operating hours of the Packed Tower Air Stripper per month.

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Storage Tanks

Ten (10) volatile organic liquid (gasoline, distillate, jet kerosene, or transmix) storage tanks, identified as tanks No. 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691. Tank specifications are as follows:

- (a) Storage Tank No. 622 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
- (b) Storage Tank No. 623 has a capacity of 3,412,290 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
- (c) Storage Tank No. 632 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
- (d) Storage Tank No. 633 has a capacity of 5,063,730 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
- (e) Storage Tank No. 636 has a capacity of 3,412,290 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
- (f) Storage Tank No. 639 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
- (g) Storage Tank No. 652 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
- (h) Storage Tank No. 653 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
- (i) Storage Tank No. 690 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.
- (j) Storage Tank No. 691 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to tanks 639, 652, and 653 except when otherwise specified in 40 CFR 60, Subparts Ka.

D.2.2 Storage Vessels [326 IAC 12] [40 CFR 60, Subpart Ka] [326 IAC 8-9-4(a)]

Pursuant to 40 CFR 60.112a(b) and/or 326 IAC 8-9-4(b), tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691, shall not store volatile organic liquid (VOL) with a vapor pressure greater than or equal to eleven and one-tenth (11.1) psia as stored.

D.2.3 Storage Vessels [326 IAC 8-9-4(c)] [326 IAC 8-4-3(b)] [326 IAC 20] [Voluntary- 40 CFR 63, Subpart R]

Pursuant to 40 CFR 60.112a(a), 40 CFR 63.423(a), and 326 IAC 8-9-4(c), tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691, shall be equipped with a fixed roof in combination with an internal floating roof meeting the following:

- (a) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage tank is completely emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.
- (b) Each internal floating roof shall be equipped with one (1) of the following closure devices between the wall of the vessel and the edge of the internal floating roof:
 - (1) A foam or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal).
 - (2) Two (2) seals mounted one (1) above the other so that each forms a continuous closure that completely covers the space between the wall of the vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.
 - (3) A mechanical shoe seal that consists of a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric, or envelope, spans the annular space between the metal sheet and the floating roof.
- (c) The facility is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.
- (d) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
- (e) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e.; no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.
- (f) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- (g) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.
- (h) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.
- (i) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (j) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.5 Monitoring [326 IAC 8-9-5(b)] [Voluntary- 40 CFR 63, Subpart R] [326 IAC 20]

Pursuant to 326 IAC 8-9-5(b) and 40 CFR 63.425(d), the owner or operator of tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 shall:

- (a) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to the filling of the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel.
- (b) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from IDEM, OAQ and HDEM in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions that the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
- (c) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied or degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years.
- (d) Notify IDEM, OAQ and HDEM in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraph (a) and (c) of this section to afford HDEM the opportunity to have an observer present. If the inspection required by (c) of this section is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify IDEM, OAQ and HDEM at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the IDEM, OAQ and HDEM at least 7 days prior to refilling.

D.2.6 Monitoring Standards for Equipment Leaks [326 IAC 20] [Voluntary- 40 CFR 63, Subpart R]

- (a) Pursuant to 40 CFR 63.424, the owner or operator of tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 shall perform a monthly leak inspection of all equipment in gasoline service. For this inspection detection methods incorporating sight, sound, and smell are acceptable.
- (b) When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of the leaking equipment shall be completed within fifteen (15) calendar days after detection of each leak. Delay of repair of leaking equipment will be allowed upon a demonstration to HDEM that repair within 15 calendar days is not feasible.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.7 Record Keeping Requirements

- (a) In accordance with 326 IAC 8-9-6(b) the owner or operator of tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691, shall maintain records of each vessel including the vessel identification number, dimensions, capacity, and a description of the emission control equipment shall be maintained for the life of the vessel.
- (b) In accordance with 326 IAC 8-9-6(c) or 40 CFR 63.428(d), a record of each inspection performed as required under Condition D.2.5 shall be maintained and shall identify the following:
 - (1) The vessel identification number
 - (2) The date of the inspection
 - (3) The observed condition of the seal, internal floating roof, and fittings.
- (c) Pursuant to 40 CFR 60.115a and/or 326 IAC 8-4-3(d), the Permittee shall maintain a record of the petroleum liquid or VOL stored in tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691, the period of storage, the maximum true vapor pressure of that liquid as stored, and the results of the inspections performed on the storage vessels.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.
- (e) A log book shall be used and shall be signed by the owner or operator at the completion of each inspection required in D.2.6. The log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility. The following information shall be recorded in the log book for each leak detected:
 - (1) The equipment type and identification number;
 - (2) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound or smell);
 - (3) The date the leak was detected and the date of each attempt to repair the leak;
 - (4) Repair methods applied in each attempt to repair the leak;
 - (5) "Repair delayed" and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak;
 - (6) The expected date of successful repair of the leak if the leak is not repaired within 15 days; and
 - (7) The date of successful repair of the leak.

D.2.8 Reporting Requirements

- (a) A report of any defects (the internal floating roof is not resting on the surface of the VOL, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric) discovered during the annual inspection required in D.2.5 shall be furnished to the IDEM, OAQ and HDEM within thirty (30) days of the inspection. The report shall identify the vessel identification number, the nature of the defects, and the date the vessel was emptied or the nature of and date the repair was made.
- (b) A semiannual report shall be submitted to HDEM in July and January of each year. The report shall list the number of equipment leaks not repaired within 5 days of detection during the periods from January through June and July through December, respectively.

SECTION D.3 FACILITY OPERATION CONDITIONS - Storage Tanks

Facility Description [326 IAC 2-7-5(15)]: Storage Tanks

Four (4) volatile organic liquid (distillate or jet kerosene) storage tanks, identified as tanks No. 654, 656, 660, and 673. Tank specifications are as follows:

- (a) Storage Tank No. 654 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.005 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
- (b) Storage Tank No. 656 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.005 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
- (c) Storage Tank No. 660 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.006 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
- (d) Storage Tank No. 673 has a capacity of 9,135,000 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.006 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 There are no emission limitations applicable to these facilities.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.2 There are no specific compliance monitoring requirements applicable to these facilities.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.3 Record Keeping Requirements

- (a) In accordance with 326 IAC 8-9-6(b) the owner or operator of tanks 654, 656, 660, and 673 shall maintain records of each vessel including the vessel identification number, dimensions, capacity, and a description of the emission control equipment shall be maintained for the life of the vessel.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.4 Reporting Requirements

In accordance with 326 IAC 8-9-6(h), the owner or operator of tanks 654, 656, 660, and 673 shall maintain a record and notify the IDEM, OAQ and HDEM within thirty (30) days when the maximum true vapor pressure of the liquid as stored exceeds seventy-five hundredths (0.75) psia.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
and
HAMMOND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**PART 70 OPERATING PERMIT
CERTIFICATION**

Source Name: Explorer Pipeline Company
Source Address: 3737 Michigan Street, Hammond, Indiana 46323
Mailing Address: P.O. Box 2057, Hammond, Indiana 46323
Part 70 Permit No.: T089-15442-00214

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

- Annual Compliance Certification Letter
- Emergency/Deviation Occurrence Reporting Form
- Test Result (specify)
- Report (specify)
- Notification (specify)
- Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
P.O. Box 6015
100 North Senate Avenue
Indianapolis, Indiana 46206-6015
Phone: 317-233-5674
Fax: 317-233-5967**

and

**HAMMOND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
5925 Calumet Avenue
Hammond, Indiana 46320
Phone: 219-853-6306
Fax: 219-853-6343**

**PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT**

Source Name: Explorer Pipeline Company
Source Address: 3737 Michigan Street, Hammond, Indiana 46323
Mailing Address: P.O. Box 2057, Hammond, Indiana 46323
Part 70 Permit No.: T089-15442-00214

This form consists of 2 pages

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<p>___ This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none">• The Permittee must notify the Office of Air Quality (OAQ) and the Hammond Department of Environmental Management (HDEM), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section) and (219-853-6306, for HDEM); and• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-5967, IDEM and 219-853-6343, HDEM), and follow the other requirements of 326 IAC 2-7- 16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

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Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NO _x , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:
Title/Position:
Date:
Phone:

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 HAMMOND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 PART 70 OPERATING PERMIT
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Explorer Pipeline Company
 Source Address: 3737 Michigan Street, Hammond, Indiana 46323
 Mailing Address: P.O. Box 2057, Hammond, Indiana 46323
 Part 70 Permit No.: T089-15442-00214

Months: _____ to _____ Year: _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:
Title/Position:
Date:
Phone:

Attach a signed certification to complete this report.

**Indiana Department of Environmental Management
Office of Air Quality**
and
**Hammond Department of Environmental Management
Air Pollution Control Division**

Technical Support Document (TSD) for a
Part 70 Operating Permit Renewal

Source Background and Description

Source Name: Explorer Pipeline Company
Source Location: 3737 Michigan Street, Hammond, Indiana 46323
County: Lake
SIC Code: 4613 Refined Petroleum Pipelines
Operation Permit No.: T089-15442-00214
Permit Reviewer: Thomas J. Nyhan, HDEM

The Hammond Department of Environmental Management (HDEM) has reviewed a Part 70 permit renewal application from Explorer Pipeline Company relating to the operation of a **Refined Petroleum Pipelines Operation**.

Permitted Emission Units and Pollution Control Equipment

This stationary source consists of the following permitted emission units and pollution control devices:

- (a) One (1) Packed Tower Air Stripper, identified as (Air Stripper) Air 1 used for the removal of volatile organic compounds (VOCs) from contaminated water drawn off the bottom of refined petroleum storage tanks. The maximum volume of contaminated water treated is not to exceed 600 gallons/hour. The tower's stack is 25 ft. high and 1 ft. in diameter with a discharge flowrate of 500 ACFM.
- (b) Ten (10) volatile organic liquid (gasoline, distillate, jet kerosene, or transmix) storage tanks, identified as tanks No. 622, 623, 632, 633, 636, 639, 652, 653, 690, 691. Tank specifications are as follows:
 - (1) Storage Tank No. 622 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (2) Storage Tank No. 623 has a capacity of 3,412,290 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (3) Storage Tank No. 632 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.

- (4) Storage Tank No. 633 has a capacity of 5,063,730 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (5) Storage Tank No. 636 has a capacity of 3,412,290 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal steel pan floating roof with a liquid mounted metallic shoe seal and was constructed in 1971.
 - (6) Storage Tank No. 639 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
 - (7) Storage Tank No. 652 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
 - (8) Storage Tank No. 653 has a capacity of 4,060,980 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1979.
 - (9) Storage Tank No. 690 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.
 - (10) Storage Tank No. 691 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 7 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.
- (c) Four (4) volatile organic liquid (distillate or jet kerosene) storage tanks, identified as tanks No. 654, 656, 660, and 673. Tank specifications are as follows:
- (1) Storage Tank No. 654 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.005 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
 - (2) Storage Tank No. 656 has a capacity of 1,015,140 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.005 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
 - (3) Storage Tank No. 660 has a capacity of 2,284,380 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.006 psia at 50°F. The tank has a fixed-cone roof and was constructed in 1971.
 - (4) Storage Tank No. 673 has a capacity of 9,135,000 gallons and stores volatile organic liquid (VOL) with a maximum true vapor pressure less than or equal to 0.006 psia at 50°F. The tank has an internal aluminum pontoon floating roof with a vapor mounted double wiper seal and was constructed in 1971.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment Receiving Advanced Source Modification Approval

The source is not seeking advanced source modification approval for new emission units.

Insignificant Activities

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) The following VOC and HAP storage containers: vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (c) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs.
- (d) On-site fire and emergency response training approved by the department.
- (e) Emergency gasoline generators not exceeding 110 horsepower.
- (f) Other emergency equipment as follows: stationary fire pumps.
- (g) Other activities or categories not previously identified:

Insignificant thresholds: Activities with emissions equal to or less than thresholds require listing only.

Lead (Pb) = 0.6 ton/year or 3.29 lbs/day

Carbon Monoxide (CO) = 25 lbs/day

Sulfur Dioxide (SO₂) = 5 lbs/hour or 25 lbs/day

Particulate Matter (PM) = 5 lbs/hour or 25 lbs/day

Nitrogen Oxides (NO_x) = 5 lbs/hour or 25 lbs/day

Volatile Organic Compounds (VOC) = 3 lbs/hour or

15 lbs/day

Some PM emissions result from the traffic movement on the roads inside the Hammond station. The roads inside the Hammond station are closed to public access and the only traffic movement on these roads results from limited in-plant maintenance traffic. The roads at the Hammond station have a gravel base and the speed limit on the roads inside the Hammond station is 15 mph. Under these conditions the PM emissions which result from traffic movement are assumed to be less than 5 lbs/hour and, hence, considered insignificant.

Existing Approvals

The source has been operating under the previous approvals including, but not limited to:

Part 70 Operating Permit T089-7450-00214, issued on December 30, 1997.

All conditions from previous approvals were incorporated into this Part 70 permit renewal.

Enforcement Issue

There are no enforcement actions pending for this source.

Recommendation

The staff recommends to the Commissioner that the Part 70 permit renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete Part 70 permit renewal application for the purposes of this review was received on April 2, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (forty-three (43) pages).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

The source was issued a Part 70 Operating Permit on December 30, 1997. The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered enforceable only after issuance of the original Part 70 operating Permit and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/emission unit	Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Air Stripper	NA	NA	NA	1.4	NA	NA	0.8
Fourteen (14) VOL Storage Tanks	NA	NA	NA	26.4	NA	NA	1.9
Fugitives	NA	NA	NA	1.3	NA	NA	0.1
Total PTE	-	-	-	29.1	-	-	2.8

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of volatile organic compounds (VOC) are equal to or greater than 25 tons per year and the source is located in Lake County. Therefore, the source is subject to the provisions of 326 IAC 2-7 – Part 70 Permit Program.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2002 OAQ emission data submitted by the source.

Pollutant	Actual Emissions (tons/year)
PM	0
PM-10	0
SO ₂	0
VOC	23.1
CO	0
NO _x	0
Total HAPs	1.6

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM-10	Moderate Nonattainment
SO ₂	Primary Nonattainment
NO _x	Attainment
Ozone*	Severe Nonattainment
CO	Maintenance Attainment
Lead	Attainment

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe nonattainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, pursuant to which the source has to meet the following:

- (a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.
- (b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Federal Rule Applicability

40 CFR 60 - New Source Performance Standards - NSPS

New Source Performance Standard, 326 IAC 12, (40 CFR 60.500 through 60.506, Subpart XX: Standards of Performance for Bulk Gasoline Terminals)

The source is not subject to the requirements of 40 CFR 60, Subpart XX (Standards of Performance for Bulk Gasoline Terminals) because there is no loading rack at the facility. The provisions of this Subpart are not applicable to this source.

New Source Performance Standard, 326 IAC 12, (40 CFR 60.110 through 60.113, Subpart K: Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973 and Prior to May 19, 1978)

Tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, 691, 654, 656, 660, and 673 are not subject to the rule because they were not constructed, reconstructed or modified between June 11, 1973 and May 19, 1978. There are no tanks at this source which were constructed, reconstructed or modified between the aforementioned dates, therefore, the provisions of this subpart are not applicable to this source.

New Source Performance Standard, 326 IAC 12, (40 CFR 60.110a, Subpart Ka: Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978 and Prior to July 23, 1984)

Tanks 622, 623, 632, 633, 636, 690, 691, 654, 656, 660, and 673 are not subject to the rule because they were not constructed, reconstructed or modified between May 18, 1978 and July 23, 1984. Tanks 639, 652, and 653 are subject to the rule because they were constructed, reconstructed or modified between the aforementioned dates and have capacities greater than 40,000 gallons. Pursuant to 40 CFR 60.112a(a), tanks 639, 652, and 653 shall be equipped with one of the following: an external floating roof, internal floating or vapor recovery system, since the true vapor pressures of the liquids as stored are equal to or greater than 1.5 psia, but not greater than 11.1 psia. 40 CFR 60.113a does not apply to tanks 639, 652, and 653 since they are equipped with internal floating roofs. Pursuant to 40 CFR 60.115a, the Permittee shall maintain a record of the petroleum liquid stored in tanks 639, 652, and 653, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification commenced After July 23, 1984)

Tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, 691, 654, 656, 660, and 673 are not subject to the rule because they were not constructed, reconstructed or modified after July 23, 1984. There are no tanks at this source which were constructed, reconstructed or modified after July 23, 1984, therefore, the provisions of this subpart are not applicable to this source.

40 CFR 61 - National Emission Standards for Hazardous Air Pollutants - NESHAPS

National Emission Standards for Hazardous Air Pollutants, 326 IAC 14, (40 CFR 61.300, Subpart BB: National Emission Standard for Benzene Emissions From Benzene Transfer Operations)

This source is not subject to the requirements of 40 CFR 61, Subpart BB (National Emission Standard for Benzene Emissions from Benzene Transfer Operations) because there are no loading racks at the facility and the liquid handled at the facility contains less than 70% benzene by weight.

40 CFR 63 - National Emission Standards for Hazardous Air Pollutants - NESHAPS

326 IAC 20, (40 CFR Part 63.50, Subpart B, Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(j))

The requirements of Section 112(j) of the Clean Air Act (40 CFR 63.50 through 63.56) are not applicable to this source because the source does not have the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. Additionally, the source does not include one or more units that belong to one or more source categories affected by the Section 112(j) MACT Hammer date of May 15, 2002.

326 IAC 20, (40 CFR Part 63.420, Subpart R, National Emission Standards for Gasoline Terminals and Pipeline Breakout Stations)

This source is not subject to the requirements for Hazardous Air Pollutants (HAPs), 326 IAC 20, (40 CFR Part 63.420, Subpart R), because it does not have the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. The source, however, wishes to voluntarily comply with Subpart R and has requested that the requirements of Subpart R be incorporated into their Part 70 Permit. The source will be required to notify the department when its HAP emissions exceed 10 tons per year of any single HAP or 25 tons per year of any combination of HAPs. For existing sources, compliance with Subpart R is required by December 15, 1997 and for new sources compliance shall be achieved upon startup.

The following storage tanks Storage Vessel Tank #'s 622, 623, 632, 633, 636, 639, 652, 653, 690 and 691 are subject to Subpart R and the following requirements:

- (a) Hazardous Air Pollutants, 326 IAC 20, (40 CFR 63, Subpart A General Provisions). General Provisions applicability to Subpart R.
- (b) Hazardous Air Pollutants, 326 IAC 20, (40 CFR 63.423 Standards: Storage Vessels). Gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall equip each gasoline storage vessel with requirements in 60.112b(a) (1) through (4) except, 60.112b(a)(1) (iv) through (ix) and 60.112b(a)(2)(ii).
- (c) Hazardous Air Pollutants, 326 IAC 20, (40 CFR 63.424 Standards: Equipment Leaks). Monthly leak inspection of all equipment in gasoline service. A log book recording monthly leak inspections shall be kept at the facility.
- (d) Hazardous Air Pollutants, 326 IAC 20, (40 CFR 63.425(d) Test Methods and Procedures). Gasoline storage vessel control equipment testing as specified in 40 CFR 60.113b. Notification must be made to the administrator in writing at least 30 days prior to filling a storage vessel for which inspection is required.
- (e) Hazardous Air Pollutants, 326 IAC 20, (40 CFR 63.428(d), (e), (f), and (g) Reporting and Record keeping). Initial notification required within one year of being subject to subpart 63.428, record and report information required in 63.428 (d), (e), (f), and (g). Initial notification to be submitted not later than 1 year after being subject to 40 CFR 63. 428; submit reports as required by 40 CFR 63.428.

40 CFR 64 - Compliance Assurance Monitoring

This source is not subject to the provisions of 40 CFR 64, Compliance Assurance Monitoring (CAM). In order for this rule to apply, a specific emissions unit must meet three criteria for a given pollutant: 1) the unit is subject to an emission limitation or standard for the applicable regulated air pollutant, 2) the unit uses a control device to achieve compliance with any such emission limitation or standard, and, 3) the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than one hundred (100) percent of the amount required for a source to be classified as a major source. The emission units (storage tanks and air stripper) at this facility do not meet any of these three requirements.

State Rule Applicability - Entire Source

326 IAC 1-5-2 (Emergency Reduction Plans)

The source submitted an updated Emergency Reduction Plan (ERP) on July 19, 1988. The ERP has been verified to fulfill the requirements of 326 IAC 1-5-2 (Emergency Reduction Plans).

326 IAC 1-6-3 (Preventive Maintenance Plan)

The source has submitted a Preventive Maintenance Plan (PMP) on April 8, 1997. This PMP has been verified to fulfill the requirements of 326 IAC 1-6-3 (Preventive Maintenance Plan).

326 IAC 1-6 (Malfunction)

This rule requires that a record be kept of all malfunctions, including startups or shutdowns of any facility or emission control equipment which result in violations of applicable air pollution control regulations or applicable emission limitations and such records shall be retained for a period of three (3) years and shall be made available to the commissioner upon request. When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to the commissioner or his appointed representative. The source shall record all the malfunctions that result in violation of applicable requirements and limitations. These records shall be retained for three years. If a malfunction lasts more than one hour, the condition shall be reported to the IDEM, OAQ and HDEM per requirements in 326 IAC 1-6-2.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants) because no major sources of HAPs were constructed or reconstructed after July 27, 1997.

326 IAC 2-6 (Emissions Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of Volatile Organic Compounds (VOCs) in Lake County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual emission statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year). The source is in compliance with the emissions statement submittal as required.

326 IAC 2-7 (Part 70 Permit Program)

The owner or operator of each Part 70 source has a duty to submit a timely and complete permit renewal application. This permit renewal application fulfills the requirements of 326 IAC 2-7.

326 IAC 4-1 (Open Burning)

This rule establishes standards for open burning that would result in emissions of regulated pollutants. The necessary variance shall be obtained by the source in accordance with 326 IAC 4-1-4 prior to commencing any open burning.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-1 (Particulate Matter and PM10 Emissions Limitations)

This source is located in a particulate matter non-attainment area of Lake County, however, no facilities are specifically listed in 326 IAC 6-1-10.1. In addition, this source does not have the potential to emit one hundred (100) tons or more of particulate matter per year or have actual emissions of ten (10) tons or more of particulate matter per year. Therefore, pursuant to 326 IAC 6-1-1, the requirements of this rule do not apply.

326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter)

This source is not subject to 326 IAC 6-1-11.1 for fugitive dust control requirements because they do not have facilities or operations that have the potential to emit five (5) tons per year of fugitive particulate matter into the atmosphere in Lake County.

326 IAC 6-4 (Fugitive Dust Emissions)

This source is subject to 326 IAC 6-4 because it is a source of fugitive dust. Pursuant to this rule, fugitive particulate matter emissions shall not be visible crossing the property lines. No violations of this rule have been observed at this source.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

This source is not subject to 326 IAC 6-5 because it does not have potential fugitive particulate emissions of twenty-five (25) tons per year or more and it is not a new source of fugitive particulate matter constructed after December 13, 1985.

326 IAC 8-4-2 (Petroleum Sources - Petroleum Refineries)

326 IAC 8-4-2 (Petroleum Sources - Petroleum Refineries) does not apply to this source because this source is not a petroleum refinery. This source just stores petroleum compounds.

326 IAC 8-4-4 (Bulk Gasoline Terminals)

326 IAC 8-4-4 (Petroleum Sources - Bulk Gasoline Terminals) does not apply to this source even though it is located in Lake County which is listed in the applicability of this rule because this source is not a bulk gasoline plant. This source just stores petroleum compounds.

326 IAC 8-4-5 (Petroleum Sources - Bulk Gasoline Plants)

326 IAC 8-4-5 (Petroleum Sources - Bulk Gasoline Plants) does not apply to this source even though it is located in Lake County which is listed in the applicability of this rule because this source is not a bulk gasoline plant. This source just stores petroleum compounds.

326 IAC 8-4-6 (Gasoline Dispensing Facilities)

326 IAC 8-4-6 (Gasoline Dispensing Facilities) does not apply to this source even though it is located in Lake County which is listed in the applicability of this rule because this source does not dispense gasoline into motor vehicle fuel tanks or portable containers.

326 IAC 8-4-7 (Petroleum Sources - Gasoline Transports)

326 IAC 8-4-7 (Petroleum Sources - Gasoline Transports) does not apply to this source even though the source is in Lake County which is listed in the applicability of this rule because this source does not transport gasoline. This source just stores petroleum compounds.

326 IAC 8-4-8 (Petroleum Sources - Leaks from Petroleum Refineries; Monitoring; Reports)

326 IAC 8-4-8 (Petroleum Sources - Leaks from Petroleum Refineries; Monitoring; Reports) does not apply to this source even though the source is in Lake County which is listed in the applicability of this rule because this source is not a Petroleum Refinery. This source just stores petroleum compounds.

326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)

This rule applies to stationary sources located in Lake, Porter, Clark, or Floyd County that emit or have the potential to emit volatile organic compounds (VOCs) at levels equal to or greater than twenty-five (25) tons per year (tpy) in Lake and Porter Counties and one hundred (100) tpy in Clark and Floyd Counties. In accordance with 326 IAC 8-7-2(a)(3)(C) and (Q), facilities covered by 326 IAC 8-4 [Petroleum Sources] and volatile organic liquid storage facilities, are not "affected facilities" and should not be considered in determining the applicability to this rule. Therefore, this source is not subject to the requirements of this rule.

326 IAC 22-1, 40 CFR 82, Subpart F (Stratosphere Ozone Protection)

The air pollution control board incorporates by reference the provisions of 40 CFR 82 for purposes of implementing the stratospheric ozone protection program that meets the requirements of Title VI of the Clean Air Act with respect to sources operating pursuant to a Part 70 permit. The source uses authorized, certified personnel to service and maintain air conditioning equipment containing regulated substances in 40 CFR 82.

State Rule Applicability - Individual Facilities

326 IAC 2-1 (Construction and Operating Permit Requirements)

Pursuant to the Construction Permit issued to Explorer Pipeline Company on November 19, 1991 (Permit No. 328) and Operation Permit No. 00826, the Packed Tower Air Stripper is limited to total VOC emissions of 0.320 lbs/hr; 1.402 Tons per year and Benzene emissions of 0.144 lbs/hr; 0.631 TPY.

Emissions reports submitted by the source show that the source is in compliance with its Construction and Operation Permit requirements.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The source is not subject to 326 IAC 7-1.1 because none of the facilities have the potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. Therefore, pursuant to 326 IAC 7-1.1-1, the requirements of 326 IAC 7-1.1 and 7.2 do not apply.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

This rule applies to facilities located anywhere in the state that were constructed on or after January 1, 1980, and which have potential volatile organic compound (VOC) emissions of 25 tons per year or more. This source is not subject to 326 IAC 8-1-6 because none of the facilities were constructed on or after January 1, 1980.

Storage Tanks

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

- (a) 326 IAC 8-4-3 does not apply to tanks 654, 656, 660, or 673 even though they are located in Lake County which is listed in the applicability of this rule and have capacities greater than thirty-nine thousand (39,000) gallons because the true vapor pressure of the distillate stored in these tanks is less than 1.52 psi.
- (b) 326 IAC 8-4-3 applies to tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 because these tanks are located in Lake County which is listed in the applicability of this rule, have capacities greater than thirty-nine thousand (39,000) gallons, and store volatile organic compounds with true vapor pressures greater than 1.52 psia. All of the aforementioned tanks are internal floating roof tanks and are, therefore, subject to 326 IAC 8-4-3(b). Pursuant to 326 IAC 8-4-3(b), no owner or operator of an affected fixed roof tank shall permit the use of such facility unless:
 - (1) The facility has been retrofitted with an internal floating roof equipped with a closure seal, or seals, to close the space between the roof edge and tank wall unless the source has been retrofitted with equally effective alternative control which has been approved.
 - (2) The facility is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.
 - (3) All openings, except stub drains, are equipped with covers, lids, or seals such that:
 - (A) The cover, lid, or seal is in the closed position at all times except when in actual use;
 - (B) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (C) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

- (a) Storage tanks 654, 656, 660, and 673 are only subject to 326 IAC 8-9-6(h) because the volatile organic liquids stored in these tanks has a maximum true vapor pressure less than five-tenths (0.5) pounds per square inch absolute (psia).
- (b) 326 IAC 8-9 applies to tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 because they are located in Lake County, store volatile organic liquid and have capacities in excess of thirty-nine thousand (39,000) gallons. Pursuant to 326 IAC 8-9-4(c) these tanks shall be equipped with a fixed roof in combination with an internal floating roof meeting the following:
 - (1) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage tank is completely emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.
 - (2) Each internal floating roof shall be equipped with a mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

- (3) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
- (4) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e.; no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.
- (5) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- (6) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.
- (7) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.
- (8) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (9) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

Testing Requirements

There are no testing requirements for this source.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

Packed Tower Air Stripper

The following monitoring requirements were carried over from the original Construction Permit (No. 328) and Operation Permit (No. 00826) into the Part 70 Permit:

- (a) The influent and effluent from the air stripper shall be analyzed for total VOC and Benzene once during each month the air stripper was operated. The results from this analysis along with the volume of contaminated water processed per month shall be submitted to the Hammond Department of Environmental Management for review within thirty (30) days after the end of each calendar year.

- (b) The following process operating records shall be maintained:
- (1) The volume (in gallons) of contaminated water processed through the Packed tower Air Stripper per day.
 - (2) The operating hours of the Packed Tower Air Stripper per day.

Storage Tank Nos. 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691:

Pursuant to 326 IAC 8-9-5(b), tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 have applicable compliance monitoring conditions as specified below:

- (a) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to the filling of the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel.
- (b) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from HDEM in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions that the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
- (c) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied or degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years.
- (d) Notify HDEM in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraph (a) and (c) of this section to afford HDEM the opportunity to have an observer present. If the inspection required by (c) of this section is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify HDEM at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the HDEM at least 7 days prior to refilling.

These monitoring conditions are necessary because the tanks must be in good condition to ensure compliance with 326 IAC 8-9-5(b) and 326 IAC 12, 40 CFR 60, Subpart Kb (standards of Performance for Volatile Organic Storage Vessels (Including Petroleum Liquid Storage Vessels), and 326 IAC 2-7 (Part 70).

Pursuant to 40 CFR 63, Subpart R, tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 have applicable compliance monitoring conditions as specified below:

- (a) Pursuant to 40 CFR 63.424, the owner or operator of tanks 622, 623, 632, 633, 636, 639, 652, 653, 690, and 691 shall perform a monthly leak inspection of all equipment in gasoline service. For this inspection detection methods incorporating sight, sound, and smell are acceptable.

- (b) When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of the leaking equipment shall be completed within fifteen (15) calendar days after detection of each leak. Delay of repair of leaking equipment will be allowed upon a demonstration to HDEM that repair within 15 calendar days is not feasible.

Conclusion

The operation of this Refined Petroleum Pipelines Operation shall be subject to the conditions of the attached proposed **Part 70 Permit Renewal No. T089-15442-00214**.

**Indiana Department of Environmental Management
Office of Air Quality**

and

Hammond Department of Environmental Management

**Addendum to the
Technical Support Documents for a Part 70 Operating Permit Renewal**

Source Name: Explorer Pipeline Company
Source Location: 3737 Michigan Street, Hammond, IN 46323
County: Lake
SIC Code: 4613 – Refined Petroleum Pipelines
Operation Permit No.: T089-15442-00214
Permit Reviewer: Thomas J. Nyhan, HDEM

On March 10, 2004, the Hammond Department of Environmental Management (HDEM) had a notice published in the Hammond Times, Hammond, Indiana, stating that Explorer Pipeline Company had applied for the renewal of a Part 70 Operating Permit to operate a refined petroleum pipelines operation. The notice also stated that the HDEM proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On April 8, 2004, one comment was received from Explorer Pipeline Company.

Comment #1:

The responsible official for Explorer Pipeline Company is no longer R. Scott VanDyke. The new responsible official is Timothy C. Felt, President and CEO.

Response #1: The responsible official in Section A, Condition A.1 has been changed.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary Refined Petroleum Pipelines operation.

Responsible Official: ~~R. Scott VanDyke~~ **Timothy C. Felt**, President and CEO
Source Address: 3737 Michigan Street, Hammond, Indiana 46323
Mailing Address: P.O. Box 2057, Hammond, Indiana 46323
General Source Phone Number: (219) 989-8262
SIC Code: 4613 – Refined Petroleum Pipelines
County Location: Lake County

Source Location Status: Attainment/Unclassifiable for CO,
Primary Nonattainment for SO₂,
Attainment for PM₁₀, and
Severe Nonattainment for Ozone

Source Status: Part 70 Permit Program
Major Source under PSD and Emission Offset Rules
Major Source, Section 112 of the Clean Air Act

Upon further review, the HDEM has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted).

Revision #1:

Page 24, Section C, Condition C.16: C.16 has been modified to reflect changes in the rule.

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]

- (a) **In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), the Permittee shall submit by July 1 an emission statement covering the previous calendar year as follows:**
- (1) **starting in 2004 and every three (3) years thereafter, and**
 - (2) **any year not already required under (1) if the source emits volatile organic compounds or oxides of nitrogen into the ambient air at levels equal to or greater than twenty-five (25) tons during the previous calendar year.**
- ~~(a)(b) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall **contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and** shall meet the following requirements:~~
- ~~(1) Indicate estimated actual emissions of ~~criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting)~~ **all pollutants listed in 326 IAC 2-6-4(a);**~~
 - ~~(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.~~
- ~~(b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:~~

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The ~~annual~~ emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ and HDEM on or before the date it is due.

Revision #2:

Page 25, Section C, Condition C.17: A new condition, Condition C.17, has been added to the permit. The existing Condition C.17 has been renumbered as Condition C.18. The existing Conditions C.18 and C.19 have been renumbered as C.19 and C.20, respectively.

C.17 Annual Emission Inventory [Hammond Ordinance No. 7102]

The Permittee shall submit an annual emission inventory containing production information for each permitted unit. The submittal should cover the twelve (12) consecutive month time period starting January 1 and ending December 31. The production information should include a description of the material stored in each tank and the throughput for the calendar year. The emission inventory must be received by July 1 of each year. A valid emission statement satisfying the requirements of Condition C.16 shall be considered an acceptable emission inventory. This is a local requirement only. The emission inventory must be submitted to:

Hammond Department of Environmental Management
5925 Calumet Avenue
Hammond, Indiana 46320

The emission inventory does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

Revision #3:

Page 17, Section B, Condition B.24: In accordance with the credible evidence rule (62 Fed. Reg. 8314, Feb 24, 1997); Section 113(a) of the Clean Air Act, 42 U.S. C. § 7413 (a); and a letter from the United States Environmental Protection Agency (USEPA) to IDEM, OAQ dated May, 18 2004, all permits must address the use of credible evidence; otherwise, USEPA will object to the permits. The following language will be incorporated into the permit to address credible evidence:

B.24 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314]

Notwithstanding the conditions of this permit that state specific methods that may be used to demonstrate compliance with, or a violation of, applicable requirements, any person (including the Permittee) may also use other credible evidence to demonstrate compliance with, or a violation of, any term or condition of this permit.

Hammond Department of Environmental Management

Emissions Calculations

Explorer Pipeline Company

Calc: T. Nyhan, 12/8/03

VOL Storage Tanks

Tank #	Type	Product	Capacity (gallons)	Thruput (gallons)	Emissions Standing* (TPY)	Emissions Working* (TPY)	Emissions Total (TPY)
622	IF	Gasoline	2,284,380	89,979,078	2.853	0.087	2.940
623	IF	Gasoline	3,412,290	245,725,242	3.469	0.194	3.663
632	IF	Gasoline	2,284,380	93,696,582	2.853	0.090	2.943
633	IF	Gasoline	5,063,730	599,627,406	4.217	0.387	4.604
636	IF	Gasoline	3,412,290	171,840,144	3.469	0.135	3.605
639	IF	Gasoline	4,060,980	145,086,102	2.510	0.105	2.615
652	IF	Gasoline	4,060,980	219,867,942	2.507	0.159	2.665
653	IF	Gasoline	4,060,980	198,530,346	2.507	0.143	2.650
690	IF	Gasoline	1,015,140	20,356,980	1.055	0.030	1.085
691	IF	Gasoline	1,015,140	6,205,248	1.051	0.009	1.060
654	FC	Distillate	2,284,380	74,317,194	0.112	0.552	0.664
656	FC	Distillate	1,015,140	3,947,706	0.049	0.029	0.078
660	FC	Distillate	2,284,380	50,024,982	0.112	0.372	0.483
673	IF	Jet Kerosene	9,135,000	507,011,148	0.015	0.291	0.306
Total							26.423

Fugitives (valves, flanges, pumps, etc.)

1.300

Air Stripper

Water Treatment Rate (gallons per hour)	Constituent	Concentration (mg/liter)	Maximum Air Emission Rate (tons per year)
600	Benzene	28.8	0.63
600	Chlorobenzene	0.46	0.01
600	1,4-Dichlorobenzene	0.94	0.02
600	Toluene	4.1	0.09
600	Xylenes	2.72	0.06
600	Ethylbenzene	0.51	0.01
600	VOC	64.1	1.41

Explorer Pipeline Total VOC Emissions

29.128

HAPS

HAPs	Storage Tanks & Fugitives		Air Stripper (TPY)	Total (TPY)
	Vapor Weight Percent	Actual Emissions (TPY)		
Benzene	0.7	0.011	0.63	0.643
Chlorobenzene			0.01	0.010
1,4-Dichlorobenzene			0.02	0.021
Ethylbenzene	0.1	0.029	0.01	0.040
Hexane	1.52	0.443		0.443
MTBE	2.61	0.760		0.760
2,2,4-Trimethylpentane	0.76	0.221		0.221
Toluene	1.22	0.355	0.09	0.445
Xylene	0.46	0.134	0.06	0.194
	Total	1.954	0.82	2.777

* See attached calculations.

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 622
 Tank Shell Diameter..... 90 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Mechanical Shoe
 Tank Capacity (max liquid)..... 2,284,380 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 89,979,078 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	1.462	Tons/yr
Lwd =	Withdrawal Loss =	0.087	Tons/yr
Lf =	Deck Fitting Losses =	1.391	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	2.940	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	5.8 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	90 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 2923.859 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	2142359 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	90 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 173.629 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	496.7 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 2782.147 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	6	33	198
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	28	7.9	221.2
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			496.7

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 623
 Tank Shell Diameter..... 110 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Mechanical Shoe
 Tank Capacity (max liquid)..... 3,412,290 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 245,725,242 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	1.787	Tons/yr
Lwd =	Withdrawal Loss =	0.194	Tons/yr
Lf =	Deck Fitting Losses =	1.683	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	3.663	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	5.8 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	110 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 3573.606 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	5850601 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	110 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 387.178 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	600.8 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 3365.239 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	7	33	231
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	37	7.9	292.3
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			600.8

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 632
 Tank Shell Diameter..... 90 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Mechanical Shoe
 Tank Capacity (max liquid)..... 2,284,380 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 93,696,582 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	1.462	Tons/yr
Lwd =	Withdrawal Loss =	0.090	Tons/yr
Lf =	Deck Fitting Losses =	1.391	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	2.943	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	5.8 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	90 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 2923.859 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	2230871 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	90 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 180.802 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	496.7 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 2782.147 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	6	33	198
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	28	7.9	221.2
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			496.7

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Internal Float Roof Tank

General Information:

Company Name	Explorer Pipeline Company
Year of Data	2002
Plant ID #	089-00214

Tank Information:

Tank ID #	633	
Tank Shell Diameter.....	134	feet
Tank Shell Height.....	48	feet
*Tank Shell Type (Welded or Riveted).....	Welded	
*Tank Deck Type (Welded or Bolted).....	Welded	
*Tank Rim Seal Type.....	Mechanical Shoe	
Tank Capacity (max liquid).....	5,063,730	gallons

Product Information: **

Product Stored.....	Gasoline	
Vapor Molecular Weight.....	66.00	lb/lb-mole
True Vapor Pressure @ 60° F.....	4.2400	psia - @ 60° F
Average Organic Liquid Density.....	5.10	lb/gal
Annual Product Throughput.....	599,627,406	gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	2.177	Tons/yr
Lwd =	Withdrawal Loss =	0.387	Tons/yr
Lf =	Deck Fitting Losses =	2.041	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	4.604	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	5.8 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	134 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 4353.302 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	14276843 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	134 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 774.336 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	728.6 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 4081.080 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	8	33	264
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	49	7.9	387.1
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			728.6

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID #	636	
Tank Shell Diameter.....	110	feet
Tank Shell Height.....	48	feet
*Tank Shell Type (Welded or Riveted).....	Welded	
*Tank Deck Type (Welded or Bolted).....	Welded	
*Tank Rim Seal Type.....	Mechanical Shoe	
Tank Capacity (max liquid).....	3,412,290	gallons

Product Information: **

Product Stored.....	Gasoline	
Vapor Molecular Weight.....	66.00	lb/lb-mole
True Vapor Pressure @ 60° F.....	4.2400	psia - @ 60° F
Average Organic Liquid Density.....	5.10	lb/gal
Annual Product Throughput.....	171,840,144	gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	1.787	Tons/yr
Lwd =	Withdrawal Loss =	0.135	Tons/yr
Lf =	Deck Fitting Losses =	1.683	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	3.605	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	5.8 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	110 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 3573.606 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	4091432 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	110 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 270.761 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	600.8 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 3365.239 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	7	33	231
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	37	7.9	292.3
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			600.8

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 639
 Tank Shell Diameter..... 120 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Double Wiper
 Tank Capacity (max liquid)..... 4,060,980 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 145,086,102 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	0.739	Tons/yr
Lwd =	Withdrawal Loss =	0.105	Tons/yr
Lf =	Deck Fitting Losses =	1.771	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	2.615	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	2.2 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	120 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 1478.733 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	3454431 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	120 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 209.398 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	632.4 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 3542.239 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	7	33	231
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	41	7.9	323.9
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			632.4

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
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Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 652
 Tank Shell Diameter..... 120 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Double Wiper
 Tank Capacity (max liquid)..... 4,060,980 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 219,867,942 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	0.739	Tons/yr
Lwd =	Withdrawal Loss =	0.159	Tons/yr
Lf =	Deck Fitting Losses =	1.767	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	2.665	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	2.2 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	120 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 1478.733 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	5234951 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	120 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 317.328 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	631 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 3534.397 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	7	33	231
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	41	7.9	323.9
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	2	0.7	1.4
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			631

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 653
 Tank Shell Diameter..... 120 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Double Wiper
 Tank Capacity (max liquid)..... 4,060,980 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 198,530,346 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	0.739	Tons/yr
Lwd =	Withdrawal Loss =	0.143	Tons/yr
Lf =	Deck Fitting Losses =	1.767	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	2.650	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	2.2 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	120 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 1478.733 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	4726913 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	120 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 286.532 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	631 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 3534.397 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	7	33	231
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	41	7.9	323.9
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	2	0.7	1.4
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			631

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 690
 Tank Shell Diameter..... 60 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Double Wiper
 Tank Capacity (max liquid)..... 1,015,140 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 20,356,980 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	0.370	Tons/yr
Lwd =	Withdrawal Loss =	0.030	Tons/yr
Lf =	Deck Fitting Losses =	0.686	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	1.085	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	2.2 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	60 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 739.367 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	484690 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	60 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 59.247 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	244.8 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 1371.189 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	1	33	33
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	17	7.9	134.3
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			244.8

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 691
 Tank Shell Diameter..... 60 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Double Wiper
 Tank Capacity (max liquid)..... 1,015,140 gallons

Product Information: **

Product Stored..... Gasoline
 Vapor Molecular Weight..... 66.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 4.2400 psia - @ 60° F
 Average Organic Liquid Density..... 5.10 lb/gal
 Annual Product Throughput..... 6,205,248 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	0.370	Tons/yr
Lwd =	Withdrawal Loss =	0.009	Tons/yr
Lf =	Deck Fitting Losses =	0.682	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	1.060	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	2.2 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.084868 dimensionless
D = tank diameter =	60 feet
Mv = vapor molecular weight (Table 7.1-3)	66.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 739.367 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	147744 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	5.1 lb/gal
D = tank diameter =	60 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 18.060 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	243.4 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 1363.347 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	1	33	33
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	17	7.9	134.3
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	2	0.7	1.4
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			243.4

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Fixed Roof Tank -Vertical

General Information:

Company Name **Explorer Pipeline Company**
 Year of Data **2002**
 Plant ID # 089-00214

Tank Information:

Tank ID # **654**
 Tank Shell Diameter..... 90 feet
 Tank Shell Height..... 48 feet
 Tank Capacity (max liquid)..... 2,284,380 gallons

Product Information:

Product Stored..... Distillate
 *Vapor Molecular Weight..... 130.0 lb/lb-mole
 *True Vapor Pressure @ 60° F..... 0.0048 psia - @ 60° F
 *True Vapor Pressure @ 40° F..... 0.0031 psia - @ 40° F
 Annual Product Throughput..... 74,317,194 gallons/yr
 Average Annual Liquid Height..... 24 feet
 (If unknown, use half of tank shell height.)

*This product information available in the AP-42, Section 7.

*if tank is not white, or if it contains crude oils - see calculations

Ls = Standing Storage Losses = 0.1118 Tons/yr
 Lw = Working Losses = 0.5521 Tons/yr

Lt = Ls + Lw = Total Losses =	0.6639	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

$$L_s = \text{Standing Storage Losses} = 365 \cdot (V_v) \cdot (W_v) \cdot (K_e) \cdot (K_s)$$

Hr = tank roof height = $S_r \cdot R_s = 0.0625 \cdot (D/2) =$	2.813 feet
Hro = roof outage = $H_r/3 =$	0.938 feet
Hl = liquid height (1/2 tank height if unknown) =	24.000 feet
Hs = tank shell height =	48.000 feet
Hvo = vapor space outage = $H_s - H_l + H_{ro} =$	24.938 feet
D = tank diameter =	90.000 feet

$$V_v = \text{Tank Vapor Space Volume} = (\pi/4) \cdot (D^2) \cdot (H_{vo}) = \underline{158645.520 \text{ cft}}$$

Mv = vapor molecular weight (Tables 7.1-2 & 3)	130.0 lb/lb-mole
Pva = vapor pressure at TLa (Tables 7.1-2 & 3)	0.0048 psia @ 50-60°F
TLa = daily average liquid surface temperature °R as calculated for Chicago area using AP-42, Section 7	510.843 °R

$$W_v = \text{Vapor Density} = (M_v \cdot P_{va}) / (10.731 \cdot T_{La}) = \underline{0.0001138 \text{ lb/cft}}$$

ΔT_a = daily ambient temp range (Chgo area) =	19.00 °R
∂ = tank paint solar absorptance (Table 7.1-7) =	0.17 dimensionless

***(this factor (∂) will change for non-white tanks)**

I = daily total solar insolation factor (Chgo) =	1215 Btu/sqft•day
ΔT_v = daily vapor temp range =	
$= 0.72 \cdot (\Delta T_a) + 0.028 \cdot (\partial) \cdot (I) =$	19.4634 °R
TLa = daily average liquid surface temp °R	510.843 °R
ΔP_v = daily vpr pres range = $P_v@60 - P_v@40 =$	0.0017 psia
ΔP_b = breather vent pressure setting range =	0.06 psig
Pa = atmospheric pressure =	14.7 psia
Pva = vapor pressure at TLa (Tables 7.1-2 & 3)	0.0048 psia

$$K_e = \text{Vapor Space Expansion Factor} = \frac{(\Delta T_v / T_{La}) + (\Delta P_v - \Delta P_b) / (P_a - P_{va})}{1} = \underline{0.034133 \text{ dimensionless}}$$

$$K_s = \text{Vented Vapor Saturation Factor} = \frac{1}{1 + 0.053 \cdot P_{va} \cdot H_{vo}} = \underline{0.993696 \text{ dimensionless}}$$

Ls = Standing Storage Losses, lb/yr

$$L_s = 365 \cdot (V_v) \cdot (W_v) \cdot (K_e) \cdot (K_s)$$

$$\underline{L_s = 223.568 \text{ lb/yr}}$$

See AP-42, Section 7, for clarification of the following calculations:

$$Lw = \text{Working Losses} = 0.0010 \cdot (Mv) \cdot (Pva) \cdot (Q) \cdot (Kn) \cdot (Kp)$$

Q = annual net thruput, bbl/yr - (42 gal/bbl) =	1,769,457.0 bbl/yr
VLx = tank max liquid volume - (7.481 gal/cft)	305,357.6 cft
N = # of turnovers per year = $5.614 \cdot Q / VLx$ =	32.5 dimensionless
Kn = turnover factor, =1 unless $N > 36$	1.0000 dimensionless
Kp = working loss product factor =	1.00 dimensionless
* Kp = 0.75 for crude oils,	
1.0 for all other products	

Lw = Working Losses, lb/yr

$$Lw = 0.0010 \cdot (Mv) \cdot (Pva) \cdot (Q) \cdot (Kn) \cdot (Kp)$$

$$Lw = 1104.141 \text{ lb/yr}$$

The End

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Fixed Roof Tank -Vertical

General Information:

Company Name **Explorer Pipeline Company**
 Year of Data **2002**
 Plant ID # 089-00214

Tank Information:

Tank ID # **656**
 Tank Shell Diameter..... 60 feet
 Tank Shell Height..... 48 feet
 Tank Capacity (max liquid)..... 1,015,140 gallons

Product Information:

Product Stored..... Distillate
 *Vapor Molecular Weight..... 130.0 lb/lb-mole
 *True Vapor Pressure @ 60° F..... 0.0048 psia - @ 60° F
 *True Vapor Pressure @ 40° F..... 0.0031 psia - @ 40° F
 Annual Product Throughput..... 3,947,706 gallons/yr
 Average Annual Liquid Height..... 24 feet
 (If unknown, use half of tank shell height.)

*This product information available in the AP-42, Section 7.

*if tank is not white, or if it contains crude oils - see calculations

Ls = Standing Storage Losses = 0.0491 Tons/yr
 Lw = Working Losses = 0.0293 Tons/yr

Lt = Ls + Lw = Total Losses =	0.0784	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

$$L_s = \text{Standing Storage Losses} = 365 \cdot (V_v) \cdot (W_v) \cdot (K_e) \cdot (K_s)$$

Hr = tank roof height = $S_r \cdot R_s = 0.0625 \cdot (D/2) =$	1.875 feet
Hro = roof outage = $H_r/3 =$	0.625 feet
Hl = liquid height (1/2 tank height if unknown) =	24.000 feet
Hs = tank shell height =	48.000 feet
Hvo = vapor space outage = $H_s - H_l + H_{ro} =$	24.625 feet
D = tank diameter =	60.000 feet

$$V_v = \text{Tank Vapor Space Volume} = (\pi/4) \cdot (D^2) \cdot (H_{vo}) = \underline{\underline{69625.547}} \text{ cft}$$

Mv = vapor molecular weight (Tables 7.1-2 & 3)	130.0 lb/lb-mole
Pva = vapor pressure at TLa (Tables 7.1-2 & 3)	0.0048 psia @ 50-60°F
TLa = daily average liquid surface temperature °R as calculated for Chicago area using AP-42, Section 7	510.843 °R

$$W_v = \text{Vapor Density} = (M_v \cdot P_{va}) / (10.731 \cdot T_{La}) = \underline{\underline{0.0001138}} \text{ lb/cft}$$

ΔT_a = daily ambient temp range (Chgo area) =	19.00 °R
∂ = tank paint solar absorptance (Table 7.1-7) =	0.17 dimensionless

***(this factor (∂) will change for non-white tanks)**

I = daily total solar insolation factor (Chgo) =	1215 Btu/sqft•day
ΔT_v = daily vapor temp range =	
$= 0.72 \cdot (\Delta T_a) + 0.028 \cdot (\partial) \cdot (I) =$	19.4634 °R
TLa = daily average liquid surface temp °R	510.843 °R
ΔP_v = daily vpr pres range = $P_v@60 - P_v@40 =$	0.0017 psia
ΔP_b = breather vent pressure setting range =	0.06 psig
Pa = atmospheric pressure =	14.7 psia
Pva = vapor pressure at TLa (Tables 7.1-2 & 3)	0.0048 psia

$$K_e = \text{Vapor Space Expansion Factor} = (\Delta T_v / T_{La}) + (\Delta P_v - \Delta P_b) / (P_a - P_{va}) = \underline{\underline{0.034133}} \text{ dimensionless}$$

$$K_s = \text{Vented Vapor Saturation Factor} = 1 / (1 + 0.053 \cdot P_{va} \cdot H_{vo}) = \underline{\underline{0.993774}} \text{ dimensionless}$$

Ls = Standing Storage Losses, lb/yr

$$L_s = 365 \cdot (V_v) \cdot (W_v) \cdot (K_e) \cdot (K_s)$$

$$\underline{\underline{L_s = 98.126 \text{ lb/yr}}}$$

See AP-42, Section 7, for clarification of the following calculations:

$$Lw = \text{Working Losses} = 0.0010 \cdot (Mv) \cdot (Pva) \cdot (Q) \cdot (Kn) \cdot (Kp)$$

Q = annual net thruput, bbl/yr - (42 gal/bbl) =	93,993.0 bbl/yr
VLx = tank max liquid volume - (7.481 gal/cft)	135,695.8 cft
N = # of turnovers per year = $5.614 \cdot Q / VLx$ =	3.9 dimensionless
Kn = turnover factor, =1 unless $N > 36$	1.0000 dimensionless
Kp = working loss product factor =	1.00 dimensionless
* Kp = 0.75 for crude oils,	
1.0 for all other products	

Lw = Working Losses, lb/yr

$$Lw = 0.0010 \cdot (Mv) \cdot (Pva) \cdot (Q) \cdot (Kn) \cdot (Kp)$$

$$Lw = \quad 58.652 \quad \text{lb/yr}$$

The End

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Fixed Roof Tank -Vertical

General Information:

Company Name **Explorer Pipeline Company**
 Year of Data **2002**
 Plant ID # 089-00214

Tank Information:

Tank ID # **660**
 Tank Shell Diameter..... 90 feet
 Tank Shell Height..... 48 feet
 Tank Capacity (max liquid)..... 2,284,380 gallons

Product Information:

Product Stored..... Distillate
 *Vapor Molecular Weight..... 130.0 lb/lb-mole
 *True Vapor Pressure @ 60° F..... 0.0048 psia - @ 60° F
 *True Vapor Pressure @ 40° F..... 0.0031 psia - @ 40° F
 Annual Product Throughput..... 50,024,982 gallons/yr
 Average Annual Liquid Height..... 24 feet
 (If unknown, use half of tank shell height.)

*This product information available in the AP-42, Section 7.

*if tank is not white, or if it contains crude oils - see calculations

Ls = Standing Storage Losses = 0.1118 Tons/yr
 Lw = Working Losses = 0.3716 Tons/yr

Lt = Ls + Lw = Total Losses =	0.4834	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

$$L_s = \text{Standing Storage Losses} = 365 \cdot (V_v) \cdot (W_v) \cdot (K_e) \cdot (K_s)$$

Hr = tank roof height = $S_r \cdot R_s = 0.0625 \cdot (D/2) =$	2.813 feet
Hro = roof outage = $H_r/3 =$	0.938 feet
Hl = liquid height (1/2 tank height if unknown) =	24.000 feet
Hs = tank shell height =	48.000 feet
Hvo = vapor space outage = $H_s - H_l + H_{ro} =$	24.938 feet
D = tank diameter =	90.000 feet

$$V_v = \text{Tank Vapor Space Volume} = (\pi/4) \cdot (D^2) \cdot (H_{vo}) = \underline{158645.520 \text{ cft}}$$

Mv = vapor molecular weight (Tables 7.1-2 & 3)	130.0 lb/lb-mole
Pva = vapor pressure at TLa (Tables 7.1-2 & 3)	0.0048 psia @ 50-60°F
TLa = daily average liquid surface temperature °R as calculated for Chicago area using AP-42, Section 7	510.843 °R

$$W_v = \text{Vapor Density} = (M_v \cdot P_{va}) / (10.731 \cdot T_{La}) = \underline{0.0001138 \text{ lb/cft}}$$

ΔT_a = daily ambient temp range (Chgo area) =	19.00 °R
∂ = tank paint solar absorptance (Table 7.1-7) =	0.17 dimensionless

***(this factor (∂) will change for non-white tanks)**

I = daily total solar insolation factor (Chgo) =	1215 Btu/sqft•day
ΔT_v = daily vapor temp range =	
$= 0.72 \cdot (\Delta T_a) + 0.028 \cdot (\partial) \cdot (I) =$	19.4634 °R
TLa = daily average liquid surface temp °R	510.843 °R
ΔP_v = daily vpr pres range = $P_v@60 - P_v@40 =$	0.0017 psia
ΔP_b = breather vent pressure setting range =	0.06 psig
Pa = atmospheric pressure =	14.7 psia
Pva = vapor pressure at TLa (Tables 7.1-2 & 3)	0.0048 psia

$$K_e = \text{Vapor Space Expansion Factor} = \frac{(\Delta T_v / T_{La}) + (\Delta P_v - \Delta P_b) / (P_a - P_{va})}{1} = \underline{0.034133 \text{ dimensionless}}$$

$$K_s = \text{Vented Vapor Saturation Factor} = \frac{1}{1 + 0.053 \cdot P_{va} \cdot H_{vo}} = \underline{0.993696 \text{ dimensionless}}$$

Ls = Standing Storage Losses, lb/yr

$$L_s = 365 \cdot (V_v) \cdot (W_v) \cdot (K_e) \cdot (K_s)$$

$$\underline{L_s = 223.568 \text{ lb/yr}}$$

See AP-42, Section 7, for clarification of the following calculations:

$$Lw = \text{Working Losses} = 0.0010 \cdot (Mv) \cdot (Pva) \cdot (Q) \cdot (Kn) \cdot (Kp)$$

Q = annual net thruput, bbl/yr - (42 gal/bbl) =	1,191,071.0 bbl/yr
VLx = tank max liquid volume - (7.481 gal/cft)	305,357.6 cft
N = # of turnovers per year = $5.614 \cdot Q / VLx$ =	21.9 dimensionless
Kn = turnover factor, =1 unless $N > 36$	1.0000 dimensionless
Kp = working loss product factor =	1.00 dimensionless
* Kp = 0.75 for crude oils,	
1.0 for all other products	

Lw = Working Losses, lb/yr

$$Lw = 0.0010 \cdot (Mv) \cdot (Pva) \cdot (Q) \cdot (Kn) \cdot (Kp)$$

$$Lw = \quad 743.228 \quad \text{lb/yr}$$

The End

Hammond Department of Environmental Management
Emission Inventory System Update (EIS)
Storage of Organic Liquids ... AP-42 ... Section 7

Internal Float Roof Tank

General Information:

Company Name Explorer Pipeline Company
 Year of Data 2002
 Plant ID # 089-00214

Tank Information:

Tank ID # 673
 Tank Shell Diameter..... 180 feet
 Tank Shell Height..... 48 feet
 *Tank Shell Type (Welded or Riveted)..... Welded
 *Tank Deck Type (Welded or Bolted)..... Welded
 *Tank Rim Seal Type..... Double Wiper
 Tank Capacity (max liquid)..... 9,135,000 gallons

Product Information: **

Product Stored..... Jet Kerosene
 Vapor Molecular Weight..... 130.00 lb/lb-mole
 True Vapor Pressure @ 60° F..... 0.0060 psia - @ 60° F
 Average Organic Liquid Density..... 6.10 lb/gal
 Annual Product Throughput..... 507,011,148 gallons/yr

*if this information changes, see calculations
 if tank contains crude oil, see calculations
 **This product information available in the AP-42, Section 7.

Lr =	Rim Seal Loss =	0.006	Tons/yr
Lwd =	Withdrawal Loss =	0.291	Tons/yr
Lf =	Deck Fitting Losses =	0.009	Tons/yr
Ld =	Deck Seam Loss =	0.000	Tons/yr

Lt = Lr + Lwd + Lf = Total Loss =	0.306	Tons/yr
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See AP-42, Section 7, for clarification of the following calculations:

* asterisked items change with rim seal information (see AP-42, Section 7)

Rim Seal Loss:

* Kr = seal factor (see Table 7.1-14) =	5.3 lb-mole/ft•yr
P* = vapor pres. function - Equation (3-3) =	0.000102 dimensionless
D = tank diameter =	180 feet
Mv = vapor molecular weight (Table 7.1-3)	130.00 lb/lb-mole
crude? Kc = product factor, Kc = 0.4 for crude oils,	1.0
Kc = 1 for all other organic liquids	

Lr = Rim Seal Loss = (Kr)*(P*)*(D)*(Mv)*(Kc) = 12.658 lb/yr

Withdrawal Loss:

Q = annual throughput, (42 gal/bbl) =	12071694 bbl/yr
WL = ave. organic liquid density (Table 7.1-3) =	6.1 lb/gal
D = tank diameter =	180 feet
Nc = number of columns =	1
C = shell clingage factor, (see Table 7.1-10) =	0.0015 bbl/1000 sqft
C = 0.006 for crude oil	

Lwd =

Withdrawal Loss = (0.943*Q*C*WL/D)(1+Nc/D) = 581.882 lb/yr

Deck Fitting Loss:

Ff = total deck fitting loss factor (Table 7.1-16) =	1312.8 lb-mole/yr
(go to cell G47)	
P*,Mv, and Kc as defined in above calculations	

Lf = Deck Fitting Losses = (Ff)*(P*)*(Mv)*(Kc) = 17.418 lb/yr

Deck Seam Loss:

Kd = deck seam loss per unit seam length factor=	0.00 lb/mole/ft-yr
(0.0 for welded deck, 0.34 for bolted deck)	
Sd = deck seam length factor =	0.2 ft/sqft
D,P*,Mv, and Kc are as defined above	

Ld =

Deck Seam Loss = (Kd)*(Sd)*(D^2)*(P*)*(Mv)*(Kc)= 0.000 lb/yr

Tanks with welded decks do not have deck seam losses

The End

Summary of Internal Float Roof Tank Deck Fitting Loss Factors

for typical numbers based on tank diameter, see AP-42, Table 7.1-16
 if tank-specific data is unavailable use Figures 7.1-24 and 25

Deck Fitting Type	Quantity	Factor	Total
Access Hatch:			
Bolted Cover, Gasketed.....	1	1.6	1.6
Unbolted Cover, Gasketed.....	0	11	0
Unbolted Cover, Ungasketed.....	0	25	0
Automatic Gauge Float Well:			
Bolted Cover, Gasketed.....	1	5.1	5.1
Unbolted Cover, Gasketed.....	0	15	0
Unbolted Cover, Ungasketed.....	0	28	0
Column Well:			
Builtup Column - Sliding cover, Gasketed.....	19	33	627
Builtup Column - Sliding Cover, Ungasketed.....	0	47	0
Pipe Column - Flexible Fabric Sleeve Seal.....	0	10	0
Pipe Column - Sliding Cover, Gasketed.....	0	19	0
Pipe Column - Sliding Cover, Ungasketed.....	0	32	0
Ladder Well:			
Sliding Cover, Gasketed.....	1	56	56
Sliding Cover, Ungasketed.....	0	76	0
Roof Leg or Hanger Well:			
Adjustable.....	77	7.9	608.3
Fixed.....	0	0	0
Sample Pipe or Well:			
Slotted Pipe - Sliding Cover, Gasketed.....	0	44	0
Slotted Pipe - Sliding Cover, Ungasketed.....	0	57	0
Sample Well - Slit Fabric Seal, (10% open area).....	1	12	12
Stub Drain, 1" diameter.....	0	1.2	0
Vacuum Breaker:			
Weighted Mechanical Actuation, Gasketed.....	4	0.7	2.8
Weighted Mechanical Actuation, Ungasketed.....	0	0.9	0
Total Deck Fitting Loss Factor (Ff) =			1312.8