DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B298721951

FACILITY: Buckeye Terminals, LLC - River Rouge Terminal		**SRN / ID:** B2987
LOCATION: 205 MARION AVE, RIVER ROUGE		**DISTRICT:** Detroit
CITY: RIVER ROUGE		**COUNTY:** WAYNE
CONTACT: Brad Crawford , Operation Manager		**ACTIVITY DATE:** 05/10/2013
STAFF: Terseer Hemben	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: VOC		
RESOLVED COMPLAINTS:		

Inspection
Buckeye Terminal, LLP.
205 Marion Street, River Rouge, MI 48218

Inspection: 5/10/2013

Present: Terseer Hemben, MDEQ – Air Quality Division
Jim Hubert Buckeye Terminal Manager

Facility Description and Background:
The Buckeye Terminal (BT), River Rouge Terminal is located at 205 Marion Industrial Avenue in River Rouge, Michigan. The facility lies about one quarter mile to the east of West Jefferson Avenue in a primarily industrial area. The nearest residences are approximately 225 yards to the northwest of the facility's truck loading rack. The facility receives a variety of petroleum products through pipelines and loads them into tank trucks using loading racks. The gasoline loading facility and some storage tanks require control equipment. Gasoline is bottom loaded into trucks that are connected to the vapor recovery unit (VRU) during loading.

The facility consists of 35 major emission units. There is a seven-lane tank truck loading rack equipped with a vapor recovery system for control of VOC emissions. There are 33 storage tanks, some of which are located on each side of Marion Avenue; thirteen of the tanks are relatively small and are exempt from NSR permit requirements under rules R336.1284 (i) and R336.1285 (g). Tank designs include internal floating roof (IFR), external floating roof (EFR) equipped with weather covers, fixed cone roof type, and horizontal cylindrical type.

A variety of common petroleum products are received and stored at the facility. These products include gasoline, No.1 fuel oil, Jet fuels and diesel fuel. Ethanol, delivered by truck, is stored for blending into summer grade gasoline product.

Inspection Narrative
I arrived at the site on May 10, 2013. I was admitted onto the site at 1000 hours. The purpose of visit was to conduct a scheduled annual compliance level 2 inspection. Temperature at the hour was 65 F with wind 14 mph coming from the SW, and humidity 84%. I met with the Terminal supervisor, Mr. Jim Hubert. We went through a pre-inspection conference meeting starting at about 1008 hours. I explained the purpose and scope of the inspection. The purpose was to evaluate facility operations for compliance consistent with conditions and requirements set in MI-ROP-B2987-2008. A visual inspection of facility emission units would follow.

Discovery
During the pre-inspection meeting, Mr. Hubert informed me that Buckeye replaced the portable VCU that was recently stack-tested for emissions compliance. The unit was replaced with a Buckeye-owned portable VCU with capacity that doubled the previously tested one. The previous one had one burner, whereas the new one has 2 burners. According to Mr. Hubert, the previous VCU was failing on extended runs. For the purpose of maintain efficiency in emissions control, the company replaced the rented unit with a buckeye-owned VCU. We walked through the plant and observed the EUs and remediation area.

Permit # MI-ROP-B2987-2008 Conditions Evaluation

1. In compliance-BT demonstrated there has been no modification of process or equipment or system in the last 12 months. The terminal supervisor stated there was no modification of equipment except for a replacement of portable VCU of a larger capacity for improving efficiency of emissions control [Response item1 attached].

2. In compliance - BT demonstrated the VOC emissions from EULOADRACK did not exceed 10 mg/liter of gasoline loaded based on 6 hour test average [S.C. I.1]. Attached response indicated the emissions amounted to 3.85 mg/l as demonstrated in emission test conducted in March of 2013.

3. In compliance-BT demonstrated the gasoline throughput in EULOADRACK did not exceed 850,000,000 gal/year based on 12-month rolling time period as determined at the end of each calendar [SC II.1]. Records submitted by BT indicated the maximum gasoline throughput in EULOADING amounted to 44.8 million gallons per 12-month rolling time [P. 72-74 attached].

4. In compliance- BT demonstrated the distillate throughput in EULOADRACK did not exceed 300,000,000 gal/year based on 12-month rolling time period as determined at the end of each calendar [SC II.2]. Records submitted by BT indicated the highest throughput was 36.5 Million gallons per 12-month rolling period [p.72-24 attached].

5. In compliance- BT demonstrated permittee complied with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and XX, as they apply to EULOADRACK.(40 CFR Part 60 Subparts A & XX) [III.1]. Records pertaining to Annual and Semiannual reports submitted are on file.

6. In compliance- BT demonstrated permittee did not operate the petroleum product truck loading rack unless the vapor recovery system is installed and operating properly. (40 CFR 60.502, R336.1910 (1)). [SC III.2]. VRU reports are attached for reference [p. 43].

7. In compliance- BT demonstrated permittee recorded identification number on each gasoline tank truck is loaded at the affected facility [III.3]. Bill of Laden is attached [p. 32-35]

8. In compliance- BT demonstrated permittee performed loading of liquid product into gasoline tank trucks limited to vapor-tight gasoline tank trucks using the following procedures:(40 CFR 60.502(e)) [SC III.4]:

   a) In compliance- BT demonstrated Permittee cross checks each tank identification number obtained in Condition 3 with the file of tank truck vapor tightness documentation within two weeks after the corresponding tank is loaded. (40 CFR 60.502(e) (3)) [SC III.4a]. Records indicated the SOP as applied in the bill of laden [p 32-35].
   b) In compliance – BT demonstrated Permittee notified the owner or operator of each non vapor-tight gasoline tank truck loaded at the facility within three weeks after the loading has occurred. (40 CFR 60.502(e) (4)) [SC III.4b]. Records indicated communication SOP as applied in the bill of Laden [p 32-35].
   c) In compliance - BT demonstrated permittee took steps assuring that the non-vapor-tight gasoline tank truck was not reloaded at the facility until vapor tightness documentation for that tank is obtained. (40 CFR 60.502(e) (5)) [SC III.4c]. The SOP relates the logic employed in the Bill of Laden [p 32-35].

d) In compliance – BT demonstrated Permittee acted to assure that loading of gasoline tank trucks at the facility were made only into tank trucks that are compatible with the terminal's vapor collection system. (40 CFR 60.502(f)) [III.4d]. The SOP presents logic employed in the bill of laden [p 32-35].

9. In compliance - BT demonstrated permittee did not operate EULOADRACK unless the Malfunction Abatement Plan on file at the District Office, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The MAP should be consistent with Rule 911(2). If the malfunction abatement plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall, by order of the AQD, revise the Malfunction Abatement Plan within the time specified in the order after such an event occurs and submit the revised plan to the AQD District Supervisor. The revised plan shall include procedures for maintaining and operating in a satisfactory manner, the Vapor Recovery Unit during malfunction events, and a program for corrective action for such events (R336.1911). [III.5]. The MAP was submitted and is on file.
10. In compliance - BT demonstrated permittee acted to assure that the terminal and tank truck's vapor collection systems were connected during each loading of a gasoline tank truck at the facility. (40 CFR 60.502(g)) [SC III.6]. SOP attached reflects the logistics required [p 32-35].
11. In compliance – BT demonstrated for each calendar month, the vapor collection system, the vapor processing system, and each loading rack handling gasoline was inspected during the loading of gasoline tank trucks for the total organic compounds liquid or vapor leaks. (For the purpose of this inspection, detection methods such as sight, sound or smell are acceptable. (40 CFR 60. 502(j))) [III.7]. Records indicated compliance [p 43].
12. In compliance - BT demonstrated permittee recorded each detection of a leak and the source of the leak repairs as soon as practicable (if applicable) but no later than fifteen (15) calendar days after the leak is detected (40CFR 60.502(j)) [III.8]. The response is same as in item 11 [p. 43].
13. In compliance - BT demonstrated permittee did not allow the loading of, any organic compound that has a true vapor pressure of more than 1.5 psia at actual conditions from any stationary vessel into any delivery vessel unless the delivery vessels are controlled by a vapor system that captures all displaced organic vapor and air by means of a vapor-tight collection line. (Compliance with this requirement shall be considered compliance with which has been subsumed under this streamlined requirement. (40 CFR 60.502(a), 40 CFR Part 60, Subpart XX, R336.1609 (2))) [III.9]. Presence of efficiently operated VCU satisfies the condition [p 43].
14. In compliance – BT demonstrated any delivery vessel located at the facility is equipped, maintained or controlled with an interlocking system or procedure to ensure that the vapor-tight collection line is connected before any organic compound is loaded. (R336.1609 (3) (a) [III.10]. The information is confirmed [p 43].
15. In compliance demonstrated there had been no visible leaks, except from the disconnection of bottom loading dry breaks and from raising top loading vapor heads, where a few drops are permitted. (R336.1627(7)) [III.11]. Compliance is stated in attached LDAR forms [p 43].

16. In compliance- BT demonstrated permittee does not allow gasoline to be handled in a manner that would result in vapor release to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to the following: (R366.1225) [III.12 (a), (b), (c), and (d)].

    a) Minimize the gasoline spills. Re MAP covers the condition through uniform loading instructions [p 43].

    b) Clean up the spills as expeditiously as practicable. Response is same as in16 (a).

    c) Cover all open gasoline containers with a gasketed seal when not in use. Response is same as in16 (a).

    d) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators. Response is same as in16 (a).

17. In compliance – BT demonstrated permittee developed written procedures for the operation of the above control measures and posted those procedures in an accessible and conspicuous location near the loading device. (R336.1609(4)) [III.13]. Visual inspection indicated the information was posted in each loading bay.

18. In compliance - BT demonstrated permittee did not operate EULOADRACK unless the portable vapor combustion unit was located within the shaded area indicated on the site plan in Appendix 1. (R336.1225) [III.14]. Visual inspection indicated compliance.

19. In compliance –BT-demonstrated After June 30, 1981, it is unlawful for a person to load, or allow the loading of, any organic compound that has a true vapor pressure of more than 1.5 psia at actual conditions from any stationary vessel into any delivery vessel located at an existing loading facility which has a throughput of 5,000,000 or more gallons of such compounds per year, unless such delivery vessel is filled by a submerged fill pipe. (R336.1225, R336.1609(1)) [SC IV.1]. Written response from BT stated only bottom loading is allowed at BT River Rouge [Item 19, p-2].

20. In compliance -BT demonstrated each vapor collection system was designed to prevent any total organic compounds vapor collected at one loading rack from passing to another loading rack. (40 CFR 60.502(d)) [SC IV.2]. Written response from company stated check valves are installed on each loading rack to prevent passage of vapors from one load bay to another [Item 20, p 2].

21. In compliance- BT demonstrated the vapor collection and liquid loading equipment is designed and operated to prevent gauge pressure in a delivery tank from exceeding 450 mm of water during product loading. (40 CFR 60 502(h)) [SC IV.3]. The response presented the rack header pressure test results attached. [p is same as in item 20.

22. In compliance- BT demonstrated no pressure vacuum-vent in the bulk gasoline terminal's vapor collection system opens at system pressure less than 450 mm of water. (40 CFR 60 502(i)) [SC IV.4]. Response is same as in item 21, and supported in p 43.

23. In compliance – BT demonstrated any delivery vessel located at the facility is equipped, maintained or controlled with a device to accomplish complete drainage before the loading device is disconnected or a device to prevent liquid drainage from the loading device when not in use. (R336.1609(3)(c)) [SC IV.5]. Response received from BT stated all loading arms are equipped with dry break couplers [Item 23, p 2].

24. In compliance - BT demonstrated any delivery vessel located at the facility is equipped, maintained or controlled with pressure vacuum relief valves that are vapor tight and set to prevent the emission of displaced organic vapor during the loading of the delivery vessel except under emergency conditions. (R336.1609(3)(d)) [SC VI. 6]. Response from BT stated only bottom loading of delivery vessels is allowed at the facility. Reference to vapor tightness test procedure posted at sight is attached [item 24, p 2].

25. In compliance- BT- demonstrated any delivery vessel located at the facility is equipped, maintained or controlled with hatch openings that are kept closed and vapor-tight during the loading of the delivery vessel. (R336.1609(3)(d)) [SV IV. 7]. Response is same as in item 24.

26. In compliance – BT- demonstrated for the flare control system, if such is installed at the facility, a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, is installed in proximity to the pilot light to indicate the presence of a flame. (40CFR 63.427(a)(4)) [SC IV. 8]. Visual inspection at the time of visit confirmed installation of properly working feature.

27. In compliance – BT- demonstrated the owner or operator of Buckeye River Rouge facility conducted performance tests and furnished the Administrator a written report of the results of such performance tests. The first test should be within 180 days after permit issue and the second test should be within 6 months of the date of permit renewal. (40 CFR 60.8(a)) [SC V.1]. The VCU test results are attached p 57-74].

28. In compliance BT - demonstrated in conducting the performance tests required in Section 60.8, the owner or operator used reference methods and procedures from the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in Section 60.8(b). (The three-run requirement of Section 60.8(f) does not apply to this subpart. (40CFR60.503(a))) [SC V. 2]. Response is same as in item 28.

29. In compliance - BT demonstrated immediately before the performance test required to determine compliance with Sec. 60.502 (b), (c), and (h), the owner or operator used Method 21 to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded. The owner or operator should repair all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test. (40 CFR 60.503(b)) [SC V. 3]. Response is same as in item 28.

30. In compliance demonstrate the owner or operator of an affected facility provided the administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the administrator the opportunity to have an observer present. (40 CFR 60.8(d)) [SC V. 4]. The response is cited in attached p 46 of PVCU testing report.

31. In compliance – BT demonstrated that compliance with standards in this part, other than opacity standards, was determined in accordance with performance tests established by section 60.8 unless otherwise specified in the applicable standard. (40CFR 60.11(a)) [SC V. 5]. Response is same as in item 30.

32. In compliance- BT demonstrated the permittee kept records of the EULOADRACK throughput volume of each specific petroleum product for each calendar month and each 12-month rolling time period. All records were kept on file for a period of at least five years and made available to the

Department upon request. (R336.1225) [SC VI.1]. Records submitted in Excel format is attached starting p 75.

33. In compliance - BT demonstrated permittee maintained a record of the results of the inspections performed as applicable requirements by rule (R336.1627) [SC VI.2]. Records submitted confirm the demonstration as in p 43.

34. In compliance – BT demonstrated permittee kept records of all replacements or additions of components performed on an existing vapor processing system for at least 5 years. (40 CFR 60. 505 (f)) [SC VI.3]. Request records covering the last 12 months are attached as in item 6.

35. In compliance - BT demonstrated permittee kept documentation of all notifications required under section 60.502(e)(4) on file at the terminal for five years. (40 CFR 60.505 (d)) [SC VI.4] Records submitted confirm records are stored using electronic share point site item 35, p 3.

36. In compliance –BT demonstrated for facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation is made available (e.g., via facsimile) for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame. (40 CFR Part 60 Subpart XX) [SC VI.5]. Response indicated the records are stored onsite in hard copy form. Plans are underway for converting to electronic data, item 36, p 3.

a. The copy of each record in paragraph (e)(2) of this section is an exact duplicate image of the original paper record with certifying signatures.

b. The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (e)(2) of this section.

37. In compliance-BT demonstrated the documentation file for each gasoline tank truck was updated at least once per year to reflect current test results as determined by Method 27. This documentation included, as a minimum, the following information: [SC VI.6 (1), (2), (3), (4), (5), (6), (7), and (8) parts]: Response stated in writing that Trailer certification dates were updated in TAS annually. Hence the carrier was obliged to provide BT with an updated certificate prior to the trailer being unlocked in the computer. A copy of trailer certification is attached p 4.

(1) Test title: Gasoline Delivery Tank Pressure Test-EPA Reference Method 27.
(2) Tank owner and address.
(3) Tank identification number.
(4) Testing location.
(5) Date of test.
(6) Tester name and signature.
(7) Witnessing inspector, if any: Name, signature, and affiliation.
(8) Test results: Actual pressure change in 5 minutes, mm of water (average for 2 runs) (40 CFR 60.505 (b)).

38. In compliance - BT demonstrated a record of each monthly leak inspection required under Section 60.502(j) was kept on file at the terminal for at least 5 years. Inspection records should include, as a minimum, the following information: [SC VI. 7(1), (2), (3), (4), and (5)]. Records relating to items were provided in p 43.

(1) Date of inspection.
(2) Findings (may indicate no leaks discovered; or location, nature, and severity of

each leak).

(3) Leak determination method.

(4) Corrective action (date each leak repaired; reasons for any repair interval in excess of 15 days).

(5) Inspector name and signature (40 CFR 60.505 (c))

39. In compliance demonstrated the terminal owner or operator kept documentation of all notifications Required under Section 60.502(e)(4) on file at the terminal for at least 5 years. (40 CFR 60.505 (d)) [SC VI.8]. Records for the last 12 months were not available because the Company had just assumed operations from previous ownership.

40.In compliance- BT demonstrated as an alternative to keeping records at the terminal of each gasoline cargo tank test result as required in paragraphs (a), (c), and (d) of this section, an owner or operator complied with the requirements in either paragraph (1) or (2) as follows: (40 CFR 60.505 (e)), [SC VI.9 (1) (i) & (ii); (2) (i) & (ii)]. Response is same as in item 36.

(1) An electronic copy of each record is instantly available at the terminal:

(i) The copy of each record in paragraph (1) of this section is an exact duplicate image of the Original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (1) (i) of this section.

(2) For facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation is made available (e.g., via facsimile) for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame.

(i) The copy of each record in paragraph (e) (2) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (e) (2) of this section.

41. In compliance - BT demonstrated the permittee notified the Department if a change in land use occurred for property classified as industrial or as a public roadway, where this classification was relied upon to demonstrate compliance with Rule 225(1). The permittee should submit the notification to the AQD District Supervisor, within 30 days of the actual land use change. Within 60 days of the land use change, the permittee should submit to the AQD District Supervisor a plan for complying with the requirements of Rule 225(1). The plan should require compliance with Rule 225(1) no later than one year after the due date of the plan submittal. (R 336.1225(4)) [SC VII.1]. The Company stated in writing there was no change in land use –item 41, p 3.

42. Acceptable level of compliance -I verified the exhaust gases from the temporary VCU stacks listed in the table below were not all discharged unobstructed vertically upwards to the ambient air [SC VIII]. There was no stack conducting vertical exhaust discharge. However the test results indicated emissions were 3.85 mg/cu. m against the permitted limit of 10 mg/cu, m. The partial

1. SVVRU 12 inches, & 22 feet above ground1 (R336.1225)-Not working.
2. SV PERMANENTVCU 8 inches, & 45 feet (R336.1225)-In compliance-the unit was not in commission.
3. SV PORTABLEVCU 8.5 inches, & 13 feet (R336.1225) –Not in compliance. There was no stack on the portable VCU. The device is a cylindrical tank with two burners and a 4-ft diametric hole for effluent gas exit. The gases were not discharged unobstructed vertically 13 feet above ground level as permitted.

DESCRIPTION; Tank 57

43. In compliance BT demonstrated tank 57 with withholding capacity 3,208,000 gallons vertical fixed roof tank is not loaded with contents of less than 3.5 kpa (0.5 psia) vapor pressure. Response submitted by Company stated the tank holds ultralow sulfur diesel oil only.
44. Note: After April 30, 1981, it is unlawful for a person to store any organic compound having a true vapor pressure of more than 1.5 psia, but less than 11 psia, at actual storage conditions in any existing fixed roof stationary vessel of more than 40,000-gallon capacity. In compliance-BT demonstrated compliance with this requirement (R 336.1604(1)). [SC III.1]. Response submitted by Company stated BT understood the requirements to stay in compliance with the condition item 44, p 3.
45. In compliance – BT demonstrated permittee stored in EUTANK57 materials that have a true vapor pressure of 0.5 psia or less (Condition accepted by the permittee to avoid becoming subject to 40 CFR 60, Subpart Kb) [336.1213(3)]. [SC III.2]. According to response submitted by Company under BEST report for 2012, only ULSD was stored in tank 67 for the reporting year. Additionally, report located in p 20 indicated the vapor pressure of the tank content was 0.22 psia – confirming diesel oil-item 45, p 3.

46. In compliance - BT demonstrated daily records of the vapor pressure of the contents of EUTANK57 was maintained to demonstrate compliance with the 0.5 psia maximum vapor pressure limitation (R 336.1213(3))][VI.1]. Response is same as in item 45.
47. In compliance – BT demonstrated the recordkeeping of the type and temperature of the stored material in the tank as a requirement equivalent to measuring true vapor pressure is kept on file (40 CFR 60.116) (b)(c) [VI.2]. Response is same as in item 46.
Note:
1. Subpart Kb, 40 CFR 60 shall not apply to EUTANK57 because the applicant has accepted the limitation of storing organic compounds which have vapor pressure not exceeding 0.5 psia (R 336.1604(1)), (336.1213(2)). Request confirmation of understanding of this knowledge.

Tank#22 WC Permit# C-9027
48. In compliance-BT demonstrated the annual throughput for the gasoline tank No. 22 does not exceed 4,000,000 barrels per year [SC 16]. Spreadsheet report attached in response on p 8.
49. In compliance- BT demonstrated the VOC emissions from the gasoline tank No. 22 do not exceed 3.17 tpy [SC 17]. Response attached in page 8 indicated compliance.
50. In compliance– BT demonstrated the gasoline storage tank complies with the requirements of 40 CFR, Part 60, Subpart Kb, sections 60.112b (a)(1), 60.113b(a), 60.115(a), 60.116(a) and (c). Response is same as in item 49 located in p 8.
51. In compliance - BT demonstrated the annual throughput for gasoline storage tank # 22 is reported to the AQD on annual basis [SC 19]. Response is same as in item 50.
52. In compliance - Remediation site observation: BT planted grass and vegetation in the aquatic remediated area. Geese and ducks were walking and swimming in the area. However, there were several run-off water plastic hoses laid around in the area without intended use. I recommended the hoses to be arranged according to good housekeeping practices.
The vapor tight collection line was in place and temporary VCU system was installed and functioning properly. Provisions in the form of an automatic lock-out apparatus to prevent the loading of any tank truck which had not been tested, or had not passed the vapor tightness certification test were in place and working properly. Records of the monthly sight, smell and sound inspections of this equipment were made available. the operation of the control measures for the truck loading control were accessible and posted in a conspicuous location in each truck lane.

The facility has a malfunction abatement plan on site.

STORAGE TANKS

Tanks at the facility are divided into four categories:

- **NSPS subject based upon size and use**
- **Fixed roof and use**
- **Fixed roof and internal floating roof**
- **Specialty, considering size and use**

CONCLUSION

The inspection was successfully conducted with all information and physical plant equipment examined indicating that BT River Rouge Terminal operated in compliance with conditions and requirements of MI-ROP-B2987-2008. The hygiene on site was satisfactory. The remediated zone was satisfactorily maintained.

NAME Ah DATE 7/18/13 SUPERVISOR W.M.

33. Annual tank seal inspections and LDAR reports are attached, along with the various PVCU records.
34. See attached VRU-PVCU PM reports
35. Current records are stored electronically on the company's Sharepoint site. Some historical records are still kept on site in hard copy.
36. Currently, these records are stored at the terminal in hard copy format. We anticipate moving this to electronic storage in late 2013 or early 2014.
37. Trailer certification dates are updated in TAS annually. The carrier must provide us with an updated cert prior to the trailer being unlocked in the computer. I've attached a copy of a typical trailer cert.
38. See attached LDAR records
39. N/A for the previous 12 months.
40. See item 36 above.
41. There was no change in land use.
42. Inspected during site visit.
43. Tank 57 is in Ultra Low Sulfur Diesel service only.
44. Understood
45. Please see the attached BEST report for 2012. The report shows that only ULSD was stored in tank 57 for the year. Also, page 20 of the report shows the Vapor Pressure at 0.022 for diesel.
46. Same as above.
47. Same as above.
48. – 51. Please see the attached BEST report.

TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS AND EFFICIENCY TESTING ON THE JORDAN TECHNOLOGIES PORTABLE VAPOR COMBUSTOR

BUCKEYE PARTNERS, LP

BUCKEYE PARTNERS, L.P.

205 MARION AVENUE
RIVER ROUGE, MICHIGAN 48218
(313) 842-2114 Plant Phone Number
Air Permit No. MI-ROP-B2987-2008

March 21, 2013
ATC Project No. P-13011

ATC
ANALYTICAL TESTING
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ANALYTICAL TESTING CONSULTANTS, INC.
1630 Dale Earnhardt Blvd.
Kannapolis, N. C. 28083
phone (704) 932-3193
toll-free (800) 733-3193
fax (704) 932-0570
e-mail corp@atc-net.net
web site: www.atc-net.net

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INTRODUCTION

Buckeye Partners LP requested that ANALYTICAL TESTING CONSULTANTS, INC. perform a Volatile Organic Compound emissions test in accordance with US EPA Method 25B on the John Zink vapor combustor unit located at the bulk storage/loading facility in Huntington, IN.

The following US EPA methodologies were utilized.

TABLE I

Method #	Description	Sampling Location
2a	Direct measurement of gas volume through pipes and small ducts	Inlet of the VCU
2b	Determination of exhaust gas volume flow rate from gasoline vapor incinerators	Inlet/Exhaust of VCU
10	Determination of Carbon Monoxide/Carbon Dioxide from Stationary Sources	Exhaust of VCU
21	Determination of volatile organic compound leaks	Loading rack, VCU, Associated piping, tanker trucks
25a	Determination of total gaseous organic concentrations using a flame ionization detector	Exhaust of VCU
25b	Determination of total gaseous organic concentrations using a non-dispersive infrared analyzer	Inlet of VCU
205	Verification of Gas Dilution Systems for Field Instrument Calibrations	All Analyzers

ATC personnel Stewart Meadows (Project Manager) and Luke Boor (Technician) conducted testing on March 21, 2013.

CERTIFICATION OF RESULTS BY TEST FIRM

"I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information."

Signature/Date Report Author	Signature/Date Report Review
W. Stewart Meadows **Sr. Project Manager** Printed Name/Title	J. Kent Childers **Sr. Project Manager** Printed Name/Title

Executive Summary

Bulk Gasoline Loading Terminal Emission Test

Test Date	03/21/13	
Terminal Owner (company)	Buckeye Partners	
Terminal Name	Same	
Physical Address	205 Marion Avenue	
Location (City, State)	River Rouge, MI 48218	
Type of Vapor Control Unit	Vapor Combustion Unit	
Vapor Control Make & Model	Jordan Portable VCU	
Number of Loading Bays	7	
Applicable Permit Number	MI-ROP-B2987-2008	
Emissions Test Methods		
Inlet Vapor Flow Rate	EPA Method 2A	
VOC Inlet Concentration	EPA Method 25B	
Exhaust Flow Rate	EPA Method 2B	
VOC Exhaust Concentration	EPA Method 25A	
Carbon Dioxide Exhaust Concentration	EPA Method 10	
Carbon Monoxide Exhaust Concentration	EPA Method 10	
Vapor Leak Test	EPA Method 21	
Other Measurements	EPA Method 22	
Product Loading Data	**Observations**	**Criteria**
Start Test (time)	6:45	
End Test (time)	12:45	
Total Test Duration (time)	6:00	> 6 hours
Total Fuels Loaded (gross gallons)	523,954	
Total Fuels Loaded (gross liters)	1,983,166	
Total Gasolines Loaded (gross gallons)	443,824	
Total Gasolines Loaded (gross liters)	1,679,874	
Total Gasolines Loaded on Leaking Tankers (gross gallons)	0	
Total Gasolines Loaded on Leaking Tankers (gross liters)	0	
Net Countable Gasolines Loaded on Non-leaking Tankers (gross gallons)	443,824	> 80,000 gallons
Net Countable Gasolines Loaded on Non-leaking Tankers (gross liters)	1,679,874	> 300,000 liters
% Distillate Loaded	15.29%	
VOC Emission Test Results	**Observations**	**Limits**
Vapor Control Leak Check	OK, no leaks	< 500 ppm as CH_4
Maximum Loading Pressure ("H_2O)	11.2	< 18 "H_2O
Local Station Pressure ("Hg)	29.86	
Average Inlet Concentration (% as C_3)	7.09	
Inlet Vapor VOC (lbs)	497.22	
Average Exhaust CO_2 Concentration (ppm)	7579.36	
Average Exhaust CO Concentration (ppm)	112.99	
Average Exhaust VOC Concentration (ppm as C_3)	26.53	
Total VOC Emissions (mg)	6470684.75	
Total VOC Emissions (lbs)	14.24	
VOC Emission Rate (lbs/hr)	2.37	
VOC Emission Rate (mg/liter of all fuels loaded)	3.26	
VOC Emission Rate (mg/liter of gasoline loaded)	3.85	< 10 mg/liter
Calculated Destruction Efficiency (VCU)	97.14%	
Opacity Observations per Method 22		<5 minutes in 2 hours

CONCLUSIONS

Results of the testing are shown in the RESULTS SUMMARY. Additional data and information may be reviewed in the CALCULATIONS section and APPENDIX of this report.

Total VOC emissions averaged **3.85 milligrams/liter** (mg/l), compared to the allowable of **10 mg/l**. This was based upon a throughput of **443,824** gallons of gasoline products loaded on non-leaking tankers.

The removal/destruction efficiency was **97.14%**.

Project Sampling Issues and Method Discussion

VOC sampling and testing of the portable vapor combustion unit was performed according to established test methods as outlined in 40 CFR 60, Appendix A and contained no abnormalities or deviations.

Quality Assurance Procedures

The following steps were conducted to ensure the accuracy and precision of the test project.

1) All equipment was visually inspected prior to arrival on site. Consumables were inventoried and replenished as needed.

2) Method 205 is performed on the Environics 2020 gas dilution system before each test to ensure the accuracy of calibration gases generated.

3) The Environics 2020 (serial no. 2032 for terminal trailer) gas dilution system is calibrated by the manufacturer annually and is currently certified through 2012. A certification sticker reflecting this date is affixed to the unit.

4) Pressure transducers and thermocouples have primary calibrations performed on an annual schedule. Turbine meter primary calibrations are performed initially and anytime repairs are needed or if post-test calibrations unveil any problems.

5) Turbine meter, pressure transducers, and thermocouples have post-test calibrations performed after each test series.

6) All data entered into an Excel spreadsheet in the field or on pre-printed ATC forms are double-checked in technical review prior to issuing the report.

7) The President or Project Manager reviews and signs the report(s).

RECOMMENDATIONS

ANALYTICAL TESTING CONSULTANTS, INC. recommends Buckeye Partners LP review the information contained in this report and if deemed accurate then submit to the Michigan DEQ, Division of Air Pollution Control as evidentiary proof of compliance with the 10 mg/liter emissions limitation of the portable vapor combustion unit.

DESCRIPTION OF TEST

Testing was conducted on a Jordan Technologies portable combustor. The combustor is the primary air pollution control unit located at the River Rouge, Michigan terminal. The loading rack consists of sevan loading bays with gasoline products available at five bays and two with distillates only.

Stewart Meadows and Luke Boor were the representatives on site for Analytical Testing Consultants. They immediately finalized the equipment setup at the exhaust of the vapor combustion system upon arrival at the terminal. Preliminary measurements and calibration of instrumentation was accomplished, followed by a complete leak test of the vapor collection system while trucks were loading; no leaks were found. Continuous monitoring of the exhaust and inlet gases was conducted from 0645 until 1245. This corresponded with Subpart XX requirements of a minimum of six hours of continuous sampling; minimum throughput volumes had been achieved earlier in the test (actual = 113,539).

The methods utilized for testing were as outlined by US EPA Method 25B. Method 2A was utilized for air volume measurements; Method 25B for the volatile organic compound determination. Copies of all calculation formula appear in the CALCULATIONS section of this report. A Rockwell Turbine Gas Meter, Model T-60, equipped with a pulse sensor for flow and sensors for temperature and pressure, was utilized for the Method 2A volume determination.

Instrument calibrations began with verifying the accuracy of the Environics 2020 Gas dilution system. The first step was to calibrate any analyzer (CAI ZRH CO_2 analyzer chosen) according to the established US EPA methodology associated with that analytical principle. Therefore, the ZRH was calibrated according to US EPA method 10 (promulgated 8/15/2006) using three gases: 18.00%, 10.48% (both Protocol mixtures of CO_2 in nitrogen) and UHP nitrogen for a zero gas. Once this was successfully completed, the gas in the 18.00% CO_2 cylinder was diluted with nitrogen to levels of 10.0% and 5.0%. These were introduced to the CAI in triplicate and the response compared to the predicted deflection. The calculated precisions were 0.20% and 0.10%. Accuracy of the 10.0% dilution was 0.00%; and the 5.0% dilution was 0.20%. The third step was to introduce a mid-level audit gas (10.48%) to the analyzer in triplicate (precision 0.09%, accuracy 0.09%). Method 205 requires precision and accuracy to be less than 2%.

DESCRIPTION OF TEST
(continued)

Monitoring of Loading Rack

Immediately prior to emissions testing, a MicroFID FID was calibrated using hydrocarbon-free air and an EPA protocol mixture of 507 ppm methane in air. Loading rack connections, flanges, seals and flame arrestors were checked from the truck rack to the control device as much as feasible (excluding underground or elevated piping) to determine compliance with the GACT leak detection level of 500 ppm (40 CFR 63 Subpart BBBBBB). The FID was then re-calibrated utilizing a cylinder of 10,080 ppm for use if a tanker was suspected of leaking.

During emissions testing, all loading tanker trucks were monitored by sight, sound and smell. Any tanker with questionable vapor-tightness was checked with the FID. Additionally, any tanker without current vapor-tightness certification was not allowed to load. No tankers were disallowed during this emissions test.

Presentation of Raw Data

Raw data may be found beginning on page one of the APPENDIX. Calibrations of all analyzers are highlighted in yellow.

REFERENCES

1. CODE OF FEDERAL REGULATIONS, Title 40, Part 60, Appendix A, July 1, 2007.

2. CODE OF FEDERAL REGULATIONS, Title 40, Part 51, Appendix M, July 1, 2007.

CALCULATIONS

VOC Mass Determinations
Calculation Formulae

EXHAUST GAS VOLUME AND EMISSION CALCULATION

BY USEPA METHOD 2B

EXHAUST GAS VOLUME IS DETERMINED ON A COMBUSTOR BY
CARBON BALANCE. THE FOLLOWING EQUATION SHOWS THE RELATIONSHIP BETWEEN
INLET FLOW, OUTLET FLOW, AND VARIOUS MEASURED PARAMETERS.

$$Ves = Vis * [K(HCi)/(K*(HCe)+CO2e+COe-300)]$$

WHERE:

Vis=	MEASURED INLET VOLUME BY METHOD 2A
K=	CALIBRATION GAS FACTOR (3 FOR PROPANE)
HCi=	MEASURED INLET HYDROCARBON CONCENTRATION BY METHOD 25B
HCe=	MEASURED OUTLET HYDROCARBON CONCENTRATION BY METHOD 25A
CO2e=	MEASURED OUTLET CARBON DIOXIDE CONCENTRATION BY METHOD 10
COe=	MEASURED OUTLET CARBON MONOXIDE CONCENTRATION BY METHOD 10

Date: 3/21/13
Client: Buckeye Partners
Source: Vapor Combustion Unit

Turbine meter calibration coefficient, G= 1.00

Test Interval	Inlet Vapor Stream					Outlet Vapor Stream					
Beginning @	Turbine Meter		Inlet Hydrocarbons (as propane)			VOCs	CO	CO2	Exhaust	Mass Emissions	
	Flow, scm	Flow, scm x G	Vol. %	lbs	Mass, mg	as propane, ppm	ppm	ppm	Volume, scm	lbs	mg
6:45 AM	0.00	0.00			0				0.0	0.000	0
6:50 AM	0.00	0.00			0				0.0	0.000	0
6:55 AM	0.00	0.00			0				0.0	0.000	0
7:00 AM	0.00	0.00			0				0.0	0.000	0
7:05 AM	0.00	0.00			0				0.0	0.000	0
7:10 AM	0.00	0.00			0				0.0	0.000	0
7:15 AM	21.25	21.25	0.4	0.313	142357	102.7106	174.75	7603	30.0	0.012	5634
7:20 AM	26.41	26.41	0.6	0.623	283333	181.05	240.32	12377	36.1	0.026	11966
7:25 AM	26.44	26.44	1.1	1.118	508075	177.3382	238.85	12329	65.1	0.046	21117
7:30 AM	26.48	26.48	1.8	1.875	852231	166.4956	234.45	12329	109.5	0.073	33352
7:35 AM	26.51	26.51	3.2	3.362	1528378	90.5496	235.41	13307	185.4	0.068	30721
7:40 AM	26.62	26.62	3.8	4.057	1843947	26.3736	228.89	12186	247.9	0.026	11965
7:45 AM	26.52	26.52	5.9	6.256	2843804	61.8314	227.91	12138	380.5	0.095	43058
7:50 AM	26.63	26.63	8.1	8.640	3927073	58.8522	225.49	12138	526.0	0.125	56647
7:55 AM	26.49	26.49	9.9	10.573	4806060	49.768	224.02	12186	642.7	0.129	58534
8:00 AM	26.63	26.63	13.0	13.927	6330597	42.2954	222.56	11994	861.7	0.147	66697
8:05 AM	26.49	26.49	15.6	16.670	7577234	36.923	221.35	11994	1032.9	0.154	69792
8:10 AM	26.60	26.60	19.0	20.375	9261462	33.7974	217.97	11896	1274.2	0.173	78808
8:15 AM	26.51	26.51	20.7	22.128	10058278	32.7716	213.86	11846	1390.5	0.183	83390
8:20 AM	26.58	26.58	21.3	22.790	10358882	30.7692	206.80	11453	1482.8	0.184	83495
8:25 AM	26.52	26.52	21.4	22.868	10394677	27.0086	170.14	9503	1802.4	0.196	89086
8:30 AM	26.62	26.62	20.8	22.299	10135686	21.7336	122.07	7311	2308.2	0.202	91803
8:35 AM	26.50	26.50	20.2	21.597	9816926	16.7522	103.14	6531	2520.8	0.170	77277
8:40 AM	26.60	26.60	18.4	19.716	8961889	9.1818	99.96	6337	2383.1	0.088	40043

Test Interval Beginning @	Inlet Vapor Stream					Outlet Vapor Stream					
	Turbine Meter		Inlet Hydrocarbons (as propane)			VOCs	CO	CO2	Exhaust	Mass Emissions	
	Flow, scm	Flow, scm x G	Vol. %	lbs	Mass, mg	as propane, ppm	ppm	ppm	Volume, scm	lbs	mg
8:45 AM	26.53	26.53	16.2	17.269	7849638	5.6654	98.27	6337	2091.5	0.048	21684
8:50 AM	26.57	26.57	14.3	15.279	6945016	6.9354	92.70	6146	1910.5	0.053	24248
8:55 AM	26.50	26.50	11.7	12.479	5672188	8.0098	92.68	6098	1572.2	0.051	23045
9:00 AM	26.40	26.40	9.1	9.656	4389202	7.082	90.30	6098	1217.6	0.035	15781
9:05 AM	26.51	26.51	6.6	7.012	3187329	5.5678	92.92	6098	884.5	0.020	9012
9:10 AM	26.41	26.41	5.1	5.374	2442686	16.0684	88.09	6098	674.8	0.044	19843
9:15 AM	26.47	26.47	4.0	4.217	1916648	14.6032	85.19	6098	530.1	0.031	14167
9:20 AM	26.43	26.43	3.4	3.613	1642084	2.8814	83.22	6098	457.1	0.005	2410
9:25 AM	26.37	26.37	3.0	3.138	1426166	0.3906	83.22	6098	397.5	0.001	284
9:30 AM	26.42	26.42	2.6	2.753	1251525	0.3416	81.75	6048	351.9	0.000	220
9:35 AM	26.32	26.32	2.2	2.381	1082202	0.4396	80.32	5948	309.6	0.001	249
9:40 AM	26.45	26.45	2.0	2.133	969399	3.4676	75.69	6098	270.1	0.004	1714
9:45 AM	26.33	26.33	1.8	1.890	858898	0.6836	75.69	6098	239.6	0.001	300
9:50 AM	26.41	26.41	1.6	1.739	790525	0.3418	74.25	5898	228.4	0.000	143
9:55 AM	26.42	26.42	1.5	1.636	743779	1.1232	74.49	5848	216.7	0.001	445
10:00 AM	26.37	26.37	1.5	1.555	706900	1.172	70.36	5848	206.1	0.001	442
10:05 AM	26.42	26.42	1.5	1.558	708322	0.3904	69.38	5609	215.9	0.000	154
10:10 AM	26.35	26.35	1.4	1.502	682896	0.8792	65.77	5361	218.2	0.001	351
10:15 AM	26.41	26.41	1.3	1.376	625490	0.4394	57.99	4970	216.8	0.000	174
10:20 AM	26.36	26.36	1.2	1.296	589107	0.4396	55.59	4870	208.7	0.000	168
10:25 AM	26.34	26.34	1.1	1.217	553273	0.2928	57.50	4870	196.0	0.000	105
10:30 AM	26.41	26.41	1.1	1.169	531184	0.3416	58.99	5118	178.5	0.000	112
10:35 AM	26.33	26.33	1.1	1.139	517877	0.4394	62.60	5459	162.5	0.000	131
10:40 AM	26.39	26.39	1.1	1.168	530825	0.3416	39.52	4631	199.1	0.000	124
10:45 AM	26.32	26.32	1.1	1.139	517584	0.4394	9.20	3461	267.5	0.000	215
10:50 AM	26.34	26.34	1.1	1.140	518057	0.2928	3.12	3313	281.5	0.000	151
10:55 AM	26.36	26.36	1.0	1.089	494798	0.3416	0.91	2972	303.3	0.000	190
11:00 AM	26.27	26.27	1.0	1.085	493082	0.2928	0.68	2924	307.9	0.000	165
11:05 AM	26.36	26.36	1.1	1.114	506543	0.3416	1.15	2924	316.2	0.000	198
11:10 AM	26.26	26.26	1.1	1.162	528189	0.2928	0.00	2485	396.1	0.000	212
11:15 AM	26.30	26.30	1.1	1.164	529037	3.4186	0.00	2094	480.7	0.007	3007
11:20 AM	26.32	26.32	1.1	1.165	529426	0.1952	171.59	12479	70.3	0.000	25
11:25 AM	26.24	26.24	1.1	1.161	527738	0.1464	193.94	13603	64.1	0.000	17
11:30 AM	26.34	26.34	1.0	1.088	494418	0.879	191.73	13503	60.5	0.000	97
11:35 AM	26.26	26.26	1.0	1.033	469441	26.4226	177.91	12283	62.9	0.007	3040
11:40 AM	26.28	26.28	1.0	1.034	469922	29.1088	171.35	11796	65.5	0.008	3491
11:45 AM	26.29	26.29	1.0	1.034	470126	30.7692	140.28	10240	75.8	0.009	4266
11:50 AM	26.24	26.24	1.0	1.032	469167	35.7998	147.59	10479	73.7	0.011	4829
11:55 AM	26.31	26.31	1.0	1.035	470432	35.067	150.95	10818	71.6	0.010	4593
12:00 PM	26.24	26.24	1.1	1.161	527769	42.5886	152.90	10868	79.7	0.014	6215
12:05 PM	26.16	26.16	3.2	3.344	1520205	42.9792	152.64	10968	227.6	0.039	17901
12:10 PM	26.27	26.27	3.3	3.487	1584783	40.5862	151.21	11016	236.4	0.039	17560
12:15 PM	26.21	26.21	18.4	19.433	8833105	42.0512	125.73	9455	1539.3	0.261	118458

Test Interval	Inlet Vapor Stream					Outlet Vapor Stream					
Beginning @	Turbine Meter		Inlet Hydrocarbons (as propane)			VOCs	CO	CO2	Exhaust	Mass Emissions	
	Flow, scm	Flow, scm x G	Vol. %	lbs	Mass, mg	as propane, ppm	ppm	ppm	Volume, scm	lbs	mg
12:20 PM	26.17	26.17	23.7	25.005	11366107	23.7852	16.72	1802	11715.4	1.122	509934
12:25 PM	26.24	26.24	24.2	25.592	11632914	23.8828	81.55	4872	4035.7	0.388	176381
12:30 PM	26.17	26.17	24.7	26.016	11825611	31.7948	1.91	535	58353.1	7.470	3395245
12:35 PM	26.19	26.19	25.6	26.990	12267969	40.3904	0.00	48	0.0	0.000	0
12:40 PM	26.21	26.21	26.5	27.984	12720178	54.359	0.00	1996	11216.7	2.455	1115801
Totals	1736.73	1736.73	467.62	497.22	226010650	1750.76	7457.50	500237.52	120735.3	14.24	6470685
Averages			7.09			26.53	112.99	7579.36			

Test Summary

Total Product Loaded	523954 gross gallons
Total Gasoline Loaded	443824 gross gallons
Gasoline Loaded on Leaking Tankers	0 gross gallons
Total Countable Product Loaded	443824 gross gallons
	3.26 mg/liter total product
	3.85 mg/liter countable gasoline
	0.032 lbs/1000 gallons of countable gasoline loaded
	2.37 lbs/hr VOC emission rate
	97.14% VOC Destruction Efficiency, %

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS

1.

$$V_{E_S} = \frac{\frac{293.16^{o}K}{760mmHg} xGx \frac{m^3}{35.315ft^3} xV_m x\left(P_g + P_b\right)}{T_m}$$

Where:

V_{es}	=	Standard volume of air-vapor mixture, m^3 (cubic meters)
G	=	Gas meter coefficient, unit less
V_m	=	Net gas meter volume, ft^3 (cubic feet)
P_g	=	Static pressure, mm Hg (millimeters mercury)
P_b	=	Atmospheric pressure, mm Hg (millimeters mercury)
T_m	=	Absolute temperature at meter, °K (degrees Kelvin)

2.

$$M_{e_i} = \frac{KxV_{es_i} xC_{e_i}}{1{,}000{,}000}$$

Where:

Me_i	=	mass of emissions for interval i, milligrams
K	=	1,830,000 mg/scm (density of propane)
Ves_i	=	standard metered volume for interval i (from equation 1), m^3 (Cubic meters)
Ce_i	=	exhaust concentration for interval i, in ppmv of propane
1,000,000	=	ppm per unity

3.

$$E = \frac{\sum_{1}^{n} M_{ei}}{L}$$

Where:

E	=	emission rate, mg VOC/L
L	=	liters of countable gasoline loaded during test period
n	=	number of test intervals, unit less

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS (continued)

4.

$$V_{e_s} = V_{i_s}\left[\frac{(KxHC_i)}{(KxHC_e)+CO_{2_e}+CO_e-300}\right]$$

Where:

CO_{2e} = mean exhaust concentration of carbon dioxide for i_{th} interval.
CO_{2a} = measured ambient concentration of CO_2 (or may be assumed to be 300 ppm)
CO_e = mean exhaust concentration of carbon monoxide for i_{th} interval.
HC_e = mean exhaust organic concentration as defined by calibration gas, E.g. propane.
HC_i = mean inlet organic concentration as defined by calibration gas, e.g. propane.
V_{is} = measured inlet gas volume, m^3 (cubic meters).
V_{es} = calculated exhaust gas volume, m^3 (cubic meters).
$K_{e\ or\ I}$ = Hydrocarbon calibration gas factor, propane=3.

5.

$$\overline{d} = \frac{1}{n}\sum_{i=1}^{n} d_i$$

Where:

d = Arithmetic mean of the difference of a data set
n = number of data points
$\sum_{i=1}^{n} d_i$ = Algebraic summation of the individual differences, d_i

6.

$$S_d = \sqrt{\frac{\sum_{i=1}^{n} d_{i^2} - \left[\frac{\left(\sum_{i=1}^{n} d_i\right)^2}{n}\right]}{n-1}}$$

Where:

S_d = standard deviation

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS (continued)

7.

$$cc = t_{0.975}\frac{S_d}{\sqrt{n}}$$

Where:

$t_{0.975}$ = t-value from Table 2-1 of PS-2.

8.

$$RA = \frac{|\overline{d}| + |cc|}{\overline{RM}} x100$$

Where:

$\overline{d}$ = absolute value of the mean differences from equation 5

cc = absolute value of the confidence coefficient from equation 7.

RM = average reference method value. In cases where the average emissions for the test are less than 50% of the applicable standard, substitute the emission standard value in the denominator of Equation 8. In all other cases, use RM.

RA = absolute mean difference between the gas concentration or emission rate determined by the reference method (RM), plus the 2.5% error confidence coefficient of a series of tests, divided by the mean of the RM tests or the applicable emission limit.

9.

$$H_T = K\sum_{i=1}^{n} C_i H_i$$

H_t = Net heating value of the sample. MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

K = Constant, 1.740×10^{-7} (1/ppm)(g mole/scm) (MJ/kcal), where the standard temperature for (g mole/scm) is 20 °C.

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994).

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS (concluded)

H_i = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 if published values are not available or can not be calculated.

10.

$$V_F = \frac{\left(\frac{VFR_{scm}}{3600}\right)}{A_{Fn}}$$

Where:

V_f = velocity of the flare, meters per second
VFR_{scm} = Volumetric flow rate, standard cubic meters per hour
3600 = Conversion from hours to seconds
Afn = Unobstructed cross-sectional area of the flare tip, m^2.

11.

$$V_{max} = 8.706 + 0.7084\left(H_T\right)$$

Where:

V_{max} = maximum permitted velocity, m/sec
8.706 = Constant
0.7084 = Constant
H_T = The net heating value as determined in equation 10.

APPENDIX

Raw Test Data
Loading Rack Information Data Sheet
Terminal Verification of Loading Volume
System Calibration Error for Protocol Gases
Method 205 Dilution System Verification
Method 21 Leak Check Results
Method 21 Calibration Form
Approved Test Plan
Calibration Data

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature ° F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	4:48	0.08	17.5	0.1	0.02	30.5	144.6	0	
3/21/13	4:49	0.08	17.4	0.0	0.00	30.5	156.3	0	
3/21/13	4:50	0.08	17.4	0.0	0.00	30.5	173.4	0	
3/21/13	4:51	0.08	17.4	0.0	0.00	30.5	187.8	0	
3/21/13	4:52	0.08	17.3	0.0	0.00	30.5	117.5	0	
3/21/13	4:53	0.08	17.3	0.0	0.00	30.5	2.0	0	
3/21/13	4:54	0.06	17.3	0.0	0.00	30.5	0.0	0	
3/21/13	4:55	0.07	17.3	0.0	0.00	30.5	0.0	0	
3/21/13	4:56	0.08	17.2	0.0	0.00	30.5	0.0	0	
3/21/13	4:57	0.08	17.2	0.0	0.00	30.5	514.5	0	
3/21/13	4:58	0.08	17.2	0.0	0.00	30.5	999.8	0	
3/21/13	4:59	0.08	17.2	0.0	0.00	30.5	1000.0	0	
3/21/13	5:00	0.08	17.2	0.0	0.00	30.5	987.3	0	
3/21/13	5:01	0.08	17.1	0.0	0.00	30.5	554.1	0	
3/21/13	5:02	0.08	17.1	0.0	0.00	30.5	558.0	0	
3/21/13	5:03	0.09	17.0	0.0	0.00	30.5	500.1	0	
3/21/13	5:04	0.08	17.0	0.0	0.00	30.5	500.4	0	
3/21/13	5:05	0.08	17.0	0.0	0.00	30.5	476.7	0	
3/21/13	5:06	0.08	17.0	0.0	0.00	30.5	263.2	0	
3/21/13	5:07	0.08	17.0	0.0	0.00	30.5	250.1	0	
3/21/13	5:08	0.08	17.0	0.0	0.02	30.5	249.8	0	
3/21/13	5:09	0.09	16.9	0.0	0.00	30.5	248.8	4	
3/21/13	5:10	0.07	16.9	0.0	0.02	30.5	75.0	2	
3/21/13	5:11	0.08	16.9	46.0	0.00	30.5	60.1	0	
3/21/13	5:12	0.08	16.9	64.7	0.00	30.5	145.5	0	
3/21/13	5:13	0.09	16.9	64.8	0.02	30.5	93.3	0	
3/21/13	5:14	0.08	16.8	51.6	0.00	30.5	130.9	2	
3/21/13	5:15	0.09	16.8	40.1	0.00	30.5	59.3	2	
3/21/13	5:16	0.08	16.7	39.9	0.00	30.5	69.4	0	
3/21/13	5:17	0.08	16.7	23.8	0.00	30.5	67.6	0	
3/21/13	5:18	0.08	16.7	20.2	0.00	30.5	65.0	0	
3/21/13	5:19	0.08	16.7	20.1	0.02	30.5	74.0	1	
3/21/13	5:20	0.08	16.7	48.1	0.02	30.5	73.5	0	
3/21/13	5:21	0.08	16.7	48.0	0.00	18.3	68.6	1	
3/21/13	5:22	0.07	16.6	48.1	0.00	26.9	89.6	0	
3/21/13	5:23	0.07	16.6	48.0	0.02	14.7	77.7	0	
3/21/13	5:24	0.08	16.7	47.5	0.00	1.2	71.8	0	
3/21/13	5:25	0.08	16.7	45.7	0.00	2.4	75.0	0	
3/21/13	5:26	0.08	16.6	37.9	0.00	1.2	72.3	0	
3/21/13	5:27	0.08	16.6	38.3	0.00	1.2	74.5	0	
3/21/13	5:28	0.08	16.5	27.5	0.00	2.4	68.4	0	
3/21/13	5:29	0.07	16.6	13.7	0.00	1.2	83.3	0	
3/21/13	5:30	0.09	16.5	13.3	0.27	1.2	76.4	2	
3/21/13	5:31	0.08	16.5	13.4	9.16	0	75.2	2	
3/21/13	5:32	0.07	16.5	13.8	10.09	0	75.5	0	
3/21/13	5:33	0.07	16.5	14.2	10.04	0	79.9	0	
3/21/13	5:34	0.08	16.5	14.3	8.69	0	76.9	1	
3/21/13	5:35	0.08	16.5	14.3	5.71	0	77.7	0	
3/21/13	5:36	0.07	16.5	14.2	4.98	0	78.1	0	
3/21/13	5:37	0.07	16.4	14.0	4.96	1.2	79.9	0	
3/21/13	5:38	0.08	16.4	14.0	4.96	0	88.2	0	
3/21/13	5:39	0.07	16.4	14.0	4.08	0	88.4	0	
3/21/13	5:40	0.07	16.4	14.0	0.15	366	87.9	0	
3/21/13	5:41	0.07	16.4	14.2	0.07	810	80.3	0	
3/21/13	5:42	0.08	16.3	14.3	0.05	1016	84.0	0	
3/21/13	5:43	0.07	16.3	14.4	0.02	1005	86.7	0	
3/21/13	5:44	0.08	16.3	14.5	0.02	780	81.6	0	
3/21/13	5:45	0.08	16.3	14.7	0.02	451	80.8	0	
3/21/13	5:46	0.08	16.3	14.8	0.00	503	80.6	0	
3/21/13	5:47	0.07	16.3	14.9	0.00	502	84.5	0	
3/21/13	5:48	0.08	16.2	14.9	0.00	486	80.3	0	
3/21/13	5:49	0.08	16.2	14.8	0.05	481	82.5	0	
3/21/13	5:50	0.07	16.2	14.4	0.20	54.9	81.6	0	
3/21/13	5:51	0.06	16.2	9.9	0.07	30.5	111.8	0	
3/21/13	5:52	0.07	16.3	1.0	0.07	30.5	87.9	0	
3/21/13	5:53	0.07	16.2	0.1	0.10	30.5	84.7	0	
3/21/13	5:54	0.06	16.1	0.1	0.10	29.3	104.0	0	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature °F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	5:55	0.06	16.1	0.1	0.10	29.3	191.2	0	
3/21/13	5:56	0.07	16.2	0.1	0.07	19.5	86.4	0	
3/21/13	5:57	0.06	16.1	0.1	0.05	1.2	79.6	0	
3/21/13	5:58	0.07	16.1	0.1	0.05	1.2	84.0	0	
3/21/13	5:59	0.06	16.1	0.1	0.05	6.1	83.0	0	
3/21/13	6:00	0.06	16.1	0.1	0.05	7.3	91.6	0	
3/21/13	6:01	0.05	16.1	0.2	4.03	8.5	93.0	0	
3/21/13	6:02	0.07	16.1	0.1	0.15	1.2	87.2	0	
3/21/13	6:03	0.07	16.1	0.1	0.02	1.2	119.2	0	
3/21/13	6:04	0.07	16.1	0.1	2.66	30.5	185.6	0	
3/21/13	6:05	0.08	16.1	0.1	4.86	1.2	189.3	0	
3/21/13	6:06	0.08	16.1	0.1	5.03	1.2	241.3	0	
3/21/13	6:07	0.07	16.1	0.1	3.22	143	244.2	0	
3/21/13	6:08	0.07	16.1	0.1	0.07	568	239.6	0	
3/21/13	6:09	0.08	16.0	0.1	0.02	503	252.5	0	
3/21/13	6:10	0.07	16.0	0.1	0.07	499	248.4	0	
3/21/13	6:11	0.06	16.0	0.1	1.44	308	250.3	0	
3/21/13	6:12	0.08	16.0	0.1	1.49	289	252.0	0	
3/21/13	6:13	0.07	16.0	0.1	1.47	292	259.1	0	
3/21/13	6:14	0.08	15.9	0.1	1.39	303	250.1	0	
3/21/13	6:15	0.08	16.0	0.1	1.39	314	248.4	0	
3/21/13	6:16	0.07	15.9	0.1	1.39	414	248.6	0	
3/21/13	6:17	0.08	15.9	0.1	1.39	272	251.0	0	
3/21/13	6:18	0.06	15.9	0.1	1.39	259	246.4	0	
3/21/13	6:19	0.07	15.9	0.1	1.37	254	241.8	0	
3/21/13	6:20	0.07	15.9	0.1	1.39	259	249.6	0	
3/21/13	6:21	0.08	15.9	0.1	1.39	259	247.6	0	
3/21/13	6:22	0.07	15.9	0.1	1.39	261	249.6	0	
3/21/13	6:23	0.07	15.8	0.1	1.39	261	117.7	0	
3/21/13	6:24	0.07	15.9	0.1	1.37	254	105.5	0	
3/21/13	6:25	0.07	15.9	0.1	1.37	255	107.9	4	
3/21/13	6:26	0.07	15.9	0.1	1.37	256	108.9	3	
3/21/13	6:27	0.07	15.8	0.1	1.39	255	109.4	0	
3/21/13	6:28	0.06	15.8	0.1	1.39	260	118.4	0	
3/21/13	6:29	0.07	15.7	0.2	1.37	253	120.6	0	
3/21/13	6:30	0.07	15.8	0.2	1.39	255	120.1	0	
3/21/13	6:31	0.07	15.8	0.2	1.37	255	128.2	0	
3/21/13	6:32	0.07	15.8	0.2	1.39	255	126.3	0	
3/21/13	6:33	0.08	15.8	0.2	1.37	253	126.7	0	
3/21/13	6:34	0.07	15.8	0.1	1.37	250	126.5	0	
3/21/13	6:35	0.07	15.8	0.2	1.39	259	127.0	0	
3/21/13	6:36	0.07	15.8	0.2	1.37	258	127.2	0	
3/21/13	6:37	0.07	15.7	0.1	1.37	255	121.9	0	
3/21/13	6:38	0.07	15.7	0.1	1.37	263	128.2	0	
3/21/13	6:39	0.07	15.7	0.2	1.37	259	123.8	0	
3/21/13	6:40	0.07	15.8	0.1	1.37	258	126.7	0	
3/21/13	6:41	0.07	15.8	0.2	1.37	250	120.6	0	
3/21/13	6:42	0.07	15.7	0.2	1.37	255	121.9	0	
3/21/13	6:43	0.07	15.7	0.2	1.03	194	104.0	0	
3/21/13	6:44	0.07	15.7	0.2	0.22	30.5	19.0	0	
3/21/13	6:45	0.07	15.7	0.2	0.07	8.5	10.7	0	Start Emission Test
3/21/13	6:46	0.07	15.7	0.2	0.02	3.7	8.1	0	
3/21/13	6:47	0.07	15.7	0.2	0.02	2.4	6.8	0	
3/21/13	6:48	0.08	15.7	0.2	0.02	1.2	5.6	0	
3/21/13	6:49	0.07	15.7	0.2	0.00	1.2	5.9	0	
3/21/13	6:50	0.07	15.6	0.2	0.00	1.2	4.9	0	
3/21/13	6:51	0.07	15.7	0.2	0.00	1.2	6.1	0	
3/21/13	6:52	0.07	15.6	0.2	0.00	1.2	6.6	0	
3/21/13	6:53	0.08	15.6	0.2	0.00	1.2	7.3	0	
3/21/13	6:54	0.16	15.6	0.2	0.00	1.2	6.6	0	
3/21/13	6:55	0.33	15.6	0.2	0.00	0	6.6	0	
3/21/13	6:56	0.37	15.6	0.2	0.00	1.2	6.1	0	
3/21/13	6:57	0.39	15.6	0.2	0.00	0	6.1	0	
3/21/13	6:58	0.37	15.6	0.2	0.00	0	5.4	0	
3/21/13	6:59	0.38	15.6	0.2	0.00	0	7.8	0	
3/21/13	7:00	0.03	15.6	0.2	0.00	0	42.7	0	
3/21/13	7:01	0.07	15.6	0.2	0.00	4.9	53.0	0	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature °F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	7:02	-0.06	15.6	0.2	0.00	9.8	62.3	0	
3/21/13	7:03	0.06	15.6	0.2	0.00	11	42.5	0	
3/21/13	7:04	0.04	15.5	0.2	0.00	13.4	15.9	0	
3/21/13	7:05	-0.05	15.5	0.2	0.00	11	13.9	0	
3/21/13	7:06	0.08	15.5	0.2	0.00	8.5	11.5	0	
3/21/13	7:07	0.04	15.5	0.2	0.00	4.9	24.9	0	
3/21/13	7:08	-0.03	15.5	0.2	0.00	2.4	31.7	0	
3/21/13	7:09	0.08	15.4	0.2	0.00	2.4	30.3	0	
3/21/13	7:10	-0.05	15.4	0.2	0.00	2.4	28.1	0	
3/21/13	7:11	0.03	15.4	0.2	0.00	1.2	35.2	0	
3/21/13	7:12	0.06	15.4	0.4	0.00	1.2	39.3	0	
3/21/13	7:13	-0.05	15.3	0.4	0.00	2.4	41.8	0	
3/21/13	7:14	0.07	15.3	0.4	0.00	1.2	52.3	0	
3/21/13	7:15	0.54	15.3	0.4	0.00	1.2	50.3	0	
3/21/13	7:16	2.05	14.8	0.4	0.32	50.1	73.3	170	
3/21/13	7:17	1.82	14.8	0.4	0.90	222	88.9	167	
3/21/13	7:18	1.79	15.0	0.4	1.34	364	128.9	169	
3/21/13	7:19	1.79	15.4	0.4	1.25	247	172.2	168	
3/21/13	7:20	1.78	15.7	0.5	1.22	242	174.6	167	
3/21/13	7:21	1.79	16.0	0.5	1.25	244	182.2	168	
3/21/13	7:22	1.79	16.1	0.6	1.25	242	177.8	169	
3/21/13	7:23	1.79	16.3	0.6	1.25	243	181.9	167	
3/21/13	7:24	1.78	16.4	0.7	1.25	243	188.8	168	
3/21/13	7:25	1.78	16.6	0.9	1.25	242	177.3	169	
3/21/13	7:26	1.78	16.7	1.0	1.22	243	182.2	167	
3/21/13	7:27	1.77	16.8	1.1	1.25	243	180.0	168	
3/21/13	7:28	1.77	16.9	1.1	1.22	241	172.2	170	
3/21/13	7:29	1.79	17.0	1.2	1.25	238	175.1	167	
3/21/13	7:30	1.79	17.0	1.3	1.25	239	172.2	168	
3/21/13	7:31	1.78	17.1	1.6	1.25	241	173.4	170	
3/21/13	7:32	1.78	17.1	1.8	1.25	238	170.0	168	
3/21/13	7:33	1.78	17.1	2.0	1.22	232	157.8	167	
3/21/13	7:34	1.78	17.1	2.1	1.22	234	159.2	170	
3/21/13	7:35	1.95	19.4	5.1	1.78	264	309.6	170	
3/21/13	7:36	1.79	17.2	2.4	1.22	232	38.1	167	
3/21/13	7:37	1.77	17.3	2.6	1.22	234	36.1	170	
3/21/13	7:38	1.78	17.3	2.7	1.22	230	35.2	170	
3/21/13	7:39	1.79	17.4	2.9	1.22	230	33.7	168	
3/21/13	7:40	1.79	17.4	3.2	1.22	232	31.3	170	
3/21/13	7:41	1.78	17.5	3.4	1.22	232	26.1	170	
3/21/13	7:42	1.79	17.5	3.8	1.22	232	22.2	168	
3/21/13	7:43	1.79	17.5	4.0	1.22	228	18.6	169	
3/21/13	7:44	1.79	17.5	4.5	1.22	232	33.7	171	
3/21/13	7:45	1.78	17.6	5.0	1.22	232	67.4	169	
3/21/13	7:46	1.79	17.6	5.4	1.22	230	62.5	168	
3/21/13	7:47	1.79	17.7	5.9	1.22	231	62.5	170	
3/21/13	7:48	1.79	17.7	6.2	1.22	231	58.4	170	
3/21/13	7:49	1.79	17.8	6.8	1.20	228	58.4	168	
3/21/13	7:50	1.79	17.8	7.3	1.20	227	58.4	170	
3/21/13	7:51	1.79	17.8	7.6	1.22	232	55.4	170	
3/21/13	7:52	1.78	17.9	8.1	1.22	227	53.7	168	
3/21/13	7:53	1.77	17.9	8.5	1.22	226	65.0	170	
3/21/13	7:54	1.79	18.0	8.8	1.22	227	61.8	171	
3/21/13	7:55	1.79	18.1	9.0	1.22	226	55.7	168	
3/21/13	7:56	1.79	18.1	9.3	1.22	227	52.5	169	
3/21/13	7:57	1.77	18.1	10.0	1.22	227	49.6	170	
3/21/13	7:58	1.79	18.2	10.4	1.22	223	45.7	169	
3/21/13	7:59	1.79	18.3	10.9	1.22	228	45.4	169	
3/21/13	8:00	1.79	18.3	11.7	1.22	228	44.4	171	
3/21/13	8:01	1.80	18.4	12.3	1.20	223	43.7	170	
3/21/13	8:02	1.79	18.5	12.9	1.20	223	41.8	168	
3/21/13	8:03	1.79	18.6	13.8	1.20	225	42.2	170	
3/21/13	8:04	1.79	18.7	14.2	1.20	225	39.3	171	
3/21/13	8:05	1.80	19.0	14.5	1.20	225	38.8	168	
3/21/13	8:06	1.79	19.1	14.9	1.20	222	37.4	170	
3/21/13	8:07	1.79	19.2	15.6	1.20	222	36.6	171	
3/21/13	8:08	1.79	19.2	16.4	1.20	223	35.9	169	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature ° F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	8:09	1.79	19.3	16.7	1.22	226	35.9	169	
3/21/13	8:10	1.79	19.4	17.6	1.20	225	36.1	171	
3/21/13	8:11	1.79	19.4	18.4	1.20	219	33.7	170	
3/21/13	8:12	1.79	19.4	19.3	1.20	221	33.2	168	
3/21/13	8:13	1.78	19.4	19.8	1.20	220	33.5	171	
3/21/13	8:14	1.79	19.4	20.0	1.17	217	32.5	171	
3/21/13	8:15	1.79	19.4	20.4	1.20	219	33.2	168	
3/21/13	8:16	1.79	19.3	20.6	1.20	219	32.7	170	
3/21/13	8:17	1.79	19.4	20.8	1.17	216	33.2	171	
3/21/13	8:18	1.79	19.4	20.9	1.20	215	32.7	169	
3/21/13	8:19	1.79	19.5	21.0	1.17	213	32.0	170	
3/21/13	8:20	1.79	19.7	21.1	1.17	216	32.5	171	
3/21/13	8:21	1.79	19.8	21.1	1.17	216	32.0	170	
3/21/13	8:22	1.79	19.8	21.4	1.15	208	30.5	169	
3/21/13	8:23	1.79	19.8	21.4	1.12	204	29.5	171	
3/21/13	8:24	1.79	19.9	21.5	1.12	202	29.3	170	
3/21/13	8:25	1.80	20.1	21.5	1.07	197	29.8	169	
3/21/13	8:26	1.79	20.2	21.5	1.03	186	27.8	170	
3/21/13	8:27	1.79	20.3	21.5	0.95	171	27.8	171	
3/21/13	8:28	1.79	20.4	21.4	0.88	160	25.4	170	
3/21/13	8:29	1.79	20.7	21.2	0.83	148	24.2	170	
3/21/13	8:30	1.80	21.1	21.1	0.78	138	23.7	172	
3/21/13	8:31	1.78	21.3	20.9	0.76	128	22.2	171	
3/21/13	8:32	1.79	21.5	20.8	0.73	123	23.2	169	
3/21/13	8:33	1.79	21.5	20.6	0.71	117	21.0	171	
3/21/13	8:34	1.79	21.6	20.6	0.68	112	18.6	172	
3/21/13	8:35	1.78	21.7	20.5	0.68	106	19.0	169	
3/21/13	8:36	1.80	21.8	20.4	0.66	107	19.5	171	
3/21/13	8:37	1.80	22.0	20.3	0.66	105	17.6	172	
3/21/13	8:38	1.79	22.0	20.3	0.64	103	14.7	170	
3/21/13	8:39	1.80	22.2	19.8	0.64	103	12.9	170	
3/21/13	8:40	1.79	22.4	19.3	0.64	103	11.2	172	
3/21/13	8:41	1.80	22.7	18.8	0.64	101	10.3	171	
3/21/13	8:42	1.81	23.0	18.4	0.64	101	9.3	170	
3/21/13	8:43	1.81	23.2	18.1	0.64	101	7.8	172	
3/21/13	8:44	1.80	23.5	17.5	0.64	101	7.3	172	
3/21/13	8:45	1.80	23.7	17.1	0.64	100	5.9	171	
3/21/13	8:46	1.80	23.7	16.7	0.64	100	5.4	170	
3/21/13	8:47	1.80	24.1	16.4	0.64	100	5.4	173	
3/21/13	8:48	1.80	24.4	15.5	0.64	100	5.9	172	
3/21/13	8:49	1.80	24.5	15.1	0.64	98.9	5.9	171	
3/21/13	8:50	1.81	24.8	14.9	0.64	96.5	6.3	171	
3/21/13	8:51	1.81	25.1	14.5	0.61	95.2	6.8	173	
3/21/13	8:52	1.81	25.6	14.3	0.61	94	6.8	172	
3/21/13	8:53	1.82	26.4	13.9	0.61	92.8	7.1	172	
3/21/13	8:54	1.82	27.1	13.8	0.61	92.8	7.6	173	
3/21/13	8:55	1.82	27.5	13.3	0.61	94	7.8	173	
3/21/13	8:56	1.80	27.6	12.5	0.61	94	8.1	172	
3/21/13	8:57	1.82	27.6	11.7	0.61	94	7.8	172	
3/21/13	8:58	1.81	27.6	10.7	0.61	94	8.1	173	
3/21/13	8:59	1.81	27.4	10.3	0.61	95.2	8.3	172	
3/21/13	9:00	1.81	26.8	9.9	0.61	92.8	7.6	171	
3/21/13	9:01	1.80	26.2	9.5	0.61	90.4	7.1	172	
3/21/13	9:02	1.81	25.8	9.2	0.61	91.6	7.1	172	
3/21/13	9:03	1.79	25.7	8.8	0.61	91.6	6.8	171	
3/21/13	9:04	1.79	25.3	8.1	0.61	92.8	6.8	170	
3/21/13	9:05	1.79	25.0	7.6	0.61	94	6.3	172	
3/21/13	9:06	1.81	25.0	7.1	0.61	95.2	6.3	172	
3/21/13	9:07	1.80	24.9	6.5	0.61	95.2	5.9	170	
3/21/13	9:08	1.80	25.0	6.1	0.61	94	4.9	171	
3/21/13	9:09	1.80	25.2	5.6	0.61	94	4.4	173	
3/21/13	9:10	1.80	25.5	5.4	0.61	94	6.6	171	
3/21/13	9:11	1.80	25.8	5.1	0.61	90.4	19.5	170	
3/21/13	9:12	1.81	26.0	5.0	0.61	89.1	16.9	173	
3/21/13	9:13	1.80	26.0	5.0	0.61	87.9	19.0	172	
3/21/13	9:14	1.80	26.1	4.8	0.61	86.7	18.3	170	
3/21/13	9:15	1.81	26.1	4.4	0.61	86.7	17.8	172	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature °F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	9:16	1.82	26.2	4.0	0.61	86.7	16.9	173	
3/21/13	9:17	1.80	26.3	3.9	0.61	86.7	15.1	171	
3/21/13	9:18	1.81	26.5	3.8	0.61	86.7	12.9	170	
3/21/13	9:19	1.80	26.6	3.7	0.61	86.7	10.3	173	
3/21/13	9:20	1.82	26.6	3.5	0.61	86.7	6.6	172	
3/21/13	9:21	1.81	26.8	3.5	0.61	83	4.6	171	
3/21/13	9:22	1.80	27.1	3.4	0.61	83	2.4	172	
3/21/13	9:23	1.80	27.4	3.3	0.61	84.2	0.5	173	
3/21/13	9:24	1.81	27.6	3.2	0.61	86.7	0.2	171	
3/21/13	9:25	1.79	27.6	3.1	0.61	85.5	0.2	171	
3/21/13	9:26	1.82	27.6	3.1	0.61	85.5	0.5	173	
3/21/13	9:27	1.81	27.4	2.9	0.61	84.2	0.2	172	
3/21/13	9:28	1.80	27.5	2.9	0.61	84.2	0.7	171	
3/21/13	9:29	1.80	27.6	2.8	0.61	84.2	0.2	171	
3/21/13	9:30	1.80	27.4	2.7	0.61	84.2	0.5	173	
3/21/13	9:31	1.81	27.4	2.7	0.61	84.2	0.2	172	
3/21/13	9:32	1.80	27.4	2.7	0.61	83	0.5	170	
3/21/13	9:33	1.80	27.3	2.6	0.61	83	0.2	172	
3/21/13	9:34	1.80	27.1	2.3	0.59	81.8	0.2	172	
3/21/13	9:35	1.79	26.9	2.3	0.59	81.8	0.7	171	
3/21/13	9:36	1.81	26.9	2.3	0.59	81.8	0.2	171	
3/21/13	9:37	1.81	26.8	2.2	0.61	81.8	0.7	172	
3/21/13	9:38	1.79	26.9	2.2	0.61	81.8	0.2	171	
3/21/13	9:39	1.79	27.1	2.2	0.59	81.8	0.2	170	
3/21/13	9:40	1.79	27.1	2.1	0.61	78.1	0.0	173	
3/21/13	9:41	1.80	27.2	2.1	0.61	76.9	0.2	172	
3/21/13	9:42	1.78	27.4	2.0	0.61	76.9	0.0	171	
3/21/13	9:43	1.79	27.5	2.0	0.61	76.9	4.9	171	
3/21/13	9:44	1.79	27.5	2.0	0.61	76.9	12.2	173	
3/21/13	9:45	1.79	27.4	1.8	0.61	76.9	2.7	171	
3/21/13	9:46	1.79	27.4	1.8	0.61	76.9	0.0	171	
3/21/13	9:47	1.79	27.4	1.8	0.61	76.9	0.2	172	
3/21/13	9:48	1.79	27.4	1.7	0.61	76.9	0.2	172	
3/21/13	9:49	1.79	27.3	1.7	0.61	78.1	0.2	170	
3/21/13	9:50	1.79	27.2	1.7	0.59	76.9	0.7	171	
3/21/13	9:51	1.79	27.0	1.7	0.59	75.7	0.0	173	
3/21/13	9:52	1.79	26.9	1.6	0.61	73.3	0.2	171	
3/21/13	9:53	1.79	26.9	1.6	0.59	74.5	0.5	171	
3/21/13	9:54	1.79	27.0	1.6	0.59	78.1	0.2	172	
3/21/13	9:55	1.79	27.2	1.6	0.59	78.1	0.2	172	
3/21/13	9:56	1.79	27.2	1.6	0.59	78.1	1.2	171	
3/21/13	9:57	1.79	27.3	1.6	0.59	75.7	3.4	171	
3/21/13	9:58	1.79	27.4	1.5	0.59	73.3	0.2	173	
3/21/13	9:59	1.80	27.4	1.5	0.59	74.5	0.5	172	
3/21/13	10:00	1.79	27.3	1.5	0.59	74.5	3.7	170	
3/21/13	10:01	1.80	27.2	1.5	0.59	72	1.2	172	
3/21/13	10:02	1.79	27.1	1.5	0.59	70.8	0.2	173	
3/21/13	10:03	1.79	27.1	1.5	0.59	70.8	0.5	170	
3/21/13	10:04	1.78	27.2	1.5	0.59	70.8	0.2	172	
3/21/13	10:05	1.78	27.3	1.5	0.56	70.8	0.5	173	
3/21/13	10:06	1.79	27.3	1.5	0.56	70.8	0.2	171	
3/21/13	10:07	1.79	27.3	1.5	0.56	70.8	0.5	170	
3/21/13	10:08	1.79	27.4	1.5	0.56	70.8	0.2	173	
3/21/13	10:09	1.79	27.4	1.5	0.56	70.8	0.5	172	
3/21/13	10:10	1.79	27.4	1.5	0.56	68.4	0.2	171	
3/21/13	10:11	1.79	27.5	1.5	0.54	68.4	0.7	171	
3/21/13	10:12	1.80	27.4	1.5	0.54	68.4	0.2	173	
3/21/13	10:13	1.80	27.4	1.3	0.54	65.9	2.4	171	
3/21/13	10:14	1.79	27.4	1.3	0.51	64.7	0.7	171	
3/21/13	10:15	1.79	27.4	1.3	0.51	61.1	0.5	172	
3/21/13	10:16	1.79	27.4	1.3	0.51	59.8	0.2	172	
3/21/13	10:17	1.79	27.5	1.3	0.49	59.8	0.5	171	
3/21/13	10:18	1.79	27.5	1.2	0.49	58.6	0.2	171	
3/21/13	10:19	1.79	27.6	1.2	0.49	57.4	0.7	173	
3/21/13	10:20	1.79	27.6	1.2	0.49	57.4	0.2	171	
3/21/13	10:21	1.79	27.6	1.2	0.49	56.2	0.7	171	
3/21/13	10:22	1.80	27.7	1.2	0.49	56.2	0.2	172	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature ° F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	10:23	1.80	27.8	1.2	0.49	56.2	0.7	173	
3/21/13	10:24	1.80	27.9	1.2	0.49	58.6	0.2	171	
3/21/13	10:25	1.80	28.0	1.2	0.49	59.8	0.5	171	
3/21/13	10:26	1.81	28.2	1.2	0.49	58.6	0.2	173	
3/21/13	10:27	1.79	28.4	1.1	0.49	58.6	0.2	172	
3/21/13	10:28	1.79	28.4	1.1	0.49	58.6	0.2	170	
3/21/13	10:29	1.79	27.9	1.1	0.49	58.6	0.2	172	
3/21/13	10:30	1.79	27.7	1.1	0.49	58.6	0.5	173	
3/21/13	10:31	1.80	27.6	1.1	0.51	58.6	0.2	171	
3/21/13	10:32	1.80	28.0	1.1	0.51	61.1	0.5	171	
3/21/13	10:33	1.79	28.3	1.1	0.51	61.1	0.2	173	
3/21/13	10:34	1.81	28.4	1.1	0.54	62.3	0.2	172	
3/21/13	10:35	1.80	28.7	1.1	0.54	62.3	0.5	171	
3/21/13	10:36	1.81	28.9	1.1	0.54	63.5	0.2	172	
3/21/13	10:37	1.81	28.9	1.1	0.54	64.7	0.7	173	
3/21/13	10:38	1.80	28.9	1.1	0.56	64.7	0.2	172	
3/21/13	10:39	1.79	29.0	1.0	0.56	64.7	0.5	171	
3/21/13	10:40	1.79	29.0	1.1	0.54	54.9	0.2	173	
3/21/13	10:41	1.80	29.2	1.1	0.49	47.6	0.5	172	
3/21/13	10:42	1.79	29.5	1.1	0.46	40.3	0.2	171	
3/21/13	10:43	1.81	29.7	1.1	0.44	35.4	0.5	173	
3/21/13	10:44	1.81	30.1	1.1	0.39	25.6	0.2	173	
3/21/13	10:45	1.80	30.1	1.1	0.37	14.7	0.7	172	
3/21/13	10:46	1.80	29.9	1.0	0.34	11	0.2	171	
3/21/13	10:47	1.79	29.7	1.1	0.34	9.8	0.5	173	
3/21/13	10:48	1.80	29.6	1.1	0.34	8.5	0.2	173	
3/21/13	10:49	1.80	29.4	1.1	0.34	7.3	0.5	171	
3/21/13	10:50	1.80	29.3	1.1	0.34	6.1	0.0	172	
3/21/13	10:51	1.79	29.2	1.1	0.34	6.1	0.5	173	
3/21/13	10:52	1.80	29.1	1.0	0.34	3.7	0.2	172	
3/21/13	10:53	1.80	29.3	1.1	0.32	2.4	0.5	171	
3/21/13	10:54	1.79	29.5	1.1	0.32	2.4	0.2	172	
3/21/13	10:55	1.79	29.7	1.1	0.32	2.4	0.5	173	
3/21/13	10:56	1.79	29.8	1.0	0.29	2.4	0.5	172	
3/21/13	10:57	1.79	29.7	1.1	0.29	2.4	0.2	171	
3/21/13	10:58	1.78	29.5	1.0	0.29	1.2	0.5	173	
3/21/13	10:59	1.79	29.2	1.0	0.29	1.2	0.0	172	
3/21/13	11:00	1.80	29.0	1.0	0.29	1.2	0.5	170	
3/21/13	11:01	1.79	28.9	1.0	0.29	1.2	0.2	172	
3/21/13	11:02	1.79	29.0	1.0	0.29	1.2	0.2	173	
3/21/13	11:03	1.80	29.0	1.1	0.29	2.4	0.2	171	
3/21/13	11:04	1.79	29.1	1.1	0.29	2.4	0.2	171	
3/21/13	11:05	1.80	29.0	1.0	0.29	2.4	0.2	172	
3/21/13	11:06	1.80	29.1	1.0	0.29	2.4	0.5	172	
3/21/13	11:07	1.79	29.1	1.1	0.29	2.4	0.2	171	
3/21/13	11:08	1.81	29.0	1.1	0.29	2.4	0.5	172	
3/21/13	11:09	1.80	29.0	1.1	0.29	1.2	0.2	173	
3/21/13	11:10	1.80	29.0	1.1	0.27	0	0.5	171	
3/21/13	11:11	1.80	29.0	1.1	0.24	0	0.2	170	
3/21/13	11:12	1.80	29.1	1.1	0.24	0	0.2	173	
3/21/13	11:13	1.80	29.1	1.1	0.24	0	0.2	172	
3/21/13	11:14	1.80	29.2	1.1	0.24	0	0.2	171	
3/21/13	11:15	1.79	29.2	1.1	0.24	0	0.2	171	
3/21/13	11:16	1.80	29.2	1.1	0.24	0	15.9	173	
3/21/13	11:17	1.80	29.4	1.1	0.24	0	0.5	172	
3/21/13	11:18	1.79	29.6	1.1	0.24	0	0.2	171	
3/21/13	11:19	1.80	29.8	1.1	0.07	0	0.2	172	
3/21/13	11:20	1.79	29.8	1.1	0.93	98.9	0.2	173	
3/21/13	11:21	1.81	29.6	1.1	1.32	184	0.2	171	
3/21/13	11:22	1.79	29.5	1.1	1.32	188	0.2	171	
3/21/13	11:23	1.81	29.6	1.1	1.34	198	0.0	173	
3/21/13	11:24	1.81	29.8	1.1	1.34	199	0.2	172	
3/21/13	11:25	1.82	29.8	1.1	1.34	197	0.0	171	
3/21/13	11:26	1.80	30.0	1.1	1.37	199	0.2	172	
3/21/13	11:27	1.80	30.1	1.1	1.37	195	0.2	173	
3/21/13	11:28	1.81	30.2	1.1	1.37	198	0.2	171	
3/21/13	11:29	1.82	30.4	1.1	1.37	192	0.0	171	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature °F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	11:30	1.80	30.4	1.1	1.37	193	0.2	174	
3/21/13	11:31	1.80	30.5	1.1	1.37	193	0.0	172	
3/21/13	11:32	1.80	30.5	1.0	1.34	193	0.5	171	
3/21/13	11:33	1.79	30.6	1.0	1.34	194	0.0	172	
3/21/13	11:34	1.80	30.8	1.0	1.34	197	3.7	173	
3/21/13	11:35	1.81	31.1	1.0	1.32	199	23.2	172	
3/21/13	11:36	1.81	31.5	1.0	1.32	194	25.2	172	
3/21/13	11:37	1.81	31.6	1.0	1.05	150	27.1	173	
3/21/13	11:38	1.80	31.6	1.0	1.17	161	28.8	173	
3/21/13	11:39	1.80	31.6	1.0	1.29	195	27.8	171	
3/21/13	11:40	1.80	31.6	1.0	1.32	199	31.3	172	
3/21/13	11:41	1.81	31.6	1.0	1.22	181	23.7	174	
3/21/13	11:42	1.80	31.5	1.0	1.20	178	27.8	172	
3/21/13	11:43	1.79	31.6	1.0	1.12	164	32.5	171	
3/21/13	11:44	1.79	31.6	1.0	1.05	145	30.3	173	
3/21/13	11:45	1.81	31.6	1.0	1.03	138	30.5	174	
3/21/13	11:46	1.82	31.7	1.0	1.03	142	31.7	171	
3/21/13	11:47	1.81	31.9	1.0	1.03	140	31.5	172	
3/21/13	11:48	1.81	32.0	1.0	1.03	140	29.8	173	
3/21/13	11:49	1.82	32.3	1.0	1.03	150	30.3	173	
3/21/13	11:50	1.80	32.5	1.0	1.03	149	34.2	172	
3/21/13	11:51	1.82	32.8	1.0	1.03	150	35.2	173	
3/21/13	11:52	1.80	33.1	1.0	1.05	150	35.2	174	
3/21/13	11:53	1.79	33.1	1.0	1.07	149	36.1	172	
3/21/13	11:54	1.82	33.0	1.0	1.07	149	38.3	172	
3/21/13	11:55	1.81	33.2	1.0	1.07	150	35.4	173	
3/21/13	11:56	1.81	33.6	1.0	1.07	153	35.9	174	
3/21/13	11:57	1.81	34.0	1.0	1.07	154	33.0	173	
3/21/13	11:58	1.82	34.3	1.0	1.10	155	35.4	172	
3/21/13	11:59	1.81	34.3	1.0	1.10	153	35.7	175	
3/21/13	12:00	1.82	34.6	1.0	1.10	155	36.6	173	
3/21/13	12:01	1.82	34.9	1.0	1.10	156	52.0	173	
3/21/13	12:02	1.82	34.9	0.9	1.07	154	41.0	173	
3/21/13	12:03	1.80	34.8	0.9	1.07	154	39.6	174	
3/21/13	12:04	1.82	34.5	1.8	1.10	155	43.7	173	
3/21/13	12:05	1.82	34.3	3.2	1.10	158	46.6	172	
3/21/13	12:06	1.80	34.2	3.2	1.10	154	40.0	173	
3/21/13	12:07	1.80	33.7	3.2	1.10	153	38.8	174	
3/21/13	12:08	1.82	33.4	3.2	1.10	154	44.2	172	
3/21/13	12:09	1.82	33.4	3.2	1.10	155	45.2	171	
3/21/13	12:10	1.81	33.3	3.2	1.10	156	49.6	174	
3/21/13	12:11	1.80	33.1	3.3	1.10	151	34.4	173	
3/21/13	12:12	1.80	32.8	3.3	1.12	150	36.4	171	
3/21/13	12:13	1.82	32.8	3.3	1.10	151	40.0	172	
3/21/13	12:14	1.81	33.0	3.4	1.10	156	42.5	174	
3/21/13	12:15	1.79	33.3	7.2	1.10	155	41.3	173	
3/21/13	12:16	1.80	33.3	15.3	1.07	153	38.3	171	
3/21/13	12:17	1.79	33.4	22.8	1.00	138	41.8	173	
3/21/13	12:18	1.80	33.5	23.3	0.88	114	43.0	174	
3/21/13	12:19	1.80	33.5	23.4	0.68	78.1	45.9	172	
3/21/13	12:20	1.80	33.4	23.6	0.37	29.3	32.7	171	
3/21/13	12:21	1.81	33.5	23.7	0.10	0	18.1	174	
3/21/13	12:22	1.80	33.8	23.7	0.02	1.2	21.2	173	
3/21/13	12:23	1.79	34.0	23.8	0.02	1.2	22.7	172	
3/21/13	12:24	1.80	34.0	23.9	0.39	57.4	24.2	172	
3/21/13	12:25	1.82	34.1	24.1	0.66	118	27.4	174	
3/21/13	12:26	1.81	34.1	24.2	0.66	94	17.8	173	
3/21/13	12:27	1.82	34.1	24.2	0.64	114	20.0	171	
3/21/13	12:28	1.82	34.1	24.3	0.37	73.3	27.6	173	
3/21/13	12:29	1.80	34.0	24.4	0.12	15.9	26.6	174	
3/21/13	12:30	1.81	34.2	24.4	0.07	9.8	39.1	172	
3/21/13	12:31	1.81	34.6	24.5	0.07	2.4	41.8	172	
3/21/13	12:32	1.81	35.4	24.7	0.05	1.2	28.6	174	
3/21/13	12:33	1.81	35.9	24.8	0.05	0	25.2	175	
3/21/13	12:34	1.82	36.5	25.0	0.02	1.2	24.4	172	
3/21/13	12:35	1.82	36.7	25.2	0.02	1.2	24.9	173	
3/21/13	12:36	1.82	37.3	25.4	0.00	0	32.2	175	

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature °F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/21/13	12:37	1.82	38.0	25.6	0.00	0	41.3	175	
3/21/13	12:38	1.82	38.4	25.8	0.00	0	50.5	173	
3/21/13	12:39	1.82	38.6	26.0	0.00	0	53.0	174	
3/21/13	12:40	1.82	38.4	26.1	0.00	0	38.8	175	
3/21/13	12:41	1.83	38.0	26.4	0.00	0	33.7	174	
3/21/13	12:42	1.83	37.8	26.5	0.02	0	51.8	173	
3/21/13	12:43	1.82	38.0	26.7	0.02	0	67.9	174	
3/21/13	12:44	1.82	38.3	26.9	0.02	0	79.6	175	
3/21/13	12:45	1.81	38.4	27.0	0.02	0	115.8	0	End Emission Test
3/21/13	12:46	1.82	38.3	9.3	0.02	0	76.2	0	
3/21/13	12:47	1.81	38.3	0.0	0.02	0	111.8	0	
3/21/13	12:48	1.82	38.3	27.7	0.05	0	120.1	0	
3/21/13	12:49	1.81	38.3	40.1	0.05	0	138.0	0	
3/21/13	12:50	1.83	38.3	28.0	0.05	0	121.9	0	
3/21/13	12:51	1.82	38.3	6.9	0.02	0	127.5	0	
3/21/13	12:52	1.82	38.3	0.1	0.02	0	130.6	0	
3/21/13	12:53	1.83	38.3	0.1	0.02	503	132.1	0	
3/21/13	12:54	1.83	38.3	0.1	0.02	281	131.9	0	
3/21/13	12:55	0.79	38.3	0.1	0.64	134	130.6	0	
3/21/13	12:56	0.73	38.3	0.1	5.01	52.4	47.9	0	
3/21/13	12:57	0.74	38.3	0.1	3.96	0	16.4	0	
3/21/13	12:58	0.73	38.3	0.1	3.88	0	13.4	0	
3/21/13	12:59	0.62	38.3	0.1	3.81	0	5.0	0	
3/21/13	13:00	0.03	38.3	0.1	3.74	0	5.9	0	
3/21/13	13:01	0.01	38.3	0.1	3.64	0	9.3	0	
3/21/13	13:02	0.01	38.3	0.1	3.57	0	217.6	0	
3/21/13	13:03	0.02	38.3	0.1	3.44	0	507.1	0	
3/21/13	13:04	-3.39	38.3	0.1	1.54	1.2	139.2	0	
3/21/13	13:05	-6.23	38.3	0.0	0.00	0	0.2	0	
3/21/13	13:06	-6.22	38.3	0.1	0.00	0	0.2	0	
3/21/13	13:07	-6.22	0.0	0.0	0.00	0	0.2	0	
3/21/13	13:08	-6.23	0.1	0.0	0.00	0	0.2	0	
3/21/13	13:09	-6.22	0.1	0.0	0.00	0	0.2	0	
3/21/13	13:10	-6.23	0.0	0.1	0.00	0	0.2	0	
3/21/13	13:11	-6.22	0.1	0.0	0.00	0	0.0	0	

Method 205

		CO2%
3/20/13	16:03	0.02
3/20/13	16:04	0.00
3/20/13	16:05	0.00
3/20/13	16:06	0.00
3/20/13	16:07	0.00
3/20/13	16:08	0.00
3/20/13	16:09	0.00
3/20/13	16:10	0.00
3/20/13	16:11	0.00
3/20/13	16:12	0.00
3/20/13	16:13	0.00
3/20/13	16:14	0.00
3/20/13	16:15	5.72
3/20/13	16:16	12.42
3/20/13	16:17	17.87
3/20/13	16:18	17.99
3/20/13	16:19	17.99
3/20/13	16:20	13.78
3/20/13	16:21	10.62
3/20/13	16:22	10.49
3/20/13	16:23	10.49
3/20/13	16:24	6.36
3/20/13	16:25	5.38
3/20/13	16:26	6.41
3/20/13	16:27	7.08
3/20/13	16:28	9.79
3/20/13	16:29	10.01
3/20/13	16:30	10.01
3/20/13	16:31	6.03

Yellow, highlighted data represents calibrations

RAW TEST DATA FROM ATC DATA LOGGER

Date	Time	Pressure Inches H_2O	Temperature ° F.	Inlet VOCs as C_3H_8, %	CO2 Vol. %	CO PPM	Exhaust VOCs as C_3H_8, ppm	Inlet Flow Volume, Ft^3	Calibration Comments
3/20/13	16:32				4.99				
3/20/13	16:33				6.00				
3/20/13	16:34				9.79				
3/20/13	16:35				10.01				
3/20/13	16:36				8.15				
3/20/13	16:37				5.63				
3/20/13	16:38				5.01				
3/20/13	16:39				4.99				
3/20/13	16:40				7.34				
3/20/13	16:41				9.99				
3/20/13	16:42				10.26				
3/20/13	16:43				5.80				
3/20/13	16:44				3.04				
3/20/13	16:45				1.62				
3/20/13	16:46				0.00				
3/20/13	16:47				8.43				
3/20/13	16:48				10.49				
3/20/13	16:49				3.21				
3/20/13	16:50				5.63				
3/20/13	16:51				9.45				
3/20/13	16:52				10.48				
3/20/13	16:53				4.72				
3/20/13	16:54				3.53				
3/20/13	16:55				9.78				
3/20/13	16:56				10.50				
3/20/13	16:57				7.92				
3/20/13	16:58				3.61				
3/20/13	16:59				0.00				
3/20/13	17:00				0.00				
3/20/13	17:01				0.02				

Yellow, highlighted data represents calibrations

CEM Event Log

Client: BUCKEYE Date: 3/21/13 Project No. 13011

Location: RIVER ROUGE, MI Techician: LB, SM

Task	Start Time	End Time	Notes
TEST	0645	1246	
			START BLADDER LEVEL: 11'11"
			END BLADDER LEVEL: 11'10"
			PRESSURE: 29.89
			ELV.: 587 FT

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ATC Project No. P-1301

LOADING RACK INFORMATION DATA SHEET

GASOLINE LOADED, BACKPRESSURE & LEAK CHECK FORM

TEST START TIME 0645 END TIME 1245 Technician(s) SA

Client Buckeye Date 3-21-13 Source CU

Location River Rouge, MI Page 1 of 4

LOAD NO.	RACK NO.	TIME START	TIME END	TRUCK NAME & TRAILER ID	GASOLINE LOADED (gal)	DISTILLATE LOADED (gal)	LAST LOAD	Truck Backpressures Every 5 minutes (AH_2O) 0	5	10	15	20	Max. Press. (AH_2O)	Leak Check Results Please identify location of leak and reading	Remarks
1	1	0700	0720	BAGLEY	4500		D							OK	
2	2	0700	0721	ACG 891	9000		G							OK	19500
3	3	0702	0720	BAGLEY	10,000		G/D							OK	
4	4	0705	0720	CURTIS 116	10000		G							OK	38500
5	5	0705	0731	ROYAL 1248	13,400		G							OK	
6	4	726	0740	BY-LOT 554	13,400		G							OK	65,300
7	1	725	0735	B+R 111	9500		G	8.7	9.4	3.6			9.4	OK	
8	3	726	0740	ADVANTAGE 13049 TAS	12,450		G	9.2	10.4	11.2	6.4		11.2	OK	
9	2	0731	0747	B+R 955	4040		G							OK	95,790
10	6	0750	0812	ROYAL 1337	~~7500~~	7500	G	3.2	4.6	3.7	2.1		3.7		
11	4	0752	0800	ADVANTAGE 13011	13300		G	9.4	10.7	3.4			10.7	OK	
12	3	0759	0812	KENWAY 171	9000		G							OK	
13	3	0757	0807	B+R 913	9500		G							OK	127,590
14	4	0832	0835	B+R 860	10000		G							OK	
15	3	0820	0838	AOG 602	8000		G							OK	
16	5	0848	0904	ADVANTAGE 13006	11050	1750	G							OK	156,640

ALL DATA REQUESTED MUST BE PROVIDED! ATC @ 1-800-733-3193 ATC FORM 21

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ATC Project No. P-130 11

LOADING RACK INFORMATION DATA SHEET

GASOLINE LOADED, BACKPRESSURE & LEAK CHECK FORM

TEST START TIME 0845 END TIME 1245 Technician(s) SM

Client Buckeye Date 3-21-13 Source VCU

Location River Rouge, MI Page 2 of 4

LOAD NO.	RACK NO	TIME START	TIME END	TRUCK NAME & TRAILER ID	GASOLINE LOADED (gal)	DISTILLATE LOADED (gal)	LAST LOAD	Truck Backpressures Every 5 minutes (AH_2O) 0	5	10	15	20	Max. Press. (AH_2O)	Leak Check Results Please identify location of leak and reading	Remarks
1	1	0845	0932	Brenner 157	11400		G							OK	
2	5	0920	0942	Brenner 167	9400	3000	G	4.7	5.3	7.4	9.2		9.3	OK	177,440
3	3	~~0835~~ 0935	0946	B&R ~~023~~ 023	9500		G							OK	
4	3	0952	0903	Brenner 169	5700		G	7.8	9.4	4.7			9.4	OK	
5	1	0955	0907	Contin Air	5300		G							OK	203,940
6	3	0918	0940	B&R 900	9500		G	5.2	7.3	8.4	5.7	4.2	8.4	OK	
7	4	0920	0930	FLT 463	13400		G							OK	226,840
8	1	0930	0932	ACC 700	10000		G							OK	
9	6	0935	0942	Barrow 134	~~9000~~	8000	G								
10	5	0927	0945	Barrick 01	~~9500~~ 9500	1000	G							OK	
11	4	0938	0945	Barrow 975	2000	10400	G							OK	247,340
12	6	0945	1003	Royal 979		9000									
13	3	0945	0956	AOG 800	9000		G							OK	
14	1	0945	0957	RPF 1	10000		G							OK	266,340
15	4	0947	0957	B&R 131	11000		G							OK	
16	5	0952	1004	RPF 2	13400		G							OK	290,740

ALL DATA REQUESTED MUST BE PROVIDED! ATC @ 1-800-733-3193 ATC FORM 21

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ATC Project No. P- (3011)

LOADING RACK INFORMATION DATA SHEET

GASOLINE LOADED, BACKPRESSURE & LEAK CHECK FORM
TEST START TIME 0645 END TIME 1245 Technician(s) SM

Client Buckeye Date 3-21-13 Source KD
Location River Rouge, MI Page 3 of 4

LOAD NO.	RACK NO.	TIME START	TIME END	TRUCK NAME & TRAILER ID	GASOLINE LOADED (gal)	DISTILLATE LOADED (gal)	LAST LOAD	Truck Backpressures Every 5 minutes (AH_2O) 0	5	10	15	20	Max. Press. (AH_2O)	Leak Check Results Please identify location of leak and reading	Remarks
1	3	1005	1017	McKinley 123	13000		G							OK	
2	1	1005	1015	ADG 662	9000		G							OK	312,740
3	4	1008	1015	B&R 091	9500	1000	G							OK	
4	5	1015	1028	Advantage 13020	11600	1750	D							OK	
5	2	1013	1028	Brenner 181	11000		G	4.7	8.4	9.7	3.2		9.7	OK	343,840
6	1	1022	1028	Corrigan	8000	3000	G							OK	
7	~~7~~			~~Barrick 091~~											
8	7	1035	1050	McKinley 104T		7200	G								
9	3	1025	1050	Spencer 10	4000	6000	D							OK	
10	5	1037	1050	Noble Light 500 45203	6000	500	G							OK	361,840
11	4	1054	1102	B&R 023	9500		G							OK	
12	~~1~~			~~B&R 913~~											
13	~~5~~			~~B&R 111~~											
14	3	1100	1117	Advantage 13011	13150		G							OK	384,490
15	~~5~~			~~Noble Light 500~~											
16	7	1117	1140	Royal 12-46		12000	G	3.9	9.2	8.3	7.4	4.2	9.2		

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ATC

Providing Quality Air Testing and Consulting Services Since 1981.

ATC Project No. P- 13011

LOADING RACK INFORMATION DATA SHEET

GASOLINE LOADED, BACKPRESSURE & LEAK CHECK FORM

TEST START TIME 0645 END TIME 1245 Technician(s) SM

Client Buckeye Date 3-21-13 Source VCU

Location River Rouge, MI Page 4 of 4

LOAD NO.	RACK NO.	TIME START	TIME END	TRUCK NAME & TRAILER ID	GASOLINE LOADED (gal)	DISTILLATE LOADED (gal)	LAST LOAD	Truck Backpressures Every 5 minutes (aH_2O) 0	5	10	15	20	Max. Press. (aH_2O)	Leak Check Results Please identify location of leak and reading	Remarks
1	4	1127	1140	Brenner 167	15000		G								384,490
2	3	1125	1137	AOG 800	9000		G								
3	1	1135	1150	McKinley	13000		G/D								416,490
4	4	1205	1215	Brenner 169	12000		G								429,490
5	6	1225	1241	AOG 662		8000	G								
6	5	1230	1243	Barton + 129 Scuds	1000	9000									
7	1	1331	1245	AOG 700	11000	1000									
8														ALL	529590
9														GAS	440490
10															
11															
12															
13															
14															
15															
16															

ALL DATA REQUESTED MUST BE PROVIDED! ATC @ 1-800-733-3193 ATC FORM 21

Phindows

GUImmore

File Screen Print Help pcteral2

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3857                              * * * T O P T E C H   I N S  5.20b * * *
DATE: 04/17/13                         TERMINAL RACK ACTIVITY SUMMARY
TIME: 10:08                     REPORTING LOCATION: BUCKEYE RIVER ROUGE            Period Beginnin
ACTIVITY FOR: 0219058 BUCKEYE RIVER ROUGE        FOR FOLIO 03/018                   Period Endin

TRANS  REFERENCE  ACCOUNT/CUSTOMER  ACCT NAME        CARRIER  BOL    PULL     GROSS    NET   TEMP  GRAV
 ID    OUT#/TICKET#                                           NUMBER DATE      GAL     GAL        DENSI

        INVENTORY PRODUCT SUMMARY:
                            000155  ULTRA LSD 1                               7747     7875
                            000190  ULTRA LSD 2 15 PPM                       72383    73341
                            000195  RUL SUB                                 369862   376262
                            000251  PUL 91 SUBGRD 91                         30226    30886
                            005482  ETHANOL (DENAT) ALCOHOL                  44236    44950
                            INVENTORY PRODUCT TOTALS:                       525954   533314

        INVENTORY ADDITIVE SUMMARY:
                            002783  RED DYE ADDITIVE                         0.830    0.830
                            008201  COLD FLOW IMPROVER                       1.784    1.784
                            017000  LUBRICITY ADDITIVE                      16.819   16.819
                            017006  CETANE IMPROVER                         29.986   29.986
                            017015  BP DIESEL ADDITIVE                       3.238    3.238
                            017050  GENERIC GAS ADDITIVE                     1.259    1.259
                            017438  BP GAS ADDITIVE                        110.955  110.955
                            INVENTORY ADDITIVE TOTALS:                     164.871  164.871
                                  * * * T O P T E C H   I N S  5.20b * * *
DATE: 04/17/13                         TERMINAL RACK ACTIVITY SUMMARY
TIME: 10:08                     REPORTING LOCATION: BUCKEYE RIVER ROUGE            Period Beginnin
ACTIVITY FOR: 0219058 BUCKEYE RIVER ROUGE        FOR FOLIO 03/018                   Period Endin

TRANS  REFERENCE  ACCOUNT/CUSTOMER  ACCT NAME        CARRIER  BOL    PULL     GROSS    NET   TEMP  GRAV
 ID    OUT#/TICKET#                                           NUMBER DATE      GAL     GAL        DENST

        SALEABLE PRODUCT SUMMARY:
```

_4U81 AAA 60%

Mark D. Smith
Sr. Terminal Specialist
River Rouge & Detroit Terminals

SYSTEM CALIBRATION ERROR DATA
Protocol Gases

Client: Bulkeye **Date:** 3/20/13

Location: River Rouge, MI **Method:** 3A

Analyzer: CAI-2RH **Technician:** LB

ATC Project No.: 13011 **Instrument stable prior to calibrations?** Yes

PROTOCOL GAS DATA

Protocol Gas Concentration, %	Pollutant Gas	Dilution Gas	Cylinder Number	Expiration Date
10.48	Carbon Dioxide	Nitrogen	SX-43677	2/14/15
18.0	Carbon Dioxide	Nitrogen	SX-10575	12/15/13
18.0	Span Value (100% of high range calibration gas)			

INITIAL CALIBRATION

RANGE	Cylinder Pressure (psi)	Cylinder Value (%)	System Response (%)	Difference (%)	Calibration Error (%)
ZERO	1800	0.0 %	0.0	0	0
MID	700	10.48%	10.49%	0.01	0.05
HIGH	400	18.0%	17.99	0.01	0.05

Specification-Methods 3a, 6c, 7e & 10 = ± 2% of span value

Field Notes:

Analyst: [signature] **Date:** 3/20/13

Data Reviewed by: W. Stewart Headley **Date:** 4-10-13

Dilution System Verification

US EPA Method 205-40CFR51, Appendix M

ATC Project No. 13011

Client: Buckeye			Instrument Used: CAI Model ZRH						
Location: River Rouge, MI			High Level Gas Type: Carbon Dioxide in N_2						
Date: 3/20/13			Gas Concentration: 18% CO_2 / SX-10515 EXP: 12/15/13						
Technician(s): CB			US EPA Method (s): 3A						
Cylinder Number	Gas Type	Protocol Gas Concentration	Actual Reading (ppm or %) 1	2	3	Average Response	Within ± 2% Precision	Accuracy
	Mid-level audit	10.48%	10.49	10.48	10.50	10.49	0.09	0.09
Dilution Number	MFC Flowrate	Dilution Concentration	Trial (record reading in ppm or %) 1	2	3	Average Response	Within ± 2% Precision	Accuracy
1	7000	5.00	4.99	4.99	5.00	4.99	0.20	0.20
2	2000	10.00	10.01	10.01	9.99	10.01	0.10	0
3								
4								
5								
6								
7								
8								
9								
10								

Precision-Calculate the % difference between the average response and the individual reading that most deviates.
Accuracy-Calculate the % difference between the average response and the predicted response.

QA/QC Check: ✓ Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness

Signatures: 3/20/13 Technician (Signature/Date) W. Steven Meeder 4-10-13 Project Manager (Signature/Date)

SYSTEM CALIBRATION ERROR DATA

Client: Buckeye | Date: 3/21/13

Location: River Rouge, MI | Project No.: 13011

Calibration Gas: Propane in Air | Cylinder No.: SX-21463 | Exp. Date: 12/16/13

US EPA Method: 25A | Analyzer ID: Model 300 HFID | Cylinder Pressure (PSI): 800

Was instrument stable prior to beginning calibrations? YES

Initial Analyzer Calibration using Dilution System

Range	Dilution Target Level (ppm or %)	Instrument Response (ppm or %)	Difference (ppm or %)	Allowable Difference (ppm or %)	Specification
Zero	0	0	0	22	± 2% of Span
Low Range	250	250	0	12.5	± 5% of Gas Value-25A/B
Mid Range	500	500	0	25	± 5% of Gas Value-25A/B
High Range	1000	1000	0	50	± 5% of Gas Value-25A/B
Span Value	1100				=110% of High Range Gas

Hourly System Calibration Error and Zero Drift Checks

	Run Time (24 Hour Clock)	Initial System Response (ppm or %)		Final System Response (ppm or %)		Drift Difference (ppm or %)		Calibration Drift (percent error)	
		Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale
Run 1	1303	0	500	5	507	5	7	0.50	0.70
Run 2									
Run 3									
Run 4									
Run 5									
Run 6									

Specification-All must be within ± 3% of span

Field Notes: 25s RESPONSE

QA/QC Check

Completeness	Legibility	Accuracy	Specifications	Reasonableness
✓	✓	✓	✓	✓

3/21/13
Technician (Signature/Date)

W. Stewart Meadows 4-10-13
Project Manager (Signature/Date)

ATC @ 1-800-733-3193

SYSTEM CALIBRATION ERROR DATA

Client: BUCKEYE Date: 3/21/13

Location: RIVER ROUGE, MI Project No.: 13011

Calibration Gas: PROPANE IN N_2 Cylinder No.: SX-65950 Exp. Date: 4/30/15

US EPA Method: 25B Analyzer ID: CAI-2RE Cylinder Pressure (PSI): 80

Was instrument stable prior to beginning calibrations? YES

Initial Analyzer Calibration using Dilution System

Range	Dilution Target Level (ppm or %)	Instrument Response (ppm or %)	Difference (ppm or %)	Allowable Difference (ppm or %)	Specification
Zero	0	0	0	1.43	±2% of Span
Low Range	20	20.1	0.1	1.40	±5% of Gas Value-25A/B
Mid Range	40	39.9	0.1	2.00	±5% of Gas Value-25A/B
High Range	65	64.8	0.2	3.25	±5% of Gas Value-25A/B
Span Value	71.5				=110% of High Range Gas

Hourly System Calibration Error and Zero Drift Checks

	Run Time (24 Hour Clock)	Initial System Response (ppm or %)		Final System Response (ppm or %)		Drift Difference (ppm or %)		Calibration Drift (percent error)	
		Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale
Run 1	1249	0.0	39.9	0.02	40.1	0.02	0.02	0.03	0.03
Run 2									
Run 3									
Run 4									
Run 5									
Run 6									

Specification-All must be within ±3% of span

Field Notes:

QA/QC Check				
✓	✓	✓	✓	✓
Completeness	Legibility	Accuracy	Specifications	Reasonableness

3/21/13
Technician (Signature/Date)

W. Stewart Meadows 4-10-13
Project Manager (Signature/Date)

ATC @ 1-800-733-3193

SYSTEM CALIBRATION ERROR DATA FOR INSTRUMENTAL ANALYSES

Client: BUCKEYE Location: RIVER ROUGE, MI Date: 3/21/13 Project No: 13011

Calibration Gas: CO_2 IN N_2 Cylinder No.: EX-10515 Exp. Date: 12/15/13 Cylinder Pressure (PSI): 500

US EPA Method: 10 Analyzer ID: CAT-ZRH Was Instrument stable prior to beginning calibration? YES

Initial Analyzer Direct Calibration

Range	Dilution Target Level (ppm or %)	Instrument Response (ppm or %)	Difference (ppm or %)	Allowable Difference (ppm or %)	Specification
Low Range (Zero)	0	0.0	0	0.20	± 2% of Span
Mid Range	5.00	4.98	0.02	0.20	± 2% of Span-3a, 6c, 7e, 10
High Range (Span)	10.00	10.03	0.03	0.20	± 2% of Span-3a, 6c, 7e, 10

Initial and Post System Bias and Drift Checks

	Run Time (24 Hour Clock)	Direct Response (ppm or %)		System Response (ppm or %)		System Bias (ppm or %)		System Bias (percent error)		Calibration Drift (ppm or %)		Calibration Drift (percent error)	
		Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale
Pre	0606	0.0	4.98	0.02	5.03	0.02	0.05	0.40	1.00				
Run 1	1256	0.0	4.98	0.02	5.01	0.02	0.03	0.40	0.60	0	0.02	0	0.40
Run 2													
Run 3													
Run 4													
Run 5													

Specification - System Bias: must be within ± 5% of actual gas value; Calibration Drift: must be within ± 3% of span of previous System Response

Field Notes (record system response time here): 15s RESPONSE

QA/QC Check

Completeness	Legibility	Accuracy	Specifications	Reasonableness
✓	✓	✓	✓	✓

Technician (Signature/Date): 3/21/13

Project Manager (Signature/Date): W. Stewart Woods 4-10-13

Document1
ATC Form No. 18a-version 2.1 (4/24/08)

ATC @ 1-800-733-3193

SYSTEM CALIBRATION ERROR DATA FOR INSTRUMENTAL ANALYSES

Client: Buckeye Location: River Rouge, MI Date: 3/21/13 Project No: 13011

Calibration Gas: CO in N_2 Cylinder No.: SX-17361 Exp. Date: 5/13/15 Cylinder Pressure (PSI): 1900

US EPA Method: 10 Analyzer ID: CAI-ZRH Was Instrument stable prior to beginning calibration? YES

Initial Analyzer Direct Calibration

Range	Dilution Target Level (ppm or %)	Instrument Response (ppm or %)	Difference (ppm or %)	Allowable Difference (ppm or %)	Specification
Low Range (Zero)	0	0	0	20	± 2% of Span
Mid Range	500	501	1	20	± 2% of Span-3a, 6c, 7e, 10
High Range (Span)	1000	1004	4	20	± 2% of Span-3a, 6c, 7e, 10

Initial and Post System Bias and Drift Checks

	Run Time (24 Hour Clock)	Direct Response (ppm or %)		System Response (ppm or %)		System Bias (ppm or %)		System Bias (percent error)		Calibration Drift (ppm or %)		Calibration Drift (percent error)	
		Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale	Zero	Midscale
Pre	0609	0	501	1	503	1	2	0.20	0.40				
Run 1	1253	0	501	0	503	0	2	0	0.40	1	0	0.20	0
Run 2													
Run 3													
Run 4													
Run 5													

Specification - System Bias: must be within ± 5% of actual gas value; Calibration Drift: must be within ± 3% of span of previous System Response

Field Notes (record system response time here): 15s RESPONSE

QA/QC Check

Completeness	Legibility	Accuracy	Specifications	Reasonableness
✓	✓	✓	✓	✓

Technician (Signature/Date): 3/21/13

Project Manager (Signature/Date): W. Stewart Meadows 4-10-13

ANALYTICAL TESTING CONSULTANTS, INC.
(800) 733-3193

VAPOR COMBUSTION UNIT (VCU)
LEAK CHECK FORM

CLIENT Buckeye Terminals EQUIPMENT TESTED Vapor Line

LOCATION River Rouge, MI TEST DATE 3-21-13

TECHNICIAN SM INSTRUMENT USED Mini Rae

ATC Project No. P-13011 Leak Check Standards 10,000 ppm or (500 ppm) (circle)

Truck Rack Components

	Leak Status						
Lane #	1	2	3	4	5	6	7
Flexible Vapor Hose	OK	OK	OK	OK	OK	OK	OK
Vapor Hose/Vapor Line Connections	OK	OK	OK	OK	OK	OK	OK
Vapor Line Check Valve (s)	OK	OK	OK	OK	OK	OK	OK
Other							

Vapor Line Components

	Leak Status
Flanged Connections	OK
Pressure/Vacuum Relief Valve(s)	OK
Flame Arrestor Connections	OK
Gauge/Device Penetrations	OK
Other	

Vapor Combustion Unit Components

	Leak Status
Vapor Line Flame Arrestor Connections	OK
Vapor Line Pressure Gauge Penetrations	OK
Hydro-seal Connections	OK
Other	

Test Equipment Components

	Leak Status
VCU Test Connections	OK
Turbine Meter Connections	OK
Other	

Leaks should be recorded in appropriate levels. For 40 CFR 60 Subpart XX tests, 10,000 ppm as methane. For 40 CFR 63 Subpart R and 40 CFR 63 Subpart BBBBBB, 500 ppm as methane.

ANALYTICAL TESTING CONSULTANTS, INC.

KANNAPOLIS, N.C.
1-800-733-3193

METHOD 21 INSTRUMENT CALIBRATION DATA

DATE 3/21/13 ANALYST CB

CLIENT Buckeye SOURCE Vapor Lines

LOCATION River Rouge, MI INSTRUMENT(S) Micro FID

ATC Project No. 13011

Initial Calibration		Time Conducted 0423	
CAL. GAS	ACTUAL CONCENTRATION	INSTRUMENT READING	% ERROR
ZERO	-0-	0	0
SPAN GAS	10,080 PPM CH_4 or ~~507 PPM~~ (circled) Please circle the appropriate gas	509	0.39

Final Calibration		Time Conducted 1337	
CAL. GAS	ACTUAL CONCENTRATION	INSTRUMENT READING	% ERROR
ZERO	-0-	1	0.19
SPAN GAS	10,080 PPM or ~~507 PPM CH_4~~ (circled) Please circle the appropriate gas	505	0.39

allowable post test drift = ≤10%

ATC Form 28-Method 21 Calibration Version 2.0 January 2005

ANALYTICAL TESTING CONSULTANTS, INC.

KANNAPOLIS, N.C.
1-800-733-3193

METHOD 21 INSTRUMENT CALIBRATION DATA

DATE 3/21/13 ANALYST CB

CLIENT Buckeye SOURCE Vapor Lines

LOCATION River Rouge, MI INSTRUMENT(S) Micro FID

ATC Project No. 13011

Initial Calibration		Time Conducted 0451	
CAL. GAS	ACTUAL CONCENTRATION	INSTRUMENT READING	% ERROR
ZERO	-0-	2	0.02
SPAN GAS	10,080 PPM CH_4 or 507 PPM Please circle the appropriate gas	10076	0.04

Final Calibration		Time Conducted 1320	
CAL. GAS	ACTUAL CONCENTRATION	INSTRUMENT READING	% ERROR
ZERO	-0-	4	0.04
SPAN GAS	10,080 PPM or 507 PPM CH_4 Please circle the appropriate gas	10084	0.04

allowable post test drift = ≤10%

ATC Form 28-Method 21 Calibration Version 2.0 January 2005

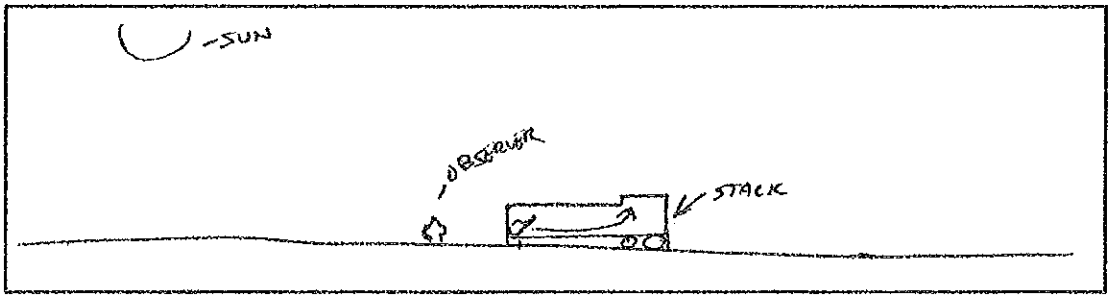
ATC Analytical Testing Consultants, Inc.

Fugitive or Smoke Emission Inspection
Outdoor Location

Company BUCKEYE
Location RIVER ROUGE, MI
Project No. 13011
Observer LB
Affiliation ATC
Date 3/21/13

Sky Conditions SCT CLDS
Wind Direction SSW
Precipitation 0
Wind Speed 5 MPH
Industry BULK GASOLINE TERMINAL
Process Unit VCU (BOTTOM)

Sketch process unit: indicate observer position relative to source and sun; indicate potential emissions points and/or actual emissions points.



OBSERVATIONS	Clock Time	Observation period duration, min:sec	Accumulated emission time, min:sec
Begin observation	0720 - 0750	30 MIN	0
	0830 - 0850	20 MIN	0
	0910 - 0930	20 MIN	0
	0950 - 1000	10 MIN	0
	1020 - 1040	20 MIN	0
	1100 - 1120	20 MIN	0
End observation			

Figure 22-1

QA/QC Checks ✓ Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness

Signatures: Technician (signature/date) 3/21/13 Project Manager (signature/date) W. Steward Woodley 4-10-13

ATC Form 10B-Method 22 Outdoor Fugitive Smoke Emission observations version 2.1 July 2007

ATC @ (800) 733-3193

TEST PROTOCOL FOR

BUCKEYE PARTNERS, LP

BUCKEYE PARTNERS, L.P.

205 MARION AVENUE
RIVER ROUGE, MICHIGAN 48218
(313) 842-2114 Plant Phone Number
Air Permit No. MI-ROP-B2987-2008

Prepared by:

ATC

W. Stewart Meadows
Issue Date:
February 11, 2013

Project # P-13004

PADEP Reg. No. 68-674

Accreditation Limited to LELAP Scope

Louisiana Environmental Lab Accreditation Program
LELAP
Certificate No. 04044

ANALYTICAL TESTING CONSULTANTS, INC.
1630 Dale Earnhardt Blvd
Kannapolis, NC 28083
(704) 932-3193 phone
(704) 932-0570 fax
(800) 733-3193 toll-free
corp@atc-net.net e-mail
www.atc-net.net home page

TABLE OF CONTENTS

ANALYTICAL TESTING CONSULTANTS, INC.
SPECIALISTS IN FIELD DATA COLLECTION

February 11, 2013

Mr. Terry Wright
Michigan DEQ
Division of Air Pollution Control
525 West Allegan Street
PO Box 30473
Lansing, MI 48909-7973

Dear Mr. Wright:

This is to inform your office that ANALYTICAL TESTING CONSULTANTS, INC. has scheduled a portable Vapor Combustor Unit (VCU) performance test at the location listed below. This testing is expected to demonstrate compliance with the permitted hydrocarbon emission limit of 10 mg/l. You and/or members of your staff are invited to witness part or all of the testing.

TEST SITE:	Buckeye Partners, LP Bulk Petroleum Terminal River Rouge, MI
TEST METHODS:	US EPA Methods 2A, 2B, 10, 21, 25A, 25B, 205, 40CFR60.503, subpart XX and 40CFR63, Subpart BBBBBB
TEST DATE:	Thursday, March 21, 2013
TEST TIME:	Begin app. 6:00 AM, local time
TEST TEAM LEADER:	Mr. Stewart Meadows
CONTACT INDIVIDUAL:	Mr. Alan Pyne Terminal Manager (313) 842-2114 Plant Phone Number

Sincerely,

W. Stewart Meadows

W. Stewart Meadows
Senior Project Manager

PROTOCOL FOR PROPOSED TESTING

This package will outline the testing protocol for compliance emissions testing at Buckeye Partners, LP bulk storage/loading terminal in River Rouge, MI. Please call if you have any questions regarding the information contained herein. We anticipate no changes to existing EPA methodology to accomplish this testing.

I. Methodology

A. US EPA METHOD 2A-Direct Measurement of gas volume through pipes and small ducts (Inlet to combustor)

This method applies to the measurement of gas flow rates in pipes and small ducts, either in-line or at exhaust positions, within the temperature range of 0 to 50°C.

A gas volume meter is used to measure exhaust gas volume directly. Temperature and pressure measurements are made to correct the volume to standard conditions. ATC will utilize an 8" in-line Rockwell Turbo-meter, model # T-60 (serial # 810555). The turbine has a working operating temperature range of -40°F to 165°F with a maximum working pressure of 175 PSI and is capable of measuring up to 60,000 cubic feet per hour with a sensitivity of 0.1 cubic feet.

Flow from the loading rack will be funneled into the Rockwell turbo-meter via connection to blind test flanges in the inlet vapor line from the loading rack. The turbo-meter will then be placed in-line using two PVC elbows and eight-inch hoses constructed of a polypropylene type material. All connections will be leak tested via US EPA method 21 and a soap bubble solution.

Taps for static pressure, temperature, and concentration determinations are located immediately prior to the meter. These determinations, along with inlet volumetric airflow, will be electronically conveyed to a data acquisition system consisting of a Pace Scientific XR5-SE 50mv data logger, a laptop computer with software package.

B. US EPA METHOD 2B- Determination of Exhaust Gas Volume Flow rate from Gasoline Vapor Incinerators (Exhaust of Combustor)

This method applies to the measurement of exhaust volume flow rate from incinerators that process gasoline vapors consisting primarily of alkanes, alkenes, and/or arenes (aromatic hydrocarbons). It is assumed that the amount of auxiliary fuel is negligible.

The incinerator exhaust flow rate is determined by carbon balance, inlet organic carbon concentration and volumetric inlet measurements. Organic carbon, carbon dioxide (CO_2), and carbon monoxide (CO) concentrations are measured at the outlet. The exhaust gas volume is calculated as follows:

PROTOCOL FOR PROPOSED TESTING
(continued)

$$V_{es} = V_{is} \frac{K_i(HC_i)}{K_e(HC_e) + [(CO_2)_e - (CO_2)_a] + CO_e}$$

where:

CO_{2e}	=	mean exhaust concentration of carbon dioxide for i_{th} interval.
CO_{2a}	=	measured ambient concentration of CO_2 (or may be assumed to be 300 ppm)
CO_e	=	mean exhaust concentration of carbon monoxide for i_{th} interval.
HC_e	=	mean exhaust organic concentration as defined by calibration gas, e.g propane.
HC_i	=	mean inlet organic concentration as defined by calibration gas, e.g. propane.
V_{is}	=	measured inlet gas volume, m^3.
V_{es}	=	calculated exhaust gas volume, m^3.
$K_{e\ or\ I}$	=	Hydrocarbon calibration gas factor, propane=3.

C. US EPA METHOD 10- Determination of Carbon Monoxide Emissions from Stationary Sources

An integrated or continuous gas sample is extracted from the vapor stream exhaust and analyzed for carbon monoxide (CO) content using a California Analytical ZRH combination CO/CO_2 analyzer (pictured below). EPA method 10 is also cited in method 2b for the measurement of carbon dioxide. CO_2 will be logged in volume percent; CO in volume ppmv.

The analytical principal of the both detectors is non-dispersive infrared. Sampling line will convey the stack gas down to the trailer and through a gas conditioning system to remove moisture (non-VOC analyzers) prior to entering the analyzer.

D. US EPA METHOD 21-Determination of Volatile Organic Compound Leaks

All above ground portions of the vapor collection system will be leak tested, as much as feasible, with a MicroFID meter calibrated using hydrocarbon-free air and an EPA protocol mixture of ~500 ppm methane in air to determine any potential source of leaks. The loading rack connections and all flanges, seals and flame arrestors will be checked prior to testing while a tanker is loading to determine compliance with the 40 CFR 63, Subpart BBBBBB leak detection level of 500 ppm. The FID will then be re-calibrated with methane (~10,000 ppm), or 20% LEL. Therefore, by the method's definition, a leak will be any reading above 20% LEL. ***Sight, sound and smell will***

PROTOCOL FOR PROPOSED TESTING
(continued)

also be used in evaluating potential sources of leaks of tankers during the compliance test. If a tanker is suspected of leaking, then the tanker will be more closely checked using the FID. Vapor-tight certification sticker numbers will be recorded for all loading tankers in lieu of actual Method 21 leak checks. This position is supported by EPA control document 0000085 entitled "Conducting Method 21 during Performance Tests".

E. US EPA METHOD 25A- DETERMINATION OF TOTAL GASEOUS ORGANIC CONCENTRATION USING A FLAME IONIZATION ANALYZER (Exhaust of Combustor)

ATC will utilize a California Analytical model 300HFID to measure the hydrocarbon emissions from the exhaust in parts per million by volume (ppmv). Heated sample line will be utilized to transport the sample from the stack directly to the analyzer. The analytical principle is flame ionization detection (FID). The minimum detection level is 0.1 ppm (as methane) in an air matrix and has a sensitivity of 0.1 ppm methane on a 0-100 scale. Resolution on the low scale is 0.1 ppm; on ranges of 0-1,000 and 0-10,000 ppm, the resolution is 1.0 ppm. Sample flow rate is approximately 2.0 liters per minute.

F. US EPA METHOD 25B- Determination of Total Gaseous Organic Concentration Using a Non-Dispersive Infrared Analyzer (Inlet to Combustor)

US EPA method 25b differs from method 25a in analytical principle only. All other definitions and data quality objectives are unchanged. ATC will utilize a CAI Model ZRE on the inlet to the combustor calibrated to a range of 0-65% propane (compared to exhaust ranges of 0-500 ppm propane). Please refer to the table below for analyzer specifics and ranges.

TABLE I-ANALYZER INFORMATION

USEPA METHOD	MODEL #	ANALYTICAL PRINCIPAL	ESTIMATED OPERATING RANGE	MINIMUM DETECT
10, CO_2	CAI-ZRH	NON-DISPERSIVE INFRARED	0-20%	0.1%
10, CO	CAI ZRH	GAS FILTER WHEEL CORRELATION	0-1,000 PPM	0.1 PPM
25A, VOC PPM OUT	CAI 300HFID	HEATED FLAME IONIZATION	0-1,000 PPM	1.0 PPM
25B, VOC % IN	CAI NDIR	NON-DISPERSIVE INFRARED	0-65%	0.1%

PROTOCOL FOR PROPOSED TESTING
(continued)

G. US EPA Method 205-Verification of Gas Dilution Systems for Field Instrument Calibrations

Method 205 utilizes a **pre-calibrated** analyzer (ATC employs the CAI model ZRH), a 2020 Environics Gas Dilution system, a protocol cylinder of ~19.5% CO_2 and UHP nitrogen. Following the procedures of US EPA method 3a, the ZRH will be calibrated utilizing protocol gases of ~19.5% and 10.50% carbon dioxide in nitrogen concentrations (or similar) and UHP nitrogen for zero.

Following successful calibration, US EPA method 205 will be performed in the following manner. A mid-level audit gas (10.50%) will be injected into the analyzer in triplicate and must be within 2% precision and accuracy. Average errors will be reported. Two dilution levels will then be performed 10% and 5%. These will be injected into the analyzer in triplicate, one gas at a time, and the responses recorded, which must also be within 2% precision and accuracy. Once the dilution system has been verified, the remainder of the instruments will be calibrated utilizing the Environics and an appropriate US EPA protocol gas.

H. GENERAL PROCEDURES

Testing will begin at approximately 0600 and continue for a minimum of six hours; a minimum of 300,000 liters (80,000 gallons) of countable gasoline will be loaded during this time period. Diesel fuel is not counted.

Any truck found to be leaking (10,000 ppm as methane, as confirmed via the MicroFid) will not be counted. Loading rack back-pressures will be monitored utilizing a slack tube manometer attached to the vapor line at the connection point on the tankers. Span and zero drift checks will be conducted as loading permits.

Calculation of Emission Rates

A Pace Scientific XR5 data logger will be utilized for collection of pertinent data. The XR5 data logger is a microprocessor based data acquisition system designed specifically to acquire, process, store, and telemeter environmental data.

PROTOCOL FOR PROPOSED TESTING
(continued)

Sensors associated with the data acquisition system continuously collect data for the following parameters: pressure, temperature, and flow, VOC inlet in volume percent, VOC outlet in volume ppm, CO outlet in volume ppm and CO_2 outlet in volume percent. This data is presented in one minute intervals and stored in a .TXT file. At the conclusion of testing, the text file will be linked to an EXCEL spreadsheet. The spreadsheet will then average the data in five minute test intervals. Equation #2 from the *CALCULATION FORMULAE* will be utilized in calculating mass at each test interval. After all test intervals are calculated, propane mass for the entire six hour (or appropriate length) time period will be calculated by a summation of all of the test intervals. This value is divided by the total terminal throughput at the rack (as expressed in liters) of all non-leaking tankers, thus yielding mg/l.

Presentation of Raw Data

A complete raw data package will be included in the appendix to the report.

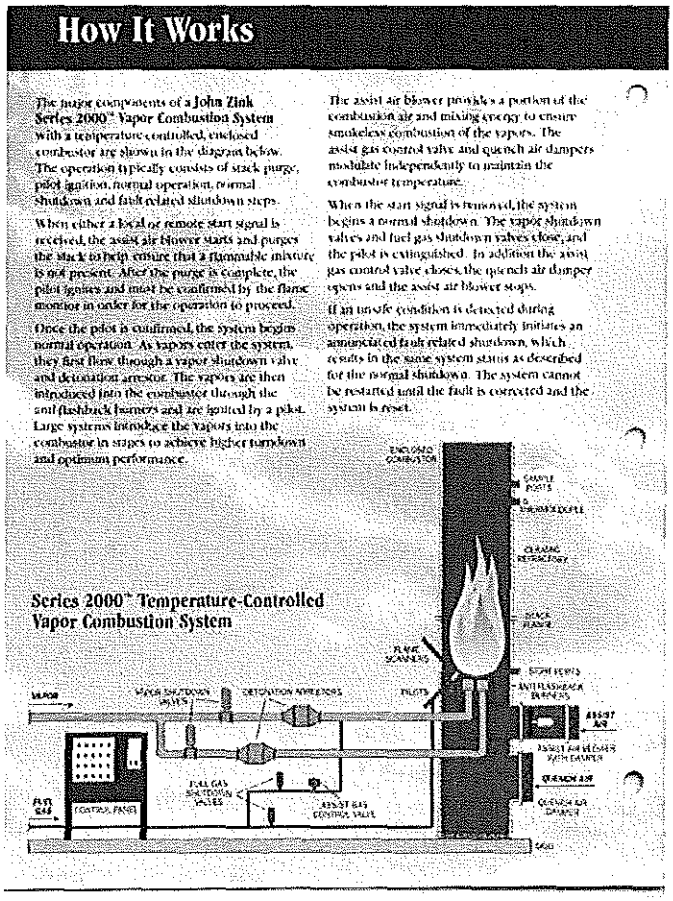
TERMINAL SPECIFIC INFORMATION

Buckeye Partners, LP owns and operates an existing bulk fuels storage/loading facility located at 205 Marion Avenue, River Rouge, MI 48218 in conformity with the conditions of permit no. MI-ROP-B2987-2008.

The facility operates a single loading rack with seven loading bays that pump three grades of gasoline and various distillates.

Loading may only be performed on vapor-tight tanker trucks. Trucks must display a current sticker demonstrating that the truck is in compliance with the pressure testing and equipment requirements.

Vapors from the loading process are displaced and captured by the vapor control system and routed to the air pollution control device (APCD), a portable vapor combustion unit. VOC emissions from the vapor combustor are limited to less than 10 milligrams per liter. The basis for testing is to show compliance with this standard.



As depicted in the color brochure to the left, a test port is located approximately five feet from the top of exhaust stack. The stack diameter is eight feet.

Vapor processing is conducted as the vapors are received, there is no vapor holding tank, therefore, the operation is batch oriented (each tanker representing a batch) with each batch lasting approximately fifteen minutes.

The Vapor Combustion Unit destroys all hazardous wastes. Air flows from the exhaust stack in the range of 240-500 std m^3/min.

TEST REPORT OUTLINE

Cover

Introduction
- Methodology Employed
- Certification of Results

Executive Summary

Conclusions

Recommendations

Description of Test

Calculations
- Exhaust Volume, Emission Rate, and Efficiency Calculations
- Calculation Formulae

Appendix
- Test Protocol
- Raw Data from ATC CEM
- Loading Rack Information Data Sheets
- Terminal Verification of Volume
- System Calibration Errors for Protocol Gases
- Method 205 Dilution System Verification
- System Calibration Errors for Step-down Calibrations
- Method 21 Calibration Data
- VCU Leak Check Results
- Calibration Data

Executive Summary

Bulk Gasoline Loading Terminal Emission Test

Test Date		
Terminal Owner (company)		
Terminal Name		
Physical Address		
Location (City, State)		
Type of Vapor Control Unit		
Vapor Control Make & Model		
Number of Loading Bays		
Applicable Permits/Regulations	40 CFR 60, Subpart XX	
Emissions Test Methods		
Inlet Vapor Flow Rate	EPA Method 2a	
VOC Inlet Concentration	EPA Method 25b	
Exhaust Flow Rate	EPA Method 2b	
VOC Exhaust Concentration	EPA Method 25a	
Carbon Dioxide Exhaust Concentration	EPA Method 10	
Carbon Monoxide Exhaust Concentration	EPA Method 10	
Vapor Leak Test	EPA Method 21	
Other Measurements		
Product Loading Data	**Observations**	**Criteria**
Start Test (time)	6:00 AM	
End Test (time)	12:00	
Total Test Duration (time)	6:00	≥ 6 hours
Total Fuels Loaded (gross gallons)		
Total Gasolines Loaded (gross gallons)		> 80,000 gallons
% Distillate Loaded	#DIV/0!	
VOC Emission Test Results	**Observations**	**Limits**
Vapor Control Leak Check		< 500 ppm as CH_4
Maximum Loading Pressure ("H2O)		< 18 "H_2O
Local Station Pressure ("Hg)		
Average Inlet Concentration (% as C3)	#DIV/0!	
Inlet Vapor VOC (lbs)	#DIV/0!	
Average Exhaust CO2 Concentration (ppm)	#DIV/0!	
Average Exhaust CO Concentration (ppm)	#DIV/0!	
Average Exhaust VOC Concentration (ppm as C3)	#DIV/0!	
Total VOC Emissions (lbs)	#DIV/0!	
VOC Emission Rate (lbs/hr)	#DIV/0!	
VOC Emission Rate (mg/liter of all fuels loaded)	#DIV/0!	
VOC Emission Rate (mg/liter of gasoline loaded)	#DIV/0!	< 10 mg/liter
Calculated Destruction Efficiency (VCU)	#DIV/0!	

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS

1.

$$V_{E_S} = \frac{\frac{293.16^{o}K}{760mmHg} xGx \frac{m^3}{35.315ft^3} xV_m x\left(P_g + P_b\right)}{T_m}$$

Where:

V_{es}	=	Standard volume of air-vapor mixture, m^3 (cubic meters)
G	=	Gas meter coefficient, unit less
V_m	=	Net gas meter volume, ft^3 (cubic feet)
P_g	=	Static pressure, mm Hg (millimeters mercury)
P_b	=	Atmospheric pressure, mm Hg (millimeters mercury)
T_m	=	Absolute temperature at meter, °K (degrees Kelvin)

2.

$$M_{e_i} = \frac{KxV_{es_i} xC_{e_i}}{1{,}000{,}000}$$

Where:

Me_i	=	mass of emissions for interval i, milligrams
K	=	1,830,000 mg/scm (density of propane)
Ves_i	=	standard metered volume for interval i (from equation 1), m^3 (Cubic meters)
Ce_i	=	exhaust concentration for interval i, in ppmv of propane (multiply by 10,000 if expressed in percent)
1,000,000 =		ppm per unity

3.

$$E = \frac{\sum_{1}^{n} M_{ei}}{L}$$

Where:

E	=	emission rate, mg VOC/L
L	=	liters of countable gasoline loaded during test period
n	=	number of test intervals, unit less

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS (continued)

4.

$$V_{e_s} = V_{i_s}\left[\frac{(KxHC_i)}{(KxHC_e)+CO_{2_e}+CO_e-300}\right]$$

Where:

CO_{2e} = mean exhaust concentration of carbon dioxide for i_{th} interval.
CO_{2a} = measured ambient concentration of CO_2 (or may be assumed to be 300 ppm)
CO_e = mean exhaust concentration of carbon monoxide for i_{th} interval.
HC_e = mean exhaust organic concentration as defined by calibration gas, E.g. propane.
HC_i = mean inlet organic concentration as defined by calibration gas, e.g. propane.
V_{is} = measured inlet gas volume, m^3 (cubic meters).
V_{es} = calculated exhaust gas volume, m^3 (cubic meters).
$K_{e\ or\ I}$ = Hydrocarbon calibration gas factor, propane=3.

5.

$$\overline{d} = \frac{1}{n}\sum_{i=1}^{n} d_i$$

Where:

d = Arithmetic mean of the difference of a data set
n = number of data points
$\sum_{i=1}^{n} d_i$ = Algebraic summation of the individual differences, d_i

6.

$$S_d = \sqrt{\frac{\sum_{i=1}^{n} d_{i^2} - \left[\frac{\left(\sum_{i=1}^{n} d_i\right)^2}{n}\right]}{n-1}}$$

Where:

S_d = standard deviation

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS (continued)

7.

$$cc = t_{0.975}\frac{S_d}{\sqrt{n}}$$

Where:

$t_{0.975}$ = t-value from Table 2-1 of PS-2.

8.

$$RA = \frac{|\bar{d}| + |cc|}{\bar{RM}} x100$$

Where:

$\bar{d}$ = absolute value of the mean differences from equation 5

cc = absolute value of the confidence coefficient from equation 7.

RM = average reference method value. In cases where the average emissions for the test are less than 50% of the applicable standard, substitute the emission standard value in the denominator of Equation 8. In all other cases, use RM.

RA = absolute mean difference between the gas concentration or emission rate determined by the reference method (RM), plus the 2.5% error confidence coefficient of a series of tests, divided by the mean of the RM tests or the applicable emission limit.

9.

$$H_T = K\sum_{i=1}^{n} C_i H_i$$

H_t = Net heating value of the sample. MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

K = Constant, 1.740×10^{-7} (1/ppm)(g mole/scm) (MJ/kcal), where the standard temperature for (g mole/scm) is 20 °C.

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994).

CALCULATION FORMULAE FOR BULK STORAGE TERMINALS (concluded)

H_i = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 if published values are not available or can not be calculated.

10.

$$V_F = \frac{\left(\frac{VFR_{scm}}{3600}\right)}{A_{Fn}}$$

Where:

V_f = velocity of the flare, meters per second
VFR_{scm} = Volumetric flow rate, standard cubic meters per hour
3600 = Conversion from hours to seconds
Afn = Unobstructed cross-sectional area of the flare tip, m^2.

11.

$$V_{\max} = 8.706 + 0.7084\left(H_T\right)$$

Where:

V_{max} = maximum permitted velocity, m/sec
8.706 = Constant
0.7084 = Constant
H_T = The net heating value as determined in equation 10.

Report on Calibration of Field Barometers

The following barometers were calibrated:

By: Larry Kirkman
Date: Feb 1, 2013

Barometer ID	Pre-Calibration Reading	Adjustment Needed
ATC #1	29.39	0.03
ATC #2	29.51	0.09
ATC #3	29.58	0.16
ATC #4	29.40	0.02

Barometer adjusted to reading obtained from National Weather Service website. Reading adjusted for elevation of 835 ft.

National Weather Service Barometer reading, actual =	30.33
Elevation Adjustment	-0.910
Adjusted Station Pressure for correction of ATC Barometers	29.42

Cherokee Instruments, Inc

FLOW CONTROLLER CALIBRATION SHEET

Description: MFC-1 Size: 10 SLM K-factor: 1.0

Model: Tylan FC-280AV
Serial Number: AW9404312
Range: 10000 cc/min
Calibration Gas: N2

Barometric 29.8 in. Hg.
Calibration Temperature: 75 F
Positioning: HESD
Conv. Factor: 1.0

This flow controller was calibrated using a CM2-C1 a NIST traceable Primary Flow Standard Calibration System. This calibration is referenced to dry air at a temperature of 32 degrees F and a pressure of 30.0 in.HG (760 Torr).

	Bench Flow (cc/min)	Inst. Flow (cc/min)	% Difference
5%	495	498	0.6
10%	1000	999	-0.1
20%	2000	1999	-0.1
30%	3000	2999	0.0
40%	4000	3999	0.0
50%	5000	5001	0.0
60%	6000	5998	0.0
70%	7000	6998	0.0
80%	8000	7996	-0.1
90%	9000	8996	0.0
100%	10000	9993	-0.1

Verified by: Jim Kreeger Date: 3/30/2012

Cherokee Instruments, Inc

FLOW CONTROLLER CALIBRATION SHEET

Description: MFC-2 Size: 10 SLM K-factor: 1.0

Model: Hastings EFC-202-10L
Serial Number: 2278700001
Range: 10000 cc/min
Calibration Gas: N2

Barometric 29.8 in. Hg.
Calibration Temperature: 75 F
Positioning: HESD
Conv. Factor: 1.0

This flow controller was calibrated using a CM2-C1 a NIST traceable Primary Flow Standard Calibration System. This calibration is referenced to dry air at a temperature of 32 degrees F and a pressure of 30.0 in.HG (760 Torr).

	Bench Flow (cc/min)	Inst Flow (cc/min)	% Difference
5%	490	491	0.2
10%	1000	997	-0.3
20%	1985	1997	0.6
30%	2990	2997	0.2
40%	3995	3995	0.0
50%	4995	4994	0.0
60%	5995	5994	0.0
70%	6995	6994	0.0
80%	7990	7993	0.0
90%	8995	8992	0.0
100%	9980	9979	0.0

Verified by: Jim Kreeger Date: 3/30/2012

Cherokee Instruments, Inc
FLOW CONTROLLER CALIBRATION SHEET

Description: MFC -3 Size: 1000 K-factor: 1.0

Model: Tylan	FC280 SAV	Barometric	29.9 in. Hg.
Serial Number:	AW9603288	Calibration Temperature:	75F
Range: 1000	cc/min	Positioning:	HESD
Calibration Gas:	N2	Conv. Factor:	1.0

This flow controller was calibrated using a CM2-C1 a NIST traceable Primary Flow Standard Calibration System. This calibration is referenced to dry air at a temperature of 32 degrees F and a pressure of 29.92 in.HG (760 Torr).

	Bench Flow (cc/min)	Inst Flow (cc/min)	% Difference
5%	49	49	0.0
10%	98.5	99	0.5
20%	199.5	200	0.3
30%	300	300.5	0.2
40%	399.5	400	0.1
50%	499	500	0.2
60%	599.5	600	0.1
70%	700	701	0.1
80%	801	801	0.0
90%	901	901.5	0.1
100%	1001	1002	0.1

Verified by: Jim Kreeger Date: 3/30/2012

Cherokee Instruments, Inc

FLOW CONTROLLER CALIBRATION SHEET

Description:MFC-5 Size: 10 SCCM K-factor: 1.0

Model:	Tylan FC-280AV	Barometric	29.8 in. Hg.
Serial Number:	AW9711212	Calibration Temperature:	75F
Range:	10 SCCM	Positioning:	HESD
Calibration Gas:	N2	Conv. Factor:	1.0

This flow controller was calibrated using a CM2-C1 a NIST traceable Primary Flow Standard Calibration System. This calibration is referenced to dry air at a temperature of 32 degrees F and a pressure of 29.92 in.HG (760 Torr).

	Bench Flow (cc/min)	Inst Flow (cc/min)	% Difference
0%	0.50	0.49	0.0
10%	1.00	1.00	-0.1
20%	2.00	2.00	-0.2
30%	3.00	3.00	-0.1
40%	4.00	4.00	0.0
50%	5.00	4.99	-0.2
60%	6.00	5.99	-0.2
70%	7.00	6.99	-0.1
80%	7.95	7.99	0.5
90%	8.95	8.99	0.4
100%	9.95	9.99	0.4

Verified by: Jim Kreeger Date: 3/30/2012

8" Turbine Meter Post-test Calibration

Date:	*4/8/2013*
Technician:	*LB*
Turbine Meter Model No.:	Rockwell T-60 MK II
Turbine Meter Serial No.:	810555
Maximum Rated Flow (ft3/hr):	60,000
Propeller Anemometer	Extel-Model #047117
Wind Tunnel Cross Sectional Area (ft2)	0.3068
Barometric Pressure (inches Hg)	*29.24*

Test Run #1		Test Run #2		Test Run #3	
Average Temperature, oF	*80.7*	Average Temperature, oF	*83.5*	Average Temperature, oF	*85.2*
Static Pressure, inches H2O	*0.050*	Static Pressure, inches H2O	*0.060*	Static Pressure, inches H2O	*0.050*
Absolute Pressure, inches H2O	29.24	Absolute Pressure, inches H2O	29.24	Absolute Pressure, inches H2O	29.24
Wind Tunnel Velocity - Traverse point #1, ft/min	589	Wind Tunnel Velocity - Traverse point #1, ft/min	603	Wind Tunnel Velocity - Traverse point #1, ft/min	599
Traverse point #2, ft/min	580	Traverse point #2, ft/min	597	Traverse point #2, ft/min	593
Traverse point #3, ft/min	574	Traverse point #3, ft/min	581	Traverse point #3, ft/min	578
Traverse point #4, ft/min	561	Traverse point #4, ft/min	576	Traverse point #4, ft/min	569
Wind Tunnel Volumetric Flow Rate, SCF/hour	10,126	Wind Tunnel Volumetric Flow Rate, SCF/hour	10,306	Wind Tunnel Volumetric Flow Rate, SCF/hour	10,195
Percent of Rated Flow	16.88%	Percent of Rated Flow	17.18%	Percent of Rated Flow	16.99%
Turbine Meter Data		Turbine Meter Data		Turbine Meter Data	
Initial Turbine Meter Reading, ft3	*0*	Initial Turbine Meter Reading, ft3	*0*	Initial Turbine Meter Reading, ft3	*0*
Final Turbine Meter Reading, ft3	*5,543*	Final Turbine Meter Reading, ft3	*5,568*	Final Turbine Meter Reading, ft3	*5,567*
Time, minutes	*30*	Time, minutes	*30*	Time, minutes	*30*
Average Temperature, oF	*81.29*	Average Temperature, oF	*83.67*	Average Temperature, oF	*85.5*
Static Pressure, inches H2O	*0.18*	Static Pressure, inches H2O	*0.18*	Static Pressure, inches H2O	*0.17*
Turbine Meter Volumetric Flow Rate, ft3 @ STP	5,278	Turbine Meter Volumetric Flow Rate, ft3 @ STP	5,278	Turbine Meter Volumetric Flow Rate, ft3 @ STP	5,259
Tubine Meter Volumetric Flow Rate, std ft3/hr	10,555	Tubine Meter Volumetric Flow Rate, std ft3/hr	10,556	Tubine Motor Volumetric Flow Rate, std ft3/hr	10,519
Italicized Entries= data required					
Turbine Meter Coefficient:	0.958	Turbine Meter Coefficient:	0.976	Turbine Meter Coefficient:	0.968

Average Turbine Meter Coefficient for Flow: 0.967

What is primary Turbine Meter Coefficient?: 1.001

Is post-test calibration within 5% of primary? **Acceptable** (40CFR60, App. A, Method 2A section 10.1.8)

QA/QC Check

Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked by: 4/8/2013 Personnel (Signature/Date)

W. Stewart Meades 4-10-13 Team Leader (Signature/Date)

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MATHESON
ask. . .The Gas Professionals™
1700 Scepter Rd
Waverly, TN 37185
931-296-3357

Certificate of Analysis - EPA Protocol Mixtures

Customer:	Analytical Testing Consultants 1630 Dale Earnhardt Blvd. Kannapolis, NC 28083		Customer PO#:	ATC2009TRIGAS1
		Protocol:	Reference #:	Lot#:
Cylinder Number:	SX17361	G2	598915-01	9302601916
Cylinder Pressure:	1900psig	DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 150 PSIG		
Last Analysis Date:	5/3/2012			
Expiration Date:	5/3/2015			

		REPLICATE RESPONSES		
		Date: 4/26/2012	Date:	5/3/2012
Component:	Carbon Monoxide	5990.4		5996.0
		6029.9		6008.0
Certified Conc:	6009ppm +/- 1% REL	6001.4		6026.8

BALANCE GAS: Nitrogen

REFERENCE STANDARDS:

Component:	Carbon Monoxide
Reference Standard:	GMIS
Cylinder #:	EB0001777
Concentration:	2416ppm
Exp Date:	6/28/2012

CERTIFICATION INSTRUMENTS

Component:	Carbon Monoxide
Make/Model:	Antaris IGS Analyzer
Serial Number:	AKS1000151
Measurement Principle:	FTIR
Last Calibration:	4/25/2012

Notes:

This Certification was performed according to EPA Traceability Protocol for Assay & Certification of Gaseous Calibration Standards September 1997, using procedure G1 and/or G2.

U.S. EPA Vendor ID No.: D52012: PGVP Participation Date: 1/1/2012: PGVP Renewal Date: 12/31/12

Analyst: Sarah Chavis
Sarah Chavis

Date: 5/3/2012

MATHESON
ask... The Gas Professionals™
1700 Scepter Rd
Waverly, TN 37185
931-296-3357

Certificate of Analysis - EPA Protocol Mixtures

Customer: Analytical Testing Consultants Inc.
1630 Dale Earnhardt Blvd.
Kannapolis, NC 28083

Customer PO#: ATC2009TRIGAS1

		Protocol:	Reference #:	Lot#:
Cylinder Number:	SX43677	G1	590646-3	9302601142
Cylinder Pressure:	1900psig			
Last Analysis Date:	2/14/2012			
Expiration Date:	2/14/2015			

DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 150 PSIG

REPLICATE RESPONSES

Component: Carbon Dioxide

Date: 2/14/2012

Certified Conc: 10.48% +/- 1% REL

10.49
10.49
10.47

BALANCE GAS: Nitrogen

REFERENCE STANDARDS:

Component: Carbon Dioxide
Reference Standard: SRM
Cylinder #: CAL016095
Concentration: 15.60%
Lot #: 9-C-18
Exp. Date: 6/2/2017

CERTIFICATION INSTRUMENTS

Component: Carbon Dioxide
Make/Model: Horiba VIA-510
Serial Number: 41679080021
Measurement Principle: NDIR
Last Calibration: 1/25/2012

Notes:

This Certification was performed according to EPA Traceability Protocol for Assay & Certification of Gaseous Calibration Standards September 1997, using procedure G1 and/or G2.

U.S. EPA Vendor ID No.: D52012 PGVP Participation Date: 01/01/12: PGVP Renewal Date: 12/31/12

Analyst: Rachel Davis
Rachel Davis

Date: 2/15/2012

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MATHESON TRI•GAS
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CERTIFICATE OF ANALYSIS - EPA PROTOCOL MIXTURE

1650 ENTERPRISE PKWY
TWINSBURG, OHIO 44087
215-648-4000

Customer: ANALYTICAL TESTING CONSULTANTS INC
Cylinder Number: SX-10515
Cylinder pressure: 2000 psig
Last Analysis date: 12/15/2010
Expiration Date: 12/15/13

Protocol:	Reference #	Lot #
G1	549883	109-96-21084

DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 150 PSIG

REPLICATE RESPONSES

Component:	Carbon Dioxide	Date: 12/15/2010	Date:
Certified Conc:	18.0% ± 1% REL	18.0%	
		18.0%	
		18.0%	

BALANCE GAS: Nitrogen

REFERENCE STANDARDS

Component:	Carbon Dioxide
SRM #:	SRM-2745
Sample #:	9-C-09
Cylinder #:	CAL-016099
Concentration:	15.633%

CERTIFICATION INSTRUMENTS

Component:	Carbon Dioxide
Make/Model:	Varian 3800 GC
Serial Number:	LR-92489
Measurement Principle:	TC, FID
Last Calibration:	12/15/2010

Notes: T149411

This certification was performed according to EPA Traceability Protocol for Assay & Certification of Gaseous Calibration Standards September 1997, using procedure G1 and/or G2.

Analyst SIGNATURE ON FILE Date 12/16/2010

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MATHESON TRI•GAS
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CERTIFICATE OF ANALYSIS - EPA PROTOCOL MIXTURE

1650 ENTERPRISE PKWY
TWINSBURG, OHIO 44087
215-648-4000

Customer: ANALYTICAL TESTING CONSULTANTS INC
Cylinder Number: SX-21463
Cylinder pressure: 1600 psig
Last Analysis date: 12/16/2010
Expiration Date: 12/16/13

Protocol:	Reference #	Lot #
G1	549883	109-96-21054

DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 150 PSIG

REPLICATE RESPONSES

Component :	Certified Conc:	Date: 12/16/2010	Date:
Propane	4902 PPM ± 1% REL	4900 PPM 4905 PPM 4904 PPM	

BALANCE GAS: Air

REFERENCE STANDARDS

Component:	Propane
SRM #:	SRM-2648a
Sample #:	105-C-23
Cylinder #:	XF-000272B
Concentration:	4927 ppm

CERTIFICATION INSTRUMENTS

Component:	Propane
Make/Model:	Varian 3800 GC
Serial Number:	LR-92489
Measurement Principle:	TC, FID
Last Calibration:	12/16/2010

Notes: T149411

This certification was performed according to EPA Traceability Protocol for Assay & Certification of Gaseous Calibration Standards September 1997, using procedure G1 and/or G2.

Analyst SIGNATURE ON FILE Date 12/16/2010

River Rouge Terminal
Prev. 12 Months Product Throughput
(Gallons)

LOADING RACK	May	June	July	August
Gasoline Products				
Regular	35,022,806	32,809,417	29,822,333	27,336,631
Premium	2,712,982	2,781,384	2,531,263	2,325,084
Ethanol	4,244,471	3,999,146	3,629,587	3,331,006
Monthly Gasoline Total	41,980,259	39,589,947	35,983,183	32,992,721
Distillate Products				
L/S Diesel #1	49,038	37,170	47,699	24,577
L/S Diesel #2	2,837,875	3,586,921	2,388,395	1,900,136
L/S Premium Diesel	0	-	-	-
Monthly Distillate Total	2,886,913	3,624,091	2,436,094	1,924,713
LOADRACK TOTALS	**44,867,172**	**43,214,038**	**38,419,277**	**34,917,434**

September	October	November	December	January - 2013	February
30,783,719	34,002,996	33,027,823	33,412,250	32,558,568	32,004,118
2,460,579	2,663,467	2,498,346	2,438,030	2,193,559	2,203,094
3,747,618	4,141,177	4,024,739	4,061,025	3,935,344	3,868,242
36,991,916	40,807,640	39,550,908	39,911,305	38,687,471	38,075,454
69,085	123,309	103,149	83,996	132,714	118,006
2,740,905	3,828,864	4,895,826	2,467,987	2,026,560	2,905,810
-	0	-	-	469,412	0
2,809,990	3,952,173	4,998,975	2,551,983	2,628,686	3,023,816
39,801,906	**44,759,813**	**44,549,883**	**42,463,288**	**41,316,157**	**41,099,270**

March	April	TOTAL
34,747,181	33,037,818	388,565,660
2,354,871	2,361,528	29,524,187
4,194,245	4,001,287	47,177,887
		-
41,296,297	39,400,633	465,267,734
64,536	58,709	911,988
2,952,668	3,507,433	36,039,380
0	0	-
		-
		-
3,017,204	3,566,142	36,951,368
44,313,501	**42,966,775**	502,688,514

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Emission Summary
Reporting Period (January 2012 to December 2012)

Distillate Tank Number	VOC Emissions tons	Tank Cleaning VOC Emissions tons	Roof Landings VOC Emissions tons	Total VOC Emissions tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethyl-benzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAP Emissions tons
13	0.3328	0.0000	0.0000	0.3328	0.0000	0.0072	0.0000	0.0006	0.0030	0.0003	0.0000	0.0003	0.0000	0.0000	0.0200	0.0097	0.0422
57	0.4569	0.0000	0.0000	0.4569	0.0000	0.0098	0.0000	0.0009	0.0041	0.0005	0.0000	0.0004	0.0001	0.0000	0.0274	0.0133	0.0579
56	0.0034	0.0000	0.0000	0.0034	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0001	0.0004
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Gasoline Ethanol Transmix Tank Number	VOC Emissions tons	Tank Cleaning VOC Emissions tons	Roof Landings VOC Emissions tons	Total VOC Emissions tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethyl-benzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAP Emissions tons
15	1.9194	0.0000	0.0000	1.9194	0.0183	0.0120	0.0000	0.0003	0.0012	0.0850	0.0058	0.0000	0.0000	0.0017	0.0162	0.0045	0.1449
17	3.4331	0.0000	0.3398	3.7729	0.0360	0.0236	0.0000	0.0006	0.0024	0.1670	0.0113	0.0000	0.0000	0.0033	0.0318	0.0089	0.2849
23	4.6760	0.0000	1.9473	6.6233	0.0631	0.0414	0.0000	0.0010	0.0042	0.2933	0.0199	0.0000	0.0000	0.0058	0.0558	0.0156	0.5002
12	2.5347	0.0000	2.2407	4.7753	0.0455	0.0299	0.0000	0.0007	0.0030	0.2114	0.0143	0.0000	0.0000	0.0042	0.0402	0.0112	0.3606
22	2.5786	0.0000	0.3449	2.9234	0.0279	0.0183	0.0000	0.0005	0.0018	0.1294	0.0088	0.0000	0.0000	0.0026	0.0246	0.0069	0.2208
20	4.6785	0.0000	2.1349	6.8133	0.0649	0.0426	0.0000	0.0011	0.0043	0.3017	0.0204	0.0000	0.0000	0.0060	0.0574	0.0160	0.5145
18	4.7801	0.0000	0.4958	5.2759	0.0503	0.0330	0.0000	0.0008	0.0033	0.2336	0.0158	0.0000	0.0000	0.0047	0.0444	0.0124	0.3984
16	0.4383	0.0000	0.0000	0.4383	0.0042	0.0027	0.0000	0.0001	0.0003	0.0194	0.0013	0.0000	0.0000	0.0004	0.0037	0.0010	0.0331
56	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Additives and Other Tanks Number	VOC Emissions tons	Tank Cleaning VOC Emissions tons	Roof Landings VOC Emissions tons	Total VOC Emissions tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethyl-benzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAP Emissions tons
93	0.0002	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
92	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
91	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
90	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
89	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
83	0.0003	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
83a	0.0003	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
79	0.0003	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0003	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
53	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Distillate/Crude Loading	VOC Emissions tons	Fugitive Emissions tons	Total VOC Emissions tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethyl-benzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAP Emissions tons
Truck Rack	0.0314	0.0000	0.0314	0.0001	0.0007	0.0000	0.0001	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0019	0.0009	0.0040

Gasoline Ethanol Transmix Loading	VOC Emissions tons	Fugitive Emissions tons	Total VOC Emissions tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethyl-benzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAP Emissions tons
Truck Rack	19.4026	17.4623	36.8649	0.3514	0.2305	0.0002	0.0058	0.0233	1.6322	0.1106	0.0002	0.0000	0.0325	0.3105	0.0866	2.7839

Other Activity	Total VOC Emissions tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethyl-benzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAP Emissions tons
Fugitives	0.7534	0.0072	0.0047	0.0000	0.0001	0.0005	0.0334	0.0023	0.0000	0.0000	0.0007	0.0063	0.0018	0.0569

	Source VOC Emissions	Tank Cleaning VOC Emissions	Roof Landings VOC Emissions	Total VOC Emissions	2,2,4-TMP	Benzene	Cresol	Cumene	Ethyl-benzene	Hexane	MTBE	Naphthalene	Phenol	Styrene	Toluene	Xylenes	HAP Emissions
TOTAL tons	63.4834	0.0000	7.5032	70.9866	0.6714	0.4565	0.0005	0.0126	0.0517	3.1072	0.2105	0.0010	0.0002	0.0619	0.6403	0.1890	5.4028

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Throughput Emissions
Reporting Period (January 2012 to December 2012)

Tank Operations Overview

Denatured Ethanol (5% Gas) - Default HAP Profile

Tank Name	Status[1]	Throughput Amount (gals)	VOC Emissions tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.000652 tons	Cumene (wt%) 0.01565 tons	Ethyl-benzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAP Emissions tons
16	Active	47,176,378	0.4383	0.0042	0.0027	0.0000	0.0001	0.0003	0.0194	0.0013	0.0000	0.0000	0.0004	0.0037	0.0010	0.0331
	Standing Losses		*0.3924*	*0.0037*	*0.0025*	*0.0000*	*0.0001*	*0.0002*	*0.0174*	*0.0012*	*0.0000*	*0.0000*	*0.0003*	*0.0033*	*0.0009*	*0.0296*
	Working Losses		*0.0459*	*0.0004*	*0.0003*	*0.0000*	*0.0000*	*0.0000*	*0.0020*	*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0004*	*0.0001*	*0.0035*

Diesel Additive - Default HAP Profile

Tank Name	Status[1]	Throughput Amount (gals)	VOC Emissions tons	2,2,4-TMP (wt%) 0 tons	Benzene (wt%) 0 tons	Cresol (wt%) 0 tons	Cumene (wt%) 0 tons	Ethyl-benzene (wt%) 1.26 tons	Hexane (wt%) 0 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0.00035 tons	Phenol (wt%) 0 tons	Styrene (wt%) 0 tons	Toluene (wt%) 0 tons	Xylenes (wt%) 3.8 tons	HAP Emissions tons
89	Active	487	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
90	Active	462	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
91	Active	2,427	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
92	Active	2,590	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
93	Active	7,345	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*

Distillate Fuel Oil No.2 - Default HAP Profile

Tank Name	Status[1]	Throughput Amount (gals)	VOC Emissions tons	2,2,4-TMP (wt%) 0.32695 tons	Benzene (wt%) 2.14899 tons	Cresol (wt%) 0.00381 tons	Cumene (wt%) 0.19394 tons	Ethyl-benzene (wt%) 0.89161 tons	Hexane (wt%) 0.1 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0.07957 tons	Phenol (wt%) 0.01388 tons	Styrene (wt%) 0 tons	Toluene (wt%) 6.003 tons	Xylenes (wt%) 2.91038 tons	HAP Emissions tons
13	Active	16,585,334	0.3328	0.0011	0.0072	0.0000	0.0006	0.0030	0.0003	0.0000	0.0003	0.0000	0.0000	0.0200	0.0097	0.0422
	Standing Losses		*0.2085*	*0.0007*	*0.0045*	*0.0000*	*0.0004*	*0.0019*	*0.0002*	*0.0000*	*0.0002*	*0.0000*	*0.0000*	*0.0125*	*0.0061*	*0.0264*
	Working Losses		*0.1243*	*0.0004*	*0.0027*	*0.0000*	*0.0002*	*0.0011*	*0.0001*	*0.0000*	*0.0001*	*0.0000*	*0.0000*	*0.0075*	*0.0036*	*0.0158*
56	Active	911,988	0.0034	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0001	0.0004
	Standing Losses		*0.0020*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0001*	*0.0001*	*0.0003*
	Working Losses		*0.0014*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0001*	*0.0000*	*0.0002*
57	Active	37,860,108	0.4569	0.0015	0.0098	0.0000	0.0009	0.0041	0.0005	0.0000	0.0004	0.0001	0.0000	0.0274	0.0133	0.0579
	Standing Losses		*0.1920*	*0.0006*	*0.0041*	*0.0000*	*0.0004*	*0.0017*	*0.0002*	*0.0000*	*0.0002*	*0.0000*	*0.0000*	*0.0115*	*0.0056*	*0.0243*

Working Losses	*0.2649*	*0.0009*	*0.0057*	*0.0000*	*0.0005*	*0.0024*	*0.0003*	*0.0000*	*0.0002*	*0.0000*	*0.0000*	*0.0159*	*0.0077*	*0.0336*

Gasoline - Default HAP Profile

Tank Name	Status[1]	Throughput Amount (gals)	VOC Emissions tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.000652 tons	Cumene (wt%) 0.01565 tons	Ethyl-benzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAP Emissions tons
12	Active	156,366,475	2.5347	0.0242	0.0159	0.0000	0.0004	0.0016	0.1122	0.0076	0.0000	0.0000	0.0022	0.0213	0.0060	0.1914
	Standing Losses		*2.4011*	*0.0229*	*0.0150*	*0.0000*	*0.0004*	*0.0015*	*0.1063*	*0.0072*	*0.0000*	*0.0000*	*0.0021*	*0.0202*	*0.0056*	*0.1813*
	Working Losses		*0.1336*	*0.0013*	*0.0008*	*0.0000*	*0.0000*	*0.0001*	*0.0059*	*0.0004*	*0.0000*	*0.0000*	*0.0001*	*0.0011*	*0.0003*	*0.0101*
17	Active	29,534,425	3.4331	0.0327	0.0215	0.0000	0.0005	0.0022	0.1520	0.0103	0.0000	0.0000	0.0030	0.0289	0.0081	0.2592
	Standing Losses		*3.4078*	*0.0325*	*0.0213*	*0.0000*	*0.0005*	*0.0022*	*0.1509*	*0.0102*	*0.0000*	*0.0000*	*0.0030*	*0.0287*	*0.0080*	*0.2573*
	Working Losses		*0.0252*	*0.0002*	*0.0002*	*0.0000*	*0.0000*	*0.0000*	*0.0011*	*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0002*	*0.0001*	*0.0019*
18	Active	160,646,455	4.7801	0.0456	0.0299	0.0000	0.0007	0.0030	0.2116	0.0143	0.0000	0.0000	0.0042	0.0403	0.0112	0.3610
	Standing Losses		*4.6506*	*0.0443*	*0.0291*	*0.0000*	*0.0007*	*0.0029*	*0.2059*	*0.0140*	*0.0000*	*0.0000*	*0.0041*	*0.0392*	*0.0109*	*0.3512*
	Working Losses		*0.1295*	*0.0012*	*0.0008*	*0.0000*	*0.0000*	*0.0001*	*0.0057*	*0.0004*	*0.0000*	*0.0000*	*0.0001*	*0.0011*	*0.0003*	*0.0098*
20	Active	32,537,675	4.6785	0.0446	0.0293	0.0000	0.0007	0.0030	0.2071	0.0140	0.0000	0.0000	0.0041	0.0394	0.0110	0.3533
	Standing Losses		*4.6522*	*0.0443*	*0.0291*	*0.0000*	*0.0007*	*0.0029*	*0.2060*	*0.0140*	*0.0000*	*0.0000*	*0.0041*	*0.0392*	*0.0109*	*0.3513*
	Working Losses		*0.0262*	*0.0002*	*0.0002*	*0.0000*	*0.0000*	*0.0000*	*0.0012*	*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0002*	*0.0001*	*0.0020*
22	Active	71,540,218	2.5786	0.0246	0.0161	0.0000	0.0004	0.0016	0.1142	0.0077	0.0000	0.0000	0.0023	0.0217	0.0061	0.1947
	Standing Losses		*2.5175*	*0.0240*	*0.0157*	*0.0000*	*0.0004*	*0.0016*	*0.1115*	*0.0076*	*0.0000*	*0.0000*	*0.0022*	*0.0212*	*0.0059*	*0.1901*
	Working Losses		*0.0611*	*0.0006*	*0.0004*	*0.0000*	*0.0000*	*0.0000*	*0.0027*	*0.0002*	*0.0000*	*0.0000*	*0.0001*	*0.0005*	*0.0001*	*0.0046*
23	Active	29,534,425	4.6760	0.0446	0.0292	0.0000	0.0007	0.0030	0.2070	0.0140	0.0000	0.0000	0.0041	0.0394	0.0110	0.3531
	Standing Losses		*4.6522*	*0.0443*	*0.0291*	*0.0000*	*0.0007*	*0.0029*	*0.2060*	*0.0140*	*0.0000*	*0.0000*	*0.0041*	*0.0392*	*0.0109*	*0.3513*
	Working Losses		*0.0238*	*0.0002*	*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0011*	*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0002*	*0.0001*	*0.0018*

Gasoline Additive - Default HAP Profile

Tank Name	Status[1]	Throughput Amount (gals)	VOC Emissions tons	2,2,4-TMP (wt%) 0 tons	Benzene (wt%) 0 tons	Cresol (wt%) 0 tons	Cumene (wt%) 0 tons	Ethyl-benzene (wt%) 1.26 tons	Hexane (wt%) 0 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0.00035 tons	Phenol (wt%) 0 tons	Styrene (wt%) 0 tons	Toluene (wt%) 0 tons	Xylenes (wt%) 3.8 tons	HAP Emissions tons
7	Active	0	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0003*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
79	Active	3,422	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0003*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
83	Active	1,176	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0003*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses		*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
83a	Active	1,176	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Standing Losses		*0.0003*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
	Working Losses															

Working Losses	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*

Transmix - Default HAP Profile

Tank Name	Status[1]	Throughput Amount (gals)	VOC Emissions tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.00065 tons	Cumene (wt%) 0.01565 tons	Ethyl-benzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAP Emissions tons
15	Active	2,952,074	1.9194	0.0183	0.0120	0.0000	0.0003	0.0012	0.0850	0.0058	0.0000	0.0000	0.0017	0.0162	0.0045	0.1449
	Standing Losses		*1.9169*	*0.0183*	*0.0120*	*0.0000*	*0.0003*	*0.0012*	*0.0849*	*0.0058*	*0.0000*	*0.0000*	*0.0017*	*0.0161*	*0.0045*	*0.1448*
	Working Losses		*0.0025*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0001*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0000*	*0.0002*
Totals:		**585,664,639.0000**	**25.8337**	**0.2412**	**0.1736**	**0.0002**	**0.0055**	**0.0229**	**1.1094**	**0.0751**	**0.0008**	**0.0001**	**0.0221**	**0.2585**	**0.0820**	**1.9914**

Tank Operations Breakdown[2]

12 - 2011-IFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	9,325,013	0	Gasoline	0.0000	0.0000	0.0216	0.0080	0.1964	0.0000	0.2259
Nov 2012	9,978,961	0	Gasoline	0.0000	0.0000	0.0218	0.0085	0.1982	0.0000	0.2285
Oct 2012	9,434,424	0	Gasoline	0.0000	0.0000	0.0249	0.0081	0.2268	0.0000	0.2597
Sep 2012	10,202,512	0	Gasoline	0.0000	0.0000	0.0175	0.0087	0.1592	0.0000	0.1854
Aug 2012	11,014,834	0	Gasoline	0.0000	0.0000	0.0191	0.0094	0.1739	0.0000	0.2024
Jul 2012	12,766,767	0	Gasoline	0.0000	0.0000	0.0196	0.0109	0.1788	0.0000	0.2093
Jun 2012	13,160,548	0	Gasoline	0.0000	0.0000	0.0187	0.0112	0.1704	0.0000	0.2003
May 2012	16,089,896	0	Gasoline	0.0000	0.0000	0.0169	0.0137	0.1537	0.0000	0.1843
Apr 2012	16,646,745	0	Gasoline	0.0000	0.0000	0.0149	0.0142	0.1354	0.0000	0.1645
Mar 2012	16,808,535	0	Gasoline	0.0000	0.0000	0.0211	0.0144	0.1923	0.0000	0.2278
Feb 2012	16,021,346	0	Gasoline	0.0000	0.0000	0.0211	0.0137	0.1927	0.0000	0.2275
Jan 2012	14,916,894	0	Gasoline	0.0000	0.0000	0.0204	0.0127	0.1858	0.0000	0.2189

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Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	1,081,250	0	Distillate Fuel Oil No.2	0.0071	0.0055	0.0000	0.0000	0.0000	0.0000	0.0126
Nov 2012	1,373,755	0	Distillate Fuel Oil No.2	0.0097	0.0085	0.0000	0.0000	0.0000	0.0000	0.0182
Oct 2012	1,740,047	0	Distillate Fuel Oil No.2	0.0162	0.0129	0.0000	0.0000	0.0000	0.0000	0.0291
Sep 2012	1,475,147	0	Distillate Fuel Oil No.2	0.0214	0.0133	0.0000	0.0000	0.0000	0.0000	0.0347
Aug 2012	935,162	0	Distillate Fuel Oil No.2	0.0271	0.0095	0.0000	0.0000	0.0000	0.0000	0.0366
Jul 2012	1,126,171	0	Distillate Fuel Oil No.2	0.0298	0.0119	0.0000	0.0000	0.0000	0.0000	0.0417

Jun 2012	1,447,320	0	Distillate Fuel Oil No.2	0.0277	0.0143	0.0000	0.0000	0.0000	0.0000	0.0421
May 2012	1,616,056	0	Distillate Fuel Oil No.2	0.0241	0.0139	0.0000	0.0000	0.0000	0.0000	0.0380
Apr 2012	1,836,114	0	Distillate Fuel Oil No.2	0.0176	0.0131	0.0000	0.0000	0.0000	0.0000	0.0307
Mar 2012	2,127,718	0	Distillate Fuel Oil No.2	0.0122	0.0126	0.0000	0.0000	0.0000	0.0000	0.0247
Feb 2012	1,147,046	0	Distillate Fuel Oil No.2	0.0082	0.0057	0.0000	0.0000	0.0000	0.0000	0.0139
Jan 2012	679,548	0	Distillate Fuel Oil No.2	0.0073	0.0032	0.0000	0.0000	0.0000	0.0000	0.0105

15 - 2011-IFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	0	0	Transmix	0.0000	0.0000	0.0230	0.0000	0.1008	0.0000	0.1238
Nov 2012	840,055	0	Transmix	0.0000	0.0000	0.0262	0.0007	0.1146	0.0000	0.1415
Oct 2012	0	0	Transmix	0.0000	0.0000	0.0297	0.0000	0.1300	0.0000	0.1597
Sep 2012	0	0	Transmix	0.0000	0.0000	0.0340	0.0000	0.1492	0.0000	0.1832
Aug 2012	420,875	0	Transmix	0.0000	0.0000	0.0371	0.0004	0.1626	0.0000	0.2001
Jul 2012	0	0	Transmix	0.0000	0.0000	0.0381	0.0000	0.1671	0.0000	0.2053
Jun 2012	0	0	Transmix	0.0000	0.0000	0.0364	0.0000	0.1594	0.0000	0.1958
May 2012	1,060,465	0	Transmix	0.0000	0.0000	0.0329	0.0009	0.1441	0.0000	0.1779
Apr 2012	0	0	Transmix	0.0000	0.0000	0.0290	0.0000	0.1271	0.0000	0.1561
Mar 2012	0	0	Transmix	0.0000	0.0000	0.0254	0.0000	0.1113	0.0000	0.1367
Feb 2012	630,679	0	Transmix	0.0000	0.0000	0.0226	0.0005	0.0990	0.0000	0.1221
Jan 2012	0	0	Transmix	0.0000	0.0000	0.0218	0.0000	0.0955	0.0000	0.1174

16 - 2011-IFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	4,061,025	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0058	0.0040	0.0190	0.0000	0.0288
Nov 2012	4,024,739	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0067	0.0039	0.0218	0.0000	0.0324
Oct 2012	4,141,177	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0077	0.0040	0.0250	0.0000	0.0367
Sep 2012	3,747,618	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0089	0.0036	0.0290	0.0000	0.0415
Aug 2012	3,331,006	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0097	0.0032	0.0318	0.0000	0.0447
Jul 2012	3,629,587	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0100	0.0035	0.0327	0.0000	0.0462
Jun 2012	3,999,146	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0095	0.0039	0.0311	0.0000	0.0445
May 2012	4,244,471	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0086	0.0041	0.0279	0.0000	0.0406
Apr 2012	4,001,793	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0075	0.0039	0.0244	0.0000	0.0358
Mar 2012	4,195,725	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0065	0.0041	0.0212	0.0000	0.0317

			Gas)							
Feb 2012	3,865,887	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0057	0.0038	0.0186	0.0000	0.0281
Jan 2012	3,934,204	0	Denatured Ethanol (5% Gas)	0.0000	0.0000	0.0055	0.0038	0.0179	0.0000	0.0272

17 - 2011-IFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	19,937	0	Gasoline	0.0000	0.0000	0.0575	0.0000	0.2519	0.0000	0.3094
Nov 2012	39,689	0	Gasoline	0.0000	0.0000	0.0580	0.0000	0.2542	0.0000	0.3123
Oct 2012	3,227,339	0	Gasoline	0.0000	0.0000	0.0664	0.0028	0.2908	0.0000	0.3599
Sep 2012	2,812,337	0	Gasoline	0.0000	0.0000	0.0466	0.0024	0.2042	0.0000	0.2532
Aug 2012	3,570,010	0	Gasoline	0.0000	0.0000	0.0509	0.0030	0.2230	0.0000	0.2770
Jul 2012	8,497,834	0	Gasoline	0.0000	0.0000	0.0523	0.0073	0.2293	0.0000	0.2889
Jun 2012	4,942,628	0	Gasoline	0.0000	0.0000	0.0499	0.0042	0.2185	0.0000	0.2726
May 2012	2,836,015	0	Gasoline	0.0000	0.0000	0.0450	0.0024	0.1971	0.0000	0.2446
Apr 2012	1,911,377	0	Gasoline	0.0000	0.0000	0.0396	0.0016	0.1736	0.0000	0.2149
Mar 2012	1,594,952	0	Gasoline	0.0000	0.0000	0.0563	0.0014	0.2466	0.0000	0.3043
Feb 2012	63,409	0	Gasoline	0.0000	0.0000	0.0564	0.0001	0.2471	0.0000	0.3036
Jan 2012	18,898	0	Gasoline	0.0000	0.0000	0.0544	0.0000	0.2382	0.0000	0.2926

18 - 2011-DEFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	16,241,860	0	Gasoline	0.0000	0.0000	0.3880	0.0131	0.0341	0.0000	0.4353
Nov 2012	15,597,246	0	Gasoline	0.0000	0.0000	0.3916	0.0126	0.0345	0.0000	0.4387
Oct 2012	14,922,574	0	Gasoline	0.0000	0.0000	0.4480	0.0120	0.0394	0.0000	0.4994
Sep 2012	13,991,428	0	Gasoline	0.0000	0.0000	0.3146	0.0113	0.0277	0.0000	0.3536
Aug 2012	10,274,550	0	Gasoline	0.0000	0.0000	0.3436	0.0083	0.0302	0.0000	0.3821
Jul 2012	11,516,417	0	Gasoline	0.0000	0.0000	0.3532	0.0093	0.0311	0.0000	0.3936
Jun 2012	14,840,452	0	Gasoline	0.0000	0.0000	0.3366	0.0120	0.0296	0.0000	0.3782
May 2012	14,098,222	0	Gasoline	0.0000	0.0000	0.3037	0.0114	0.0267	0.0000	0.3418
Apr 2012	10,313,711	0	Gasoline	0.0000	0.0000	0.2675	0.0083	0.0235	0.0000	0.2994
Mar 2012	12,522,107	0	Gasoline	0.0000	0.0000	0.3799	0.0101	0.0334	0.0000	0.4235
Feb 2012	12,262,476	0	Gasoline	0.0000	0.0000	0.3807	0.0099	0.0335	0.0000	0.4241
Jan 2012	14,065,412	0	Gasoline	0.0000	0.0000	0.3670	0.0113	0.0323	0.0000	0.4106

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Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	2,866,440	0	Gasoline	0.0000	0.0000	0.3880	0.0023	0.0343	0.0000	0.4246

Nov 2012	2,918,633	0	Gasoline	0.0000	0.0000	0.3915	0.0024	0.0346	0.0000	0.4285
Oct 2012	3,121,299	0	Gasoline	0.0000	0.0000	0.4480	0.0025	0.0396	0.0000	0.4901
Sep 2012	2,460,579	0	Gasoline	0.0000	0.0000	0.3146	0.0020	0.0278	0.0000	0.3444
Aug 2012	3,414,242	0	Gasoline	0.0000	0.0000	0.3436	0.0028	0.0304	0.0000	0.3767
Jul 2012	2,531,263	0	Gasoline	0.0000	0.0000	0.3532	0.0020	0.0312	0.0000	0.3865
Jun 2012	2,781,384	0	Gasoline	0.0000	0.0000	0.3366	0.0022	0.0297	0.0000	0.3686
May 2012	2,788,599	0	Gasoline	0.0000	0.0000	0.3037	0.0022	0.0268	0.0000	0.3328
Apr 2012	2,401,691	0	Gasoline	0.0000	0.0000	0.2675	0.0019	0.0236	0.0000	0.2931
Mar 2012	2,431,865	0	Gasoline	0.0000	0.0000	0.3799	0.0020	0.0336	0.0000	0.4155
Feb 2012	2,629,347	0	Gasoline	0.0000	0.0000	0.3807	0.0021	0.0336	0.0000	0.4164
Jan 2012	2,192,333	0	Gasoline	0.0000	0.0000	0.3670	0.0018	0.0324	0.0000	0.4012

22 - 2011-IFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	7,845,377	0	Gasoline	0.0000	0.0000	0.0216	0.0067	0.2070	0.0000	0.2352
Nov 2012	7,451,616	0	Gasoline	0.0000	0.0000	0.0218	0.0064	0.2089	0.0000	0.2370
Oct 2012	9,645,998	0	Gasoline	0.0000	0.0000	0.0249	0.0082	0.2389	0.0000	0.2721
Sep 2012	6,589,779	0	Gasoline	0.0000	0.0000	0.0175	0.0056	0.1678	0.0000	0.1909
Aug 2012	6,047,247	0	Gasoline	0.0000	0.0000	0.0191	0.0052	0.1833	0.0000	0.2075
Jul 2012	5,539,149	0	Gasoline	0.0000	0.0000	0.0196	0.0047	0.1884	0.0000	0.2128
Jun 2012	4,808,417	0	Gasoline	0.0000	0.0000	0.0187	0.0041	0.1795	0.0000	0.2024
May 2012	4,834,688	0	Gasoline	0.0000	0.0000	0.0169	0.0041	0.1620	0.0000	0.1830
Apr 2012	6,081,830	0	Gasoline	0.0000	0.0000	0.0149	0.0052	0.1427	0.0000	0.1627
Mar 2012	5,429,139	0	Gasoline	0.0000	0.0000	0.0211	0.0046	0.2027	0.0000	0.2284
Feb 2012	3,699,531	0	Gasoline	0.0000	0.0000	0.0211	0.0032	0.2031	0.0000	0.2274
Jan 2012	3,567,447	0	Gasoline	0.0000	0.0000	0.0204	0.0030	0.1957	0.0000	0.2192

23 - 2011-DEFRT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	19,937	0	Gasoline	0.0000	0.0000	0.3880	0.0000	0.0343	0.0000	0.4224
Nov 2012	39,689	0	Gasoline	0.0000	0.0000	0.3916	0.0000	0.0346	0.0000	0.4263
Oct 2012	3,227,339	1,561,906	Gasoline	0.0000	0.0000	0.4480	0.0026	0.0396	0.0000	0.4902
Sep 2012	2,812,337	2,675,822	Gasoline	0.0000	0.0000	0.3146	0.0023	0.0278	0.0000	0.3447
Aug 2012	3,570,010	2,636,024	Gasoline	0.0000	0.0000	0.3436	0.0029	0.0304	0.0000	0.3768
Jul 2012	8,497,834	2,775,932	Gasoline	0.0000	0.0000	0.3532	0.0068	0.0312	0.0000	0.3913
Jun 2012	4,942,628	2,525,021	Gasoline	0.0000	0.0000	0.3366	0.0040	0.0297	0.0000	0.3703
May 2012	2,836,015	2,485,644	Gasoline	0.0000	0.0000	0.3037	0.0023	0.0268	0.0000	0.3328
Apr 2012	1,911,377	2,583,249	Gasoline	0.0000	0.0000	0.2675	0.0015	0.0236	0.0000	0.2927
Mar 2012	1,594,952	0	Gasoline	0.0000	0.0000	0.3799	0.0013	0.0336	0.0000	0.4148
Feb 2012	63,409	0	Gasoline	0.0000	0.0000	0.3807	0.0001	0.0336	0.0000	0.4144

Jan 2012	18,898	0	Gasoline	0.0000	0.0000	0.3670	0.0000	0.0324	0.0000	0.3994

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Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	83,996	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0002
Nov 2012	103,149	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000	0.0003
Oct 2012	123,309	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000	0.0004
Sep 2012	69,085	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0002	0.0000	0.0003
Aug 2012	24,577	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0003
Jul 2012	47,699	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0002	0.0000	0.0003
Jun 2012	37,170	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0002	0.0000	0.0003
May 2012	49,038	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0002	0.0000	0.0003
Apr 2012	58,709	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0002
Mar 2012	64,536	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0002
Feb 2012	118,006	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000	0.0003
Jan 2012	132,714	0	Distillate Fuel Oil No.2	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000	0.0003

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Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	1,386,737	0	Distillate Fuel Oil No.2	0.0066	0.0071	0.0000	0.0000	0.0000	0.0000	0.0136
Nov 2012	3,522,071	0	Distillate Fuel Oil No.2	0.0089	0.0217	0.0000	0.0000	0.0000	0.0000	0.0306
Oct 2012	2,088,817	0	Distillate Fuel Oil No.2	0.0150	0.0155	0.0000	0.0000	0.0000	0.0000	0.0304
Sep 2012	1,759,780	0	Distillate Fuel Oil No.2	0.0197	0.0159	0.0000	0.0000	0.0000	0.0000	0.0356
Aug 2012	1,305,739	0	Distillate Fuel Oil No.2	0.0249	0.0133	0.0000	0.0000	0.0000	0.0000	0.0382
Jul 2012	1,684,531	0	Distillate Fuel Oil No.2	0.0274	0.0178	0.0000	0.0000	0.0000	0.0000	0.0453
Jun 2012	2,602,020	0	Distillate Fuel Oil No.2	0.0256	0.0258	0.0000	0.0000	0.0000	0.0000	0.0513
May 2012	3,740,251	0	Distillate Fuel Oil No.2	0.0222	0.0321	0.0000	0.0000	0.0000	0.0000	0.0543
Apr 2012	5,244,605	0	Distillate Fuel Oil No.2	0.0162	0.0375	0.0000	0.0000	0.0000	0.0000	0.0537
Mar 2012	7,533,343	0	Distillate Fuel Oil No.2	0.0112	0.0444	0.0000	0.0000	0.0000	0.0000	0.0557
Feb 2012	4,125,109	0	Distillate Fuel Oil No.2	0.0076	0.0204	0.0000	0.0000	0.0000	0.0000	0.0280
Jan 2012	2,867,105	0	Distillate Fuel Oil No.2	0.0067	0.0135	0.0000	0.0000	0.0000	0.0000	0.0202

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Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	0	89,740	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	0	189,619	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	0	227,918	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	0	354,081	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Aug 2012	0	58,200	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	0	324,417	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	0	60,828	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	0	15,770	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	0	364,970	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	0	226,792	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	0	177,228	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	0	239,934	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	552	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	613	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	661	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	0	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	19	241,060	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	818	370,602	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	759	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

83 - 2010-HT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	76	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	86	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	114	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	101	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	91	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	88	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	107	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	116	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	104	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	104	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Feb 2012	98	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	93	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

83a - 2010-HT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	76	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	86	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	114	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	101	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	91	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	88	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	107	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	116	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	104	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	104	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	98	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	93	0	Gasoline Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

89 - 2010-HT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	43	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	46	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	66	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	34	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	11	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	13	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	14	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	13	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	19	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	16	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	8	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	204	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

90 - 2010-HT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	32	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	64	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	35	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Sep 2012	30	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	19	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	25	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	36	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	43	188,117	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	55	261,712	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	40	311,651	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	42	358,962	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	41	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

91 - HT-2012

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	386	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	314	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	46	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	0	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	0	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	0	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	0	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	0	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	0	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	324	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	523	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	834	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

92 - 2010-HT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	403	306,770	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	434	334,931	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	614	286,494	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	315	355,583	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	102	373,606	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	109	373,606	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	116	177,979	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	107	212,523	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	161	248,570	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	122	280,861	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	59	294,003	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	48	311,651	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

93 - 2010-HT

Throughput Month	Throughput Amount (gals)	Max Volume (gals)	Product	Standing Losses tons	Working Losses tons	Rim Seal Losses tons	Withdrawl Losses tons	Deck Fitting Losses tons	Deck Seam Losses tons	Total Losses tons
Dec 2012	498	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov 2012	958	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct 2012	776	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep 2012	536	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug 2012	364	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul 2012	461	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun 2012	683	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May 2012	590	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2012	726	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2012	613	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2012	610	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jan 2012	530	0	Diesel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Totals:	**585,664,639.0000**			**804.3591**	**778.8891**	**28,760.5536**	**898.4550**	**20,425.1389**	**0.0000**	**51,667.3958**

1. Tank Status is listed as current status of the tank. Throughput from earlier months may still display if the tank is OOS by the end of the reporting period.
2. Tank Throughput Emission Breakdown of Details Can Be Found in Attachment 1
3. VOC Emissions calculated from EPA's AP-42 method (Chapter 5.2 Transportation and marketing of Petroleum Liquids
4. Concentration of HAPs determined from wt% of distillate, jet kerosene, and gasoline. Radian (1995)
5. Concentration of Distillate HAPs determined from Radian (1995) wt% of jet kerosene for Biphenyl, Cresol, 2,2,4-TMP, Naphthalene and Phenol. Remainder of distaillate HAPs determined from API Publication 1673, Table 3-1 (1998)
6. Monthly actual data used in emissions totals. Values shown for temperature and vapor pressure are annual averages. Results may vary slightly.

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Roof Landing Emissions
Reporting Period (January 2012 to December 2012)

Tank Roof Landings Overview

Gasoline - Default HAP Profile

Tank Number	Number Landings	VOC Emissions tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.000652 tons	Cumene (wt%) 0.01565 tons	Ethyl-benzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAP Emissions tons

12	7	2.2407	0.0214	0.0140	0.0000	0.0004	0.0014	0.0992	0.0067	0.0000	0.0000	0.0020	0.0189	0.0053	0.1692
17	1	0.3398	0.0032	0.0021	0.0000	0.0001	0.0002	0.0150	0.0010	0.0000	0.0000	0.0003	0.0029	0.0008	0.0257
18	3	0.4958	0.0047	0.0031	0.0000	0.0001	0.0003	0.0220	0.0015	0.0000	0.0000	0.0004	0.0042	0.0012	0.0374
20	5	2.1349	0.0203	0.0134	0.0000	0.0003	0.0013	0.0945	0.0064	0.0000	0.0000	0.0019	0.0180	0.0050	0.1612
22	1	0.3449	0.0033	0.0022	0.0000	0.0001	0.0002	0.0153	0.0010	0.0000	0.0000	0.0003	0.0029	0.0008	0.0260
23	5	1.9473	0.0186	0.0122	0.0000	0.0003	0.0012	0.0862	0.0058	0.0000	0.0000	0.0017	0.0164	0.0046	0.1470
Totals:	**22**	**7.5032**	**0.0715**	**0.0469**	**0.0000**	**0.0012**	**0.0047**	**0.3322**	**0.0225**	**0.0000**	**0.0000**	**0.0066**	**0.0632**	**0.0176**	**0.5666**

Breakdown of Tank Landings

Landing Date	Tank Name	Product In Tank	Roof Height (inches)	Days Idle	Product Left In Tank (ft)	Full Heel	Drain Dry	Standing Losses tons	Filling Losses tons	Total Losses tons
2012-01-01	23	Gasoline	79	1	5.8183098473	Yes	No	0.0090	0.1176	0.1266
2012-02-08	20	Gasoline	66	1	5.42764752464	Yes	No	0.0010	0.0114	0.0125
2012-02-13	12	Gasoline	83	2	6.80051274766	Yes	No	0.0033	0.0183	0.0217
2012-02-16	12	Gasoline	83	1	6.5746072012	Yes	No	0.0049	0.0540	0.0589
2012-02-19	20	Gasoline	66	1	4.95471887637	Yes	No	0.0078	0.0861	0.0939
2012-03-08	17	Gasoline	50	3	2.70808989779	Yes	No	0.0875	0.2523	0.3398
2012-04-01	18	Gasoline	52	1	3.98822962864	Yes	No	0.0105	0.0660	0.0765
2012-04-10	20	Gasoline	66	4	1.99921988372	Yes	No	0.4244	0.6694	1.0939
2012-04-24	12	Gasoline	83	2	3.25689730922	Yes	No	0.2219	0.6998	0.9217
2012-04-29	23	Gasoline	79	12	5.38806455974	Yes	No	0.4347	0.2286	0.6633
2012-05-11	22	Gasoline	48	1	2.62917299577	Yes	No	0.0569	0.2879	0.3449
2012-05-13	12	Gasoline	83	1	6.30925565512	Yes	No	0.0252	0.1276	0.1528
2012-05-13	20	Gasoline	66	3	3.1438262478	Yes	No	0.2935	0.4949	0.7884
2012-05-15	18	Gasoline	52	1	2.81423798706	Yes	No	0.0631	0.3191	0.3822
2012-07-01	12	Gasoline	83	1	6.20534881583	Yes	No	0.0383	0.1666	0.2049
2012-07-07	23	Gasoline	79	1	5.99934058863	Yes	No	0.0314	0.1368	0.1682
2012-08-22	18	Gasoline	52	1	4.19961685579	Yes	No	0.0065	0.0307	0.0372
2012-08-22	12	Gasoline	83	2	4.69294087887	Yes	No	0.2154	0.5106	0.7260
2012-08-26	12	Gasoline	83	1	6.36041841158	Yes	No	0.0269	0.1277	0.1547
2012-09-15	23	Gasoline	79	1	4.03947954482	Yes	No	0.0977	0.5482	0.6459
2012-10-11	23	Gasoline	79	14	5.9878479568	Yes	No	0.2273	0.1159	0.3432
2012-12-05	20	Gasoline	66	1	4.64922405289	Yes	No	0.0099	0.1363	0.1462

1. VOC Emissions calculated from EPA's AP-42 method (Chapter 5.2 Transportation and marketing of Petroleum Liquids
2. Concentration of HAPs determined from wt% of distillate, jet kerosene, and gasoline, Radian (1995)
3. Concentration of Distillate HAPs determined from Radian (1995) wt% of jet kerosene for Biphenyl, Cresol, 2,2,4-TMP, Naphthalene and Phenol. Remainder of distaillate HAPs determined from API Publication 1673, Table 3-1 (1998)
4. Monthly actual data used in emissions totals. Values shown for temperature and vapor pressure are annual averages. Results may vary slightly.

River Rouge Terminal (BETHY)

Tank Cleaning Emissions
Reporting Period (January 2012 to December 2012)

Tank Cleaning Operations

There w ere no tank cleanings during this period

Breakdown of Tank Cleaning Operations

Cleaning Date	Tank Name	Product In Tank	Idle Cleaning Days	Height of Product (ft)	Sludge Remove Days	Sludge Depth (ft)	Standing Losses tons	Purge Losses tons	Sludge Remove Losses tons	Filling Losses tons	Total Losses tons
There w ere no tank cleanings during this period											

1. VOC Emissions calculated from EPA's AP-42 method (Chapter 5.2 Transportation and marketing of Petroleum Liquids
2. Concentration of HAPs determined from wt% of distillate, jet kerosene, and gasoline. Radian (1995)
3. Concentration of Distillate HAPs determined from Radian (1995) wt% of jet kerosene for Biphenyl, Cresol, 2,2,4-TMP, Naphthalene and Phenol. Remainder of distaillate HAPs determined from API Publication 1673, Table 3-1 (1998)
4. Monthly actual data used in emissions totals. Values shown for temperature and vapor pressure are annual averages. Results may vary slightly.

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Transfer Rack Loading Operations
Reporting Period (January 2012 to December 2012)

Transfer Rack Loading Operations VOC/HAP Emissions Overview

Transfer Rack	Total Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP tons	Benzene tons	Cresol tons	Cumene tons	Ethylbenzene tons	Hexane tons	MTBE tons	Naphthalene tons	Phenol tons	Styrene tons	Toluene tons	Xylenes tons	HAPs Emissions tons
All Racks	502,794,991	1,226.9610	19.4347	0.1850	0.1220	0.0001	0.0031	0.0125	0.8591	0.0582	0.0001	0.0000	0.0171	0.1653	0.0465	1.4692

VCU Combustion Emissions

Transfer Rack	CO tons	CO2 tons	SO2 tons	PM tons	NOx tons	N2O tons	CH4 tons
All Racks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Breakdown of Loading Operations

Butane Loading Operations - Default HAP Profile

Transfer Rack	Control Device	Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP (wt%) 0 tons	Benzene (wt%) 0 tons	Cresol (wt%) 0 tons	Cumene (wt%) 0 tons	Ethylbenzene (wt%) 0 tons	Hexane (wt%) 0 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0 tons	Phenol (wt%) 0 tons	Styrene (wt%) 0 tons	Toluene (wt%) 0 tons	Xylenes (wt%) 0 tons	HAPs Emissions tons
Truck Rack	VRU - 01	3,300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Denatured Ethanol (5% Gas) Loading Operations - Default HAP Profile

Transfer Rack	Control Device	Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.000652 tons	Cumene (wt%) 0.01565 tons	Ethylbenzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAPs Emissions tons
Truck Rack	VRU - 01	47,180,056	17.6992	1.9674	0.0188	0.0123	0.0000	0.0003	0.0012	0.0871	0.0059	0.0000	0.0000	0.0017	0.0166	0.0046	0.1486

Diesel Additive Loading Operations - Default HAP Profile

Transfer Rack	Control Device	Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP (wt%) 0 tons	Benzene (wt%) 0 tons	Cresol (wt%) 0 tons	Cumene (wt%) 0 tons	Ethylbenzene (wt%) 1.26 tons	Hexane (wt%) 0 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0.00035 tons	Phenol (wt%) 0 tons	Styrene (wt%) 0 tons	Toluene (wt%) 0 tons	Xylenes (wt%) 3.8 tons	HAPs Emissions tons
Truck Rack	VRU - 01	12,072	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Distillate Fuel Oil No.2 Loading Operations - Default HAP Profile

Transfer Rack	Control Device	Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP (wt%) 0.32695 tons	Benzene (wt%) 2.14899 tons	Cresol (wt%) 0.00381 tons	Cumene (wt%) 0.19394 tons	Ethylbenzene (wt%) 0.89161 tons	Hexane (wt%) 0.1 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0.07957 tons	Phenol (wt%) 0.01388 tons	Styrene (wt%) 0 tons	Toluene (wt%) 6.003 tons	Xylenes (wt%) 2.91038 tons	HAPs Emissions tons
Truck Rack	VRU - 01	37,421,282	0.1570	0.0314	0.0001	0.0007	0.0000	0.0001	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0019	0.0009	0.0040

Gasoline Loading Operations - Default HAP Profile

Transfer Rack	Control Device	Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.000652 tons	Cumene (wt%) 0.01565 tons	Ethylbenzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAPs Emissions tons
Truck Rack	VRU - 01	418,109,059	1,209.1041	17.4351	0.1662	0.1090	0.0001	0.0027	0.0110	0.7720	0.0523	0.0001	0.0000	0.0154	0.1468	0.0410	1.3166

Gasoline Additive Loading Operations - Default HAP Profile

Transfer Rack	Control Device	Gallons Loaded	VOC Emissions Before Control tons	VOC Emissions After Control tons	2,2,4-TMP (wt%) 0 tons	Benzene (wt%) 0 tons	Cresol (wt%) 0 tons	Cumene (wt%) 0 tons	Ethylbenzene (wt%) 1.26 tons	Hexane (wt%) 0 tons	MTBE (wt%) 0 tons	Naphthalene (wt%) 0.00035 tons	Phenol (wt%) 0 tons	Styrene (wt%) 0 tons	Toluene (wt%) 0 tons	Xylenes (wt%) 3.8 tons	HAPs Emissions tons
Truck Rack	VRU - 01	69,222	0.0007	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

VRU - 01 (VRU) Control Efficiencies

Permitted (Default) Control Efficiencies

Active Date	Product Type	Efficiency (%)	Efficiency (mg/l)

Stack Test Control Efficiencies

Active Date	Product Type	Efficiency (%)	Efficiency (mgl)

VCU (VCU) Control Efficiencies

Permitted (Default) Control Efficiencies

Active Date	Product Type	Efficiency (%)	Efficiency (mgl)

Stack Test Control Efficiencies

Active Date	Product Type	Efficiency (%)	Efficiency (mgl)

PVCU (VCU) Control Efficiencies

Permitted (Default) Control Efficiencies

Active Date	Product Type	Efficiency (%)	Efficiency (mgl)

Stack Test Control Efficiencies

Active Date	Product Type	Efficiency (%)	Efficiency (mgl)

Note: Calculations use stack test control efficiencies when available. If no stack test control efficiency is available, the permitted efficiences are used in the calculations

1. Conversion factor for Controlled Emissions		8.337E-06
	1000	mg/gram
	454	gram/lb
	3.785	L/gal

2. AP-42 Method- Chapter 5.2 Transportatin and Marketing of Petroleum Liquids

3. Formula used when controll efficiency is provided (mg/l) = (Gallons Loaded) * (Controll Efficiency) * (Conversion Factor)

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Fugitive Emissions
Reporting Period (January 2012 to December 2012)

Fugitive Equipment

Fugitive Equipment	Light Devices	Heavy Devices	Gas Devices	VOC Emissions tons	2,2,4-TMP (wt%) 0.95315 tons	Benzene (wt%) 0.62539 tons	Cresol (wt%) 0.000652 tons	Cumene (wt%) 0.01565 tons	Ethylbenzene (wt%) 0.06313 tons	Hexane (wt%) 4.42761 tons	MTBE (wt%) 0.3 tons	Naphthalene (wt%) 0.00055 tons	Phenol (wt%) 0.00011 tons	Styrene (wt%) 0.08817 tons	Toluene (wt%) 0.84213 tons	Xylenes (wt%) 0.23501 tons	HAPs Emissions tons
Flanges	2,000	0	450	0.3289	0.0031	0.0021	0.0000	0.0001	0.0002	0.0146	0.0010	0.0000	0.0000	0.0003	0.0028	0.0008	0.0248

Loading Arm Valve	100	0	0	0.0415	0.0004	0.0003	0.0000	0.0000	0.0000	0.0018	0.0001	0.0000	0.0000	0.0000	0.0003	0.0001	0.0031
Pumps	20	0	0	0.1025	0.0010	0.0006	0.0000	0.0000	0.0001	0.0045	0.0003	0.0000	0.0000	0.0001	0.0009	0.0002	0.0077
Valves	600	0	250	0.2806	0.0027	0.0018	0.0000	0.0000	0.0002	0.0124	0.0008	0.0000	0.0000	0.0002	0.0024	0.0007	0.0212
Racks				17.4623	0.1664	0.1092	0.0001	0.0027	0.0110	0.7732	0.0524	0.0001	0.0000	0.0154	0.1471	0.0410	1.3187
Totals:	**1.3600**	**0.0000**	**0.3500**	**18.2157**	**0.1736**	**0.1139**	**0.0001**	**0.0029**	**0.0115**	**0.8065**	**0.0546**	**0.0001**	**0.0000**	**0.0161**	**0.1534**	**0.0428**	**1.3756**

Fugitive Factors Detail

Fugitive Equipment	Factor Year	Light Devices lbs per hour	Heavy Devices lbs per hour	Gas Devices lbs per hour
Flanges	2012	0.000017	0.000017	0.000090
Loading Arm Valve	2012	0.000095	0.000095	0.000029
Other	2012	0.000287	0.000287	0.000265
Pumps	2012	0.001170	0.001170	0.000143
Valves	2012	0.000095	0.000095	0.000029

1. Fugitive emissing factors determined from EPA protocol for Equipment Leak Emission Estimates (EPA-453/R-95-017), Nov. 1995.
2. Concentration of HAPs determined from wt% of distillate, jet kerosene, and gasoline. Radian (1995)
3. Concentration of Distillate HAPs determined from Radian (1995) wt% of jet kerosene for Biphenyl, Cresol, 2,2,4-TMP, Naphthalene and Phenol. Remainder of distaillate HAPs determined from API Publication 1673, Table 3-1 (1998)

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Release and Spill Emissions
Reporting Period (January 2012 to December 2012)

Releases and Spills

There were no spills during this period

Breakdown of Releases and Spills

Spill Date	Product in Spill	Gallons	Area of Spill (ft)	Duration (hrs)	Temperature (deg f)	Wind Speed (mph)	Emissions tons
There were no spills during this period							

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River Rouge Terminal (BETHY)
Boiler/VCU Fuel Usage & Emissions
Reporting Period (January 2012 to December 2012)

Facility Boiler/VCU Fuel Emissions

Totals:	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Breakdown of Boiler Usage

1. Combustion factors used for Fuel Oil derived from AP-42 Table 1.3-1 (Criteria Pollutant Emission Factors for Fuel Oil Combustion) September, 1998. SO2 = 157S lb/10E3gal where S = 1.5%
2. Combustion Emission factors used for Natural Gas derived from AP-42 Table 1.4-1 (Emission Factors for Nitrogen Oxides and Carbon Monoxide from Natural Gas Combustion), July 1998
3. Combustion factors used for Natural Gas derived from AP-42 Table 1.4-2 (Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion), July 1998
4. Emission factors used for Natural Gas derived from AP-42 Table 1.4-3 (Emission Factors for Speciated Organic Compounds from Natural Gas Combustion) July, 1998
5. Emission factors used for Fuel Oil derived from AP-42 Table 1.3-9 (Emission Factors for Speciated Organic Compounds from Fuel Oil Combustion) September, 1998

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Remediation Projects and Miscellaneous Emissions
Reporting Period (January 2012 to December 2012)

Remediation Projects

There were no remediation projects during this period

Miscellaneous Emissions

There were no miscellaneous emissions during this period

Combustion Emissions from Other Sources

There were no miscellaneous emissions during this period

1. Pipeline equipment fugitive emissions factors determined from EPA protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017), Nov. 1995
2. Other pipeline equipment futigive emissions include scrapper traps, proover loops, sample sheds, strainers, etc.
3. VOC emissions from releases are considered to be the entire weight of the spilled material with was not recovered

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Physical Property & Calculation Information

Product Information

Product	Type	Density	KC (AP42 Factor)	Mol Wt	VP Mol Wt	RVP	Coef A	Coef B	NOx (lb/gal scf)	CO (lb/gal scf)	SO2 (lb/gal scf)	PM (lb/gal scf)	CO2 (lb/gal scf)	N2O (lb/gal scf)	CH4 (lb/gal scf)
Asphalt	Other	7.9	1	387	190	0	20.7962	15032.54	0	0	0	0	0	0	0
Butane	Other	0	1	0	0	0	0	0	0.2153	0.3623	0	0	10.714	0.0003	0.0224
Condensate	Gasoline	6.0129	1	124.4	57.3	0	9.1521	3864.3	0	0	0	0	0	0	0
Crude - Shale Liquids	Crude oil	6	0.4	60	52	15	11.6	4937.9	0.055	0.005	0.0314	0.005058	24.4	0	0
Crude - Utica	Crude oil	6.7017	0.4	92	68	7	10.9379157	4894.773259	0.055	0.005	0.0314	0.005058	0	0	0
Crude Oil (RVP 5/8)	Crude oil	7.1	0.4	207	50	8	13.8221522	6560.665823	0.055	0.005	0.0314	0.005058	24.4	0	0
Denatured Ethanol (2% Gas)	Gasoline	6.38	1	48.86	48.86	2.1	12.71360301	6678.334053	0	0	0	0	0	0	0
Denatured Ethanol (5% Gas)	Gasoline	6.38	1	48.86	48.86	3.17	12.5446	6350.8381	0.0334	0.0834	0.00136	0.002	12.1	2e-05	0.00018
Diesel Additive	Other	6.1	1	130	130	0	17.881	11890.714	0	0	0	0	0	0	0
Distillate Fuel Oil No.2	Distillate	7.1	1	188	130	0.022	12.101	8907	0.02	0.005	0.0284	0.002	22.3	0.00018	0.00091
Distillate Fuel Oil No.2 (85F Flash)	Distillate	7.1	1	188	130	1.2	15.42387696	8518.828087	0.02	0.005	0.0284	0.002	0	0.00018	0.00018
Distillate Fuel Oil No.2 (HI VP)	Distillate	7.1	1	188	130	2.25	12.4202128	6473.813012	0	0	0	0	0	0	0
Gasoline	Gasoline	5.6	1	92	68	6.9	11.83756356	5511.218582	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	62	14	11.62099578	4988.865979	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	63	12.5	11.6556	5072.5331	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	62	13.5	11.63212745	5015.715123	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	67	9	11.75623519	5315.057883	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	96	60.15	15	11.5998779333478	4937.93060603046	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	66	10	11.72398567	5237.273366	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	65	11.5	11.68120631	5134.091305	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline	Gasoline	5.6	1	92	68	7	11.8331	5500.5958	0.0334	0.0834	0.001136	0.002	19.5	0.00018	0.00091
Gasoline - RVP 12	Gasoline	5.6	1	92	64	12	11.66817935	5102.670815	0	0	0	0	0	0	0
Gasoline - RVP 15	Gasoline	5.6	1	96	60.15	15	11.5998779333478	4937.93060603046	0	0	0	0	0	0	0
Gasoline - RVP 7	Gasoline	5.6	1	92	68	7	11.8331	5500.5958	0	0	0	0	0	0	0
Gasoline Additive	Other	7.24	1	188	130	0	15.672	10310.88	0	0	0	0	0	0	0
Generic PCW	Other	6.25	1	143.18	68.114	7	11.09	5511.2	0	0	0	0	0	0	0
Jet Kerosene	Distillate	7	1	162	130	0.029	12.39	8933	0.0334	0.0834	0.0426	0.002	21.5	0	0
Jet Naphtha (JP-4)	Distillate	6.4	1	120	80	0	11.368	5784.3	0.02	0.005	0.0426	0.002	21.5	0	0
Kerosene Additive	Other	6.1	1	130	130	0	17.881	11890.714	0	0	0	0	0	0	0
Methanol	Other	6.63	1	32.04	32.04	0	0	0	0	0	0	0	0	0	0
Natural Gas		0	1	0	0	0	0	0	0.0001	8.4e-05	6e-07	7.6e-06	0.12	2.2e-06	2.3e-06
No. 6 Fuel Oil	Distillate	7.9	1	387	190	0	10.104	10475	0.055	0.005	0.0314	0.005058	25	0.0002	0.00099
PCW - 99/1	Gasoline	8.29	1	18.136	18.02	0.75	12.51683364	7149.590127	0	0	0	0	0	0	0
Propane	Other	0	1	0	0	0	0	0	0.013	0.0075	1e-06	0.0007	12.5	0.00012	0.0006
Propylene	Other	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Toluene	Other	7.261	1	92.13	92.13	0	18.4261	4497.7866	0	0	0	0	0	0	0
Transmix	Gasoline	5.6	1	68	68	7.4	11.833	5500.6	0.0334	0.0834	0.001136	0.002	19.5	18	0.00091
Transmix (1.82 RVP)	Gasoline	5.6	1	98	68	1.82	12.22593741	6447.960352	0	0	0	0	0	0	0
Transmix - (66G/34D Mix)	Gasoline	6.4	1	141.4	98.5	5.75	11.89336988	5645.821133	0	0	0	0	0	0	0
Transmix - (68G/32D Mix)	Gasoline	6.006	1	109.96	65.01	9.13	11.75184555	5304.470265	0	0	0	0	0	0	0

Transmix - (75G/25D Mix)	Gasoline	5.91	1	105.46	65	11.25	11.688	5150.3	0	0	0	0	0	0	0
Transmix - (75G/25D Mix)	Gasoline	5.91	1	105.46	65	10.125	11.72	5228.1	0	0	0	0	0	0	0
Transmix - (75G/25D Mix)	Gasoline	5.91	1	105.46	65	6.75	11.844	5527.4	0	0	0	0	0	0	0
Transmix - (75G/25D Mix)	Gasoline	5.91	1	105.46	65	8.625	11.769	5346.5	0	0	0	0	0	0	0
Water	Other	0	1	0	0	0	0	0	0	0	0	0	0	0	0

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 7
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	7	Internal Shell Condition:		Construction:	
Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	**Quantity**	**KFa (lb-mole/yr)**	**KFb (lb-mole/(yr mph^n))**	**m**	**Fitting Loss Factor (lb/lb-mole)**

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 7
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline Additive		Jan	38.01	34.74	41.27	48.6	0.0064	0.0056	0.0074	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Feb	39.46	35.71	43.22	48.6	0.0068	0.0058	0.008	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Mar	44.39	39.96	48.81	48.6	0.0084	0.007	0.01	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Apr	49.96	44.46	55.46	48.6	0.0105	0.0084	0.013	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		May	55.29	49.11	61.47	48.6	0.0129	0.0101	0.0164	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jun	59.6	53.19	66.02	48.6	0.0152	0.0119	0.0194	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jul	61.62	55.36	67.89	48.6	0.0165	0.0129	0.0208	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Aug	60.46	54.56	66.36	48.6	0.0157	0.0125	0.0197	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Sep	56.77	51.37	62.17	48.6	0.0137	0.0111	0.0168	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Oct	50.94	46.17	55.71	48.6	0.0109	0.009	0.0131	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Nov	45.6	42.1	49.1	48.6	0.0088	0.0076	0.0101	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Dec	40.22	37.24	43.2	48.6	0.0071	0.0062	0.008	130			188	RVP:0 A:15.672 B:10310.88

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 7
River Rouge Terminal (BETHY)

Month:	Jan 2012	Jan 2012	Feb 2012	Mar 2012	Apr 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0064	0.0064	0.0068	0.0084	0.0105	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Net Throughput (gal/mo):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)														
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0.009**	**0.009**	**0.0205**	**0.0313**	**0.0233**	**0.0233**	**0.0659**	**0.0775**	**0.0842**	**0.076**	**0.0589**	**0.0433**	**0.0251**	**0.0179**
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Space Expansion Factor:	0.0235	0.0235	0.0271	0.0319	0.0396	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9989	0.9989	0.9989	0.9986	0.9983	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Tank Vapor Space Volume														
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Roof Outage

Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density														
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0064	0.0064	0.0068	0.0084	0.0105	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg. Liquid Surface Temperature (deg R):	497.677	497.677	499.1328	504.0553	509.6307	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor														
Vapor Space Expansion Factor:	0.0235	0.0235	0.0271	0.0319	0.0396	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	14.7	15.7	17.4	20.9	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0064	0.0064	0.0068	0.0084	0.0105	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg Liquid Surface Temperature (deg R):	497.677	497.677	499.1328	504.0553	509.6307	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	14.7	15.7	17.4	20.9	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor														
Vented Vapor Saturdation Factor:	0.9989	0.9989	0.9989	0.9986	0.9983	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0064	0.0068	0.0084	0.0105	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0064	0.0068	0.0084	0.0105	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Net Throughput (gal/mo):	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0090	0.0090	0.0205	0.0313	0.0233	0.0233	0.0659	0.0775	0.0842	0.0760	0.0589	0.0433	0.0251	0.0179

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY

Emissions Report - Detail Format
Tank Emission Totals

Tank: 7
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline Additive	0.5653	0.0000	0.0000	0.0000	0.0000	0.0000	0.5653

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 12
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	12	Internal Shell Condition:	Light Rust	Construction:	
Configuration	2011-IFRT	Shell Color/Shade:	White/White	Primary Seal:	Mechanical Shoe
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	Rim-mounted
State	MI				
Type of Tank	Internal Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2863000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	7	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	1	Deck Type:	Welded		
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Bolted Cover, Gasketed	1	1.6	0	0	1.6000
Automatic Gauge Float Well - Bolted Cover, Gasketed	1	2.8	0	0	2.8000
Column Well (24-in. Diam.) - Built-Up Col.-Sliding Cover, Gask.	7	33	0	0	231.0000
Ladder Well (36-in. Diam.) - Sliding Cover, Gasketed	1	56	0	0	56.0000
Roof Leg or Hanger Well - Adjustable	40	7.9	0	0	316.0000
Sample Pipe or Well (24-in. Diam.) - Slit Fabric Seal 10% Open	1	12	0	0	12.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Gasketed sliding Cover, w. Wiper	1	14	3.7	0.78	14.0000

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 12
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline	Good	Jan	38.01	34.74	41.27	48.6	5.3544	5.0151	5.7118	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Feb	39.46	35.71	43.22	48.6	5.5116	5.1131	5.9345	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Mar	44.39	39.96	48.81	48.6	5.3731	4.9194	5.8596	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Apr	49.96	44.46	55.46	48.6	3.7697	3.3645	4.2134	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	May	55.29	49.11	61.47	48.6	4.1994	3.7046	4.746	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jun	59.6	53.19	66.02	48.6	4.5754	4.0256	5.184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jul	61.62	55.36	67.89	48.6	4.7604	4.2054	5.373	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Aug	60.46	54.56	66.36	48.6	4.6533	4.1384	5.2184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Sep	56.77	51.37	62.17	48.6	4.3255	3.8796	4.8117	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Oct	50.94	46.17	55.71	48.6	6.1053	5.5651	6.6865	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Nov	45.6	42.1	49.1	48.6	5.5033	5.135	5.8924	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Dec	40.22	37.24	43.2	48.6	5.5949	5.2735	5.9317	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 12
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	40.7753	42.2989	42.2147	29.7228	33.745	37.4009	39.2494	38.1748	34.9564	49.7753	43.516	43.1161
Seal Factor A (lb-mole/ft-yr):	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	1	1	1	1	1	1	1	1	1	1	1	1
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	25.4841	27.371	28.7158	28.4394	27.4881	22.4836	21.8108	18.8178	17.4301	16.1178	17.0481	15.9309
Net Throughput (gal/mo):	14,916,894	16,021,346	16,808,535	16,646,745	16,089,896	13,160,548	12,766,767	11,014,834	10,202,512	9,434,424	9,978,961	9,325,013
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	7	7	7	7	7	7	7	7	7	7	7	7
Effective Column Diameter (ft):	1	1	1	1	1	1	1	1	1	1	1	1
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	371.5086	385.3901	384.6229	270.8078	307.4546	340.7634	357.6061	347.8144	318.4918	453.5086	396.4791	392.8357
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	639.6	639.6	639.6	639.6	639.6	639.6	639.6	639.6	639.6	639.6	639.6	639.6
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0

Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0

Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Net Throughput (gal/mo):	14,916,894.00	16,021,346.00	16,808,535.00	16,646,745.00	16,089,896.00	13,160,548.00	12,766,767.00	11,014,834.00	10,202,512.00	9,434,424.00	9,978,961.00	9,325,013.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	437.7680	455.0600	455.5535	328.9701	368.6878	400.6478	418.6664	404.8070	370.8783	519.4017	457.0432	451.8827

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 12
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline	0.0000	0.0000	474.9457	267.1378	4,327.2830	0.0000	5,069.3665

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 13
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	13	Internal Shell Condition:		Construction:	
Configuration	2011-VFRT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	/Good	Secondary Seal:	
State	MI				
Type of Tank	Vertical Fixed Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03

Tank Dimensions		Type:	Cone		
Shell Height/Length (ft):	42	Fitting Category:		**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2884000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY

Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 13
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Distillate Fuel Oil No.2	Good	Jan	38.01	34.74	41.27	48.6	0.003	0.0027	0.0034	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Feb	39.46	35.71	43.22	48.6	0.0032	0.0028	0.0037	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Mar	44.39	39.96	48.81	48.6	0.0038	0.0033	0.0044	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Apr	49.96	44.46	55.46	48.6	0.0046	0.0038	0.0056	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	May	55.29	49.11	61.47	48.6	0.0055	0.0045	0.0068	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Jun	59.6	53.19	66.02	48.6	0.0064	0.0052	0.0079	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Jul	61.62	55.36	67.89	48.6	0.0068	0.0056	0.0084	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Aug	60.46	54.56	66.36	48.6	0.0066	0.0054	0.008	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Sep	56.77	51.37	62.17	48.6	0.0058	0.0049	0.007	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Oct	50.94	46.17	55.71	48.6	0.0048	0.0041	0.0056	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Nov	45.6	42.1	49.1	48.6	0.004	0.0035	0.0045	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Dec	40.22	37.24	43.2	48.6	0.0033	0.003	0.0037	130			188	RVP:0.022 A:12.101 B:8907

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 13
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	679,548	1,147,046	2,127,718	1,836,114	1,616,056	1,447,320	1,126,171	935,162	1,475,147	1,740,047	1,373,755	1,081,250
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1

Standing Losses[1] - Fixed Roof Tanks (lb):	**14.5197**	**16.4315**	**24.3843**	**35.1022**	**48.2965**	**55.4837**	**59.5629**	**54.1569**	**42.7979**	**32.4882**	**19.4145**	**14.2682**
Vapor Space Volume (cu ft):	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.996	0.9957	0.9949	0.9939	0.9927	0.9915	0.991	0.9913	0.9923	0.9937	0.9947	0.9956
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101	270610.6101
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17
Tank Shell Height (ft):	42	42	42	42	42	42	42	42	42	42	42	42
Aveage Liquid Height (ft):	18	18	18	18	18	18	18	18	18	18	18	18
Roof Outage (ft):	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Roof Outage	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone
Roof Outage (ft):	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0030	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.0040	0.0033
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.996	0.9957	0.9949	0.9939	0.9927	0.9915	0.991	0.9913	0.9923	0.9937	0.9947	0.9956
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033

Vapor Space Outage (ft):	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17
Working Losses - Fixed Roof Tanks (lb):	**6.3927**	**11.3689**	**25.1035**	**26.2832**	**27.7195**	**28.6621**	**23.8345**	**19.0509**	**26.5887**	**25.7577**	**16.912**	**11.0105**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0030	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.0040	0.0033
Net Throughput (gal/mo):	679,548.00	1,147,046.00	2,127,718.00	1,836,114.00	1,616,056.00	1,447,320.00	1,126,171.00	935,162.00	1,475,147.00	1,740,047.00	1,373,755.00	1,081,250.00
Turnovers:	0.2414	0.4075	0.7558	0.6522	0.5741	0.5141	0.4	0.3322	0.524	0.6181	0.488	0.3841
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	2810931.42672810931.42672810931.42672810931.42672810931.42672810931.42672810931.42672810931.42672810931.42672810931.42672810931.42672810931.4267											
Maximum Liquid Height (ft):	35	35	35	35	35	35	35	35	35	35	35	35
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	20.9124	27.8004	49.4879	61.3854	76.0161	84.1458	83.3974	73.2078	69.3866	58.2459	36.3265	25.2788

1. Tanks that have multiple throughputs for the *same month* have been averaged for any AP-42 calculation that calculates over a *monthly* period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 13
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Distillate Fuel Oil No.2	416.9067	248.6843	0.0000	0.0000	0.0000	0.0000	665.5910

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 15
River Rouge Terminal (BETHY)

Identification		Shell Characteristics		Tank Construction and Rim-Seal System	
Tank Name	15	Internal Shell Condition:	Light Rust	Construction:	
Configuration	2011-IFRT	Shell Color/Shade:	White/White	Primary Seal:	Liquid-mounted
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	None

State	MI				
Type of Tank	Internal Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2922000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	7	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	1	Deck Type:	Welded		
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Unbolted Cover, Ungasketed	1	36	5.9	1.2	36.0000
Automatic Gauge Float Well - Unbolted Cover, Ungasketed	1	14	5.4	1.1	14.0000
Column Well (24-in. Diam.) - Built-Up Col.-Sliding Cover, Ungask.	7	47	0	0	329.0000
Ladder Well (36-in. Diam.) - Sliding Cover, Ungasketed	1	76	0	0	76.0000
Roof Leg or Hanger Well - Adjustable	40	7.9	0	0	316.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Slotted Guide-Pole/Sample Well - Ungask. Sliding Cover, w/o Float	1	43	270	1.4	43.0000

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 15
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Transmix	Good	Jan	38.01	34.74	41.27	48.6	2.1825	2.0289	2.3453	68			68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Feb	39.46	35.71	43.22	48.6	2.254	2.0732	2.4474	68			68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Mar	44.39	39.96	48.81	48.6	2.5101	2.2786	2.7604	68			68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Apr	49.96	44.46	55.46	48.6	2.8284	2.5144	3.1736	68			68	RVP:7.4 A:11.833 B:5500.6

Transmix	Good	May	55.29	49.11	61.47	48.6	3.1626	2.7778	3.5896	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Jun	59.6	53.19	66.02	48.6	3.4561	3.0273	3.9329	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Jul	61.62	55.36	67.89	48.6	3.6009	3.1673	4.0814	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Aug	60.46	54.56	66.36	48.6	3.517	3.1151	3.96	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Sep	56.77	51.37	62.17	48.6	3.2609	2.9137	3.641	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Oct	50.94	46.17	55.71	48.6	2.8876	2.6086	3.1903	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Nov	45.6	42.1	49.1	48.6	2.5768	2.3883	2.7773	68	68	RVP:7.4 A:11.833 B:5500.6
Transmix	Good	Dec	40.22	37.24	43.2	48.6	2.2919	2.1457	2.4461	68	68	RVP:7.4 A:11.833 B:5500.6

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 15
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	43.6151	45.171	50.8186	58.0055	65.7629	72.7621	76.2815	74.2371	68.0878	59.3635	52.3108	46.0007
Seal Factor A (lb-mole/ft-yr):	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Value of Vapor Pressure Function:	0.0411	0.0426	0.0479	0.0547	0.062	0.0686	0.0719	0.07	0.0642	0.056	0.0493	0.0434
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	2.1825	2.254	2.5101	2.8284	3.1626	3.4561	3.6009	3.517	3.2609	2.8876	2.5768	2.2919
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	68	68	68	68	68	68	68	68	68	68	68	68
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	1.0775	0	0	1.8117	0	0	0.719	0	0	1.4352	0
Net Throughput (gal/mo):	0	630,679	0	0	1,060,465	0	0	420,875	0	0	840,055	0
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	7	7	7	7	7	7	7	7	7	7	7	7
Effective Column Diameter (ft):	1	1	1	1	1	1	1	1	1	1	1	1
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	191.0955	197.9126	222.6573	254.1459	288.1344	318.8007	334.2206	325.2634	298.3206	260.0957	229.1952	201.5479
Value of Vapor Pressure Function:	0.0411	0.0426	0.0479	0.0547	0.062	0.0686	0.0719	0.07	0.0642	0.056	0.0493	0.0434
Vapor Molecular Weight (lb/lb-mole):	68	68	68	68	68	68	68	68	68	68	68	68
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1

Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	68	68	68	68	68	68	68	68	68	68	68	68
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	68	68	68	68	68	68	68	68	68	68	68	68
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	2.1825	2.2540	2.5101	2.8284	3.1626	3.4561	3.6009	3.5170	3.2609	2.8876	2.5768	2.2919
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183

Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	2.1825	2.254	2.5101	2.8284	3.1626	3.4561	3.6009	3.517	3.2609	2.8876	2.5768	2.2919
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.1825	2.254	2.5101	2.8284	3.1626	3.4561	3.6009	3.517	3.2609	2.8876	2.5768	2.2919
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	68	68	68	68	68	68	68	68	68	68	68	68
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.1825	2.2540	2.5101	2.8284	3.1626	3.4561	3.6009	3.5170	3.2609	2.8876	2.5768	2.2919
Net Throughput (gal/mo):	0.00	630,679.00	0.00	0.00	1,060,465.000.00		0.00	420,875.00	0.00	0.00	840,055.00	0.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	234.7106	244.1610	273.4759	312.1514	355.7090	391.5628	410.5021	400.2195	366.4084	319.4591	282.9411	247.5486

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 15
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Transmix	0.0000	0.0000	712.4167	5.0433	3,121.3897	0.0000	3,838.8497

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY

River Rouge Terminal (BETHY)

River Rouge Terminal (BETHY)

Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 16
River Rouge Terminal (BETHY)

Identification		Shell Characteristics		Tank Construction and Rim-Seal System	
Tank Name	16	Internal Shell Condition:	Light Rust	Construction:	
Configuration	2011-IFRT	Shell Color/Shade:	White/White	Primary Seal:	Liquid-mounted
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	None
State	MI				
Type of Tank	Internal Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2968000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	7	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	1	Deck Type:	Welded		
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Unbolted Cover, Ungasketed	1	36	5.9	1.2	36.0000
Automatic Gauge Float Well - Unbolted Cover, Ungasketed	1	14	5.4	1.1	14.0000
Column Well (24-in. Diam.) - Built-Up Col.-Sliding Cover, Ungask.	7	47	0	0	329.0000
Ladder Well (36-in. Diam.) - Sliding Cover, Ungasketed	1	76	0	0	76.0000
Roof Leg or Hanger Well - Adjustable	15	7.9	0	0	118.5000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Ungasketed Sliding Cover	1	31	150	1.4	31.0000

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 16
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Denatured Ethanol (5% Gas)	Good	Jan	38.01	34.74	41.27	48.6	0.8054	0.7404	0.8752	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Feb	39.46	35.71	43.22	48.6	0.836	0.7591	0.9194	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Mar	44.39	39.96	48.81	48.6	0.9466	0.8466	1.0564	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Apr	49.96	44.46	55.46	48.6	1.0865	0.9485	1.241	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	May	55.29	49.11	61.47	48.6	1.236	1.0641	1.4307	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Jun	59.6	53.19	66.02	48.6	1.3694	1.1752	1.5898	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Jul	61.62	55.36	67.89	48.6	1.4359	1.2382	1.6593	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Aug	60.46	54.56	66.36	48.6	1.3973	1.2146	1.6024	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Sep	56.77	51.37	62.17	48.6	1.2805	1.1244	1.4544	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Oct	50.94	46.17	55.71	48.6	1.1128	0.9896	1.2486	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Nov	45.6	42.1	49.1	48.6	0.9757	0.8938	1.0639	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381
Denatured Ethanol (5% Gas)	Good	Dec	40.22	37.24	43.2	48.6	0.8523	0.7898	0.9188	48.86			48.86	RVP:3.17 A:12.5446 B:6350.8381

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 16
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	**10.9798**	**11.4088**	**12.9705**	**14.9641**	**17.1184**	**19.0602**	**20.0349**	**19.4689**	**17.7638**	**15.3412**	**13.384**	**11.6379**
Seal Factor A (lb-mole/ft-yr):	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Value of Vapor Pressure Function:	0.0144	0.015	0.017	0.0196	0.0225	0.025	0.0263	0.0255	0.0233	0.0201	0.0176	0.0153
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.8054	0.836	0.9466	1.0865	1.236	1.3694	1.4359	1.3973	1.2805	1.1128	0.9757	0.8523
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**7.6574**	**7.5244**	**8.1664**	**7.789**	**8.2613**	**7.7838**	**7.0645**	**6.4834**	**7.2942**	**8.0602**	**7.8336**	**7.9042**
Net Throughput (gal/mo):	3,934,204	3,865,887	4,195,725	4,001,793	4,244,471	3,999,146	3,629,587	3,331,006	3,747,618	4,141,177	4,024,739	4,061,025

D14

Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38
Number of Fixed Roof Columns:	7	7	7	7	7	7	7	7	7	7	7	7
Effective Column Diameter (ft):	1	1	1	1	1	1	1	1	1	1	1	1
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	35.8194	37.2189	42.3135	48.8172	55.8452	62.1799	65.3595	63.5131	57.9506	50.0474	43.6625	37.9661
Value of Vapor Pressure Function:	0.0144	0.015	0.017	0.0196	0.0225	0.025	0.0263	0.0255	0.0233	0.0201	0.0176	0.0153
Vapor Molecular Weight (lb/lb-mole):	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0

Vapor Molecular Weight (lb/lb-mole):	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.8054	0.8360	0.9466	1.0865	1.2360	1.3694	1.4359	1.3973	1.2805	1.1128	0.9757	0.8523
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.8054	0.836	0.9466	1.0865	1.236	1.3694	1.4359	1.3973	1.2805	1.1128	0.9757	0.8523
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.8054	0.836	0.9466	1.0865	1.236	1.3694	1.4359	1.3973	1.2805	1.1128	0.9757	0.8523
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.8054	0.8360	0.9466	1.0865	1.2360	1.3694	1.4359	1.3973	1.2805	1.1128	0.9757	0.8523
Net Throughput (gal/mo):	3,934,204.00	3,865,887.00	4,195,725.00	4,001,793.00	4,244,471.00	3,999,146.00	3,629,587.00	3,331,006.00	3,747,618.00	4,141,177.00	4,024,739.00	4,061,025.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	54.4566	56.1522	63.4505	71.5703	81.2250	89.0239	92.4589	89.4653	83.0087	73.4488	64.8801	57.5082

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 16

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured Ethanol (5% Gas)	0.0000	0.0000	184.1326	91.8225	600.6934	0.0000	876.6485

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 17
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	17	Internal Shell Condition:	Light Rust	Construction:	
Configuration	2011-IFRT	Shell Color/Shade:	White/White	Primary Seal:	Liquid-mounted
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	None
State	MI				
Type of Tank	Internal Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2960000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	7	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	1	Deck Type:	Welded		
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Unbolted Cover, Ungasketed	1	36	5.9	1.2	36.0000
Automatic Gauge Float Well - Unbolted Cover, Ungasketed	1	14	5.4	1.1	14.0000
Column Well (24-in. Diam.) - Built-Up Col.-Sliding Cover, Ungask.	7	47	0	0	329.0000
Ladder Well (36-in. Diam.) - Sliding Cover, Ungasketed	1	76	0	0	76.0000
Roof Leg or Hanger Well - Adjustable	40	7.9	0	0	316.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000

Slotted Guide-Pole/Sample Well - Ungask, Sliding Cover, w/o Float	1	43	270	1.4	43.0000

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 17
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline	Good	Jan	38.01	34.74	41.27	48.6	5.3544	5.0151	5.7118	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Feb	39.46	35.71	43.22	48.6	5.5116	5.1131	5.9345	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Mar	44.39	39.96	48.81	48.6	5.3731	4.9194	5.8596	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Apr	49.96	44.46	55.46	48.6	3.7697	3.3645	4.2134	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	May	55.29	49.11	61.47	48.6	4.1994	3.7046	4.746	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jun	59.6	53.19	66.02	48.6	4.5754	4.0256	5.184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jul	61.62	55.36	67.89	48.6	4.7604	4.2054	5.373	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Aug	60.46	54.56	66.36	48.6	4.6533	4.1384	5.2184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Sep	56.77	51.37	62.17	48.6	4.3255	3.8796	4.8117	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Oct	50.94	46.17	55.71	48.6	6.1053	5.5651	6.6865	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Nov	45.6	42.1	49.1	48.6	5.5033	5.135	5.8924	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Dec	40.22	37.24	43.2	48.6	5.5949	5.2735	5.9317	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format

Detail Calculations (AP-42)

Tank: 17
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	108.7342	112.7971	112.5726	79.2608	89.9867	99.7356	104.6652	101.7993	93.2171	132.7342	116.0427	114.9763

Seal Factor A (lb-mole/ft-yr):	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**0.0323**	**0.1083**	**2.7248**	**3.2654**	**4.8451**	**8.444**	**14.5178**	**6.099**	**4.8046**	**5.5136**	**0.0678**	**0.0341**
Net Throughput (gal/mo):	18,898	63,409	1,594,952	1,911,377	2,836,015	4,942,628	8,497,834	3,570,010	2,812,337	3,227,339	39,689	19,937
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	7	7	7	7	7	7	7	7	7	7	7	7
Effective Column Diameter (ft):	1	1	1	1	1	1	1	1	1	1	1	1
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	476.4092	494.2104	493.2266	347.2742	394.2687	436.9827	458.5812	446.0247	408.4224	581.563	508.4305	503.7583
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2	820.2
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0

Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Net Throughput (gal/mo):	18,898.00	63,409.00	1,594,952.00	1,911,377.00	2,836,015.00	4,942,628.00	8,497,834.00	3,570,010.00	2,812,337.00	3,227,339.00	39,689.00	19,937.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117

Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	585.1757	607.1158	608.5240	429.8004	489.1005	545.1623	577.7641	553.9231	506.4442	719.8109	624.5409	618.7686

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 17
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	**Standing Loss**	**Working Loss**	**Rim Seal Loss**	**Withdrawl Loss**	**Deck Fitting Loss**	**Deck Seam Loss**	**Total Emissions**
Gasoline	0.0000	0.0000	1,266.5219	50.4569	5,549.1519	0.0000	6,866.1306

ATTACHMENT 1 - TANK REPORTS
BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 18
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	18	Internal Shell Condition:	Light Rust	Construction:	Riveted
Configuration	2011-DEFRT	Shell Color/Shade:	White/White	Primary Seal:	Mechanical Shoe
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	None
State	MI				
Type of Tank	Domed External Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:	Pontoon		
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2941000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Bolted Cover, Gasketed	1	1.6	0	0	1.6000
Automatic Gauge Float Well - Unbolted Cover, Ungasketed	1	14	5.4	1.1	14.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Ungasketed Sliding Cover	1	31	150	1.4	31.0000
Roof Leg (3-in. Diameter) - Adjustable, Pontoon Area, Ungasketed	19	2	0.37	0.91	38.0000
Roof Leg (3-in. Diameter) - Adjustable, Center Area, Ungasketed	24	0.82	0.53	0.14	19.6800
Rim Vent (6-in. Diameter) - Weighted Mech. Actuation, Gask.	1	0.71	0.1	1	0.7100

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 18
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F) Avg	Min	Max	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Gasoline	Good	Jan	38.01	34.74	41.27	48.6	5.3544	5.0151	5.7118	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Feb	39.46	35.71	43.22	48.6	5.5116	5.1131	5.9345	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Mar	44.39	39.96	48.81	48.6	5.3731	4.9194	5.8596	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Apr	49.96	44.46	55.46	48.6	3.7697	3.3645	4.2134	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	May	55.29	49.11	61.47	48.6	4.1994	3.7046	4.746	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jun	59.6	53.19	66.02	48.6	4.5754	4.0256	5.184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jul	61.62	55.36	67.89	48.6	4.7604	4.2054	5.373	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Aug	60.46	54.56	66.36	48.6	4.6533	4.1384	5.2184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Sep	56.77	51.37	62.17	48.6	4.3255	3.8796	4.8117	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Oct	50.94	46.17	55.71	48.6	6.1053	5.5651	6.6865	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Nov	45.6	42.1	49.1	48.6	5.5033	5.135	5.8924	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Dec	40.22	37.24	43.2	48.6	5.5949	5.2735	5.9317	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046

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BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 18
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	733.9559	761.3805	759.8648	535.0106	607.4104	673.2154	706.4901	687.1456	629.2155	895.9559	783.2879	776.09
Seal Factor A (lb-mole/ft-yr):	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	2	2	2	2	2	2	2	2	2	2	2	2
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	22.673	19.7667	20.1852	16.6253	22.7259	23.9223	18.5641	16.5622	22.5537	24.0547	25.1422	26.1813
Net Throughput (gal/mo):	14,065,412	12,262,476	12,522,107	10,313,711	14,098,222	14,840,452	11,516,417	10,274,550	13,991,428	14,922,574	15,597,246	16,241,860
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	64.5842	66.9974	66.864	47.0781	53.4488	59.2393	62.1673	60.4651	55.3676	78.8393	68.9251	68.2917
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	111.19	111.19	111.19	111.19	111.19	111.19	111.19	111.19	111.19	111.19	111.19	111.19
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1

Standing Losses[1] - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949

Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Net Throughput (gal/mo):	14,065,412.00	12,262,476.00	12,522,107.00	10,313,711.00	14,098,222.00	14,840,452.00	11,516,417.00	10,274,550.00	13,991,428.00	14,922,574.00	15,597,246.00	16,241,860.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	821.2131	848.1445	846.9140	598.7140	683.5851	756.3771	787.2215	764.1729	707.1368	998.8499	877.3552	870.5630

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 18
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline	0.0000	0.0000	8,549.0225	258.9566	752.2680	0.0000	9,560.2471

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 20
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	20	Internal Shell Condition:	Light Rust	Construction:	Riveted
Configuration	2011-DEFRT	Shell Color/Shade:	White/White	Primary Seal:	Mechanical Shoe
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	None
State	MI				

Type of Tank	Domed External Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:	Pontoon		
Shell Height/Length (ft):	0	Fitting Category:	Typical	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2776000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:	Typical	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

	Roof Fitting Loss Factors				
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Bolted Cover, Gasketed	1	1.6	0	0	1.6000
Automatic Gauge Float Well - Unbolted Cover, Ungasketed	1	14	5.4	1.1	14.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Ungasketed Sliding Cover	1	31	150	1.4	31.0000
Gauge-Hatch/Sample Well (8-in. Diam.) - Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.4700
Roof Leg (3-in. Diameter) - Adjustable, Pontoon Area, Ungasketed	19	2	0.37	0.91	38.0000
Roof Leg (3-in. Diameter) - Adjustable, Center Area, Ungasketed	24	0.82	0.53	0.14	19.6800
Rim Vent (6-in. Diameter) - Weighted Mech. Actuation, Gask.	1	0.71	0.1	1	0.7100

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 20
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline	Good	Jan	38.01	34.74	41.27	48.6	5.3544	5.0151	5.7118	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Feb	39.46	35.71	43.22	48.6	5.5116	5.1131	5.9345	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Mar	44.39	39.96	48.81	48.6	5.3731	4.9194	5.8596	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Apr	49.96	44.46	55.46	48.6	3.7697	3.3645	4.2134	67			92	RVP:9 A:11.75623519 B:5315.057883

Gasoline	Good	May	55.29	49.11	61.47	48.6	4.1994	3.7046	4.746	67	92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jun	59.6	53.19	66.02	48.6	4.5754	4.0256	5.184	67	92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jul	61.62	55.36	67.89	48.6	4.7604	4.2054	5.373	67	92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Aug	60.46	54.56	66.36	48.6	4.6533	4.1384	5.2184	67	92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Sep	56.77	51.37	62.17	48.6	4.3255	3.8796	4.8117	67	92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Oct	50.94	46.17	55.71	48.6	6.1053	5.5651	6.6865	62	92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Nov	45.6	42.1	49.1	48.6	5.5033	5.135	5.8924	62	92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Dec	40.22	37.24	43.2	48.6	5.5949	5.2735	5.9317	60.15	96	RVP:15 A:11.5998779333478 B:4937.93060603046

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 20
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	733.9559	761.3805	759.8648	535.0106	607.4104	673.2154	706.4901	687.1456	629.2155	895.9559	783.2879	776.09
Seal Factor A (lb-mole/ft-yr):	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	2	2	2	2	2	2	2	2	2	2	2	2
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	3.534	4.2384	3.9201	3.8714	4.4951	4.4835	4.0803	5.5036	3.9664	5.0314	4.7047	4.6206
Net Throughput (gal/mo):	2,192,333	2,629,347	2,431,865	2,401,691	2,788,599	2,781,384	2,531,263	3,414,242	2,460,579	3,121,299	2,918,633	2,866,440
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	64.8572	67.2806	67.1466	47.2771	53.6748	59.4897	62.4301	60.7207	55.6016	79.1726	69.2165	68.5804
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15

Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183

Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Net Throughput (gal/mo):	2,192,333.002	629,347.002	431,865.002	401,691.002	788,599.002	781,384.002	531,263.003	414,242.002	460,579.003	121,299.002	918,633.002	866,440.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	802.3471	832.8995	830.9315	586.1591	665.5803	737.1887	773.0005	753.3699	688.7835	980.1599	857.2091	849.2910

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 20
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline	0.0000	0.0000	8,549.0225	52.4496	755.4478	0.0000	9,356.9200

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 22
River Rouge Terminal (BETHY)

Identification		Shell Characteristics		Tank Construction and Rim-Seal System	
Tank Name	22	Internal Shell Condition:	Light Rust	Construction:	
Configuration	2011-IFRT	Shell Color/Shade:	White/White	Primary Seal:	Mechanical Shoe
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	Rim-mounted
State	MI				
Type of Tank	Internal Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	3526000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	7	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	1	Deck Type:	Welded		
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Unbolted Cover, Ungasketed	1	36	5.9	1.2	36.0000
Automatic Gauge Float Well - Bolted Cover, Gasketed	1	2.8	0	0	2.8000
Column Well (24-in. Diam.) - Built-Up Col.-Sliding Cover, Gask.	7	33	0	0	231.0000
Ladder Well (36-in. Diam.) - Sliding Cover, Gasketed	1	56	0	0	56.0000
Roof Leg or Hanger Well - Adjustable	40	7.9	0	0	316.0000
Sample Pipe or Well (24-in. Diam.) - Slit Fabric Seal 10% Open	1	12	0	0	12.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Gasketed sliding Cover, w. Wiper	1	14	3.7	0.78	14.0000

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format

Liquid Contents of Storage Tank

Tank: 22
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline	Good	Jan	38.01	34.74	41.27	48.6	5.3544	5.0151	5.7118	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Feb	39.46	35.71	43.22	48.6	5.5116	5.1131	5.9345	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Mar	44.39	39.96	48.81	48.6	5.3731	4.9194	5.8596	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Apr	49.96	44.46	55.46	48.6	3.7697	3.3645	4.2134	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	May	55.29	49.11	61.47	48.6	4.1994	3.7046	4.746	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jun	59.6	53.19	66.02	48.6	4.5754	4.0256	5.184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jul	61.62	55.36	67.89	48.6	4.7604	4.2054	5.373	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Aug	60.46	54.56	66.36	48.6	4.6533	4.1384	5.2184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Sep	56.77	51.37	62.17	48.6	4.3255	3.8796	4.8117	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Oct	50.94	46.17	55.71	48.6	6.1053	5.5651	6.6865	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Nov	45.6	42.1	49.1	48.6	5.5033	5.135	5.8924	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Dec	40.22	37.24	43.2	48.6	5.5949	5.2735	5.9317	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 22
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	**40.7753**	**42.2989**	**42.2147**	**29.7228**	**33.745**	**37.4009**	**39.2494**	**38.1748**	**34.9564**	**49.7753**	**43.516**	**43.1161**
Seal Factor A (lb-mole/ft-yr):	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	1	1	1	1	1	1	1	1	1	1	1	1
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949

Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**6.0947**	**6.3203**	**9.2752**	**10.3902**	**8.2596**	**8.2147**	**9.4631**	**10.3312**	**11.258**	**16.4793**	**12.7304**	**13.4031**
Net Throughput (gal/mo):	3,567,447	3,699,531	5,429,139	6,081,830	4,834,688	4,808,417	5,539,149	6,047,247	6,589,779	9,645,998	7,451,616	7,845,377
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	7	7	7	7	7	7	7	7	7	7	7	7
Effective Column Diameter (ft):	1	1	1	1	1	1	1	1	1	1	1	1
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	391.4896	406.1178	405.3093	285.3729	323.9906	359.0908	376.8394	366.5212	335.6215	477.8999	417.8031	413.9638
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	674	674	674	674	674	674	674	674	674	674	674	674
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Net Throughput (gal/mo):	3,567,447.00	3,699,531.00	5,429,139.00	6,081,830.00	4,834,688.00	4,808,417.00	5,539,149.00	6,047,247.00	6,589,779.00	9,645,998.00	7,451,616.00	7,845,377.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	438.3596	454.7370	456.7992	325.4859	365.9953	404.7064	425.5520	415.0271	381.8359	544.1545	474.0495	470.4830

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 22
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline	0.0000	0.0000	474.9457	122.2199	4,560.0199	0.0000	5,157.1855

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 23
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	23	Internal Shell Condition:	Light Rust	Construction:	Riveted
Configuration	2011-DEFRT	Shell Color/Shade:	White/White	Primary Seal:	Mechanical Shoe
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	None
State	MI				
Type of Tank	Domed External Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:	Pontoon		
Shell Height/Length (ft):	0	Fitting Category:	Typical	**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	2945000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:	Typical	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

			Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

					(lb/lb-mole)
Access Hatch (24-in. Diam.) - Bolted Cover, Gasketed	1	1.6	0	0	1.6000
Automatic Gauge Float Well - Unbolted Cover, Ungasketed	1	14	5.4	1.1	14.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Ungasketed Sliding Cover	1	31	150	1.4	31.0000
Gauge-Hatch/Sample Well (8-in. Diam.) - Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.4700
Roof Leg (3-in. Diameter) - Adjustable, Pontoon Area, Ungasketed	19	2	0.37	0.91	38.0000
Roof Leg (3-in. Diameter) - Adjustable, Center Area, Ungasketed	24	0.82	0.53	0.14	19.6800
Rim Vent (6-in. Diameter) - Weighted Mech. Actuation, Gask.	1	0.71	0.1	1	0.7100

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 23
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline	Good	Jan	38.01	34.74	41.27	48.6	5.3544	5.0151	5.7118	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Feb	39.46	35.71	43.22	48.6	5.5116	5.1131	5.9345	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046
Gasoline	Good	Mar	44.39	39.96	48.81	48.6	5.3731	4.9194	5.8596	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Apr	49.96	44.46	55.46	48.6	3.7697	3.3645	4.2134	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	May	55.29	49.11	61.47	48.6	4.1994	3.7046	4.746	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jun	59.6	53.19	66.02	48.6	4.5754	4.0256	5.184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Jul	61.62	55.36	67.89	48.6	4.7604	4.2054	5.373	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Aug	60.46	54.56	66.36	48.6	4.6533	4.1384	5.2184	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Sep	56.77	51.37	62.17	48.6	4.3255	3.8796	4.8117	67			92	RVP:9 A:11.75623519 B:5315.057883
Gasoline	Good	Oct	50.94	46.17	55.71	48.6	6.1053	5.5651	6.6865	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Nov	45.6	42.1	49.1	48.6	5.5033	5.135	5.8924	62			92	RVP:13.5 A:11.63212745 B:5015.715123
Gasoline	Good	Dec	40.22	37.24	43.2	48.6	5.5949	5.2735	5.9317	60.15			96	RVP:15 A:11.5998779333478 B:4937.93060603046

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 23
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	733.9559	761.3805	759.8648	535.0106	607.4104	673.2154	706.4901	687.1456	629.2155	895.9559	783.2879	776.09
Seal Factor A (lb-mole/ft-yr):	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	2	2	2	2	2	2	2	2	2	2	2	2
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0.0305	0.1022	2.571	3.0811	4.5716	7.9673	13.6982	5.7547	4.5334	5.2024	0.064	0.0321
Net Throughput (gal/mo):	18,898	63,409	1,594,952	1,911,377	2,836,015	4,942,628	8,497,834	3,570,010	2,812,337	3,227,339	39,689	19,937
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	64.8572	67.2806	67.1466	47.2771	53.6748	59.4897	62.4301	60.7207	55.6016	79.1726	69.2165	68.5804
Value of Vapor Pressure Function:	0.1159	0.1202	0.1164	0.0758	0.0861	0.0954	0.1001	0.0974	0.0892	0.1372	0.12	0.1225
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66	111.66
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0

Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon	Pontoon
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0

Vapor Molecular Weight (lb/lb-mole):	60.15	60.15	62	67	67	67	67	67	67	62	62	60.15
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.3544	5.5116	5.3731	3.7697	4.1994	4.5754	4.7604	4.6533	4.3255	6.1053	5.5033	5.5949
Net Throughput (gal/mo):	18,898.00	63,409.00	1,594,952.00	1,911,377.00	2,836,015.00	4,942,628.00	8,497,834.00	3,570,010.00	2,812,337.00	3,227,339.00	39,689.00	19,937.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	798.8436	828.7633	829.5824	585.3687	665.6567	740.6725	782.6184	753.6210	689.3505	980.3308	852.5683	844.7025

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 23
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline	0.0000	0.0000	8,549.0225	47.6085	755.4478	0.0000	9,352.0788

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 56
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	56	Internal Shell Condition:	Light Rust	Construction:	
Configuration	2011-IFRT	Shell Color/Shade:	White/White	Primary Seal:	Mechanical Shoe
City	River Rouge	Shell/Paint Condition:	Light Rust/Good	Secondary Seal:	Rim-mounted
State	MI				
Type of Tank	Internal Floating Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03

Tank Dimensions		Type:			
Shell Height/Length (ft):	0	Fitting Category:	Detail	**Tank Options**	
Diameter (ft):	80			Is Tank Heated?	No
Volume (gallons):	1355000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	1	Deck Fitting Category:	Detail	Self Supp. Roof?:	No
Eff. Col. Diam (ft):	1	Deck Type:	Welded		
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting Loss Factors

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)
Access Hatch (24-in. Diam.) - Bolted Cover, Gasketed	1	1.6	0	0	1.6000
Automatic Gauge Float Well - Bolted Cover, Gasketed	1	2.8	0	0	2.8000
Column Well (24-in. Diam.) - Built-Up Col.-Sliding Cover, Gask.	1	33	0	0	33.0000
Ladder Well (36-in. Diam.) - Sliding Cover, Gasketed	1	56	0	0	56.0000
Roof Leg or Hanger Well - Adjustable	24	7.9	0	0	189.6000
Sample Pipe or Well (24-in. Diam.) - Slit Fabric Seal 10% Open	1	12	0	0	12.0000
Vacuum Breaker (10-in. Diam.) - Weighted Mech. Actuation, Gask.	1	6.2	1.2	0.94	6.2000
Unslotted Guide-Pole Well - Gasketed sliding Cover, w. Wiper	1	14	3.7	0.78	14.0000

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 56
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F) Avg	Min	Max	Liquid Buk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Distillate Fuel Oil No.2	Good	Jan	38.01	34.74	41.27	48.6	0.003	0.0027	0.0034	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Feb	39.46	35.71	43.22	48.6	0.0032	0.0028	0.0037	130			188	RVP:0.022 A:12.101 B:8907

Distillate Fuel Oil No.2	Good	Mar	44.39	39.96	48.81	48.6	0.0038	0.0033	0.0044	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Apr	49.96	44.46	55.46	48.6	0.0046	0.0038	0.0056	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	May	55.29	49.11	61.47	48.6	0.0055	0.0045	0.0068	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Jun	59.6	53.19	66.02	48.6	0.0064	0.0052	0.0079	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Jul	61.62	55.36	67.89	48.6	0.0068	0.0056	0.0084	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Aug	60.46	54.56	66.36	48.6	0.0066	0.0054	0.008	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Sep	56.77	51.37	62.17	48.6	0.0058	0.0049	0.007	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Oct	50.94	46.17	55.71	48.6	0.0048	0.0041	0.0056	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Nov	45.6	42.1	49.1	48.6	0.004	0.0035	0.0045	130	188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Dec	40.22	37.24	43.2	48.6	0.0033	0.003	0.0037	130	188	RVP:0.022 A:12.101 B:8907

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 56
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	**0.0275**	**0.0289**	**0.0345**	**0.0418**	**0.0501**	**0.0578**	**0.0618**	**0.0595**	**0.0526**	**0.0432**	**0.036**	**0.0297**
Seal Factor A (lb-mole/ft-yr):	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Seal Factor B (lb-mole/ft-yr (mpg^n):	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	1	1	1	1	1	1	1	1	1	1	1	1
Value of Vapor Pressure Function:	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Tank Diameter (ft)	80	80	80	80	80	80	80	80	80	80	80	80
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**0.4016**	**0.3571**	**0.1953**	**0.1777**	**0.1484**	**0.1125**	**0.1444**	**0.0744**	**0.2091**	**0.3732**	**0.3122**	**0.2542**
Net Throughput (gal/mo):	132,714	118,006	64,536	58,709	49,038	37,170	47,699	24,577	69,085	123,309	103,149	83,996
Shell Clinage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Number of Fixed Roof Columns:	1	1	1	1	1	1	1	1	1	1	1	1
Effective Column Diameter (ft):	1	1	1	1	1	1	1	1	1	1	1	1
Tank Diameter (ft):	80	80	80	80	80	80	80	80	80	80	80	80
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0.1804	0.1901	0.2262	0.2745	0.3289	0.3798	0.4059	0.3907	0.3457	0.2839	0.2361	0.1953

Value of Vapor Pressure Function:	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)	315.2	315.2	315.2	315.2	315.2	315.2	315.2	315.2	315.2	315.2	315.2	315.2
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	80	80	80	80	80	80	80	80	80	80	80	80
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vented Vapor Saturation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	80	80	80	80	80	80	80	80	80	80	80	80
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Shell Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	40	40	40	40	40	40	40	40	40	40	40	40
Vapor Density												
Vapor Density (lb/cu ft):	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0030	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.0040	0.0033
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17

Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Vapor Space Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Working Losses - Fixed Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0030	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.0040	0.0033
Net Throughput (gal/mo):	132,714.00	118,006.00	64,536.00	58,709.00	49,038.00	37,170.00	47,699.00	24,577.00	69,085.00	123,309.00	103,149.00	83,996.00
Turnovers:	0	0	0	0	0	0	0	0	0	0	0	0
Turnover Factor:	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Volume (gal):	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	80	80	80	80	80	80	80	80	80	80	80	80
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.6095	0.5761	0.4560	0.4940	0.5274	0.5501	0.6121	0.5246	0.6074	0.7003	0.5842	0.4792

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 56
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Distillate Fuel Oil No.2	0.0000	0.0000	0.5235	2.7600	3.4374	0.0000	6.7209

ATTACHMENT 1 - TANK REPORTS

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ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 57
River Rouge Terminal (BETHY)

Identification		Shell Characteristics		Tank Construction and Rim-Seal System	
Tank Name	57	Internal Shell Condition:		Construction:	
Configuration	2011-VFRT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	/Good	Secondary Seal:	
State	MI				
Type of Tank	Vertical Fixed Roof Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:	Good	Vacuum Settings (psia):	-0.03
		Roof Color/Shade:	White/White	Pressure Settings (psia):	0.03
Tank Dimensions		Type:	Cone		
Shell Height/Length (ft):	42	Fitting Category:		**Tank Options**	
Diameter (ft):	117			Is Tank Heated?	No
Volume (gallons):	3208000	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 57
River Rouge Terminal (BETHY)

Tank Paint	Daily Liquid Surface Temperature (deg F)	Liquid Buk	Vapor Pressure (psia)	Vapor	Liquid	Vapor	Molecular Basis for Vapor Pressure

Mixture/Component	Tank Fill Condition	Month	Temperature (deg F) Avg	Min	Max	Temp (deg F)	Avg	Min	Max	Mol Weight	Mass Fraction	Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Distillate Fuel Oil No.2	Good	Jan	38.01	34.74	41.27	48.6	0.003	0.0027	0.0034	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Feb	39.46	35.71	43.22	48.6	0.0032	0.0028	0.0037	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Mar	44.39	39.96	48.81	48.6	0.0038	0.0033	0.0044	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Apr	49.96	44.46	55.46	48.6	0.0046	0.0038	0.0056	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	May	55.29	49.11	61.47	48.6	0.0055	0.0045	0.0068	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Jun	59.6	53.19	66.02	48.6	0.0064	0.0052	0.0079	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Jul	61.62	55.36	67.89	48.6	0.0068	0.0056	0.0084	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Aug	60.46	54.56	66.36	48.6	0.0066	0.0054	0.008	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Sep	56.77	51.37	62.17	48.6	0.0058	0.0049	0.007	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Oct	50.94	46.17	55.71	48.6	0.0048	0.0041	0.0056	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Nov	45.6	42.1	49.1	48.6	0.004	0.0035	0.0045	130			188	RVP:0.022 A:12.101 B:8907
Distillate Fuel Oil No.2	Good	Dec	40.22	37.24	43.2	48.6	0.0033	0.003	0.0037	130			188	RVP:0.022 A:12.101 B:8907

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 57
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Tank Diameter (ft)	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	2,867,105	4,125,109	7,533,343	5,244,605	3,740,251	2,602,020	1,684,531	1,305,739	1,759,780	2,088,817	3,522,071	1,386,737
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0

Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	13.3703	15.131	22.4558	32.3288	44.4848	51.1093	54.8694	49.8881	39.4214	29.9217	17.8793	13.1391
Vapor Space Volume (cu ft):	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9963	0.9961	0.9953	0.9944	0.9932	0.9922	0.9917	0.992	0.9929	0.9942	0.9951	0.996
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792	249107.9792
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Vapor Space Outage (ft):	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17
Tank Shell Height (ft):	42	42	42	42	42	42	42	42	42	42	42	42
Aveage Liquid Height (ft):	20	20	20	20	20	20	20	20	20	20	20	20
Roof Outage (ft):	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Roof Outage	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone
Roof Outage (ft):	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700	1.1700
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Shell Radius (ft):	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0030	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.0040	0.0033
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904

Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9963	0.9961	0.9953	0.9944	0.9932	0.9922	0.9917	0.992	0.9929	0.9942	0.9951	0.996
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.003	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.004	0.0033
Vapor Space Outage (ft):	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17	23.17
Working Losses - Fixed Roof Tanks (lb):	**26.9718**	**40.8858**	**88.8809**	**75.0742**	**64.155**	**51.5293**	**35.6517**	**26.6002**	**31.7191**	**30.9205**	**43.3595**	**14.1214**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0030	0.0032	0.0038	0.0046	0.0055	0.0064	0.0068	0.0066	0.0058	0.0048	0.0040	0.0033
Net Throughput (gal/mo):	2,867,105.00	4,125,109.00	7,533,343.00	5,244,605.00	3,740,251.00	2,602,020.00	1,684,531.00	1,305,739.00	1,759,780.00	2,088,817.00	3,522,071.00	1,386,737.00
Tumovers:	0.8912	1.2822	2.3415	1.6301	1.1625	0.8088	0.5236	0.4059	0.547	0.6492	1.0947	0.431
Tumover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3212493.05913212493.05913212493.05913212493.05913212493.05913212493.05913212493.05913212493.05913212493.05913212493.05913212493.05913212493.0591											
Maximum Liquid Height (ft):	40	40	40	40	40	40	40	40	40	40	40	40
Tank Diameter (ft):	117	117	117	117	117	117	117	117	117	117	117	117
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	40.3421	56.0168	111.3367	107.4030	108.6398	102.6387	90.5212	76.4883	71.1404	60.8422	61.2388	27.2604

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 57
River Rouge Terminal (BETHY)

Fixed Roof Losses (lbs) Floating Roof Losses (lbs)

Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Distillate Fuel Oil No.2	383.9991	529.8694	0.0000	0.0000	0.0000	0.0000	913.8685

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 83
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	83	Internal Shell Condition:		Construction:	
Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 83
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline Additive		Jan	38.01	34.74	41.27	48.6	0.0064	0.0056	0.0074	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Feb	39.46	35.71	43.22	48.6	0.0068	0.0058	0.008	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Mar	44.39	39.96	48.81	48.6	0.0084	0.007	0.01	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Apr	49.96	44.46	55.46	48.6	0.0105	0.0084	0.013	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		May	55.29	49.11	61.47	48.6	0.0129	0.0101	0.0164	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jun	59.6	53.19	66.02	48.6	0.0152	0.0119	0.0194	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jul	61.62	55.36	67.89	48.6	0.0165	0.0129	0.0208	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Aug	60.46	54.56	66.36	48.6	0.0157	0.0125	0.0197	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Sep	56.77	51.37	62.17	48.6	0.0137	0.0111	0.0168	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Oct	50.94	46.17	55.71	48.6	0.0109	0.009	0.0131	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Nov	45.6	42.1	49.1	48.6	0.0088	0.0076	0.0101	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Dec	40.22	37.24	43.2	48.6	0.0071	0.0062	0.008	130			188	RVP:0 A:15.672 B:10310.88

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 83
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	93	98	104	104	116	107	88	91	101	114	86	76

Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0.018	0.0205	0.0313	0.0465	0.0659	0.0775	0.0842	0.076	0.0589	0.0433	0.0251	0.0179
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9989	0.9989	0.9986	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002

Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9989	0.9989	0.9986	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0018**	**0.0021**	**0.0027**	**0.0034**	**0.0046**	**0.005**	**0.0045**	**0.0044**	**0.0042**	**0.0038**	**0.0023**	**0.0017**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Net Throughput (gal/mo):	92.50	98.00	103.50	104.00	115.50	107.00	87.50	91.00	100.50	114.00	86.00	76.00
Turnovers:	0.0234	0.0248	0.0262	0.0263	0.0293	0.0271	0.0222	0.023	0.0255	0.0289	0.0218	0.0192
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0198	0.0226	0.0340	0.0499	0.0706	0.0826	0.0886	0.0805	0.0632	0.0471	0.0275	0.0196

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY

Emissions Report - Detail Format
Tank Emission Totals

Tank: 83
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline Additive	0.5653	0.0406	0.0000	0.0000	0.0000	0.0000	0.6059

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 83a
River Rouge Terminal (BETHY)

Identification		Shell Characteristics		Tank Construction and Rim-Seal System	
Tank Name	83a	Internal Shell Condition:		Construction:	
Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format

Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 83a
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Gasoline Additive		Jan	38.01	34.74	41.27	48.6	0.0064	0.0056	0.0074	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Feb	39.46	35.71	43.22	48.6	0.0068	0.0058	0.008	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Mar	44.39	39.96	48.81	48.6	0.0084	0.007	0.01	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Apr	49.96	44.46	55.46	48.6	0.0105	0.0084	0.013	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		May	55.29	49.11	61.47	48.6	0.0129	0.0101	0.0164	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jun	59.6	53.19	66.02	48.6	0.0152	0.0119	0.0194	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jul	61.62	55.36	67.89	48.6	0.0165	0.0129	0.0208	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Aug	60.46	54.56	66.36	48.6	0.0157	0.0125	0.0197	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Sep	56.77	51.37	62.17	48.6	0.0137	0.0111	0.0168	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Oct	50.94	46.17	55.71	48.6	0.0109	0.009	0.0131	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Nov	45.6	42.1	49.1	48.6	0.0088	0.0076	0.0101	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Dec	40.22	37.24	43.2	48.6	0.0071	0.0062	0.008	130			188	RVP:0 A:15.672 B:10310.88

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 83a
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8

Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Net Throughput (gal/mo):	93	98	104	104	116	107	88	91	101	114	86	76
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0.018**	**0.0205**	**0.0313**	**0.0465**	**0.0659**	**0.0775**	**0.0842**	**0.076**	**0.0589**	**0.0433**	**0.0251**	**0.0179**
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9989	0.9989	0.9986	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0

Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9989	0.9989	0.9986	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0018**	**0.0021**	**0.0027**	**0.0034**	**0.0046**	**0.005**	**0.0045**	**0.0044**	**0.0042**	**0.0038**	**0.0023**	**0.0017**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Net Throughput (gal/mo):	92.50	98.00	103.50	104.00	115.50	107.00	87.50	91.00	100.50	114.00	86.00	76.00
Turnovers:	0.0234	0.0248	0.0262	0.0263	0.0293	0.0271	0.0222	0.023	0.0255	0.0289	0.0218	0.0192
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0198	0.0226	0.0340	0.0499	0.0706	0.0826	0.0886	0.0805	0.0632	0.0471	0.0275	0.0196

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 83a
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline Additive	0.5653	0.0406	0.0000	0.0000	0.0000	0.0000	0.6059

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 89
River Rouge Terminal (BETHY)

Identification

Tank Name	89
Configuration	2010-HT
City	River Rouge
State	MI
Type of Tank	Horizontal Tank
Description	

Tank Dimensions

Shell Height/Length (ft):	10.5
Diameter (ft):	8
Volume (gallons):	3943
No. of Columns:	0
Eff. Col. Diam (ft):	0

Shell Characteristics

Internal Shell Condition:	
Shell Color/Shade:	White/White
Shell/Paint Condition:	Good/

Roof Characteristics

Roof Condition:	
Roof Color/Shade:	
Type:	
Fitting Category:	

Deck Characteristics

Deck Fitting Category:	
Deck Type:	
Construction:	
Deck Seam:	(Length: 0 ft)

Tank Construction and Rim-Seal System

Construction:	
Primary Seal:	
Secondary Seal:	

Breather Settings

Vacuum Settings (psia):	-0.03
Pressure Settings (psia):	0.03

Tank Options

Is Tank Heated?	No
Is Tank Underground?	No
Self Supp. Roof?:	No

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 89
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Diesel Additive		Jan	38.01	34.74	41.27	48.6	0.0025	0.0021	0.0029	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Feb	39.46	35.71	43.22	48.6	0.0026	0.0022	0.0031	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Mar	44.39	39.96	48.81	48.6	0.0033	0.0027	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Apr	49.96	44.46	55.46	48.6	0.0043	0.0033	0.0055	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		May	55.29	49.11	61.47	48.6	0.0055	0.0041	0.0072	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jun	59.6	53.19	66.02	48.6	0.0066	0.005	0.0088	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jul	61.62	55.36	67.89	48.6	0.0072	0.0055	0.0095	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Aug	60.46	54.56	66.36	48.6	0.0069	0.0053	0.0089	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Sep	56.77	51.37	62.17	48.6	0.0058	0.0046	0.0074	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Oct	50.94	46.17	55.71	48.6	0.0045	0.0036	0.0056	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Nov	45.6	42.1	49.1	48.6	0.0035	0.003	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Dec	40.22	37.24	43.2	48.6	0.0027	0.0024	0.0031	130			130	RVP:0 A:17.881 B:11890.714

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 89
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0

Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Net Throughput (gal/mo):	204	8	16	19	13	14	13	11	34	66	46	43
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0.0069**	**0.0079**	**0.0124**	**0.0191**	**0.028**	**0.0337**	**0.0371**	**0.0333**	**0.0252**	**0.0179**	**0.01**	**0.0069**
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0

Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0015**	**0.0001**	**0.0002**	**0.0003**	**0.0002**	**0.0003**	**0.0003**	**0.0002**	**0.0006**	**0.0009**	**0.0005**	**0.0004**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Net Throughput (gal/mo):	204.00	8.00	16.00	19.00	13.00	14.00	13.00	11.00	34.00	66.00	46.00	43.00
Turnovers:	0.0517	0.002	0.0041	0.0048	0.0033	0.0035	0.0033	0.0028	0.0086	0.0167	0.0117	0.0109
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1

Total Losses (lb):	0.0084	0.0080	0.0126	0.0194	0.0282	0.0340	0.0374	0.0335	0.0258	0.0188	0.0105	0.0073

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 89
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)			Floating Roof Losses (lbs)			
Component	**Standing Loss**	**Working Loss**	**Rim Seal Loss**	**Withdrawl Loss**	**Deck Fitting Loss**	**Deck Seam Loss**	**Total Emissions**
Diesel Additive	0.2384	0.0055	0.0000	0.0000	0.0000	0.0000	0.2439

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 90
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	90	Internal Shell Condition:		Construction:	
Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 90
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F) Avg	Min	Max	Liquid Buk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Diesel Additive		Jan	38.01	34.74	41.27	48.6	0.0025	0.0021	0.0029	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Feb	39.46	35.71	43.22	48.6	0.0026	0.0022	0.0031	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Mar	44.39	39.96	48.81	48.6	0.0033	0.0027	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Apr	49.96	44.46	55.46	48.6	0.0043	0.0033	0.0055	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		May	55.29	49.11	61.47	48.6	0.0055	0.0041	0.0072	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jun	59.6	53.19	66.02	48.6	0.0066	0.005	0.0088	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jul	61.62	55.36	67.89	48.6	0.0072	0.0055	0.0095	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Aug	60.46	54.56	66.36	48.6	0.0069	0.0053	0.0089	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Sep	56.77	51.37	62.17	48.6	0.0058	0.0046	0.0074	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Oct	50.94	46.17	55.71	48.6	0.0045	0.0036	0.0056	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Nov	45.6	42.1	49.1	48.6	0.0035	0.003	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Dec	40.22	37.24	43.2	48.6	0.0027	0.0024	0.0031	130			130	RVP:0 A:17.881 B:11890.714

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 90
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012

Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	41	42	40	55	43	36	25	19	30	35	64	32
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0.0069	0.0079	0.0124	0.0191	0.028	0.0337	0.0371	0.0333	0.0252	0.0179	0.01	0.0069
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8

Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0003**	**0.0003**	**0.0004**	**0.0007**	**0.0007**	**0.0007**	**0.0006**	**0.0004**	**0.0005**	**0.0005**	**0.0007**	**0.0003**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Net Throughput (gal/mo):	41.00	42.00	40.00	55.00	43.00	36.00	25.00	19.00	30.00	35.00	64.00	32.00
Turnovers:	0.0104	0.0106	0.0101	0.0139	0.0109	0.0091	0.0063	0.0048	0.0076	0.0089	0.0162	0.0081
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731

Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0072	0.0082	0.0128	0.0198	0.0287	0.0345	0.0376	0.0337	0.0258	0.0184	0.0107	0.0072

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 90
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	**Standing Loss**	**Working Loss**	**Rim Seal Loss**	**Withdrawl Loss**	**Deck Fitting Loss**	**Deck Seam Loss**	**Total Emissions**
Diesel Additive	0.2384	0.0062	0.0000	0.0000	0.0000	0.0000	0.2446

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 79
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	79	Internal Shell Condition:		Construction:	
Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			

Deck Seam: (Length: 0 ft)

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 79
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F) Avg	Min	Max	Liquid Buk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Gasoline Additive		Jan	38.01	34.74	41.27	48.6	0.0064	0.0056	0.0074	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Feb	39.46	35.71	43.22	48.6	0.0068	0.0058	0.008	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Mar	44.39	39.96	48.81	48.6	0.0084	0.007	0.01	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Apr	49.96	44.46	55.46	48.6	0.0105	0.0084	0.013	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		May	55.29	49.11	61.47	48.6	0.0129	0.0101	0.0164	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jun	59.6	53.19	66.02	48.6	0.0152	0.0119	0.0194	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Jul	61.62	55.36	67.89	48.6	0.0165	0.0129	0.0208	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Aug	60.46	54.56	66.36	48.6	0.0157	0.0125	0.0197	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Sep	56.77	51.37	62.17	48.6	0.0137	0.0111	0.0168	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Oct	50.94	46.17	55.71	48.6	0.0109	0.009	0.0131	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Nov	45.6	42.1	49.1	48.6	0.0088	0.0076	0.0101	130			188	RVP:0 A:15.672 B:10310.88
Gasoline Additive		Dec	40.22	37.24	43.2	48.6	0.0071	0.0062	0.008	130			188	RVP:0 A:15.672 B:10310.88

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 79
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	759	818	19	0	0	0	0	0	0	661	613	552
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0.018	0.0205	0.0313	0.0465	0.0659	0.0775	0.0842	0.076	0.0589	0.0433	0.0251	0.0179
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9989	0.9989	0.9986	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988

Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0002	0.0003	0.0004	0.0004	0.0004	0.0003	0.0003	0.0002	0.0002
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9989	0.9989	0.9986	0.9983	0.9979	0.9975	0.9973	0.9974	0.9977	0.9982	0.9985	0.9988
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0151**	**0.0173**	**0.0005**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0223**	**0.0167**	**0.0121**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0064	0.0068	0.0084	0.0105	0.0129	0.0152	0.0165	0.0157	0.0137	0.0109	0.0088	0.0071
Net Throughput (gal/mo):	759.00	818.00	19.00	0.00	0.00	0.00	0.00	0.00	0.00	661.00	613.00	552.00
Turnovers:	0.1933	0.2072	0.0048	0	0	0	0	0	0	0.1674	0.1553	0.1398

Turnovers:	0.1922	0.2072	0.0040	0	0	0	0	0	0	0.1074	0.1333	0.1398
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0331	0.0378	0.0318	0.0465	0.0659	0.0775	0.0842	0.0760	0.0589	0.0656	0.0418	0.0300

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 79
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)			Floating Roof Losses (lbs)			
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline Additive	0.5653	0.0839	0.0000	0.0000	0.0000	0.0000	0.6492

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 91
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**	
Tank Name	91	Internal Shell Condition:		Construction:	
Configuration	HT-2012	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No

Volume (gallons):	3943	Deck Characteristics		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorological Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 91
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F) Avg	Min	Max	Liquid Buk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Diesel Additive		Jan	38.01	34.74	41.27	48.6	0.0025	0.0021	0.0029	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Feb	39.46	35.71	43.22	48.6	0.0026	0.0022	0.0031	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Mar	44.39	39.96	48.81	48.6	0.0033	0.0027	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Apr	49.96	44.46	55.46	48.6	0.0043	0.0033	0.0055	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		May	55.29	49.11	61.47	48.6	0.0055	0.0041	0.0072	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jun	59.6	53.19	66.02	48.6	0.0066	0.005	0.0088	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jul	61.62	55.36	67.89	48.6	0.0072	0.0055	0.0095	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Aug	60.46	54.56	66.36	48.6	0.0069	0.0053	0.0089	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Sep	56.77	51.37	62.17	48.6	0.0058	0.0046	0.0074	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Oct	50.94	46.17	55.71	48.6	0.0045	0.0036	0.0056	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Nov	45.6	42.1	49.1	48.6	0.0035	0.003	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Dec	40.22	37.24	43.2	48.6	0.0027	0.0024	0.0031	130			130	RVP:0 A:17.881 B:11890.714

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 91
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	834	523	324	0	0	0	0	0	0	46	314	386
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	0.0069	0.0079	0.0124	0.0191	0.028	0.0337	0.0371	0.0333	0.0252	0.0179	0.01	0.0069
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137

Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0063**	**0.0043**	**0.0033**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0006**	**0.0034**	**0.0033**

Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Net Throughput (gal/mo):	834.00	523.00	324.00	0.00	0.00	0.00	0.00	0.00	0.00	46.00	314.00	386.00
Turnovers:	0.2112	0.1325	0.0821	0	0	0	0	0	0	0.0117	0.0795	0.0978
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0132	0.0122	0.0158	0.0191	0.0280	0.0337	0.0371	0.0333	0.0252	0.0185	0.0135	0.0102

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 91
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	**Standing Loss**	**Working Loss**	**Rim Seal Loss**	**Withdrawl Loss**	**Deck Fitting Loss**	**Deck Seam Loss**	**Total Emissions**
Diesel Additive	0.2384	0.0212	0.0000	0.0000	0.0000	0.0000	0.2596

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 92
River Rouge Terminal (BETHY)

Identification		**Shell Characteristics**		**Tank Construction and Rim-Seal System**
Tank Name	92	Internal Shell Condition:		Construction:
Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:
State	MI			
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**

Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

		Roof Fitting Loss Factors			
Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 92
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F)			Liquid Buk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
			Avg	Min	Max		Avg	Min	Max					
Diesel Additive		Jan	38.01	34.74	41.27	48.6	0.0025	0.0021	0.0029	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Feb	39.46	35.71	43.22	48.6	0.0026	0.0022	0.0031	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Mar	44.39	39.96	48.81	48.6	0.0033	0.0027	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Apr	49.96	44.46	55.46	48.6	0.0043	0.0033	0.0055	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		May	55.29	49.11	61.47	48.6	0.0055	0.0041	0.0072	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jun	59.6	53.19	66.02	48.6	0.0066	0.005	0.0088	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jul	61.62	55.36	67.89	48.6	0.0072	0.0055	0.0095	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Aug	60.46	54.56	66.36	48.6	0.0069	0.0053	0.0089	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Sep	56.77	51.37	62.17	48.6	0.0058	0.0046	0.0074	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Oct	50.94	46.17	55.71	48.6	0.0045	0.0036	0.0056	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Nov	45.6	42.1	49.1	48.6	0.0035	0.003	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Dec	40.22	37.24	43.2	48.6	0.0027	0.0024	0.0031	130			130	RVP:0 A:17.881 B:11890.714

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BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 92
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	48	59	122	161	107	116	109	102	315	614	434	403
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8

Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0.0069**	**0.0079**	**0.0124**	**0.0191**	**0.028**	**0.0337**	**0.0371**	**0.0333**	**0.0252**	**0.0179**	**0.01**	**0.0069**
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												

Vented Vapor Saturdation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.0004**	**0.0005**	**0.0013**	**0.0021**	**0.0018**	**0.0024**	**0.0024**	**0.0022**	**0.0057**	**0.0085**	**0.0047**	**0.0034**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Net Throughput (gal/mo):	48.00	59.00	122.00	161.00	107.00	116.00	109.00	102.00	315.00	614.00	434.00	403.00
Turnovers:	0.0122	0.0149	0.0309	0.0408	0.0271	0.0294	0.0276	0.0258	0.0798	0.1555	0.1099	0.1021
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0072	0.0084	0.0137	0.0213	0.0298	0.0361	0.0395	0.0354	0.0309	0.0264	0.0148	0.0103

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 92
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)			Floating Roof Losses (lbs)			
Component	Standing Loss	Working Loss	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Diesel Additive	0.2384	0.0354	0.0000	0.0000	0.0000	0.0000	0.2738

ATTACHMENT 1 - TANK REPORTS

BUCKEYE AIR EMISSIONS INVENTORY
River Rouge Terminal (BETHY)
Tank Identification and Physical Characteristics
Reporting Period (January 2012 to December 2012)

Tank: 93
River Rouge Terminal (BETHY)

Identification		Shell Characteristics	Tank Construction and Rim-Seal System
Tank Name	93	Internal Shell Condition:	Construction:

Configuration	2010-HT	Shell Color/Shade:	White/White	Primary Seal:	
City	River Rouge	Shell/Paint Condition:	Good/	Secondary Seal:	
State	MI				
Type of Tank	Horizontal Tank	**Roof Characteristics**		**Breather Settings**	
Description		Roof Condition:		Vacuum Settings (psia):	-0.03
		Roof Color/Shade:		Pressure Settings (psia):	0.03
Tank Dimensions		Type:			
Shell Height/Length (ft):	10.5	Fitting Category:		**Tank Options**	
Diameter (ft):	8			Is Tank Heated?	No
Volume (gallons):	3943	**Deck Characteristics**		Is Tank Underground?	No
No. of Columns:	0	Deck Fitting Category:		Self Supp. Roof?:	No
Eff. Col. Diam (ft):	0	Deck Type:			
		Construction:			
		Deck Seam:	(Length: 0 ft)		

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa (lb-mole/yr)	KFb (lb-mole/(yr mph^n))	m	Fitting Loss Factor (lb/lb-mole)

1. Meteorlogical Data used in Emissions Calculations: Detroit, MI (Avg Atmospheric Pressure = 14.384 psia)

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank: 93
River Rouge Terminal (BETHY)

Mixture/Component	Tank Paint Condition	Month	Daily Liquid Surface Temperature (deg F) Avg	Min	Max	Liquid Buk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fraction	Vapor Mass Fraction	Molecular Weight	Basis for Vapor Pressure Calculations
Diesel Additive		Jan	38.01	34.74	41.27	48.6	0.0025	0.0021	0.0029	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Feb	39.46	35.71	43.22	48.6	0.0026	0.0022	0.0031	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Mar	44.39	39.96	48.81	48.6	0.0033	0.0027	0.0041	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Apr	49.96	44.46	55.46	48.6	0.0043	0.0033	0.0055	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		May	55.29	49.11	61.47	48.6	0.0055	0.0041	0.0072	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jun	59.6	53.19	66.02	48.6	0.0066	0.005	0.0088	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Jul	61.62	55.36	67.89	48.6	0.0072	0.0055	0.0095	130			130	RVP:0 A:17.881 B:11890.714
Diesel Additive		Aug	60.46	54.56	66.36	48.6	0.0069	0.0053	0.0089	130			130	RVP:0 A:17.881 B:11890.714

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Diesel Additive	Sep	56.77	51.37	62.17	48.6	0.0058	0.0046	0.0074	130	130	RVP:0 A:17.881 B:11890.714
Diesel Additive	Oct	50.94	46.17	55.71	48.6	0.0045	0.0036	0.0056	130	130	RVP:0 A:17.881 B:11890.714
Diesel Additive	Nov	45.6	42.1	49.1	48.6	0.0035	0.003	0.0041	130	130	RVP:0 A:17.881 B:11890.714
Diesel Additive	Dec	40.22	37.24	43.2	48.6	0.0027	0.0024	0.0031	130	130	RVP:0 A:17.881 B:11890.714

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank: 93
River Rouge Terminal (BETHY)

Month:	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Rim Seal Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor A (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Seal Factor B (lb-mole/ft-yr (mpg^n):	0	0	0	0	0	0	0	0	0	0	0	0
Average Wind Speed (mph)	0	0	0	0	0	0	0	0	0	0	0	0
Seal-related Wind Speed Exponent	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Pressure at Daily Average Liquid Surage Temperature (psia)	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Tank Diameter (ft)	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole)	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Withdrawl Losses - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Net Throughput (gal/mo):	530	610	613	726	590	683	461	364	536	776	958	498
Shell Clinage Factor (bbl/1000 sqft):	0	0	0	0	0	0	0	0	0	0	0	0
Average Organic Liquid Density (lb/gal):	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Number of Fixed Roof Columns:	0	0	0	0	0	0	0	0	0	0	0	0
Effective Column Diameter (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Deck Fitting Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Value of Vapor Pressure Function:	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Roof Fitting Loss Factors (lb-mole/yr)												
Average Wind Speed (mph):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seeam Losses[1] - Floating Roof Tanks (lb):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length (ft):	0	0	0	0	0	0	0	0	0	0	0	0

Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0	0	0	0	0	0	0	0	0	0	0	0
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Standing Losses[1] - Fixed Roof Tanks (lb):	**0.0069**	**0.0079**	**0.0124**	**0.0191**	**0.028**	**0.0337**	**0.0371**	**0.0333**	**0.0252**	**0.0179**	**0.01**	**0.0069**
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Vented Vapor Saturation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137	157.9137
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Tank Shell Height (ft):	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Aveage Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Outage												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Roof Slope (ft/ft):	0	0	0	0	0	0	0	0	0	0	0	0
Shell Radius (ft):	4	4	4	4	4	4	4	4	4	4	4	4
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temp (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg. Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904
Ideal Gas Constant R (psia cuft/(lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg R):	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265	508.265
Tank Paint Solar Absorbance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorbance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insulation Factor (Btu/sqft/day):	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183	1197.2183
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0235	0.0271	0.0319	0.0396	0.0445	0.0462	0.0451	0.0425	0.0389	0.0343	0.0252	0.0214
Daily Vapor Temperature Range (def R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Breather Vent Pressure Setting Range (psia):	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Vapor Pressure at Daily Avg Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Daily Avg Liquid Surface Temperature (deg R):	497.677	499.1328	504.0553	509.6307	514.9599	519.2745	521.2939	520.1323	516.4403	510.6107	505.271	499.8904

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Daily Ambient Temperature Range (deg R):	14.7	15.7	17.4	20.9	22.5	22.6	22	21.7	21.4	20.6	15.9	13.8
Vented Vapor Saturation Factor												
Vented Vapor Saturdation Factor:	0.9996	0.9996	0.9994	0.9993	0.9991	0.9989	0.9988	0.9989	0.999	0.9993	0.9994	0.9995
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Vapor Space Outage (ft):	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416	3.1416
Working Losses - Fixed Roof Tanks (lb):	**0.004**	**0.005**	**0.0063**	**0.0096**	**0.01**	**0.014**	**0.0103**	**0.0077**	**0.0097**	**0.0108**	**0.0104**	**0.0042**
Vapor Molecular Weight (lb/lb-mole):	130	130	130	130	130	130	130	130	130	130	130	130
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0025	0.0026	0.0033	0.0043	0.0055	0.0066	0.0072	0.0069	0.0058	0.0045	0.0035	0.0027
Net Throughput (gal/mo):	530.00	610.00	613.00	726.00	590.00	683.00	461.00	364.00	536.00	776.00	958.00	498.00
Turnovers:	0.1342	0.1545	0.1553	0.1839	0.1494	0.173	0.1168	0.0922	0.1357	0.1965	0.2426	0.1261
Turnover Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Liquid Volume (gal):	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731	3942.5731
Maximum Liquid Height (ft):	0	0	0	0	0	0	0	0	0	0	0	0
Tank Diameter (ft):	8	8	8	8	8	8	8	8	8	8	8	8
Working Loss Product Factor:	1	1	1	1	1	1	1	1	1	1	1	1
Total Losses (lb):	0.0109	0.0129	0.0187	0.0288	0.0379	0.0477	0.0474	0.0410	0.0349	0.0287	0.0204	0.0111

1. Tanks that have multiple throughputs for the same month have been averaged for any AP-42 calculation that calculates over a monthly period.

BUCKEYE AIR EMISSIONS INVENTORY
Emissions Report - Detail Format
Tank Emission Totals

Tank: 93
River Rouge Terminal (BETHY)

	Fixed Roof Losses (lbs)		Floating Roof Losses (lbs)				
Component	**Standing Loss**	**Working Loss**	**Rim Seal Loss**	**Withdrawl Loss**	**Deck Fitting Loss**	**Deck Seam Loss**	**Total Emissions**
Diesel Additive	0.2384	0.1020	0.0000	0.0000	0.0000	0.0000	0.3404

McLemore, Wilhemina (DEQ)

From:	DeGuire, Laura (DEQ)
Sent:	Tuesday, May 28, 2013 3:04 PM
To:	DEQ-AQD-Supr
Subject:	Air Qualitly Training Classes
Attachments:	EPA Self-Instructional Courses.pdf; 2013 EPA only Classroom courses.pdf; 2013 NACT Classroom courses.pdf

AQD Supervisors -

EPA Air Pollution Training Course lists are found on the EPA **APTI-Learn** webpage: http://www.apti-learn.com

Because you can't copy the list of training classes from this website, I have attached pdfs of the following:

- EPA self-instruction courses
- EPA classroom courses
- NACT [National Air Compliance Training formerly CARB] courses.

These course lists are constantly changing … so you will see broken links and other course changes/additions/removals over time. APTI Learn is brand-new and it is improving as problems/issues are brought to EPA's attention.

Note that to register for any EPA classes (*including self-instructional*) staff need to submit a user profile. Instructions how to register are provided on our AQD Intranet page under the "Training" tab. [*Everyone from Michigan DEQ AQD should follow this format.*] Also remind staff that they need your approval to take any training classes. This is done by filling out the dreaded AQD Training Form … which is also found on the Training page … and forwarding it to me.

Enrollment is not automatically accepted [in APTI-Learn] by the State/Local Training Coordinator hosting a class. This is true even though MI air quality employees have the ability to enroll. What happens is that outstate requests go into a holding spot until the host air agency has had the chance to enroll their own staff first.

Let me know if you have any questions.

Regards,
- *Laura*

Laura J. DeGuire
Environmental Quality Specialist
DEQ Air Quality Division
deguirel@michigan.gov
517-335-6985

EPA Classroom Courses

	Course Title	Course #	Prerequisite
1	Air Pollution Dispersion Models - Applications 2009 (will update 2013)	423	SI-409; SI-410
2	Air Pollution Field Enforcement 2003	444	SI-422
3	Analytical Methods for Air Quality Standards 2008	464	435
4	Asbestos NESHAP Inspection and Safety Procedures Workshop (2013)	350	
5	Atmospheric Sampling 2008	435	
6	Combustion Evaluation 2004 (2012 rev.)	427	SI-100
7	Continuous Emission Monitoring	474	SI-100; SI-476B
8	Control of Nitrogen Oxide Emissions 2009	418	RE-100
9	Control of Particulate Emissions 2007	413	RE-100
10	Control of Gaseous Emissions (2013)	415	RE-100
11	Effective Permit Writing 2008	454	RE-100
12	Emission Capture & Gas Handling Systems Inspection 1995	345	SI-100; SI-431; SI-445
13	Fugitive Source Inspection 2000	380	SI-422
14	Inspection of Particle Control Devices 2003	445	SI-422
15	Inspection Procedures & Safety 1994 (will update 2013)	446	SI-445
16	Inspection of Gas Control Devices and Selected Industries 2003	455	SI-422
17	Intermediate Permitting pre-2000	461	SI-460
18	Introduction to Hazardous Air Pollutants 2009	400	SI-434; SI-422
19	Monitoring Compliance Test & Source Test Observation 2012	468	450
20	Preparation of Fine Particulate Emission Inventories	419B	SI-419A
21	Principles & Practices of Air Pollution 2003	452	SI-422
22	Quality Assurance for Air Pollution Measurement Systems 1999 (2010?)	470	SI-100; SI-473A
23	Source & Control Volatile Organic Air Pollutants	482	SI-422
24	Source Receptor Modeling 1998	424	SI-410; SI-473A
25	Source Sampling for Pollutants 1995 (will update 2013)	450	RE-100
26	Compliance Source Test Observation and Evaluation	450M	

EPA SELF-INSTRUCTION COURSES

SELF-INSTRUCTION: Course Title	Course #
Air Pollution Control Orientation Course	SI-422
Air Pollution Control Systems for Selected Industries	SI-431
Air Pollution Control Technology Series	SI-437
Air Pollution Source Inspection	SI-446
Basic Air Pollution Meteorology	SI-409
Basic Concepts in Environmental Sciences	RE-100
Beginning Environmental Statistical Techniques	SI-473A
Chain of Custody	
Computational Atmospheric Sciences EXIT Disclaimer	OS 411
Continuous Emission Monitoring Systems - Operation & Maintenance of Gas Monitors	SI-476B
Controlling VOC Emissions from Leaking Process Equipment	SI-417
Electrostatic Precipitator Plan Review	SI-412B
Fabric Filter Operation Review	SI-412A
General Quality Assurance Consideration for Ambient Air Monitoring	SI-471
Introduction to Air Pollution Control	
Introduction to Air Pollution Toxicology	SI-300
Introduction to Ambient Air Monitoring, PM 2.5 Monitoring Update	SI-434
Introduction to Baseline Source Inspection Techniques	SI-445
Introduction to Boiler Operations	SI-428
Introduction to Dispersion Modeling	SI-410
Introduction to Emission Inventories	SI-419A
Introduction to Environmental Statistics	
Introduction to Permitting	SI-460
Introduction to Risk Assessment/Risk Management	SI-400
Mathematics Review for Air Pollution Control	SI-100
Network Design & Site Selection for Monitoring PM2.5 & PM10 in Ambient Air	SI-433
Risk-Based Air Toxics	
Site Selection for Monitoring SO2	SI-436
Wet Scrubber Plan Review	SI-412C