



CERTIFIED MAIL – 7012 3460 0003 4309 4950

September 8, 2015

Bev McKeone, NSR Program Manager  
West Virginia Department of Environmental Protection  
Department of Air Quality  
601 57th Street, SE  
Charleston, WV 25304

Re: Ergon – West Virginia, Inc., Newell, WV  
Construction and Modification Permit Application

Dear Ms. McKeone,

Ergon – West Virginia, Inc. (EWVI) is submitting the enclosed Construction and Modification Permit Application (and three (3) photocopies). Check No. 803903 in the amount of \$1,000.00 has been included for payment of the application fee.

If you have any questions, please call me at our Jackson, Mississippi office at (601) 933-3123.

Sincerely,

Ergon – West Virginia, Inc.

Jake Neihaus, RPG, CHMM  
Environmental Supervisor  
Office: 601.933.3123  
Fax: 601.933.3369  
Mobile: 601.209.6786  
[jake.neihaus@ergon.com](mailto:jake.neihaus@ergon.com)

Enclosure – Check No. 803903  
Construction/Modification Permit Application (original and three (3) copies)

CC: Jack Azar – EWVI  
Ray Callahan – EHS  
File (48 – E – 01 – 03 - )

**SEPTEMBER 2015**

**ERGON – WEST VIRGINIA, INC  
NEWELL, HANCOCK COUNTY, W.V.**

**REG 13 & TITLE V  
PERMIT  
MODIFICATION**

**PERMIT NOs.**

**R13-2334X**

**R30-02900008-2015**

Project Number 098-080

## TABLE OF CONTENTS

<u>Section</u>	<u>Page Number</u>
1.0 EXECUTIVE SUMMARY .....	2
2.0 APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISIONS .....	4
2.1 ATTACHMENT A – BUSINESS REGISTRATION .....	9
2.2 ATTACHMENT B – SITE LOCATION MAP .....	11
2.3 ATTACHMENT C – INSTALLATION & START-UP SCHEDULE .....	13
2.4 ATTACHMENT D – REGULATORY DISCUSSION .....	15
2.5 ATTACHMENT E – PLOT PLAN .....	18
2.6 ATTACHMENT F – PROCESS FLOW DIAGRAM .....	20
2.7 ATTACHMENT G – PROCESS DESCRIPTION .....	22
2.8 ATTACHMENT I – EMISSION UNITS TABLE .....	24
2.9 ATTACHMENT J – EMISSION POINTS DATA SUMMARY SHEETS .....	26
2.10 ATTACHMENT K – FUGITIVE EMISSIONS DATA SUMMARY SHEET .....	29
2.11 ATTACHMENT L – EMISSIONS UNIT DATA SHEETS .....	32
2.12 ATTACHMENT N – SUPPORTING CALCULATIONS .....	73
2.13 ATTACHMENT O – MONITORING, RECORDKEEPING, REPORTING, & TESTING PLANS .....	85
2.14 ATTACHMENT S – TITLE V PERMIT REVISION INFORMATION .....	89

## **1.0 EXECUTIVE SUMMARY**

## 1.0 EXECUTIVE SUMMARY

Ergon – West Virginia, Inc. (EWVI) owns and operates a petroleum refinery (Newell Refinery) located in Newell, Hancock County, West Virginia. The facility is located at 9995 Ohio River Blvd., Newell, WV, as illustrated in **Attachment B – Area Map**.

The facility currently operates under West Virginia Department of Environmental Protection (WV DEP) Regulation 13 Permit No. R13-2334X, which was issued to EWVI on June 8, 2015. EWVI is submitting this air permit application to authorize the installation of new equipment and an increase of throughputs in the catalytic reforming (platformer) unit of the Newell Refinery.

The platformer unit converts naphthas distilled from crude oil into high-octane reformates. EWVI proposes to increase the platformer's capacity from 3,900 barrels per day (bpd) to 7,500 bpd. In addition, equipment will be added to recover liquid petroleum gas (LPG) from fuel gas used at the refinery.

The equipment to be installed as part of this operational upgrade includes new shell-and-tube heat exchangers, a new process heater (emission unit ID: H-505R), new pumps, two small caustic storage drums, two LPG storage vessels (LPG bullets), and an LPG loading station. In addition, EWVI is proposing to increase the crude oil throughput for the existing crude oil tank group from 705,180,000 gallons per year to 802,264,890 gallons per year. The crude oil tank group consists of tanks 4000, 4001, 4060, and 4061. EWVI plans to accommodate the crude oil throughput increase by increasing the throughput on tanks 4060 and 4061. Tanks 4060 and 4061 are currently permitted for 176,295,000 gallons per year per tank. EWVI plans to increase the crude oil throughput on tanks 4060 and 4061 to 224,837,445 gallons per year per tank.

The H-505R heater will be a replacement for the existing H-505 heater. The H-505 heater is currently permitted under the H-500 series (H-500S) heater group which share a common exhaust stack. Exhaust gas emissions from the new H-505R heater will be routed to the existing H-500S common exhaust manifold. The new heater emissions from H-505R, along with a summary of the project net change in emissions, are provided in Attachment N.

The attachments required for a Regulation 13 permit modification have been included herein, and are found in **Section 2**.

This application contains all supporting documentations and state forms required for this permit action. The application includes:

- ATTACHMENT A – BUSINESS REGISTRATION
- ATTACHMENT B – SITE LOCATION MAP
- ATTACHMENT C – INSTALLATION AND START-UP SCHEDULE
- ATTACHMENT D – REGULATORY DISCUSSION
- ATTACHMENT E – PLOT PLAN
- ATTACHMENT F – PROCESS FLOW DIAGRAM
- ATTACHMENT G – PROCESS DESCRIPTION
- ATTACHMENT I – EMISSION UNIT TABLES
- ATTACHMENT J – EMISSIONS POINT DATA SUMMARY SHEET
- ATTACHMENT K – FUGITIVE EMISSIONS DATA SUMMARY SHEET
- ATTACHMENT L – EMISSIONS UNIT DATA SHEETS

ATTACHMENT N – SUPPORTING EMISSIONS CALCULATIONS  
ATTACHMENT O – MONITORING, RECORDKEEPING, REPORTING, AND TESTING PLANS  
ATTACHMENT S – TITLE V PERMIT REVISION INFORMATION

APPENDIX A – PROPOSED BURNER MANUFACTURER SPECIFICATIONS  
APPENDIX B – APPLICATION FEE

## **2.0 APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISIONS**



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**DIVISION OF AIR QUALITY**

601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0475

[www.dep.wv.gov/daq](http://www.dep.wv.gov/daq)

**APPLICATION FOR NSR PERMIT  
AND  
TITLE V PERMIT REVISION  
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION     MODIFICATION     RELOCATION  
 CLASS I ADMINISTRATIVE UPDATE     TEMPORARY  
 CLASS II ADMINISTRATIVE UPDATE     AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT     MINOR MODIFICATION  
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

*FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.*

**Section I. General**

1. Name of applicant (as registered with the WV Secretary of State's Office): Ergon – West Virginia, Inc.		2. Federal Employer ID No. (FEIN): 7 2 1 3 7 5 1 1 4	
3. Name of facility (if different from above): Newell Refinery		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: 9995 Ohio River Blvd  Newell, WV 26050		5B. Facility's present physical address: 9995 Ohio River Blvd Route 2 South  Newell, West Virginia 26050	
6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO – If YES, provide a copy of the <b>Certificate of Incorporation/Organization/Limited Partnership</b> (one page) including any name change amendments or other Business Registration Certificate as <b>Attachment A</b> . – If NO, provide a copy of the <b>Certificate of Authority/Authority of L.L.C./Registration</b> (one page) including any name change amendments or other Business Certificate as <b>Attachment A</b> .			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation:			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – If YES, please explain:        This is an existing site owned by Ergon – West Virginia, Inc.  – If NO, you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be <b>constructed, modified, relocated, administratively updated or temporarily permitted</b> (e.g., coal preparation plant, primary crusher, etc.): Petroleum Refinery		10. North American Industry Classification System (NAICS) code for the facility:  324110	
11A. DAQ Plant ID No. (for existing facilities only): 0 2 9 – 0 0 0 0 8		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R13-2334X, R30-02900008-2015	

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

12A.

- For **Modifications, Administrative Updates or Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction or Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP as Attachment B**.

Two miles South of Newell, WV, on State Route 2.

12.B. New site address (if applicable):

N/A

12C. Nearest city or town:

Newell, WV

12D. County:

Hancock

12.E. UTM Northing (KM): 4,495.1

12F. UTM Easting (KM): 531.0

12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:

EWVI plans to install new equipment and modify existing equipment to increase the Platformer capacity from 3,900 bpd to 4,600 bpd.

14A. Provide the date of anticipated installation or change: Upon receipt of permit

- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen:        /        /

14B. Date of anticipated Start-Up if a permit is granted:

04/01/2016

14C. Provide a **Schedule** of the planned **Installation of/Change to and Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:

Hours Per Day 24        Days Per Week 7        Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved?     **YES**         **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see [www.epa.gov/ceppo](http://www.epa.gov/ceppo)), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

### ***Section II. Additional attachments and supporting documents.***

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.  
– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions     | <input type="checkbox"/> Quarry  |
| <input checked="" type="checkbox"/> Chemical Processes   | <input type="checkbox"/> Hot Mix Asphalt Plant   | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant            | <input type="checkbox"/> Incinerator             | <input checked="" type="checkbox"/> Storage Tanks                                |
| <input type="checkbox"/> Grey Iron and Steel Foundry     | <input type="checkbox"/> Indirect Heat Exchanger |  |
| <input type="checkbox"/> General Emission Unit, specify  |  |  |

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Absorption Systems        | <input type="checkbox"/> Baghouse                   | <input type="checkbox"/> Flare                 |
| <input type="checkbox"/> Adsorption Systems        | <input type="checkbox"/> Condenser                  | <input type="checkbox"/> Mechanical Collector  |
| <input type="checkbox"/> Afterburner               | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
| <input type="checkbox"/> Other Collectors, specify |   |  |

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES     NO

- If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

### **Section III. Certification of Information**

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- |  |   |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership         |
| <input type="checkbox"/> Authority of Governmental Agency                  | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

**Certification of Truth, Accuracy, and Completeness**

I, the undersigned  **Responsible Official** /  **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

**Compliance Certification**

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE  DATE: 9/8/2015  
(Please use blue ink) (Please use blue ink)

35B. Printed name of signee: Mr. Paul W. Young, Jr. 35C. Title: Vice President of Regulatory Affairs

35D. E-mail: paul.young@ergon.com 36E. Phone: (601)-933-3000 36F. FAX: (601)-933-3369

36A. Printed name of contact person (if different from above): Jake Neihaus 36B. Title: Environmental Supervisor

36C. E-mail: jake.neihaus@ergon.com 36D. Phone: (601)-933-3123 36E. FAX: 601-933-3369

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate               | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet            |
| <input checked="" type="checkbox"/> Attachment B: Map(s)                             | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s)                     |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s)                       |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion              | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations                |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan                          | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s)   | <input type="checkbox"/> Attachment P: Public Notice   |
| <input checked="" type="checkbox"/> Attachment G: Process Description                | <input type="checkbox"/> Attachment Q: Business Confidential Claims                                |
| <input type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS)            | <input type="checkbox"/> Attachment R: Authority Forms   |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table               | <input checked="" type="checkbox"/> Attachment S: Title V Permit Revision Information              |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee  |

*Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.*

**FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:**

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
  - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
  - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
  - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
  - NSR permit writer should notify a Title V permit writer of draft permit,
  - Public notice should reference both 45CSR13 and Title V permits,
  - EPA has 45 day review period of a draft permit.

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

## **2.1 ATTACHMENT A – BUSINESS REGISTRATION**

**WEST VIRGINIA  
STATE TAX DEPARTMENT  
BUSINESS REGISTRATION  
CERTIFICATE**

ISSUED TO:  
**ERGON-WEST VIRGINIA INC  
9995 OHIO RIVER BLVD  
NEWELL, WV 26050-1195**

**BUSINESS REGISTRATION ACCOUNT NUMBER: 1050-8935**

This certificate is issued on: **06/11/2010**

*This certificate is issued by  
the West Virginia State Tax Commissioner  
in accordance with W.Va. Code § 11-12.*

*The person or organization identified on this certificate is registered  
to conduct business in the State of West Virginia at the location above.*

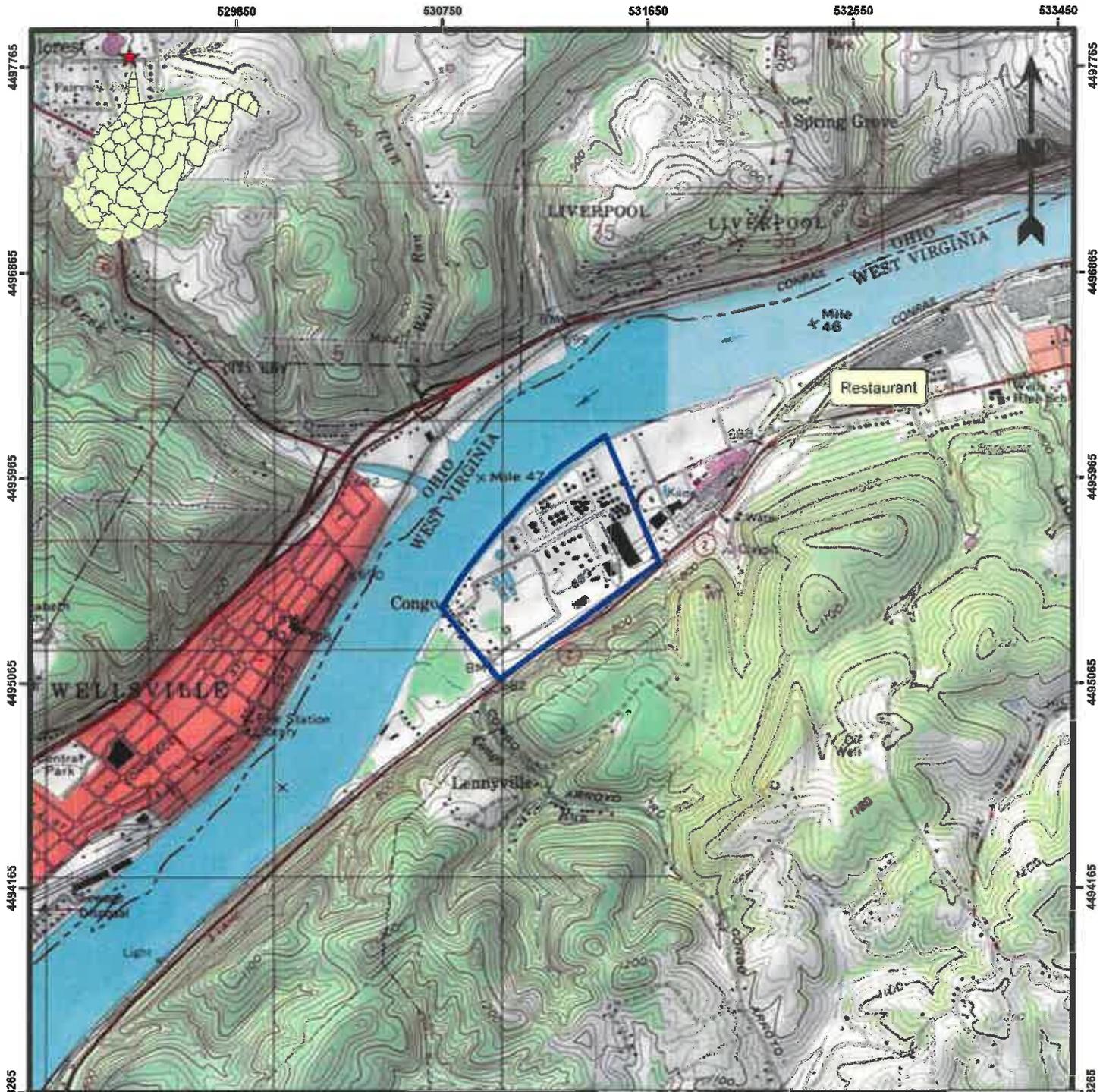
**This certificate is not transferrable and must be displayed at the location for which issued.**

**This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.**

**Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.**

**TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.  
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of  
this certificate displayed at every job site within West Virginia.**

## **2.2 ATTACHMENT B – SITE LOCATION MAP**



**Legend**

 Property Boundary

**Reference**

Base map comprised of U.S.G.S. 7.5 minute topographic maps, "East Liverpool North, WV", "East Liverpool South, WV", "Westville, WV", and "West Point, OH".

**Site Location Map**

Permit Amendment Application  
Newell, Hancock County, West Virginia

**Ergon-West Virginia, Inc**  
Newell Refinery



Drawn By	JCS	03/20/12
Checked By	LMM	03/20/12
Approved By	LMS	03/20/12

Project Number	<b>B</b>
098-023	
Drawing Number	Attachment
098-023-A003	

Providence Engineering and Environmental Group LLC

## **2.3 ATTACHMENT C – INSTALLATION & START-UP SCHEDULE**

## **ATTACHMENT C      SCHEDULE OF INSTALLATION AND STARTUP**

Construction of the project will begin upon receipt by the permittee of the permit authorization letter from the W.V. D.E.P. Startup is scheduled for April, 2016.

## **2.4 ATTACHMENT D – REGULATORY DISCUSSION**

## **ATTACHMENT D      REGULATORY DISCUSSION**

In addition to the permit conditions in Permit No. R13-2334X, emission sources constructed in this project are subject to the applicable requirements in the following state and federal regulations. The list below comprises primarily facility-wide requirements that are applicable to the Newell Refinery.

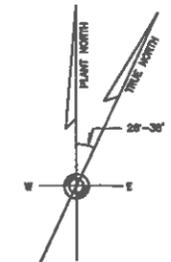
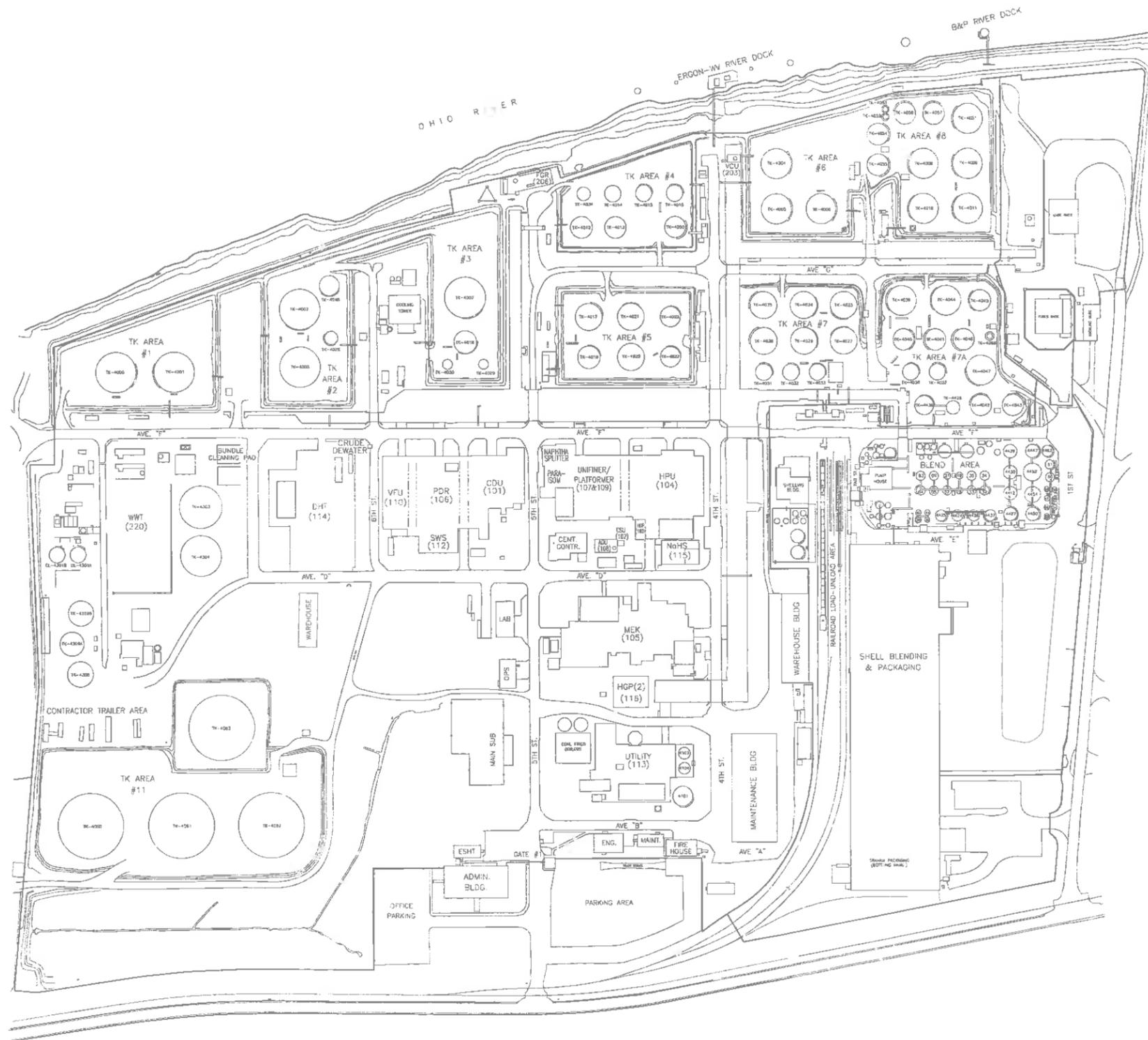
### **State Regulations**

1.      45 C.S.R. 02 To Prevent and Control Particulate Air Pollution From Combustion of Fuel in Indirect Heat Exchangers
2.      45 C.S.R. 04 To Prevent and Control the Discharge of Air Pollutants in the Open Air Which Causes or Contributes to an Objectionable Odor or Odors
3.      45 C.S.R. 11 Prevention of Air Pollution Emergency Episodes
4.      45 C.S.R. 13 Permits for Construction, Modification, Relocation & Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits & Procedures for Evaluation
5.      45 C.S.R. 14 Permits for Construction & Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration
6.      45 C.S.R. 16 Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
7.      45 C.S.R. 20 Good Engineering Practice as Applies to Stack Heights
8.      45 C.S.R. 22 Air Quality Management Fee Program
9.      45 C.S.R. 27 To Prevent and Control the Emissions of Toxic Air Pollutants
10.     45 C.S.R. 30 Requirements for Operating Permits
11.     45 C.S.R. 34 Emission Standards for Hazardous Air Pollutants For Source Categories in 40 CFR Part 63

## **Federal Regulations**

1. 40 CFR Part 60 Subpart A Standards of Performance for New Stationary Sources. General Provisions
2. 40 CFR Part 60 Subpart Ja Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
3. 40 CFR Part 60 Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which construction, Reconstruction, or Modification Commenced After July 23, 1984
4. 40 CFR Part 60 Subpart VVa Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced after November 7, 2006
5. 40 CFR Part 60 Subpart GGGa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

## **2.5 ATTACHMENT E – PLOT PLAN**



SCALE : 1"=120'-0"

**NOTICE**  
 THIS DRAWING IS THE PROPERTY OF ERGON WEST VIRGINIA, INC. AND IS LOANED TO RECIPIENT FOR HIS CONFIDENTIAL USE ONLY WITH THE UNDERSTANDING THAT COPIES OR REPRODUCTION OF THE DRAWINGS IN ANY MANNER, IN WHOLE OR IN PART, SHALL NOT BE MADE NOR INFORMATION THEREON PUBLISHED OR USED OTHER THAN AS SPECIFICALLY DIRECTED BY ERGON WITHOUT THE PRIOR WRITTEN PERMISSION OF ERGON. ALL COPIES ARE TO BE RETURNED ON REQUEST OF ERGON WEST VIRGINIA, INC.

**NOTES**

**REFERENCE DRAWINGS**

NO.	DESCRIPTION	BY	DATE	CHK.	DATE	APP.
0	ISSUED AS BUILT	JWB	11/8/07	BLJ	11/8/07	
1	ADDED FACILITY UPDATES	JWB	16/0/03	BLJ	16/0/03	
2	REDRAWN PER DIGITIZED PHOTO 2013	JWB	12/8/14	BLJ	12/8/14	

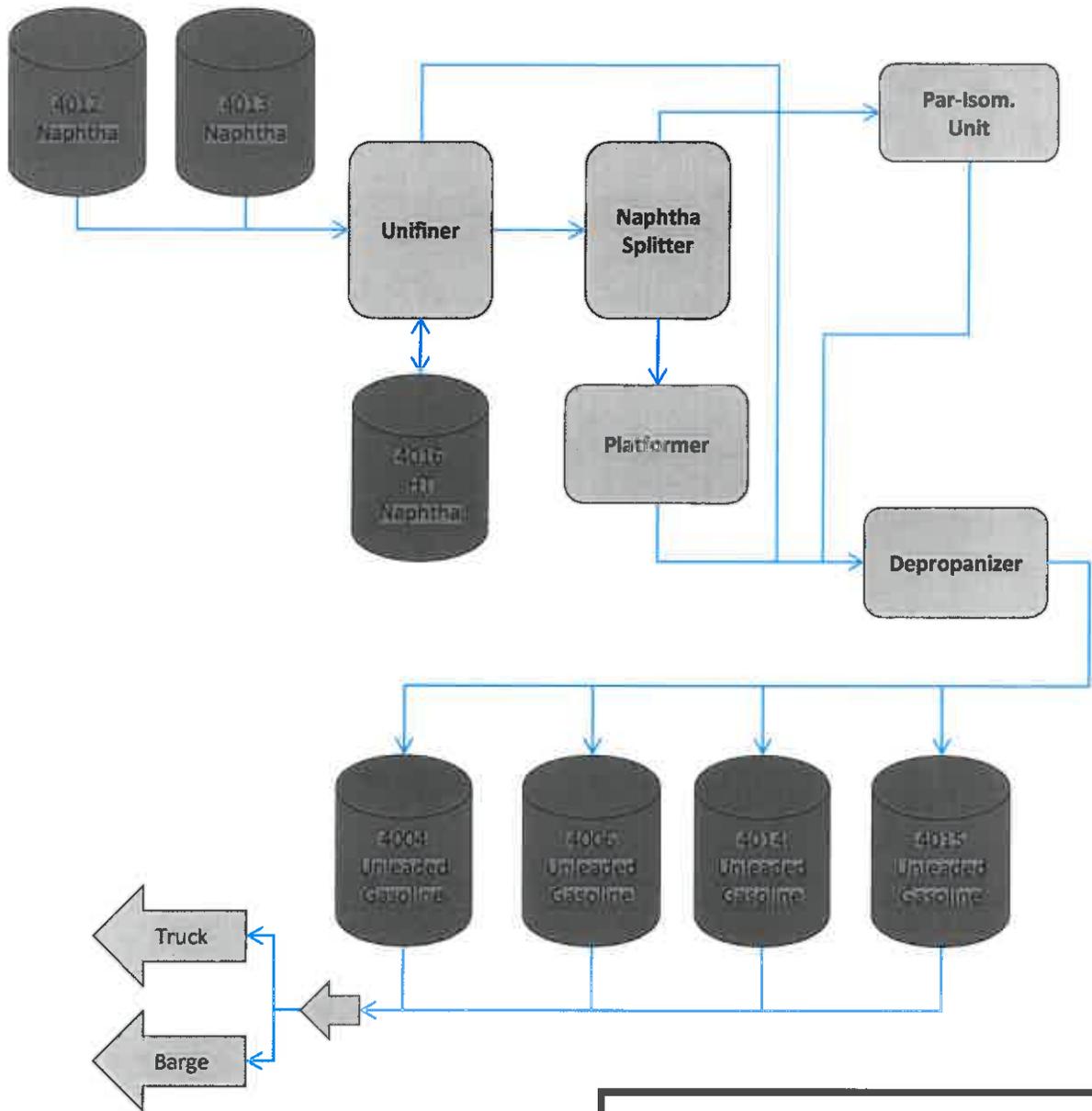
**REVISIONS**

NO.	DESCRIPTION	BY	DATE	CHK.	DATE	APP.
0	ISSUED AS BUILT	JWB	11/8/07	BLJ	11/8/07	
1	ADDED FACILITY UPDATES	JWB	16/0/03	BLJ	16/0/03	
2	REDRAWN PER DIGITIZED PHOTO 2013	JWB	12/8/14	BLJ	12/8/14	



Company: ERGON WEST VIRGINIA, INC.		Project: REFINERY	
Location: NEWELL, WEST VIRGINIA		Drawing Title: SITE PLOT PLAN	
Drawn By: JWB	Date Drawn: 11/8/07	Drawn Title: LAA01155	Sheet No.: L-100A01-155
			2

## **2.6 ATTACHMENT F – PROCESS FLOW DIAGRAM**



## Process Flow Diagram

Permit Amendment Application  
Newell, Hancock County, West Virginia

Ergon – West Virginia, Inc  
Newell Refinery



Drawn by EM 8/31/2015

Project Number  
098-080

Attn.

**F**

## **2.7 ATTACHMENT G – PROCESS DESCRIPTION**

## **PROCESS DESCRIPTION**

The Newell Refinery processes crude oil into fuels and other industrial chemical feedstocks through the use of distillation and chemical reaction processes. The platformer unit represents a stage in this process.

### **Catalytic Reforming (Platformer Unit)**

The platformer unit converts petroleum naphthas produced from distilling crude oil into high-octane liquid products called reformates, through a process known as catalytic reforming. These reformates can be used as premium blending stock for the production of gasoline or as a source of industrial feedstock for aromatic chemicals.

The process of catalytic reforming is shown in block diagram form in **Attachment F – Process Flow Diagram**. Naphthas from the distillation of crude oil comes into the platformer unit and may be combined with hydrogen and other hydrocarbon streams. This is then heated and passed through catalyst beds to convert naphthas into branched or aromatic hydrocarbons of the desired range of molecular weights and chemical properties. This mixture of hydrocarbon products is then passed through a distillation tower to separate out the desired products.

At multiple points of this process, pumps and compressors are used to move liquid and gas streams from one unit of equipment to another, and process heaters and heat exchangers are used to bring liquids or gases to the desired temperature range for reactions or chemical separations to occur.

EWVI plans to increase the platformer capacity from 3,900 bpd to 7,500 bpd to match the unifiner and allow the refinery to process an additional 1,000 bpd of untreated naphtha.

### **Crude Oil Tanks**

EWVI is proposing to increase the crude oil throughput for the existing crude oil tank group from 705,180,000 gallons per year to 802,264,890 gallons per year. The crude oil tank group consists of tanks 4000, 4001, 4060, and 4061. EWVI plans to accommodate the crude oil throughput increase by increasing the throughput on tanks 4060 and 4061. Tanks 4060 and 4061 are currently permitted for 176,295,000 gallons per year per tank. EWVI plans to increase the crude oil throughput on tanks 4060 and 4061 to 224,837,445 gallons per year per tank.

### **Heater H-505R**

The new process heater presented in this application (emission unit: H-505R) will be a replacement for the existing H-505 heater. H-505 is part of a heater group (H-500S) that share a common exhaust stack.

### **LPG Recovery**

The fuel gas used at the refinery is primarily methane and ethane, but can contain propane and butane. To relieve current fuel system limitations, equipment installed as part of this proposal will separate propane and butane from the fuel gas produced in the platformer unit. This propane and butane will then be stored in pressurized containment vessels and loaded onto trucks and sold as Y-Grade LPG.

## **2.8 ATTACHMENT I – EMISSION UNITS TABLE**



## **2.9 ATTACHMENT J – EMISSION POINTS DATA SUMMARY SHEETS**

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup>  (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase  (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
H-505R	Point: H-500 Series Common Stack	H-505R	Process Heater	N/A	N/A	N/A	N/A	NOx SO <sub>2</sub> CO PM VOC Formaldehyde Hexane Benzene Toluene	0.23 0.23 0.31 0.04 0.02 0.02 0.02 0.02 0.02	1.00 1.02 1.37 0.19 0.07 0.07 0.07 0.07 0.07	N/A	N/A	Gas/Vapor	EE	N/A
TK-4060	Relief vent	4060	Internal floating roof tank	N/A	N/A	N/A	N/A	VOC Benzene Hexane i-Octane Toluene Ethylbenzene Xylene Isopropyl Benzene	0.54 0.01 0.01 0.01 0.01 0.01 0.01 0.01	2.37 0.01 0.01 0.01 0.02 0.01 0.03 0.01	N/A	N/A	Gas/Vapor	EE	N/A
TK-4061	Relief vent	4061	Internal floating roof tank	N/A	N/A	N/A	N/A	VOC Benzene Hexane i-Octane Toluene Ethylbenzene Xylene Isopropyl Benzene	0.55 0.01 0.01 0.01 0.01 0.01 0.01 0.01	2.40 0.01 0.01 0.01 0.02 0.01 0.03 0.01	N/A	N/A	Gas/Vapor	EE	N/A
PL-FUG	Fugitive	PL-FUG	Platformer expansion	N/A	N/A	N/A	N/A	VOC Hexane	0.14 0.04	0.60 0.04	N/A	N/A	Gas/Vapor	EE	N/A
YNGL-FUG	Fugitive	YNGL-FUG	NGL service Area	N/A	N/A	N/A	N/A	VOC Hexane	0.22 0.01	0.94 0.03	N/A	N/A	Gas/Vapor	EE	N/A

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- <sup>1</sup> Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- <sup>2</sup> Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- <sup>3</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. **DO NOT LIST** H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
- <sup>4</sup> Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- <sup>5</sup> Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- <sup>6</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- <sup>7</sup> Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m<sup>3</sup>) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO<sub>2</sub>, use units of ppmv (See 45CSR10).

**Attachment J**  
**EMISSION POINTS DATA SUMMARY SHEET**

Table 2: Release Parameter Data								
Emission Point ID No. <i>(Must match Emission Units Table)</i>	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow <sup>1</sup> (acfm) <i>at operating conditions</i>	Velocity (fps)	Ground Level <i>(Height above mean sea level)</i>	Stack Height <sup>2</sup> <i>(Release height of emissions above ground level)</i>	Northing	Easting
H-505R	TBD	1,340	TBD	TBD	680	TBD	4,495.678	531.282
TK-4060	N/A	N/A	N/A	N/A	680	N/A	4,495.312	531.095
TK-4061	N/A	N/A	N/A	N/A	680	N/A	4,495.342	531.150
PL-FUG	N/A	N/A	N/A	N/A	680	N/A	4,495.678	531.282
YNGL-FUG	N/A	N/A	N/A	N/A	680	N/A	TBD	TBD

<sup>1</sup> Give at operating conditions. Include inerts.  
<sup>2</sup> Release height of emissions above ground level.

## **2.10 ATTACHMENT K – FUGITIVE EMISSIONS DATA SUMMARY SHEET**

## Attachment K

### FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS	
1.) Will there be haul road activities?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."	

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants- Chemical Name/CAS <sup>1</sup>	Maximum Potential Uncontrolled Emissions <sup>2</sup>		Maximum Potential Controlled Emissions <sup>3</sup>		Est. Method Used <sup>4</sup>
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads						
Unpaved Haul Roads						
Storage Pile Emissions						
Loading/Unloading Operations						
Wastewater Treatment Evaporation & Operations						
Equipment Leaks	VOC Hexane	Does not apply	1.54 0.07	Does not apply	N/A	EE
General Clean-up VOC Emissions						
Other						

<sup>1</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.

<sup>2</sup> Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>3</sup> Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>4</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

## **2.11 ATTACHMENT L – EMISSIONS UNIT DATA SHEETS**

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): H-505R

<p>1. Name or type and model of proposed affected source:</p> <p>Platformer Process Heater (Replacement), model CUBLF-4W</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>N/A</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>N/A</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>Combustion of refinery fuel gas (RFG) for burners and natural gas for pilot.</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

RFG, 8.745 MMBtu/hr  
 NG, 0.10 MMBtu/hr

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air: 15%

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

2.915 MMBtu/hr per burner  
 0.10 MMBtu/hr for pilot

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

N/A

(g) Proposed maximum design heat input: 8.745 × 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52
-----------	----	-----------	---	------------	----

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	°F and		psia
a. NO <sub>x</sub>	0.23	lb/hr	grains/ACF
b. SO <sub>2</sub>	0.23	lb/hr	grains/ACF
c. CO	0.31	lb/hr	grains/ACF
d. PM <sub>10</sub>	0.04	lb/hr	grains/ACF
e. Hydrocarbons	N/A	lb/hr	grains/ACF
f. VOCs	0.02	lb/hr	grains/ACF
g. Pb	N/A	lb/hr	grains/ACF
h. Specify other(s)			
Hexane	0.02	lb/hr	grains/ACF
Formaldehyde	<0.01	lb/hr	grains/ACF
Benzene	<0.01	lb/hr	grains/ACF
Toluene	<0.01	lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

The permittee will monitor the H2S content of fuel gas in accordance with 40 CFR 60.102a and 40 CFR 60.107a.

The permittee will perform opacity observations in accordance with 40 CFR 60 Appendix A Method 9.

**RECORDKEEPING**

The permittee will keep records of excess discharges in accordance with 40 CFR 60.108a(c)(6).

The permittee will maintain operation, monitoring, and testing records required by 45 CSR 2.8.3.

The permittee will estimate annual emissions for the criteria pollutants.

**REPORTING**

The permittee will comply with the applicable reporting requirements of 45 CSR 13.

The permittee will provide the construction and performance test notifications required by 40 CFR 60.7.

The permittee will report to the Director any malfunction that results in exceeding emission standards in 45 CSR 2.3 and 45 CSR 2.4, or any excursion outside approved emissions or monitoring parameters.

**TESTING**

The permittee will conduct initial performance testing for the heater and H2S monitoring equipment in accordance with 40 CFR 60.104a.

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

Minimize tramp air entering the furnace. Use only fuel that the burners are designed for.

**Attachment L**  
**EMISSIONS UNIT DATA SHEET**  
**STORAGE TANKS**

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT [www.epa.gov/tnn/tanks.html](http://www.epa.gov/tnn/tanks.html)), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS," MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (<http://www.epa.gov/tnn/chief/>).

**I. GENERAL INFORMATION (required)**

1. Bulk Storage Area Name Area 11 - Crude Oil Storage	2. Tank Name 4060
3. Tank Equipment Identification No. (as assigned on <i>Equipment List Form</i> ) 4060	4. Emission Point Identification No. (as assigned on <i>Equipment List Form</i> ) TK-4060
5. Date of Commencement of Construction (for existing tanks) 1999	
6. Type of change <input type="checkbox"/> New Construction <input type="checkbox"/> New Stored Material <input checked="" type="checkbox"/> Other Tank Modification	
7. Description of Tank Modification (if applicable) Increase of throughput	
7A. Does the tank have more than one mode of operation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (e.g. Is there more than one product stored in the tank?)	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

**II. TANK INFORMATION (required)**

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 5,040,000 gallons	
9A. Tank Internal Diameter (ft) 146.5	9B. Tank Internal Height (or Length) (ft) 40
10A. Maximum Liquid Height (ft) N/A	10B. Average Liquid Height (ft) N/A
11A. Maximum Vapor Space Height (ft) N/A	11B. Average Vapor Space Height (ft) N/A
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. 4,469,976 Gallons	

13A. Maximum annual throughput (gal/yr) 224,837,445 gal/yr	13B. Maximum daily throughput (gal/day) 615,993 gal/day
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) 44.61	
15. Maximum tank fill rate (gal/min) TBD	
16. Tank fill method <input checked="" type="checkbox"/> Submerged <input type="checkbox"/> Splash <input type="checkbox"/> Bottom Loading	
17. Complete 17A and 17B for Variable Vapor Space Tank Systems <input checked="" type="checkbox"/> Does Not Apply	
17A. Volume Expansion Capacity of System (gal)	17B. Number of transfers into system per year
18. Type of tank (check all that apply): <input type="checkbox"/> Fixed Roof ___ vertical ___ horizontal ___ flat roof ___ cone roof ___ dome roof ___ other (describe) <input type="checkbox"/> External Floating Roof ___ pontoon roof ___ double deck roof <input type="checkbox"/> Domed External (or Covered) Floating Roof <input checked="" type="checkbox"/> Internal Floating Roof x vertical column support ___ self-supporting <input type="checkbox"/> Variable Vapor Space ___ lifter roof ___ diaphragm <input type="checkbox"/> Pressurized ___ spherical ___ cylindrical <input type="checkbox"/> Underground <input type="checkbox"/> Other (describe)	

### III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction: <input type="checkbox"/> Riveted <input type="checkbox"/> Gunitite lined <input type="checkbox"/> Epoxy-coated rivets <input type="checkbox"/> Other (describe)		
20A. Shell Color White	20B. Roof Color White	20C. Year Last Painted
21. Shell Condition (if metal and unlined): <input type="checkbox"/> No Rust <input checked="" type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable		
22A. Is the tank heated? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
22B. If YES, provide the operating temperature (°F)		
22C. If YES, please describe how heat is provided to tank.		
23. Operating Pressure Range (psig): _____ to _____		
24. Complete the following section for <b>Vertical Fixed Roof Tanks</b> <input checked="" type="checkbox"/> Does Not Apply		
24A. For dome roof, provide roof radius (ft)		
24B. For cone roof, provide slope (ft/ft)		
25. Complete the following section for <b>Floating Roof Tanks</b> <input type="checkbox"/> Does Not Apply		
25A. Year Internal Floaters Installed:		
25B. Primary Seal Type: <input checked="" type="checkbox"/> Metallic (Mechanical) Shoe Seal <input type="checkbox"/> Liquid Mounted Resilient Seal (check one) <input type="checkbox"/> Vapor Mounted Resilient Seal <input type="checkbox"/> Other (describe):		
25C. Is the Floating Roof equipped with a Secondary Seal? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
25D. If YES, how is the secondary seal mounted? (check one) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):		
25E. Is the Floating Roof equipped with a weather shield? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

25F. Describe deck fittings; indicate the number of each type of fitting:		
<b>ACCESS HATCH</b>		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED: 2	UNBOLTED COVER, UNGASKETED:
<b>AUTOMATIC GAUGE FLOAT WELL</b>		
BOLT COVER, GASKETED: 1	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
<b>COLUMN WELL</b>		
BUILT-UP COLUMN – SLIDING COVER, GASKETED:	BUILT-UP COLUMN – SLIDING COVER, UNGASKETED: 9	PIPE COLUMN – FLEXIBLE FABRIC SLEEVE SEAL:
<b>LADDER WELL</b>		
PIP COLUMN – SLIDING COVER, GASKETED: 1	PIPE COLUMN – SLIDING COVER, UNGASKETED:	
<b>GAUGE-HATCH/SAMPLE PORT</b>		
SLIDING COVER, GASKETED: 1	SLIDING COVER, UNGASKETED:	
<b>ROOF LEG OR HANGER WELL</b>		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED: 120	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
<b>VACUUM BREAKER</b>		
WEIGHTED MECHANICAL ACTUATION, GASKETED: 2	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
<b>RIM VENT</b>		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
<b>DECK DRAIN (3-INCH DIAMETER)</b>		
OPEN:	90% CLOSED: 1	
<b>STUB DRAIN</b>		
1-INCH DIAMETER: 95		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks <input type="checkbox"/> Does Not Apply	
26A. Deck Type:	<input checked="" type="checkbox"/> Bolted <input type="checkbox"/> Welded
26B. For Bolted decks, provide deck construction: Sheet	
26C. Deck seam:	
<input checked="" type="checkbox"/> Continuous sheet construction 5 feet wide <input type="checkbox"/> Continuous sheet construction 6 feet wide <input type="checkbox"/> Continuous sheet construction 7 feet wide <input type="checkbox"/> Continuous sheet construction 5 × 7.5 feet wide <input type="checkbox"/> Continuous sheet construction 5 × 12 feet wide <input type="checkbox"/> Other (describe)	
26D. Deck seam length (ft)	2820.52
26E. Area of deck (ft <sup>2</sup> )	14,102
For column supported tanks:	
26F. Number of columns:	9
26G. Diameter of each column:	1 ft

**IV. SITE INFORMATION** (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based. Pittsburgh, PA	
28. Daily Average Ambient Temperature (°F)	50.31
29. Annual Average Maximum Temperature (°F)	59.88
30. Annual Average Minimum Temperature (°F)	40.73
31. Average Wind Speed (miles/hr)	9.075
32. Annual Average Solar Insulation Factor (BTU/(ft <sup>2</sup> ·day))	1,202.96
33. Atmospheric Pressure (psia)	14.108

**V. LIQUID INFORMATION** (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid:			
34A. Minimum (°F)	48.70	34B. Maximum (°F)	64.69
35. Average operating pressure range of tank:			
35A. Minimum (psig)		35B. Maximum (psig)	
36A. Minimum Liquid Surface Temperature (°F)		36B. Corresponding Vapor Pressure (psia)	
37A. Average Liquid Surface Temperature (°F)		37B. Corresponding Vapor Pressure (psia)	
38A. Maximum Liquid Surface Temperature (°F)		38B. Corresponding Vapor Pressure (psia)	
39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.			
39A. Material Name or Composition	Crude Oil		
39B. CAS Number	N/A		
39C. Liquid Density (lb/gal)	7.1		
39D. Liquid Molecular Weight (lb/lb-mole)	207		
39E. Vapor Molecular Weight (lb/lb-mole)	50		

Maximum Vapor Pressure 39F. True (psia)	2.6958		
39G. Reid (psia)	5		
Months Storage per Year 39H. From	January		
39I. To	December		

**VI. EMISSIONS AND CONTROL DEVICE DATA (required)**

40. Emission Control Devices (check as many as apply):  Does Not Apply

- Carbon Adsorption<sup>1</sup>
- Condenser<sup>1</sup>
- Conservation Vent (psig)
 

Vacuum Setting	Pressure Setting
----------------	------------------
- Emergency Relief Valve (psig)
- Inert Gas Blanket of
- Insulation of Tank with
- Liquid Absorption (scrubber)<sup>1</sup>
- Refrigeration of Tank
- Rupture Disc (psig)
- Vent to Incinerator<sup>1</sup>
- Other<sup>1</sup> (describe):

<sup>1</sup> Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss		Annual Loss (lb/yr)	Estimation Method <sup>1</sup>
		Amount	Units		
Benzene				28.46	ST
Hexane				18.97	ST
Iso-Octane				4.74	ST
Toluene				47.73	ST
Ethylbenzene				18.97	ST
Xylene				66.41	ST
Isopropyl Benzene				4.74	ST
Total VOC				4,743.45	ST

<sup>1</sup> EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

Remember to attach emissions calculations, including TANKS Summary Sheets if applicable.

**Attachment L**  
**EMISSIONS UNIT DATA SHEET**  
**STORAGE TANKS**

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT [www.epa.gov/tnn/tanks.html](http://www.epa.gov/tnn/tanks.html)), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS," MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (<http://www.epa.gov/tnn/chief/>).

**I. GENERAL INFORMATION (required)**

1. Bulk Storage Area Name Area 11 - Crude Oil Storage	2. Tank Name 4061
3. Tank Equipment Identification No. (as assigned on <i>Equipment List Form</i> ) 4061	4. Emission Point Identification No. (as assigned on <i>Equipment List Form</i> ) TK-4061
5. Date of Commencement of Construction (for existing tanks) 2008	
6. Type of change <input type="checkbox"/> New Construction <input type="checkbox"/> New Stored Material <input checked="" type="checkbox"/> Other Tank Modification	
7. Description of Tank Modification (if applicable) Increase of throughput	
7A. Does the tank have more than one mode of operation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (e.g. Is there more than one product stored in the tank?)	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

**II. TANK INFORMATION (required)**

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. <p style="text-align: center;">5,040,000 gallons</p>	
9A. Tank Internal Diameter (ft) <p style="text-align: center;">146.5</p>	9B. Tank Internal Height (or Length) (ft) <p style="text-align: center;">40</p>
10A. Maximum Liquid Height (ft) <p style="text-align: center;">N/A</p>	10B. Average Liquid Height (ft) <p style="text-align: center;">N/A</p>
11A. Maximum Vapor Space Height (ft) <p style="text-align: center;">N/A</p>	11B. Average Vapor Space Height (ft) <p style="text-align: center;">N/A</p>
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. <p style="text-align: center;">4,469,976</p>	

13A. Maximum annual throughput (gal/yr) 224,837,445 gal/yr	13B. Maximum daily throughput (gal/day) 615,993 gal/day
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) 44.61	
15. Maximum tank fill rate (gal/min) TBD	
16. Tank fill method <input checked="" type="checkbox"/> Submerged <input type="checkbox"/> Splash <input type="checkbox"/> Bottom Loading	
17. Complete 17A and 17B for Variable Vapor Space Tank Systems <input checked="" type="checkbox"/> Does Not Apply	
17A. Volume Expansion Capacity of System (gal)	17B. Number of transfers into system per year
18. Type of tank (check all that apply): <input type="checkbox"/> Fixed Roof <input type="checkbox"/> vertical <input type="checkbox"/> horizontal <input type="checkbox"/> flat roof <input type="checkbox"/> cone roof <input type="checkbox"/> dome roof <input type="checkbox"/> other (describe) <input type="checkbox"/> External Floating Roof <input type="checkbox"/> pontoon roof <input type="checkbox"/> double deck roof <input type="checkbox"/> Domed External (or Covered) Floating Roof <input checked="" type="checkbox"/> Internal Floating Roof <input type="checkbox"/> vertical column support <input type="checkbox"/> self-supporting <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> lifter roof <input type="checkbox"/> diaphragm <input type="checkbox"/> Pressurized <input type="checkbox"/> spherical <input type="checkbox"/> cylindrical <input type="checkbox"/> Underground <input type="checkbox"/> Other (describe)	

### III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction: <input type="checkbox"/> Riveted <input type="checkbox"/> Gunite lined <input type="checkbox"/> Epoxy-coated rivets <input type="checkbox"/> Other (describe)		
20A. Shell Color White	20B. Roof Color White	20C. Year Last Painted
21. Shell Condition (if metal and unlined): <input type="checkbox"/> No Rust <input checked="" type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable		
22A. Is the tank heated? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
22B. If YES, provide the operating temperature (°F)		
22C. If YES, please describe how heat is provided to tank.		
23. Operating Pressure Range (psig): _____ to _____		
24. Complete the following section for <b>Vertical Fixed Roof Tanks</b> <input checked="" type="checkbox"/> Does Not Apply		
24A. For dome roof, provide roof radius (ft)		
24B. For cone roof, provide slope (ft/ft)		
25. Complete the following section for <b>Floating Roof Tanks</b> <input type="checkbox"/> Does Not Apply		
25A. Year Internal Floaters Installed:		
25B. Primary Seal Type: <input checked="" type="checkbox"/> Metallic (Mechanical) Shoe Seal <input type="checkbox"/> Liquid Mounted Resilient Seal <input type="checkbox"/> Vapor Mounted Resilient Seal <input type="checkbox"/> Other (describe):		
25C. Is the Floating Roof equipped with a Secondary Seal? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
25D. If YES, how is the secondary seal mounted? (check one) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):		
25E. Is the Floating Roof equipped with a weather shield? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

25F. Describe deck fittings; indicate the number of each type of fitting:		
<b>ACCESS HATCH</b>		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
	2	
<b>AUTOMATIC GAUGE FLOAT WELL</b>		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
1		
<b>COLUMN WELL</b>		
BUILT-UP COLUMN - SLIDING COVER, GASKETED:	BUILT-UP COLUMN - SLIDING COVER, UNGASKETED:	PIPE COLUMN - FLEXIBLE FABRIC SLEEVE SEAL:
	9	
<b>LADDER WELL</b>		
PIP COLUMN - SLIDING COVER, GASKETED:	PIPE COLUMN - SLIDING COVER, UNGASKETED:	
1		
<b>GAUGE-HATCH/SAMPLE PORT</b>		
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:	
1		
<b>ROOF LEG OR HANGER WELL</b>		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
	120	
<b>VACUUM BREAKER</b>		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
2		
<b>RIM VENT</b>		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
<b>DECK DRAIN (3-INCH DIAMETER)</b>		
OPEN:	90% CLOSED:	
	1	
<b>STUB DRAIN</b>		
1-INCH DIAMETER:		
60		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks <input type="checkbox"/> Does Not Apply	
26A. Deck Type:	<input checked="" type="checkbox"/> Bolted <input type="checkbox"/> Welded
26B. For Bolted decks, provide deck construction: Sheet	
26C. Deck seam: <input checked="" type="checkbox"/> Continuous sheet construction 5 feet wide <input type="checkbox"/> Continuous sheet construction 6 feet wide <input type="checkbox"/> Continuous sheet construction 7 feet wide <input type="checkbox"/> Continuous sheet construction 5 × 7.5 feet wide <input type="checkbox"/> Continuous sheet construction 5 × 12 feet wide <input type="checkbox"/> Other (describe)	
26D. Deck seam length (ft)	3,371.28
26E. Area of deck (ft <sup>2</sup> )	14,102
For column supported tanks:	
26F. Number of columns:	9
26G. Diameter of each column:	1 ft

**IV. SITE INFORMATION** (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based. Pittsburgh, PA	
28. Daily Average Ambient Temperature (°F)	50.31
29. Annual Average Maximum Temperature (°F)	59.88
30. Annual Average Minimum Temperature (°F)	40.73
31. Average Wind Speed (miles/hr)	9.075
32. Annual Average Solar Insulation Factor (BTU/(ft <sup>2</sup> ·day))	1,202.96
33. Atmospheric Pressure (psia)	14.108

**V. LIQUID INFORMATION** (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid:			
34A. Minimum (°F)	48.70	34B. Maximum (°F)	64.69
35. Average operating pressure range of tank:			
35A. Minimum (psig)		35B. Maximum (psig)	
36A. Minimum Liquid Surface Temperature (°F)		36B. Corresponding Vapor Pressure (psia)	
37A. Average Liquid Surface Temperature (°F)		37B. Corresponding Vapor Pressure (psia)	
38A. Maximum Liquid Surface Temperature (°F)		38B. Corresponding Vapor Pressure (psia)	
39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.			
39A. Material Name or Composition	Crude Oil		
39B. CAS Number	N/A		
39C. Liquid Density (lb/gal)	7.1		
39D. Liquid Molecular Weight (lb/lb-mole)	207		
39E. Vapor Molecular Weight (lb/lb-mole)	50		

Maximum Vapor Pressure 39F. True (psia)	2.6958		
39G. Reid (psia)	5		
Months Storage per Year 39H. From	January		
39I. To	December		

**VI. EMISSIONS AND CONTROL DEVICE DATA (required)**

40. Emission Control Devices (check as many as apply):  Does Not Apply

- Carbon Adsorption<sup>1</sup>
- Condenser<sup>1</sup>
- Conservation Vent (psig)
  - Vacuum Setting
  - Pressure Setting
- Emergency Relief Valve (psig)
- Inert Gas Blanket of
- Insulation of Tank with
- Liquid Absorption (scrubber)<sup>1</sup>
- Refrigeration of Tank
- Rupture Disc (psig)
- Vent to Incinerator<sup>1</sup>
- Other<sup>1</sup> (describe):

<sup>1</sup> Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss		Annual Loss (lb/yr)	Estimation Method <sup>1</sup>
		Amount	Units		
Benzene				28.82	ST
Hexane				19.21	ST
Iso-Octane				4.80	ST
Toluene				48.03	ST
Ethylbenzene				19.21	ST
Xylene				67.24	ST
Isopropyl Benzene				4.80	ST
Total VOC				4,802.95	ST

<sup>1</sup> EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

Remember to attach emissions calculations, including TANKS Summary Sheets if applicable.

**Attachment L  
EMISSIONS UNIT DATA SHEET  
CHEMICAL PROCESS**

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

- Emergency Vent Summary Sheet*
- Leak Sources Data Sheet*
- Toxicology Data Sheet*
- Reactor Data Sheet*
- Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)

Process area: Platformer  
Equipment ID: PL-FUG

2. Standard Industrial Classification Codes (SICs) for process(es)

2911

3. List raw materials and  attach MSDSs

Petroleum Naphtha

4. List Products and Maximum Production and  attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Gasoline (86290-81-5)	51,726 lb/hr	226,560 ton/yr

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices.

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.

Subject to 40 CFR 60, Subpart VVa.

LDAR program described in permit R30-02900008-2015.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.).

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.)

9A. Types and amounts of wastes to be disposed:

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: N/A

Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units).

circle units:	(hrs/day) (hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs/day		365 days/yr
10B. Typical	24 hrs/day		365 days/yr

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process.

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process.

**13. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

The permittee will monitor pumps on a monthly basis and valves on a quarterly basis.

The permittee will calibrate all monitoring equipment in accordance with EPA Method 21.

The permittee will record, track, repair, and re-monitor all leaks in excess of leak definitions.

**RECORDKEEPING**

The permittee will integrate all valves and pumps added to the facility into the LDAR program.

The permittee will record equipment leaks, repairs, and re-monitoring in accordance with 40 CFR 60.486a.

**REPORTING**

The permittee will maintain an electronic database for storing and reporting LDAR data and will use electronic data logging and/or collection during LDAR monitoring.

The permittee will submit reports in accordance with 40 CFR 60.487a.

**TESTING**

The permittee will determine compliance with applicable NSPS Subpart VVa standards by following test methods in 40 CFR 60.485a.

**MONITORING.** Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

**RECORDKEEPING.** Please describe the proposed recordkeeping that will accompany the monitoring.

**REPORTING.** Please describe the proposed frequency of reporting of the recordkeeping.

**TESTING.** Please describe any proposed emissions testing for this process equipment or air pollution control device.

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty  
N/A

## INFORMATION REQUIRED FOR CHEMICAL PROCESSES

The notes listed below for chemical processes are intended to help the applicant submit a complete application to the OAQ; these notes are not intended to be all inclusive. The requirements for a complete application for a permit issued under 45CSR13 are designed to provide enough information for a permit reviewer to begin a technical review. Additional information beyond that identified may be required to complete the technical review of any individual application.

### Process Description

Please keep these points in mind when completing your process description as part of this permit application.

1. Provide a general process overview. This brief, but complete, process description should include chemical or registered trademark names of chemical products, intermediates, and/or raw materials to be produced or consumed, and the ultimate use(s) of the product(s). A list of the various chemical compounds is helpful.
2. Describe each process step. Include the process chemistry and stoichiometrically balanced reaction equation or material mass balance on all components.
3. Describe the methods and equipment used to receive, store, handle, and charge raw materials.
4. Describe the methods and equipment used to handle, store, or package final products and intermediates.
5. Provide process flow diagrams or equipment layout drawings which clearly show the process flow relationships among all pieces of process and control equipment. Identify all air emission discharge points. Discuss instrumentation and controls for the process.
6. Discuss the possibilities of process upsets, the duration and frequency of upsets, and consequences (including air emissions) of these upsets. Include a description of rupture discs, pressure relief valves, and secondary containment systems.
7. Discuss any fugitive emissions and the methods used to minimize them.
8. Include the following plans for the process if available:
  - a. preventative maintenance and malfunction abatement plan (recommended for all control equipment).
  - b. continuous emissions (in-stack) monitoring plan
  - c. ambient monitoring plan
  - d. emergency response plan

### Regulatory Discussion

The following state and federal air pollution control regulations may be applicable to your chemical process. You should review these regulations carefully to determine if they apply to your process. Please summarize the results of your review in your permit application along with any other regulations you believe are applicable.

- Title 45 Legislative Rule Division of Environmental Protection, Office of Air Quality contains West Virginia's air pollution control regulations, including the following promulgated rules which may require emissions reductions or control technologies for your chemical process:
  - a. 45CSR27 - Best Available Technology (BAT) for Toxic Air Pollutants (TAPs)
  - b. 45CSR21 - VOC emissions controls for ozone maintenance in Kanawha, Cabell, Putnam, Wayne, and Wood counties.
  - c. 45CSR13 (Table 45-13A) - plantwide emission thresholds for permitting for certain pollutants.
- Federal Guidelines for case-by-case MACT determinations under section 112(g) of the 1990 CAAA for individual and total HAPs greater than 10 and 25 tons per year, respectively.
- There are also subparts of the federal Standards of Performance for New Stationary Sources (NSPS), 40CFR60.60, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40CFR61 and 40CFR63, which apply to various chemical and nonchemical processes. These subparts are too numerous to list here, but these areas of the federal regulations should be consulted carefully to determine applicability to your process.

### Emissions Summary and Calculations

Please keep these points in mind when submitting your emissions calculations as part of this permit application.

1. For each pollutant, provide the basis for the emissions estimate and for all emission reduction(s) or control efficiency(ies) claimed.
2. For all batch processes provide the following
  - a. Emissions of each pollutant in pound(s) per batch, from each process step
  - b. Annual emissions based on number of batches requested per year
  - c. The total time for each process step and the duration of the emissions during the process step
  - d. Total batch time, total emissions per batch (or per day), and annual emissions based on the number of batches requested per year.



**LEAK SOURCE DATA SHEET**

Source Category	Pollutant	Number of Source Components <sup>1</sup>	Number of Components Monitored by Frequency <sup>2</sup>	Average Time to Repair (days) <sup>3</sup>	Estimated Annual Emission Rate (lb/yr) <sup>4</sup>
Pumps <sup>5</sup>	light liquid VOC <sup>6,7</sup>	11	11/0/0/0/0		1204.0
	heavy liquid VOC <sup>8</sup>				
	Non-VOC <sup>9</sup>				
Valves <sup>10</sup>	Gas VOC				
	Light Liquid VOC				
	Heavy Liquid VOC				
	Non-VOC				
Safety Relief Valves <sup>11</sup>	Gas VOC				
	Non VOC				
Open-ended Lines <sup>12</sup>	VOC				
	Non-VOC				
Sampling Connections <sup>13</sup>	VOC				
	Non-VOC				
Compressors	VOC				
	Non-VOC				
Flanges	VOC				
	Non-VOC				
Other	VOC				
	Non-VOC				

<sup>1-13</sup> See notes on the following page.

## Notes for Leak Source Data Sheet

1. For VOC sources include components on streams and equipment that contain greater than 10% w/w VOC, including feed streams, reaction/separation facilities, and product/by-product delivery lines. Do not include certain leakless equipment as defined below by category.
2. By monitoring frequency, give the number of sources routinely monitored for leaks, using a portable detection device that measures concentration in ppm. Do not include monitoring by visual or soap-bubble leak detection methods. "M/Q(M)/Q/SA/A/O" means the time period between inspections as follows:  
  
Monthly/Quarterly, with Monthly follow-up of repaired leakers/Quarterly/Semi-annual/Annually/Other (specify time period)  
  
If source category is not monitored, a single zero in the space will suffice. For example, if 50 gas-service valves are monitored quarterly, with monthly follow-up of those repaired, 75 are monitored semi-annually, and 50 are checked bimonthly (alternate months), with non checked at any other frequency, you would put in the category "valves, gas service:" 0/50/0/75/0/50 (bimonthly).
3. Give the average number of days, after a leak is discovered, that an attempt will be made to repair the leak.
4. Note the method used: MB - material balance; EE - engineering estimate; EPA - emission factors established by EPA (cite document used); O - other method, such as in-house emission factor (specify).
5. Do not include in the equipment count sealless pumps (canned motor or diaphragm) or those with enclosed venting to a control device. (Emissions from vented equipment should be included in the estimates given in the Emission Points Data Sheet.)
6. Volatile organic compounds (VOC) means the term as defined in 40 CFR 51.100 (s).
7. A light liquid is defined as a fluid with vapor pressure equal to or greater than 0.04 psi (0.3 Kpa) at 20°C. For mixtures, if 20% w/w or more of the stream is composed of fluids with vapor pressures greater than 0.04 psi (0.3 Kpa) at 20 °C, then the fluid is defined as a light liquid.
8. A heavy liquid is defined as a fluid with a vapor pressure less than 0.04 psi (0.3 Kpa) at 20°C. For mixtures, if less than 20% w/w of the stream is composed of fluids with vapor pressures greater than 0.04 psi (0.3 Kpa) at 20 °C, then the fluid is defined as a heavy liquid.
9. LIST CO, H<sub>2</sub>S, mineral acids, NO, NO<sub>2</sub>, SO<sub>3</sub>, etc. DO NOT LIST CO<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
10. Include all process valves whether in-line or on an open-ended line such as sample, drain and purge valves. Do not include safety-relief valves, or leakless valves such as check, diaphragm, and bellows seal valves.
11. Do not include a safety-relief valve if there is a rupture disk in place upstream of the valve, or if the valve vents to a control device.
12. Open-ended lines include purge, drain and vent lines. Do not include sampling connections, or lines sealed by plugs, caps, blinds or second valves.
13. Do not include closed-purge sampling connections.



## REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on <i>Equipment List Form</i> ):							
1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)							
2. Type of operation <input type="checkbox"/> Batch <input type="checkbox"/> Continuous <input type="checkbox"/> Semi-batch							
3. Projected Actual Equipment Operating Schedule (complete appropriate lines):							
hrs/day		days/week			weeks/year		
hrs/batch		batches/day, weeks (Circle one)			day, weeks/yr (Circle one)		
4. Feed Data      Flow In =                      gal/hr, or gal/batch							
Material Name & CAS No.	Phase <sup>a</sup>	Specific Gravity	Vapor Pressure <sup>b</sup>	Charge Rate			Fill Time (min/batch, run) <sup>c</sup>
				Normal	Max	Units	
<p>a. S = Solid, L = Liquid, G = gas or vapor</p> <p>b. At feed conditions</p> <p>c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.</p>							
5. Provide all <b>chemical reactions</b> that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.							

6. Maximum Temperature  °C °F	7A. Maximum Pressure 7B. Max. Set Pressure for venting  mmHg psig
--	---

8. Output Data		Flow Out =		gal/hr or gal/batch		
Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		Units
				Normal	Maximum	

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **

\*\* MB - material balance; EE - Engineering Estimate; TM - Test Measurement (submit test data); O - other (Explain)

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S

% Ash

BTU/lb, std. ft<sup>3</sup>/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: ×10<sup>6</sup> BTU/hr.

**12. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

RECORDKEEPING

REPORTING

TESTING

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION OR AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

**13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty**

**NOTE:** An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

## DISTILLATION COLUMN DATA SHEET

Identification Number (as assigned on <i>Equipment List Form</i> ):		
1. Name and type of equipment		
#. Projected actual equipment operating schedule (complete appropriate lines):		
hrs/day	days/week	weeks/year
hrs/batch	batches/day, batches/week (circle one)	days/yr, weeks/yr (circle one)
2. Number of stages (plates), excluding condenser		
3. Number of feed plates and stage location		
4. Specify details of any reheating, recycling, or stage conditioning along with the stage locations		
5. Specify reflux ratio, R (where R is defined as the ratio of the reflux to the overhead product, given symbolically as $R=L/D$ , where L = liquid down column, D = distillation product)		
6. Specify the fraction of feed which is vaporized, f (where f is the molal fraction of the feed that leaves the feed plate continuously as vapor).		
7A. Type of condenser used: <input type="checkbox"/> total <input type="checkbox"/> partial <input type="checkbox"/> multiple <input type="checkbox"/> other		
7B. For each condenser provide process operating details including all inlet and outlet temperatures, pressures, and compositions.		
8. Feed Characteristics		
A. Molar composition		
B. Individual vapor pressure of each component		
C. Total feed stage pressure		
D. Total feed stage temperature		
E. Total mass flow rate of each stream into the system		
9. Overhead Product		
A. Molar composition of components		
B. Vapor pressure of components		
C. Total mass flow rate of all streams leaving the system as overhead products		
10. Bottom Product		
A. Molar composition of all components		
B. Total mass flow rate of all streams leaving the system as bottom products		

11. General Information

- A. Distillation column diameter
- B. Distillation column height
- C. Type of plates
- D. Plate spacing
- E. Murphree plate efficiency
- F. Any other information necessary of describe the operation of this distillation column.

12. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

RECORDKEEPING

REPORTING

TESTING

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION OR AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

**NOTE:** An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this distillation column.

**Attachment L  
EMISSIONS UNIT DATA SHEET  
CHEMICAL PROCESS**

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

- Emergency Vent Summary Sheet*
- Leak Sources Data Sheet*
- Toxicology Data Sheet*
- Reactor Data Sheet*
- Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)

Process area: Platformer  
Equipment ID: YNGL-FUG

2. Standard Industrial Classification Codes (SICs) for process(es)

2911

3. List raw materials and  attach MSDSs

Natural Gas Liquids (NGL)

4. List Products and Maximum Production and  attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Y-Grade NGL (64741-48-6)	562.2	1,779

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices.

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.

Subject to 40 CFR 60, Subpart VVa.  
LDAR program described in permit R30-02900008-2015.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.).

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.)

9A. Types and amounts of wastes to be disposed:

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: N/A

Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units).

circle units:	(hrs/day) (hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs/day		365 days/yr
10B. Typical	24 hrs/day		365 days/yr

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process.

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process.

**13. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

The permittee will monitor pumps on a monthly basis and valves on a quarterly basis.

The permittee will calibrate all monitoring equipment in accordance with EPA Method 21.

The permittee will record, track, repair, and re-monitor all leaks in excess of leak definitions.

**RECORDKEEPING**

The permittee will integrate all valves and pumps added to the facility into the LDAR program.

The permittee will record equipment leaks, repairs, and re-monitoring in accordance with 40 CFR 60.486a.

**REPORTING**

The permittee will maintain an electronic database for storing and reporting LDAR data and will use electronic data logging and/or collection during LDAR monitoring.

The permittee will submit reports in accordance with 40 CFR 60.487a.

**TESTING**

The permittee will determine compliance with applicable NSPS Subpart VVa standards by following test methods in 40 CFR 60.485a.

**MONITORING.** Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

**RECORDKEEPING.** Please describe the proposed recordkeeping that will accompany the monitoring.

**REPORTING.** Please describe the proposed frequency of reporting of the recordkeeping.

**TESTING.** Please describe any proposed emissions testing for this process equipment or air pollution control device.

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty  
N/A

### INFORMATION REQUIRED FOR CHEMICAL PROCESSES

The notes listed below for chemical processes are intended to help the applicant submit a complete application to the OAQ; these notes are not intended to be all inclusive. The requirements for a complete application for a permit issued under 45CSR13 are designed to provide enough information for a permit reviewer to begin a technical review. Additional information beyond that identified may be required to complete the technical review of any individual application.

#### Process Description

Please keep these points in mind when completing your process description as part of this permit application.

1. Provide a general process overview. This brief, but complete, process description should include chemical or registered trademark names of chemical products, intermediates, and/or raw materials to be produced or consumed, and the ultimate use(s) of the product(s). A list of the various chemical compounds is helpful.
2. Describe each process step. Include the process chemistry and stoichiometrically balanced reaction equation or material mass balance on all components.
3. Describe the methods and equipment used to receive, store, handle, and charge raw materials.
4. Describe the methods and equipment used to handle, store, or package final products and intermediates.
5. Provide process flow diagrams or equipment layout drawings which clearly show the process flow relationships among all pieces of process and control equipment. Identify all air emission discharge points. Discuss instrumentation and controls for the process.
6. Discuss the possibilities of process upsets, the duration and frequency of upsets, and consequences (including air emissions) of these upsets. Include a description of rupture discs, pressure relief valves, and secondary containment systems.
7. Discuss any fugitive emissions and the methods used to minimize them.
8. Include the following plans for the process if available:
  - a. preventative maintenance and malfunction abatement plan (recommended for all control equipment).
  - b. continuous emissions (in-stack) monitoring plan
  - c. ambient monitoring plan
  - d. emergency response plan

#### Regulatory Discussion

The following state and federal air pollution control regulations may be applicable to your chemical process. You should review these regulations carefully to determine if they apply to your process. Please summarize the results of your review in your permit application along with any other regulations you believe are applicable.

- Title 45 Legislative Rule Division of Environmental Protection, Office of Air Quality contains West Virginia's air pollution control regulations, including the following promulgated rules which may require emissions reductions or control technologies for your chemical process:
  - a. 45CSR27 - Best Available Technology (BAT) for Toxic Air Pollutants (TAPs)
  - b. 45CSR21 - VOC emissions controls for ozone maintenance in Kanawha, Cabell, Putnam, Wayne, and Wood counties.
  - c. 45CSR13 (Table 45-13A) - plantwide emission thresholds for permitting for certain pollutants.
- Federal Guidelines for case-by-case MACT determinations under section 112(g) of the 1990 CAAA for individual and total HAPs greater than 10 and 25 tons per year, respectively.
- There are also subparts of the federal Standards of Performance for New Stationary Sources (NSPS), 40CFR60 60, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40CFR61 and 40CFR63, which apply to various chemical and nonchemical processes. These subparts are too numerous to list here, but these areas of the federal regulations should be consulted carefully to determine applicability to your process.

#### Emissions Summary and Calculations

Please keep these points in mind when submitting your emissions calculations as part of this permit application.

1. For each pollutant, provide the basis for the emissions estimate and for all emission reduction(s) or control efficiency(ies) claimed.
2. For all batch processes provide the following
  - a. Emissions of each pollutant in pound(s) per batch, from each process step
  - b. Annual emissions based on number of batches requested per year
  - c. The total time for each process step and the duration of the emissions during the process step
  - d. Total batch time, total emissions per batch (or per day), and annual emissions based on the number of batches requested per year.



**LEAK SOURCE DATA SHEET**

Source Category	Pollutant	Number of Source Components <sup>1</sup>	Number of Components Monitored by Frequency <sup>2</sup>	Average Time to Repair (days) <sup>3</sup>	Estimated Annual Emission Rate (lb/yr) <sup>4</sup>
Pumps <sup>5</sup>	light liquid VOC <sup>6,7</sup>				
	heavy liquid VOC <sup>8</sup>				
	Non-VOC <sup>9</sup>				
Valves <sup>10</sup>	Gas VOC	261	0/261/0/0/0/0		1712.8
	Light Liquid VOC				
	Heavy Liquid VOC				
	Non-VOC				
Safety Relief Valves <sup>11</sup>	Gas VOC				
	Non VOC				
Open-ended Lines <sup>12</sup>	VOC				
	Non-VOC				
Sampling Connections <sup>13</sup>	VOC				
	Non-VOC				
Compressors	VOC				
	Non-VOC				
Flanges	VOC				
	Non-VOC				
Other	VOC	14	0/14/0/0/0/0		176.16
	Non-VOC				

1 - 13 See notes on the following page.

## Notes for Leak Source Data Sheet

1. For VOC sources include components on streams and equipment that contain greater than 10% w/w VOC, including feed streams, reaction/separation facilities, and product/by-product delivery lines. Do not include certain leakless equipment as defined below by category.
2. By monitoring frequency, give the number of sources routinely monitored for leaks, using a portable detection device that measures concentration in ppm. Do not include monitoring by visual or soap-bubble leak detection methods. "M/Q(M)/Q/SA/A/O" means the time period between inspections as follows:  
  
Monthly/Quarterly, with Monthly follow-up of repaired leakers/Quarterly/Semi-annual/Annually/Other (specify time period)  
  
If source category is not monitored, a single zero in the space will suffice. For example, if 50 gas-service valves are monitored quarterly, with monthly follow-up of those repaired, 75 are monitored semi-annually, and 50 are checked bimonthly (alternate months), with non checked at any other frequency, you would put in the category "valves, gas service:" 0/50/0/75/0/50 (bimonthly).
3. Give the average number of days, after a leak is discovered, that an attempt will be made to repair the leak.
4. Note the method used: MB - material balance; EE - engineering estimate; EPA - emission factors established by EPA (cite document used); O - other method, such as in-house emission factor (specify).
5. Do not include in the equipment count sealless pumps (canned motor or diaphragm) or those with enclosed venting to a control device. (Emissions from vented equipment should be included in the estimates given in the Emission Points Data Sheet.)
6. Volatile organic compounds (VOC) means the term as defined in 40 CFR 51.100 (s).
7. A light liquid is defined as a fluid with vapor pressure equal to or greater than 0.04 psi (0.3 Kpa) at 20°C. For mixtures, if 20% w/w or more of the stream is composed of fluids with vapor pressures greater than 0.04 psi (0.3 Kpa) at 20 °C, then the fluid is defined as a light liquid.
8. A heavy liquid is defined as a fluid with a vapor pressure less than 0.04 psi (0.3 Kpa) at 20°C. For mixtures, if less than 20% w/w of the stream is composed of fluids with vapor pressures greater than 0.04 psi (0.3 Kpa) at 20 °C, then the fluid is defined as a heavy liquid.
9. LIST CO, H<sub>2</sub>S, mineral acids, NO, NO<sub>2</sub>, SO<sub>3</sub>, etc. DO NOT LIST CO<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
10. Include all process valves whether in-line or on an open-ended line such as sample, drain and purge valves. Do not include safety-relief valves, or leakless valves such as check, diaphragm, and bellows seal valves.
11. Do not include a safety-relief valve if there is a rupture disk in place upstream of the valve, or if the valve vents to a control device.
12. Open-ended lines include purge, drain and vent lines. Do not include sampling connections, or lines sealed by plugs, caps, blinds or second valves.
13. Do not include closed-purge sampling connections.



## REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on <i>Equipment List Form</i> ):							
1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)							
2. Type of operation <input type="checkbox"/> Batch <input type="checkbox"/> Continuous <input type="checkbox"/> Semi-batch							
3. Projected Actual Equipment Operating Schedule (complete appropriate lines):							
hrs/day		days/week			weeks/year		
hrs/batch		batches/day, weeks (Circle one)			day, weeks/yr (Circle one)		
4. Feed Data      Flow In =      gal/hr, or gal/batch							
Material Name & CAS No.	Phase <sup>a</sup>	Specific Gravity	Vapor Pressure <sup>b</sup>	Charge Rate			Fill Time (min/batch, run) <sup>c</sup>
				Normal	Max	Units	
<p>a. S = Solid, L = Liquid, G = gas or vapor</p> <p>b. At feed conditions</p> <p>c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.</p>							
5. Provide all <b>chemical reactions</b> that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.							

6. Maximum Temperature  °C °F	7A. Maximum Pressure 7B. Max. Set Pressure for venting  mmHg psig
--	---

8. Output Data		Flow Out = gal/hr or gal/batch				
Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		Units
				Normal	Maximum	

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **

\*\* MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S

% Ash

BTU/lb, std. ft<sup>3</sup>/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: ×10<sup>6</sup> BTU/hr.

**12. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

RECORDKEEPING

REPORTING

TESTING

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION OR AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

**13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty**

**NOTE:** An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

## DISTILLATION COLUMN DATA SHEET

Identification Number (as assigned on <i>Equipment List Form</i> ):		
1. Name and type of equipment		
#. Projected actual equipment operating schedule (complete appropriate lines):		
hrs/day	days/week	weeks/year
hrs/batch	batches/day, batches/week (circle one)	days/yr, weeks/yr (circle one)
2. Number of stages (plates), excluding condenser		
3. Number of feed plates and stage location		
4. Specify details of any reheating, recycling, or stage conditioning along with the stage locations		
5. Specify reflux ratio, R (where R is defined as the ratio of the reflux to the overhead product, given symbolically as $R=L/D$ , where L = liquid down column, D = distillation product)		
6. Specify the fraction of feed which is vaporized, f (where f is the molal fraction of the feed that leaves the feed plate continuously as vapor).		
7A. Type of condenser used: <input type="checkbox"/> total <input type="checkbox"/> partial <input type="checkbox"/> multiple <input type="checkbox"/> other		
7B. For each condenser provide process operating details including all inlet and outlet temperatures, pressures, and compositions.		
8. Feed Characteristics		
A. Molar composition		
B. Individual vapor pressure of each component		
C. Total feed stage pressure		
D. Total feed stage temperature		
E. Total mass flow rate of each stream into the system		
9. Overhead Product		
A. Molar composition of components		
B. Vapor pressure of components		
C. Total mass flow rate of all streams leaving the system as overhead products		
10. Bottom Product		
A. Molar composition of all components		
B. Total mass flow rate of all streams leaving the system as bottom products		

11. General Information

- A. Distillation column diameter
- B. Distillation column height
- C. Type of plates
- D. Plate spacing
- E. Murphree plate efficiency
- F. Any other information necessary of describe the operation of this distillation column.

12. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

RECORDKEEPING

REPORTING

TESTING

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION OR AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

NOTE: An AIR POLLUTION CONTROL DEVICE SHEET must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this distillation column.

## **2.12 ATTACHMENT N – SUPPORTING CALCULATIONS**

## External Combustion Emission Calculations

Emission Unit ID: H-505R      Emission Unit Description: Process Heater (Replacement)

### Variables for Heater Emissions

Description	Value	Unit	Notes
Maximum Heat Release	8.745	MMBtu/hr	Three 2.915- $\text{MMBtu/hr}$ burners
Annual Operating Hours	8760	hours/year	Site-Specific
Fuel Gas Heating Value (HHV)	1019	Btu/scf	Typical value for RFG
NOx Emission Factor	0.025	lb/MMBtu (HHV)	Manufacturer specifications
SO <sub>2</sub> Emission Factor	0.0265	lb/MMBtu (HHV)	Conservatively based on annual sulfur content of 160 ppmv
VOC Emission Factor	0.0017	lb/MMBtu (HHV)	Manufacturer specifications
PM Emission Factor	0.005	lb/MMBtu (HHV)	Manufacturer specifications
CO Emissions Concentration	50	ppmv (dry)	Manufacturer specifications
O <sub>2</sub> Concentration for CO Factor	2%	vol% (dry)	Manufacturer specifications
O <sub>2</sub> Ambient Concentration	20.90%	vol% (dry)	EPA Method 19, Equation 19-1
CO Concentration Conversion Factor	7.25E-08	lb/(scf(dry)*ppm)	EPA Method 19, Equation 19-1
Volume of combust. prod. per unit heat content	8710	scf(dry)/MMBtu	Typical value for natural gas combustion
CO Emission Factor, Converted	0.035	lb/MMBtu (HHV)	EPA Method 19, Equation 19-1
<b>Heater Emissions</b>	NOx	0.22	lb/hr
		0.96	ton/yr
	SO <sub>2</sub>	0.23	lb/hr
		1.02	ton/yr
	VOC	0.01	lb/hr
		0.07	ton/yr
	PM	0.04	lb/hr
		0.19	ton/yr
CO	0.31	lb/hr	
	1.34	ton/yr	

### Variables for Pilot Emissions

Description	Value	Unit	Notes
Pilot Flame Design Capacity	0.1	MMBtu/hr	Manufacturer Specifications
Natural Gas Heating Value (HHV)	1020	Btu/scf	Typical value for natural gas
Annual Operating Hours	8760	hr/yr	Site-Specific
NOx Emission Factor	100	lb/MMscf	AP-42 Table 1.4-1
SO <sub>2</sub> Emission Factor	0.0006	lb/MMscf	AP-42 Table 1.4-2; Converted from lb/MMscf to lb/MMBtu based on HHV
CO Emission Factor	84	lb/MMscf	AP-42 Table 1.4-1
VOC Emission Factor	5.5	lb/MMscf	AP-42 Table 1.4-2
PM Emission Factor	7.6	lb/MMscf	AP-42 Table 1.4-2
<b>Pilot Emissions</b>	<b>NOx</b>	9.80E-03	lb/hr
		4.29E-02	ton/yr
	<b>SO<sub>2</sub></b>	5.88E-05	lb/hr
		2.58E-04	ton/yr
	<b>VOC</b>	5.39E-04	lb/hr
		2.36E-03	ton/yr
	<b>PM</b>	7.45E-04	lb/hr
		3.26E-03	ton/yr
	<b>CO</b>	8.24E-03	lb/hr
		3.61E-02	ton/yr

### Total Emissions

<b>Pollutant Emission Rates</b>	<b>NOx</b>	0.23	lb/hr
		1.00	ton/yr
	<b>SO<sub>2</sub></b>	0.23	lb/hr
		1.02	ton/yr
	<b>VOC</b>	0.02	lb/hr
		0.07	ton/yr
	<b>PM</b>	0.04	lb/hr
		0.19	ton/yr
	<b>CO</b>	0.31	lb/hr
		1.37	ton/yr

### VOC HAPs Speciation

Emission factors taken from AP-42 Table 1.4-3

HAP Species	Emission Factor	Emission Rate	
	(lb/MMscf)	(lb/hr)	(ton/yr)
Formaldehyde	0.075	6.51E-04	2.85E-03
Hexane	1.8	0.02	0.07
Benzene	0.0021	1.82E-05	7.98E-05
Toluene	0.0034	2.95E-05	1.29E-04

## External Combustion Emission Calculations

Emission Unit ID: H-505R      Emission Unit Description: Process Heater (Replacement)

### Heater Example Calculations

#### Hourly Emissions

##### NOx, VOC, and PM Emissions

$$E_x \left( \frac{lb}{hr} \right) = F_x \left( \frac{lb}{MMBtu} \right) * R_{max} \left( \frac{MMBtu}{hr} \right)$$

$E_x$  = Emission rate of pollutant x

$F_x$  = Emission factor of pollutant x

$R_{max}$  = Heater maximum heat release rate

Example:

$$E_{NOx} = (0.025 \text{ lb/MMBtu}) * (8.745 \text{ MMBtu/hr})$$

$$0.2186 \text{ lb/hr}$$

#### CO Emissions

Method: EPA Method 19, Equation 19-1

$$F_{CO} \left( \frac{lb}{MMBtu} \right) = C_{CO} (ppm) * F_{d,NG} \left( \frac{scf}{MMBtu} \right) * XF_{CO} \left( \frac{lb}{scf * ppm} \right) * \frac{Ox_{amb} (vol\%)}{Ox_{amb} (vol\%) - Ox_{exh} (vol\%)}$$

$F_{CO}$  = CO emission factor

$C_{CO}$  = Exhaust concentration of CO, by volume, dry

$F_{d,NG}$  = Volume of combustion product per unit heat value, natural gas

$XF_{CO}$  = CO concentration conversion factor

$Ox_{amb}$  = Ambient air oxygen fraction, by volume

$Ox_{exh}$  = Exhaust gas oxygen fraction, by volume

Example:

$$F_{CO} = (50 \text{ ppm}) * (8710 \text{ scf/MMBtu}) * (7.25 * 10^{-8} \text{ lb/(scf*ppm)}) * (20.9\% / (20.9\% - 2\%))$$

$$0.0349 \text{ lb/MMBtu}$$

$$E_{CO} = (0.0349 \text{ lb/MMBtu}) * (8.745 \text{ MMBtu/hr})$$

$$0.3052 \text{ lb/hr}$$

#### Annual Emissions

$$E_x \left( \frac{ton}{yr} \right) = E_x \left( \frac{lb}{hr} \right) * t \left( \frac{hr}{yr} \right) * \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right)$$

$t$  = Annual operating schedule of heater

Example:

$$E_{NOx} = (0.3052 \text{ lb/hr}) * (8760 \text{ hr/yr}) * (1 \text{ ton} / 2000 \text{ lb})$$

$$1.3368 \text{ ton/yr}$$

## External Combustion Emission Calculations

Emission Unit ID: H-505R Emission Unit Description: Process Heater (Replacement)

### Pilot Example Calculations

#### Hourly Emissions

$$E_x \left( \frac{lb}{hr} \right) = \frac{F_x \left( \frac{lb}{MMscf} \right) * R_{max} \left( \frac{MMBtu}{hr} \right)}{H_v \left( \frac{Btu}{scf} \right)}$$

$E_x$  = Emission rate of pollutant x

$F_x$  = Emission factor of pollutant x

$R_{max}$  = Pilot maximum heat release rate

$H_v$  = Heating value of fuel (natural gas)

Example:

$$E_{NOx} = ((100 \text{ lb/MMscf}) * (0.10 \text{ MMBtu/hr})) / (1020 \text{ Btu/scf})$$

0.0098 lb/hr

#### Annual Emissions

$$E_x \left( \frac{ton}{yr} \right) = E_x \left( \frac{lb}{hr} \right) * t \left( \frac{hr}{yr} \right) * \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right)$$

t = Annual operating schedule of pilot

Example:

$$E_{NOx} = (0.0098 \text{ lb/hr}) * (8760 \text{ hr/yr}) * (1 \text{ ton} / 2000 \text{ lb})$$

0.0429 ton/yr

### Annual Storage Tank Emission Calculations - Total

Emission Unit ID: 4060 Emission Unit Description: Internal floating roof; crude; mechanical shoe

Tank Annual Throughput (Gal): 224,837,445 Crude Oil (RVP 5)

#### Variables for Rim Seal Losses

Variable	Description	Value	Unit	Notes
D	Tank diameter	146.50	ft	Site specific
M <sub>v</sub>	Average vapor molecular weight	50.00	lb/lbmol	TANKS 4.09d component information - crude oil
K <sub>c</sub>	Product factor	0.40	dimensionless	AP-42; Chapter 7 Equation 2-2, Product Factor Note
T <sub>avg</sub>	Liquid average surface temperature	56.69	°F	TANKS 4.09d component information - crude oil
P <sub>va</sub>	Vapor pressure at daily average liquid surface temperature	2.70	psia	TANKS 4.09d component information - crude oil
P <sub>A</sub>	Atmospheric pressure	14.11	psia	TANKS 4.09d atmospheric pressure data for Pittsburgh, PA
P*	Vapor pressure function	0.053	dimensionless	AP-42; Chapter 7 Equation 2-3
K <sub>ra</sub>	Zero-wind-speed rim seal loss factor	5.80	lbmol/(ft*yr)	AP-42; Table 7.1-8
<b>Rim Seal Loss (L<sub>r</sub>) Emission Rates</b>		<b>900.05</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-2
		<b>0.10</b>	<b>lb/hr</b>	

#### Variables for Withdrawal Losses

Variable	Description	Value	Unit	Notes
Q	Annual throughput	5,353,272.50	bbbl/yr	Site specific
C <sub>S</sub>	Shell clingage factor	0.006	bbbl/(1,000 ft <sup>2</sup> )	AP-42; Table 7.1-10
W <sub>L</sub>	Average organic liquid density	7.10	lb/gal	AP-42; Chapter 7 Equation 2-4, Note 1
D	Tank diameter	146.5	ft	Site specific
N <sub>c</sub>	Number of fixed-roof support columns	9	dimensionless	Site specific
P <sub>c</sub>	Column perimeter	3.14	ft	Site specific
F <sub>c</sub>	Effective column diameter	1.00	ft	AP-42; Chapter 7 Equation 2-4, Note 3
<b>Withdrawal Loss (L<sub>wd</sub>) Emission Rates</b>		<b>1558.10</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-4
		<b>0.18</b>	<b>lb/hr</b>	

#### Variables for Deck Fitting Losses

Variable	Description	Value	Unit	Notes
F <sub>f</sub>	Total deck fitting loss factor	1654.67	lbmol/yr	AP-42; Chapter 7 Equation 2-6
P*	Vapor pressure function	0.053	dimensionless	AP-42; Chapter 7 Equation 2-3
M <sub>v</sub>	Average vapor molecular weight	50.00	lb/lbmol	AP-42; Table 7.1-2
K <sub>c</sub>	Product factor	0.40	dimensionless	AP-42; Chapter 7 Equation 2-2, Product Factor Note
<b>Deck Fitting Loss (L<sub>f</sub>) Emission Rates</b>		<b>1752.73</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-2
		<b>0.20</b>	<b>lb/hr</b>	

#### Variables for Deck Seam Losses

Variable	Description	Value	Unit	Notes
D	Tank diameter	146.50	ft	Site specific
K <sub>D</sub>	Deck seam loss per unit seam length	0.14	lbmol/(ft*yr)	AP-42; Chapter 7 Equation 2-9, Deck Seam Loss Factor Note
L <sub>s</sub>	Deck seams total length	2820.52	ft	Site specific
S <sub>D</sub>	Deck seam length factor	0.17	ft <sup>-1</sup>	AP-42; Chapter 7 Equation 2-9, Deck Seam Length Factor Note
P*	Vapor pressure function	0.053	dimensionless	AP-42; Chapter 7 Equation 2-3
M <sub>v</sub>	Average vapor molecular weight	50.00	lb/lbmol	AP-42; Table 7.1-2
K <sub>c</sub>	Product factor	0.40	dimensionless	AP-42; Chapter 7 Equation 2-2, Product Factor Note
<b>Deck Seam Loss (L<sub>D</sub>) Emission Rates</b>		<b>532.56</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-9
		<b>0.06</b>	<b>lb/hr</b>	

#### Summary of Total Annual Emissions

<b>Total Annual Storage Tank Losses</b>	4743.45	lb/yr	AP-42; Chapter 7 Equation 2-1
	2.37	ton/yr	
	0.54	lb/hr	

#### HAP Speciation

HAP Species	Vapor Fraction (wt%)	Total Annual Storage Tank Losses			Notes
		(lb/yr)	(ton/yr)	(lb/hr)	
Benzene	0.60%	28.46	0.01	3.25E-03	Vapor weight fractions given here were taken from typical vapor compositions for the materials stored in this tank at this site.
Hexane	0.40%	18.97	0.01	2.17E-03	
l-Octane	0.10%	4.74	2.37E-03	5.42E-04	
Toluene	1.00%	47.43	0.02	0.01	
Ethylbenzene	0.40%	18.97	0.01	2.17E-03	
Xylene	1.40%	66.41	0.03	0.01	
Isopropyl Benzene	0.10%	4.74	2.37E-03	5.42E-04	

### Annual Storage Tank Emission Calculations - Total

Emission Unit ID: **4861** Emission Unit Description: **Internal floating roof, crude, mechanical shoes**

Tank Annual Throughput (Gal): **224,837,445** Crude Oil (RVP 5)

#### Variables for Rim Seal Losses

Variable	Description	Value	Unit	Notes
D	Tank diameter	146.50	ft	Site specific
M <sub>v</sub>	Average vapor molecular weight	50.00	lb/lbmol	TANKS 4.09d component information - crude oil
K <sub>c</sub>	Product factor	0.40	dimensionless	AP-42; Chapter 7 Equation 2-2, Product Factor Note
T <sub>avg</sub>	Liquid average surface temperature	56.69	°F	TANKS 4.09d component information - crude oil
P <sub>VA</sub>	Vapor pressure at daily average liquid surface temperature	2.70	psia	TANKS 4.09d component information - crude oil
P <sub>A</sub>	Atmospheric pressure	14.11	psia	TANKS 4.09d atmospheric pressure data for Pittsburgh, PA
P*	Vapor pressure function	0.053	dimensionless	AP-42; Chapter 7 Equation 2-3
K <sub>RA</sub>	Zero-wind-speed rim seal loss factor	5.80	lbmol/(ft*yr)	AP-42; Table 7.1-8
<b>Rim Seal Loss (L<sub>rs</sub>) Emission Rates</b>		<b>900.05</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-2
		<b>0.10</b>	<b>lb/hr</b>	

#### Variables for Withdrawal Losses

Variable	Description	Value	Unit	Notes
Q	Annual throughput	5,353,272.50	bb/yr	Site specific
C <sub>s</sub>	Shell clingage factor	0.006	bb/(1,000 ft <sup>2</sup> )	AP-42; Table 7.1-10
W <sub>l</sub>	Average organic liquid density	7.10	lb/gal	AP-42; Chapter 7 Equation 2-4, Note 1
D	Tank diameter	146.5	ft	Site specific
N <sub>c</sub>	Number of fixed-roof support columns	9	dimensionless	Site specific
P <sub>c</sub>	Column perimeter	3.14	ft	Site specific
F <sub>c</sub>	Effective column diameter	1.00	ft	AP-42; Chapter 7 Equation 2-4, Note 3
<b>Withdrawal Loss (L<sub>wc</sub>) Emission Rates</b>		<b>1558.10</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-4
		<b>0.18</b>	<b>lb/hr</b>	

#### Variables for Deck Fitting Losses

Variable	Description	Value	Unit	Notes
F <sub>f</sub>	Total deck fitting loss factor	1612.67	lbmol/yr	AP-42; Chapter 7 Equation 2-6
P*	Vapor pressure function	0.053	dimensionless	AP-42; Chapter 7 Equation 2-3
M <sub>v</sub>	Average vapor molecular weight	50.00	lb/lbmol	AP-42; Table 7.1-2
K <sub>c</sub>	Product factor	0.40	dimensionless	AP-42; Chapter 7 Equation 2-2, Product Factor Note
<b>Deck Fitting Loss (L<sub>f</sub>) Emission Rates</b>		<b>1706.24</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-2
		<b>0.20</b>	<b>lb/hr</b>	

#### Variables for Deck Seam Losses

Variable	Description	Value	Unit	Notes
D	Tank diameter	146.50	ft	Site specific
K <sub>D</sub>	Deck seam loss per unit seam length	0.14	lbmol/(ft*yr)	AP-42; Chapter 7 Equation 2-9, Deck Seam Loss Factor Note
L <sub>s</sub>	Deck seams total length	3371.28	ft	Site specific
S <sub>D</sub>	Deck seam length factor	0.20	ft <sup>-1</sup>	AP-42; Chapter 7 Equation 2-9, Deck Seam Length Factor Note
P*	Vapor pressure function	0.053	dimensionless	AP-42; Chapter 7 Equation 2-3
M <sub>v</sub>	Average vapor molecular weight	50.00	lb/lbmol	AP-42; Table 7.1-2
K <sub>c</sub>	Product factor	0.40	dimensionless	AP-42; Chapter 7 Equation 2-2, Product Factor Note
<b>Deck Seam Loss (L<sub>s</sub>) Emission Rates</b>		<b>636.56</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-9
		<b>0.07</b>	<b>lb/hr</b>	

#### Summary of Total Annual Emissions

<b>Total Annual Storage Tank Losses</b>	<b>4802.95</b>	<b>lb/yr</b>	AP-42; Chapter 7 Equation 2-1
	<b>2.40</b>	<b>ton/yr</b>	
	<b>0.55</b>	<b>lb/hr</b>	

#### HAP Speciation

HAP Species	Vapor Fraction	Total Annual Storage Tank Losses			Notes
	(wt%)	(lb/yr)	(ton/yr)	(lb/hr)	
Benzene	0.60%	28.82	0.01	3.29E-03	Vapor weight fractions given here were taken from typical vapor compositions for the materials stored in this tank at this site.
Hexane	0.40%	19.21	0.01	2.19E-03	
i-Octane	0.10%	4.80	2.40E-03	5.48E-04	
Toluene	1.00%	48.03	0.02	0.01	
Ethylbenzene	0.40%	19.21	0.01	2.19E-03	
Xylene	1.40%	67.24	0.03	0.01	
Isopropyl Benzene	0.10%	4.80	2.40E-03	5.48E-04	

## Fugitive Emission Calculations

Emission Unit ID: PL-FUG      Emission Unit Description: Platformer Expansion Fugitives

### Variables for Fugitive Emissions

Description	Value	Unit	Notes
Number of Pumps	11	unitless	Site-Specific
Fraction of Components Leaking	3%	percent	Site-Specific
Pump Leak Rate	0.06234	kg/hr	EPA Correlation Approach (see example calculations)
Annual Operating Hours	8760	hr/yr	Site-Specific
Fugitive Emission Rate	0.14	lb/hr	
	0.60	ton/yr	

### VOC HAPs Speciation

Emission factors taken from site-specific data

HAP Species	Fraction (wt%)	Emission Rate	
		(lb/hr)	(ton/yr)
Hexane	6.26%	0.01	0.04

## Fugitive Emission Calculations

Emission Unit ID: PL-FUG      Emission Unit Description: Platformer Expansion Fugitives

### Fugitive Example Calculations

**Notes/Assumptions**

The following assumptions were made for the EPA Correlation Approach:

- a. The screening value (SV<sub>NL</sub>) for each non leaking component was 1 ppm less than the leak definition of 500 ppm for valves and 2,000 ppm for pumps
- b. The screening value (SV<sub>L</sub>) for all leaky components was 20,000 ppm
- c. The equation listed below is used to calculate the leak rate:

$$LR_x \left( \frac{kg}{hr} \right) = F_C * \left( n_{NL} * (SV_{NL}(ppm))^M + n_L * (SV_L(ppm))^M \right)$$

- LR<sub>x</sub> = Leak rate of component x
- F<sub>C</sub> = Correlation factor for component x (see table below)
- n<sub>NL</sub> = Number of non-leakers for component x
- n<sub>L</sub> = Number of leakers for component x
- SV<sub>NL</sub> = Screening value for non-leakers for component x (see table below)
- SV<sub>L</sub> = Screening value for leakers for component x (see table below)
- M = Screening value exponential factor for component x (see table below)

**Correlation Values Table - values are site-specific**

Component Type	F <sub>C</sub>	SV <sub>NL</sub> (ppm)	SV <sub>L</sub> (ppm)	M
Valves	2.29E-06	499	20,000	0.746
Pumps	5.03E-05	1,999	20,000	0.610
Connectors	1.53E-06	499	20,000	0.735
Other	1.36E-05	499	20,000	0.589

**Hourly Emission Rate**

$$E_x \left( \frac{lb}{hr} \right) = LR_x \left( \frac{kg}{hr} \right) * \left( \frac{2.2046 lb}{kg} \right)$$

- E<sub>x</sub> = Emission rate for component x
- LR<sub>x</sub> = Leak rate of component x

Example: Emissions from pumps

11 pumps  
3% of components are leakers

$$LR_{Pumps} \left( \frac{kg}{hr} \right) = (5.03 * 10^{-5}) * \left( (11 * (100\% - 3\%)) * (1999 ppm)^{0.610} + (11 * (3\%)) * (20000 ppm)^{0.610} \right)$$

$$LR_{Pumps} = 0.0623 \text{ kg/hr}$$

$$E_{Pumps} \left( \frac{lb}{hr} \right) = (0.0623 \text{ kg/hr}) * \left( \frac{2.2046 lb}{kg} \right) = 0.1373 \text{ lb/hr}$$

**Annual Emission Rate**

$$E_x \left( \frac{ton}{yr} \right) = E_x \left( \frac{lb}{hr} \right) * t \left( \frac{hr}{yr} \right) * \left( \frac{1 ton}{2,000 lb} \right)$$

- E<sub>x</sub> = Emission rate for component x
- t = Annual operating hours

Example: Emissions from pumps

$$E_{Pumps} \left( \frac{ton}{yr} \right) = \left( 0.1373 \frac{lb}{hr} \right) * \left( 8760 \frac{hr}{yr} \right) * \left( \frac{1 ton}{2,000 lb} \right) = 0.6016 \text{ ton/yr}$$

## Fugitive Emission Calculations

Emission Unit ID: YNGL-FUG      Emission Unit Description: Y-Grade NGL Fugitives

### Variables for Fugitive Emissions

Description	Value	Unit	Notes
Number of Valves	261	unitless	Site-Specific
Number of Other Equipment	14	unitless	Site-Specific
Fraction of Components Leaking	3%	percent	Site-Specific
Valve Leak Rate	0.08869	kg/hr	EPA Correlation Approach (see example calculations)
Other Equipment Leak Rate	0.00912	kg/hr	EPA Correlation Approach (see example calculations)
Annual Operating Hours	8760	hr/yr	Site-Specific
Valve Fugitive Emissions	0.20	lb/hr	
	0.86	ton/yr	
Other Equip. Fugitive Emissions	0.02	lb/hr	
	0.09	ton/yr	

### Total Fugitive Emissions

YNGL-FUG Emission Rate	0.22	lb/hr	
	0.94	ton/yr	

### VOC HAPs Speciation

Emission factors taken from site-specific data for Y-grade NGL

HAP Species	Fraction (wt%)	Emission Rate	
		(lb/hr)	(ton/yr)
Hexane	3.01%	0.01	0.03

## Fugitive Emission Calculations

Emission Unit ID: YNGL-FUG      Emission Unit Description: Y-Grade NGL Fugitives

### Fugitive Example Calculations

#### Notes/Assumptions

The following assumptions were made for the EPA Correlation Approach:

- a. The screening value (SV<sub>NL</sub>) for each non-leaking component was 1 ppm less than the leak definition of 500 ppm for valves and 2,000 ppm for pumps
- b. The screening value (SV<sub>L</sub>) for all leaky components was 20,000 ppm
- c. The equation listed below is used to calculate the leak rate:

$$LR_x \left( \frac{kg}{hr} \right) = F_C * \left( n_{NL} * (SV_{NL}(ppm))^M + n_L * (SV_L(ppm))^M \right)$$

LR<sub>x</sub> = Leak rate of component x

F<sub>C</sub> = Correlation factor for component x (see table below)

n<sub>NL</sub> = Number of non-leakers for component x

n<sub>L</sub> = Number of leakers for component x

SV<sub>NL</sub> = Screening value for non-leakers for component x (see table below)

SV<sub>L</sub> = Screening value for leakers for component x (see table below)

M = Screening value exponential factor for component x (see table below)

Correlation Values Table - values are site-specific

Component Type	F <sub>C</sub>	SV <sub>NL</sub>	SV <sub>L</sub>	M
		(ppm)	(ppm)	
Valves	2.29E-06	499	20,000	0.746
Pumps	5.03E-05	1,999	20,000	0.610
Connectors	1.53E-06	499	20,000	0.735
Other	1.36E-05	499	20,000	0.589

#### Hourly Emission Rate

$$E_x \left( \frac{lb}{hr} \right) = LR_x \left( \frac{kg}{hr} \right) * \left( \frac{2.2046 lb}{kg} \right)$$

E<sub>x</sub> = Emission rate for component x

LR<sub>x</sub> = Leak rate of component x

#### Example: Emissions from valves

261 valves

3% of components are leakers

$$LR_{vfv} \left( \frac{kg}{hr} \right) = (2.29 * 10^{-6}) * \left( (261 * (100\% - 3\%)) * (499 ppm)^{0.746} + (261 * (3\%)) * (20000 ppm)^{0.746} \right)$$

$$LR_{vfv} = 0.0887 \text{ kg/hr}$$

$$E_{Pumps} \left( \frac{lb}{hr} \right) = (0.0887 \text{ kg/hr}) * \left( \frac{2.2046 lb}{kg} \right) = \mathbf{0.1955 \text{ lb/hr}}$$

#### Annual Emission Rate

$$E_x \left( \frac{ton}{yr} \right) = E_x \left( \frac{lb}{hr} \right) * t \left( \frac{hr}{yr} \right) * \left( \frac{1 ton}{2,000 lb} \right)$$

E<sub>x</sub> = Emission rate for component x

t = Annual operating hours

#### Example: Emissions from valves

$$E_{Pumps} \left( \frac{ton}{yr} \right) = \left( 0.1995 \frac{lb}{hr} \right) * \left( 8760 \frac{hr}{yr} \right) * \left( \frac{1 ton}{2,000 lb} \right) = \mathbf{0.8565 \text{ ton/yr}}$$

**Project Emissions Summary**

Source Description <sup>(1)</sup>	Pollutants (tpy)												
	Total VOC	Total PM	NO <sub>x</sub>	CO	SO <sub>2</sub>	Total HAP	F-Hyde	Hexane	Benzene	Toluene	Ethyl Benzene	Xylene	Isopropyl Benzene
H-505R Process Heater (Replacement)	0.07	0.19	0.96	1.34	1.02	0.07	2.85E-03	6.84E-02	7.98E-05	1.29E-04	-	-	-
H-505 Process Heater (Removed)	-0.18	-0.24	-3.86	-2.71	-0.87	-0.02	-	-3.54E-03	-3.54E-03	-3.54E-03	-3.54E-03	-3.54E-03	-3.54E-03
PL-FUG / Platformer Expansion Fugitives	0.60	-	-	-	-	0.04	-	3.77E-02	-	-	-	-	-
YNGL-FUG / NGL Service Area Fugitives	0.94	-	-	-	-	0.03	-	2.84E-02	-	-	-	-	-
4060 - Crude Oil Tank (New Rates)	2.37	-	-	-	-	0.09	-	9.49E-03	1.42E-02	2.37E-02	9.49E-03	3.32E-02	2.37E-03
4060 - Crude Oil Tank (Permitted)	-2.21	-	-	-	-	-0.09	-	-8.84E-03	-1.33E-02	-2.21E-02	-8.84E-03	-3.09E-02	-2.21E-03
4061 - Crude Oil Tank (New Rates)	2.40	-	-	-	-	0.09	-	9.61E-03	1.44E-02	2.40E-02	9.61E-03	3.36E-02	2.40E-03
4061 - Crude Oil Tank (Permitted)	-2.21	-	-	-	-	-0.09	-	-8.84E-03	-1.33E-02	-2.21E-02	-8.84E-03	-3.09E-02	-2.21E-03
<b>Project Emissions Summary</b>	<b>1.79</b>	<b>-0.05</b>	<b>-2.91</b>	<b>-1.37</b>	<b>0.15</b>	<b>0.13</b>	<b>2.85E-03</b>	<b>1.32E-01</b>	<b>-1.34E-03</b>	<b>1.19E-04</b>	<b>-2.13E-03</b>	<b>1.40E-03</b>	<b>-3.19E-03</b>

**Notes / References:**

<sup>(1)</sup> The project emissions summary was calculated by summing all new or modified emission rates and subtracting emission rates from equipment that has either been removed or has an existing permitted emission rate.

## **2.13 ATTACHMENT O – MONITORING, RECORDKEEPING, REPORTING, & TESTING PLANS**

**ATTACHMENT O MONITORING, RECORDKEEPING, REPORTING AND TESTING PLAN**

Source	Monitoring	Recordkeeping	Reporting	Testing
H-505R	<p>The permittee will monitor the PM emissions by conducting visible emissions checks in accordance with 40 CFR 60 Appendix A, Method 22.</p> <p>The permittee will monitor the H2S content of fuel gas.</p>	<p>The permittee will keep records of excess discharges in accordance with 40 CFR 60.108a(c)(6).</p> <p>The permittee will maintain operation, monitoring, and testing records required by 45 CSR 2.8.3.</p> <p>The permittee will estimate annual emissions for the criteria pollutants.</p>	<p>The permittee will comply with the applicable reporting requirements of 45 CSR 13.</p> <p>The permittee will provide the construction and performance test notifications required by 40 CFR 60.7.</p> <p>The permittee will report to the Director any malfunction that results in exceeding emission standards in 45 CSR 2.3 and 45 CSR 2.4, or any excursion outside approved emissions or monitoring parameters.</p>	<p>The permittee will conduct initial performance testing for the heater and H2S monitoring equipment in accordance with 40 CFR 60.104a.</p>
PL-FUG	<p>The permittee will monitor pumps on a monthly basis and valves on a quarterly basis.</p> <p>The permittee will calibrate all monitoring equipment in accordance with EPA Method 21.</p> <p>The permittee will record, track, repair, and re-monitor all leaks in excess of leak definitions.</p>	<p>The permittee will integrate all valves and pumps added to the facility into the LDAR program.</p> <p>The permittee will record equipment leaks, repairs, and re-monitoring in accordance with 40 CFR 60.486a.</p>	<p>The permittee will maintain an electronic database for storing and reporting LDAR data and will use electronic data logging and/or collection during LDAR monitoring. The permittee will submit reports in accordance with 40 CFR 60.487a.</p>	<p>The permittee will determine compliance with applicable NSPS Subpart VVa standards by following test methods in 40 CFR 60.485a.</p>

Source	Monitoring	Recordkeeping	Reporting	Testing
YNGL-FUG	<p>The permittee will monitor pumps on a monthly basis and valves on a quarterly basis.</p> <p>The permittee will calibrate all monitoring equipment in accordance with EPA Method 21.</p> <p>The permittee will record, track, repair, and re-monitor all leaks in excess of leak definitions.</p>	<p>The permittee will integrate all valves and pumps added to the facility into the LDAR program.</p> <p>The permittee will record equipment leaks, repairs, and re-monitoring in accordance with 40 CFR 60.486a.</p>	<p>The permittee will maintain an electronic database for storing and reporting LDAR data and will use electronic data logging and/or collection during LDAR monitoring. The permittee will submit reports in accordance with 40 CFR 60.487a.</p>	<p>The permittee will determine compliance with applicable NSPS Subpart VVa standards by following test methods in 40 CFR 60.485a.</p>
TK-4060	<p>The permittee will comply with the applicably inspection requirements of 40 CFR 60.116b.</p>	<p>The permittee will keep monthly records of throughput.</p> <p>The permittee will estimate annual emissions for criteria pollutants.</p> <p>The permittee will comply with applicable recordkeeping requirements of 40 CFR 60 Kb.</p>	N/A	N/A

Source	Monitoring	Recordkeeping	Reporting	Testing
TK-4061	The permittee will comply with the applicably inspection requirements of 40 CFR 60.116b.	<p>The permittee will keep monthly records of throughput.</p> <p>The permittee will estimate annual emissions for criteria pollutants.</p> <p>The permittee will comply with applicable recordkeeping requirements of 40 CFR 60 Kb.</p>	N/A	N/A

## **2.14 ATTACHMENT S – TITLE V PERMIT REVISION INFORMATION**

## Attachment S

### Title V Permit Revision Information

<b>1. New Applicable Requirements Summary</b>	
Mark all applicable requirements associated with the changes involved with this permit revision:	
<input type="checkbox"/> SIP	<input type="checkbox"/> FIP
<input checked="" type="checkbox"/> Minor source NSR (45CSR13)	<input type="checkbox"/> PSD (45CSR14)
<input type="checkbox"/> NESHAP (45CSR15)	<input type="checkbox"/> Nonattainment NSR (45CSR19)
<input type="checkbox"/> Section 111 NSPS (Subpart(s) _____)	<input type="checkbox"/> Section 112(d) MACT standards (Subpart(s) _____)
<input type="checkbox"/> Section 112(g) Case-by-case MACT	<input type="checkbox"/> 112(r) RMP
<input type="checkbox"/> Section 112(i) Early reduction of HAP	<input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e)
<input type="checkbox"/> Section 129 Standards/Reqts.	<input type="checkbox"/> Stratospheric ozone (Title VI)
<input type="checkbox"/> Tank vessel reqt., section 183(f)	<input type="checkbox"/> Emissions cap 45CSR§30-2.6.1
<input type="checkbox"/> NAAQS, increments or visibility (temp. sources)	<input checked="" type="checkbox"/> 45CSR27 State enforceable only rule
<input type="checkbox"/> 45CSR4 State enforceable only rule	<input type="checkbox"/> Acid Rain (Title IV, 45CSR33)
<input type="checkbox"/> Emissions Trading and Banking (45CSR28)	<input type="checkbox"/> Compliance Assurance Monitoring (40CFR64) <sup>(1)</sup>
<input type="checkbox"/> NO <sub>x</sub> Budget Trading Program Non-EGUs (45CSR1)	<input type="checkbox"/> NO <sub>x</sub> Budget Trading Program EGUs (45CSR26)
<p><sup>(1)</sup> If this box is checked, please include <b>Compliance Assurance Monitoring (CAM) Form(s)</b> for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why <b>Compliance Assurance Monitoring</b> is not applicable:</p>	

<b>2. Non Applicability Determinations</b>
<p>List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.</p> <p>N/A</p>
<p><input type="checkbox"/> <b>Permit Shield Requested</b> <i>(not applicable to Minor Modifications)</i></p>
<p><i>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</i></p>

**3. Suggested Title V Draft Permit Language**

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision?  Yes  No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

N/A

**4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision**

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R13-2334X	06/08/2015	
	/ /	
	/ /	

**5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision**

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	/ /	
	/ /	
	/ /	

**6. Change in Potential Emissions**

Pollutant	Change in Potential Emissions (+ or -), TPY
VOC	+1.79
CO	-1.37
NOx	-2.91
Total Particulate (PM)	-0.05
SO2	+0.15

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

**7. Certification For Use Of Minor Modification Procedures (Required Only for Minor Modification Requests)**

**Note:** This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:

- i. Proposed changes do not violate any applicable requirement;
- ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
- iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
- v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
- vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

**Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.**

<b>(Signed):</b>	 <i>(Please use blue ink)</i>	<b>Date:</b>	9 / 8 / 15 <i>(Please use blue ink)</i>
<b>Named (typed):</b>	Paul W. Young, Jr.	<b>Title:</b>	Vice President of Regulatory Affairs

**Note: Please check if the following included (if applicable):**

- Compliance Assurance Monitoring Form(s)
- Suggested Title V Draft Permit Language

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*