# Commonwealth of Kentucky
# Division for Air Quality
# PERMIT APPLICATION SUMMARY FORM

Completed by: Jacob Zortman

## GENERAL INFORMATION:

| | |
|---|---|
| Name: | Westlake Chemical OpCo, LP |
| Address: | 2468 Industrial Parkway, Calvert City, KY 42029 |
| Date application received: | 5/8/2019 |
| SIC Code/SIC description: | 2869, Industrial Organic Chemicals, NEC |
| Source ID: | 21-157-00080 |
| Agency Interest: | 122899 |
| Activity: | APE20190002 |
| Permit: | V-14-022 R2 |

## APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance
[X] Permit modification
__Administrative
__Minor
X Significant
[ ] Permit renewal

[ ] General permit
[ ] Conditional major
[X] Title V
[ ] Synthetic minor
[ ] Operating
[X] Construction/operating

## COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[X] Compliance certification signed
[ ] Compliance schedule included

## SOURCE APPLICABLE REQUIREMENTS LIST:

[ ] NSR
__ Non-Attainment
X PSD
X Netted out of PSD/NSR for $NO_X$
__ Not major modification per 401 KAR 51:001, 1(114)(b)

[X] NSPS
[X] NESHAPS
[ ] CAM

[X] SIP
[ ] Other

## MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[X] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[ ] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

## EMISSIONS SUMMARY:

| Pollutant | Actual* (tpy) | Potential V-14-022 R1 (tpy) | Potential V-14-022 R2 (tpy) |
|---|---|---|---|
| CO | 146.10 | 88.9 | 388.28 |
| $NO_x$ | 134.79 | 63.6 | 213.54 |
| PT | 17.91 | 22.4 | 48.22 |
| $PM_{10}$ | 17.91 | 22.4 | 48.22 |
| $PM_{2.5}$ | 17.91 | 13.1 | 40.80 |
| $SO_2$ | 1.68 | 1.92 | 2.31 |
| VOC | 180.84 | 415 | 234.79 |
| **Hazardous Air Pollutants (HAP)** | | | |
| 1,3-Butadiene | 4.87 | 2.72 | 15.25 |
| Benzene | 45.00 | 14.9 | 183.0 |
| Methanol | 0.001 | 0.00423 | 0.003 |
| Naphthalene | 0.002 | 0.225 | 0.003 |
| Styrene | 0.015 | 2.26 | 0.01 |
| Toluene | 10.35 | 3.84 | 41.80 |
| Xylenes | 6.48 | 0.940 | 23.95 |
| Source wide HAPs or Combined HAPs | 66.72 | 24.9 | 273.02 |
| **Greenhouse Gases** | | | |
| Carbon dioxide ($CO_2$) | 170,044.42 | 91,123 | 1,014,274 |
| Nitrous Oxide | 6.05 | 1.89 | 0.91 |
| Methane | 27.06 | 14.9 | 45.83 |
| $CO_2$ Equivalent | 172,523.82 | 92,059 | 1,015,692 |

* Actual emissions are from the 2017 Kentucky Emissions Inventory Survey

## SOURCE DESCRIPTION:

Westlake Chemical OpCo, LP (Westlake OpCo), Westlake Vinyls, Inc. – Vinyls Plant and Westlake Vinyls, Inc. – PVC Plant are all subsidiaries of Westlake Chemical Corporation. The three facilities are located within a contiguous area. Even though the facilities have separate Title V permits, the facilities are a single major source, pursuant to 401 KAR 52:001, Section 1(45)(a) definitions. Each owner/operator is responsible and liable for their own violations, unless there is a joint cause for the violations. Westlake Chemical OpCo, LP, Westlake Vinyls, Inc. – Vinyls Plant and Westlake Vinyls, Inc. – PVC Plant are also a single major source as defined by 401 KAR 52:020, Title V Permits..

The primary function of the Westlake OpCo Plant is to produce high-purity ethylene through thermal cracking of ethane feedstock. The efficiency of this process depends to a great extent on the simultaneous recovery of useful and profitable co-products. These include: propylene, mixed C-4's, aromatic gasoline, fuel oil, and fuel gas.

## V-14-022 R2 – SIGNIFICANT REVISION:

APE20190001:

The application received on April 15, 2019 is for the updated fugitive component counts in the Ethylene plant.APE20190002:

The application received on May 8, 2019 is for the increase in production from 755 MMlb/yr to 785 MMlb/yr. This increase in production capacity is accomplished by the addition of a new cracking furnace, ethylene flare, decoking pot and fugitive components. The overall change in emissions required further review under 401 KAR 51:017, Prevention of Significant Deterioration (PSD) applicability. Best Achievable Control Technology (BACT) determinations were made for CO, PM, $PM_{10}$, $PM_{2.5}$, VOC and GHG. The project did not result in a net emissions increase for NOx over the significance emission rate threshold that will require further review under 401 KAR 51:017.

## V-14-022 R1 – MINOR REVISION:

APE20160001:

The application received on January 14, 2016 is for the voluntary disclosure to bring non-monitored equipment leak components into the leak detection and repair program described by 40 CFR 60, Subpart VVa.

APE20160002:

The application received on February 11, 2016 is for the increase in production from 570 MMlb/yr to 755 MMlb/yr. This increase resulted in no physical changes at the source.

## EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

As part of the significant revision application of May 2019, the facility has chosen to impose maximum hourly and annual heat rating for the following units: 005A-C (EPN 305-307); 005D (EPN 311); 006A-B (EPN 327-328); 006C (EPN 329) and RRH (EPN 314).

## OPERATIONAL FLEXIBILITY:

Westlake OpCo has the operational flexibility to use both the new and existing flares (EU# 007 and EU# 007A) as long as they do not exceed the combined operating rate of 56.1 mmBtu/hr on a 30-day rolling average. In addition, Westlake OpCp may install a ground flare or an elevated flare. Both a ground flare and elevated flare have been modeled, and a BACT analysis has been performed using both designs.