

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1085-AOP-R15 AFIN: 32-00036

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

FutureFuel Chemical Company
2800 Gap Road
Batesville, Arkansas 72501

3. PERMIT WRITER:

Christopher Riley

4. NAICS DESCRIPTION AND CODE:

NAICS Description: All Other Basic Organic Chemical Manufacturing
NAICS Code: 325199

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

| Date of Application | Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment) | Short Description of Any Changes That Would Be Considered New or Modified Emissions |
|---------------------|---|---|
| 5/27/2021 | Minor Mod | Replacing an engine, removing a tank |

6. REVIEWER'S NOTES:

FutureFuel Chemical Company, located in Batesville, Arkansas, is a supplier of specialty organic chemical intermediates used in the manufacture of color film and photographic paper, paints and coatings, plastics and bottle polymers, medical supplies, prescription medicines, food supplements, household detergents, agricultural products, and biofuel. This application was submitted as a minor modification to Permit No. 1085-AOP-R14:

- Update the process description for the Aldehyde Processing Section (AP)
- Removing tank 5N01-39 as well as a tank from bubble source 5N03TK-01
- Replacing 6N02 Diesel Generator with 6N02-EG (emergency generator)

- Update Plantwide Limits due to the change in generators
Permitted emission decreases are 0.4 tpy of both PM and PM₁₀, 0.3 tpy Organic Pollutants and 0.6 tpy NO_x
Permitted emission increases are 0.1 tpy SO₂ and CO

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

Facility was last inspected July 26 and 27, 2021. No violations were found during this inspection.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N/A

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

Based on information submitted, no significant emissions increases for NSR pollutants.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|--|-----------|---|
| 5N09-01, OCI-FUG | VHAP | 40 CFR Part 63 Subpart GGG - National Emission Standards Pharmaceuticals Production |
| 5N09-01, OCI-FUG | VHAP | 40 CFR Part 63 Subpart MMM - National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production |
| TF-13 (SN-5N03-43) WB-06 (SN-6M-03-08) WB-07 (SN-6M-03-09) WB-08 (SN-6M-03-10) WB-09 (SN-6M-03-11) Tanks under SN-5M04-01 Tanks under SN-5M04-02 Tanks under SN-5M04-06 | VOC | 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 |

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|---|-----------|---|
| Tanks under SN-5M04-08 Tanks under SN-5M14-06 TFS-60 PT-60 PT-68 PT69A PT69B PB-51 PB-52 PM-50A PM-50B TBA-100 4P94-11 SN-5N03-51 SN-5N03-53 T-280 T-265 T-251 T-220 T-211A T-211B T-241 TF-13 PA-50 T-242 T-243 VC-PT-03 VC-PT-01 VC-PT-02 | | after July 23, 1984 |
| Utilities Section (coal processing activities) | PM | 40 CFR Part 60 Subpart Y- Standards of Performance for Coal Preparation Plants |
| Organic Sulfonation DIPB Production (Equipment Leaks) | VOC | 40 CFR Part 60 Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry |
| 5M01-02 | VOC | 40 CFR Part 60 Subpart NNN - Standards of Performance for Volatile Organic Compound (VOC) Emissions From |

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|---|---|---|
| | | Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations |
| DIPB Production (equipment Leaks, benzene) | Benzene | 40 CFR Part 61 Subpart J - National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene |
| DIPB Production (equipment leaks, VHAP) | VHAP | 40 CFR Part 61 Subpart V - National Emission Standards for Equipment Leaks (Fugitive Emission Sources) |
| Tank T-210 (benzene vessel) | Benzene | 40 CFR Part 61 Subpart Y - National Emission Standards for Benzene Emissions from Benzene Storage Vessels |
| DIPB Production T9, D9 (benzene waste streams). | Benzene | 40 CFR Part 61 Subpart FF - National Emission Standard for Benzene Waste Operations |
| Facility (waste management/recovery operations). | VHAP | 40 CFR Part 63 Subpart DD - National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations |
| 6M03-05 6M01-01 | Dioxins Furans Mercury Lead Cadmium Arsenic Beryllium Chromium CO Hydrocarbons HCl Cl ₂ PM | 40 CFR Part 63 Subpart EEE (Phase I and II) - National Emission Standard for Hazardous Air Pollutants from Hazardous Waste Combustors |
| Organic Chemical Intermediates Organic Sulfonation Process Solvent Recovery Isopropyl Benzene Production 5N07 Production Facility | VHAP | 40 CFR Part 63 Subpart FFFF - National Emission Standard for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing |

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|--|-----------|--|
| Aldehyde Processing Facility Storage Tanks and Misc. Sources Anode Production Section | | |
| 6M07-01 | NOx | 40 CFR Part 60 Subpart Db - Standards of Performance for Industrial-Commercial- Institutional Steam Generating Units |
| 5N01-WA 7M04-HT-G01 7M04-HT-G04 6N02-EG 8M01 | VHAP | 40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines |
| 4P05-01 4P05-03 6M06-01 6M07-01 | HAPs | Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters |

10. UNCONSTRUCTED SOURCES:

| Unconstructed Source | Permit Approval Date | Extension Requested Date | Extension Approval Date | If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit |
|----------------------|----------------------|--------------------------|-------------------------|---|
| N/A | | | | |

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N (shield already existed)
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----------|---|---|-------------------|------------------------------|------------------------------------|
| | | NO _x : 100lb/1,000,000 scf CO: 84lb/1,000,000 scf SO ₂ : 0.6 lb/1,000,000 scf | | | |
| OCI-FUG | Bagging Study | <u>VOC</u> Pumps/Fans: 0.00417lb/hr/component Valves: 0.000154 lb/hr/component Flanges: 0.000057 lb/hr/component Relief Devices: 0.000168 lb/hr/component Simple Ports: 0.0086 lb/hr/component | - | - | - |
| 5N09-01 | AP-42 And material balance | PM/PM ₁₀ 8.6 lb/hr NO _x 2.7 lb/hr CO 13.0 lb/hr SO ₂ 6.75 lb/hr VOC 43 lb/hr Inorganic emissions 8.2 lb/hr | | | All numbers are pre- control |
| 5M18-01 | Mass balance | PM/PM ₁₀ 0.31 lb/100 lbs intake | | | |
| 5M18-02 | Mass balance | PM/PM ₁₀ 0.3 lbs/100 lbs intake | | | |
| 5M18-03 | AP-42 | PM/PM ₁₀ 10 gr/ft ³ | | | 600 cfm |
| 5M16-01 | AP-42 | PM/PM ₁₀ 1 gr/ft ³ | | | 1000 cfm |
| 5M11-15 | AP-42 | PM/PM ₁₀ 2 gr/ft ³ | | | 1600 cfm |
| 5M01-TSP | Mass balance | PM/PM ₁₀ 3.1 lb/hr | | | |
| 5M05-02 | Vendor supplied | PM/PM ₁₀ 0.02 gr/ft ³ | | | 502 dscfm |
| 5M11-08 | Vendor supplied | PM/PM ₁₀ 0.016 gr/ft ³ | | | 11585 cfm |
| 5M01-01 | Modeling | VOC 0.007 lb/hr | | | |
| 5M01-02 | Modeling | VOC 0.018 lb/hr | | | |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|------------|---|--|-------------------|------------------------------|----------|
| 5M01-05 | Modeling | VOC trace/0.1 lb/hr | | | |
| 5M01-06 | Modeling | VOC 0.006 lb/hr | | | |
| 5M01-07 | Modeling | VOC trace/0.1 lb/hr | | | |
| 5M01-08 | Modeling | VOC trace/0.1 lb/hr | | | |
| 5M01-09 | Modeling | VOC 0.001 lb/hr | | | |
| 5M03-01 | Modeling | VOC 0.0012 lb/hr | | | |
| 5M03-02 | Modeling | VOC trace/0.2 lb/hr | | | |
| 5M04-02 | Modeling | VOC 0.018 lb/hr | | | |
| 5M04-10 | Modeling | VOC trace/0.1 lb/hr | | | |
| 5M05-01 | Modeling | VOC 0.001 lb/hr | | | |
| 5M11-01 | Modeling | VOC 0.007 lb/hr | | | |
| 5M11-04 | Modeling | VOC trace/0.1 lb/hr | | | |
| 5M11-05 | Modeling | VOC 0.006 lb/hr | | | |
| 5M11-06 | Modeling | Trace/0.1 lb/hr | | | |
| 5M11-07 | Modeling | VOC trace/0.1 lb/hr | | | |
| 5M13-01 | Modeling | VOC 0.0012 lb/hr | | | |
| 5MNOBS-TNK | Modeling | VOC 0.00082 lb/hr | | | |
| NOBS-FUG | Bagging Study | VOC 0.96 lb/hr | | | |
| 5N03-54 | AP-42 and TANKS 4.0 | VOC 0.0518 lb/MMBtu Organic emissions 0.0882 lb/MMBtu CO 0.37 lb/MMBtu NO _x and SO ₂ 0.068 lb/MMBtu PM/PM ₁₀ 0.013 lb/hr | | | |
| DIPB-FUG | Bagging study | VOC 0.2 lb/hr | | | |
| 5N03-48 | Mass balance | Inorganics 0.09 lb/hr | | | |
| 5N03-55 | Mass balance | Inorganics 0.009 lb/hr | | | |
| 5NDIPB-TNK | TANKS | VOC 0.061 lb/hr | | | |
| 5N07 | TANKS and other modeling | VOC 2.67 lb/hr | | | |
| 4P05-01 | TANKS and | VOC 1.3 lb/hr | | | |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|-----------|---|---|-------------------|------------------------------|-------------------------------------|
| 4P05-03 | other modeling | PM/PM ₁₀ 0.2 lb/hr NO _x 2.1 lb/hr CO 1.0 lb/hr SO ₂ 0.8 lb/hr | | | |
| 4PSR-FUG | Bagging study | VOC 0.57 lb/hr | | | |
| CP2-FUG | Bagging study | VOC 0.32 lb/hr | | | |
| 5M11-09 | Vendor supplied | 0.016 gr/ft ³ | | | |
| 4PSR-00 | Modeling | VOC 3.85 lb/hr after control | | | |
| SR-FUG | Bagging study | VOC 2.14 lb/hr | | | |
| 5N03TK-01 | TANKS 4.0 | VOC 8.0 lb/hr | | | |
| 6N01-02 | TANKS 4.0 | VOC 2.53 lb/year | | | |
| 6N01-03 | TANKS 4.0 | VOC 1248 lb/yr | | | |
| 6M01-01 | AP-42, Monitoring, and testing | VOC 0.05 lb/ton PM/PM ₁₀ 0.44 lbs/ton NO _x 11 lb/ton CO 2000 ppmv SO ₂ 76 lb/ton HCl 1.2 lb/ton Inorganics 302.3 lb/hr | | | Coal burning boilers 24000 dscfm |
| BLR-FUG | Bagging study | VOC 0.41 lb/hr | | | |
| 6M01-01A | AP-42 | PM/PM ₁₀ 0.02 gr/scf | | | 880 scfm |
| 6M06-01 | AP-42 and BACT | NO _x 13.3 lb/hr CO 84 lb/MMscf PM/PM ₁₀ 5.7 lb/MMscf SO ₂ 0.6 lb/MMscf VOC 5.5 lb/MMscf | | | |
| 6M07-01 | AP-42 and BACT | NO _x 0.1 lb/MMBtu CO 84 lb/MMscf PM/PM ₁₀ 5.7 lb/MMscf SO ₂ 0.6 lb/MMscf VOC 5.5 lb/MMscf | | | |
| 6M03-05 | AP-42 and bagging | VOC 0.9 lb/hr PM/PM ₁₀ 0.44 lb/hr | | | |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|-----------|---|---|-------------------|------------------------------|----------|
| | study | NO _x 15.97 lb/hr CO 2.05 lb/hr SO ₂ 10.19 lb/hr Inorganics 1.4 lb/hr | | | |
| DEST-FUG | Bagging study | VOC 0.38 lb/hr | | | |
| 7K01-01 | Toxchem modeling | VOC 28.6 lb/hr | | | |
| 7M01-02 | Toxchem modeling | VOC 0.02 lb/hr | | | |
| 7M01-03 | Toxchem modeling | Inorganics 0.03 lb/hr | | | |
| 7M01-03-B | Toxchem modeling | Inorganics 0.06 lb/hr | | | |
| 7M01-04 | Toxchem modeling | VOC 0.01 lb/hr | | | |

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

| SN | Pollutants | Test Method | Test Interval | Justification |
|---------|---|--------------------------|---------------|---|
| 5N09-03 | SO ₂ VOC CO NO _x | Method 26 or 26A, or 320 | 5 years | To ensure compliance with emission limits |

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

| SN | Parameter or Pollutant to be Monitored | Method (CEM, Pressure Gauge, etc.) | Frequency | Report (Y/N) |
|---------|--|------------------------------------|------------|--------------|
| 5N09-03 | Temperature | Not Specified | Continuous | No |

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|--|---|--------------|------------------|--------------|
| 4P05-01 4P05-03 6M06-01 6M07-01 | Fuel analyses, compliance mechanisms, performance tests | N/A | - | Y |
| 4P05-01 4P05-03 | Tune-up | N/A | Initial, 5 years | N |
| 6M06-01 6M07-01 | Tune-up | N/A | Initial, 2 years | N |
| 6N02-EG | Operational hours | 100 hours | Calendar year | N |

19. OPACITY:

| SN | Opacity | Justification for limit | Compliance Mechanism |
|----------------------------------|---|--|---|
| 5N09-01, 5N09-02, and 5N09-03 | 20% | Previous limit. Department Guidance | Weekly Method 22 Method 9 if any visible emissions detected. |
| 6M01 | 5% | §18.501 | |
| 6M01-01 | 20% | §19.503 | |
| 6M01-01A | 5% | §18.501 | |
| 6M06-01 | 5% | §18.501 | |
| 6M07-01 | 20% | NSPS Db | |
| 6M03-05 | 20% | §19.503 | Method 9 |
| 5M11-08 and 5M11-09 | 5% | §18.501 | Weekly Method 22 Method 9 if any visible emissions detected. |
| 5N01-WA | 20% | §18.501 | Method 9 |
| 7M04-HT-G01 | 20% | §18.501 | Method 9 |
| 7M04-HT-G04 | 20% | §18.501 | Method 9 |
| 6N02-EG | 20% | §18.501 | Method 9 |
| 8M01 | 20% | §18.501 | Method 9 |
| 4P05-01 4P05-03 | 5% except during periods of fuel oil usage for 4P05-01, | §18.501 | Weekly Method 22 Method 9 if any visible emissions |

| SN | Opacity | Justification for limit | Compliance Mechanism |
|----|------------------------------------|-------------------------|----------------------|
| | which the permittee is allowed 20% | | detected. |

20. DELETED CONDITIONS:

| Former SC | Justification for removal |
|-----------|---------------------------|
| | N/A |

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

| Source Name | Group A Category | Emissions (tpy) | | | | | | | |
|---|-------------------------|---------------------|-----------------|-----|--------|-----------------|--------|-------|------|
| | | PM/PM ₁₀ | SO ₂ | VOC | CO | NO _x | HAPs | | |
| | | | | | | | Single | Total | |
| Vents (Organic Sulfonation Process) | 5M11-09 | A-13 | | | 0 | | | 0 | 0 |
| Unloading Station (Isopropyl Benzene Process) | 5N03-46 | A-13 | | | 0.23 | | | 0.23 | 0.23 |
| Unloading Station (Isopropyl Benzene Process) | 5N03-47 | A-13 | | | 0 | | | 0 | 0 |
| Railcar Loading and Unloading Racks | 4Q01-12 | A-13 | | | 0.0112 | | | 0 | 0 |
| Sawdust pile and handling | | A-13 | 2.0 | | | | | | |
| 5P01-01 | Storage Tank (Glycerin) | A-13 | | | 0.001 | | | | |
| 5P01-02 | Storage Tank (Glycerin) | A-13 | | | 0.001 | | | | |
| 4Q01-12 | Storage Tank (Glycerin) | A-13 | | | 0.001 | | | | |
| 4Q01-13 | Storage Tank (Glycerin) | A-13 | | | 0.001 | | | | |
| A-13 Totals | | | 2.0 | | 0.25 | | | 0.23 | 0.23 |
| Storage Tank (Organic Sulfonation Process) | 5M04-04 | A-4 | | | | | | | |
| Storage Tank (Organic Sulfonation) | 5M04-07 | A-4 | | | | | | | |

| | | | | | | | | |
|--|---------|-----|--|--|-------|--|-------|-------|
| Process) | | | | | | | | |
| Storage Tank (Solvent Recovery Process) | 4P94-03 | A-4 | | | | | | |
| Storage Tank (Storage Tank Process) | 5N03-39 | A-4 | | | | | | |
| Storage Tank (Storage Tank Process) | 5N03-40 | A-4 | | | | | | |
| Storage Tank (Chemical Destruction Process) | 6M03-15 | A-4 | | | | | | |
| Caustic Tank (CL-01R) | - | A-4 | | | | | | |
| Storage Tank (Organic Chemical Intermediate Process) | 5N01-63 | A-3 | | | 0.001 | | 0.001 | 0.001 |
| Storage Tank (Organic Chemical Intermediate Process) | 5N01-64 | A-3 | | | 0.001 | | 0.001 | 0.001 |
| Storage Tank (Organic Chemical Intermediate Process) | 5N03-63 | A-3 | | | 0.001 | | 0.001 | 0.001 |
| Storage Tank (Storage Tank Process) | 6N01-01 | A-3 | | | 0.001 | | | |
| A-3 Totals | | | | | 0.004 | | 0.003 | 0.003 |

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

| |
|--------------|
| Permit # |
| 1085-AOP-R14 |

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name:
Permit Number:
AFIN:

| | | | |
|---------------|-----------|-----------------------------------|---------|
| \$/ton factor | 25.13 | Annual Chargeable Emissions (tpy) | 6637.67 |
| Permit Type | Minor Mod | Permit Fee \$ | 500 |

| | |
|---|--------------------------|
| Minor Modification Fee \$ | 500 |
| Minimum Modification Fee \$ | 1000 |
| Renewal with Minor Modification \$ | 500 |
| Check if Facility Holds an Active Minor Source or Minor Source General Permit | <input type="checkbox"/> |
| If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$ | 0 |
| Total Permit Fee Chargeable Emissions (tpy) | -1 |
| Initial Title V Permit Fee Chargeable Emissions (tpy) | |

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|-------------------|------------------------------|------------|------------|---------------------|---------------------------------|-----------------------------|
| PM | | 178.7 | 178.6 | -0.1 | | |
| PM ₁₀ | | 178.7 | 178.6 | -0.1 | -0.1 | 178.6 |
| PM _{2.5} | | 0 | 0 | 0 | | |
| SO ₂ | | 6144.2 | 6144.3 | 0.1 | 0 | 4000 |
| VOC | | 491.17 | 490.87 | -0.3 | -0.3 | 490.87 |
| CO | | 1224.1 | 1224.2 | 0.1 | | |
| NO _x | | 875.9 | 875.3 | -0.6 | -0.6 | 875.3 |
| Pb | <input type="checkbox"/> | 3.5 | 3.5 | 0 | | |

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|--------------------|-------------------------------------|------------|------------|---------------------|---------------------------------|-----------------------------|
| Inorganics | <input checked="" type="checkbox"/> | 1092.9 | 1092.9 | 0 | 0 | 1092.9 |
| Organic Pollutants | <input type="checkbox"/> | 491.17 | 490.87 | -0.3 | | |