STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1085-AOP-R13 AFIN: 32-00036

1. PERMITTING AUTHORITY:

Arkansas Department 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. SUBMITTALS:

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
3/16/2018	Renewal	New test data changing emission factors

6. REVIEWER'S NOTES:

7. 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. The facility has submitted a Title V permit renewal, with modification, to update several emission factors due to new test data. Permitted emission increases are 0.8 tpy of PM and PM_{10}, 7.6 tpy SO_2, 9.07 tpy VOC and organic pollutants, 89.5 tpy CO, 38.2 tpy NO_X, and 1.2 tpy of inorganic pollutants.

8. COMPLIANCE STATUS:

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

The last inspection was on July 17 and 18, 2017. There are no known compliance issues as of that inspection.

9. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

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, explain why this permit modification is not PSD.

No physical modifications made during this application.

10. 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 Tanks under SN-5M04-08 Tanks under SN-5M14-06 TFS-60 PT-60 PT-68	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 after July 23, 1984

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
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		
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 Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
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 Aldehyde Processing Facility Storage Tanks and Misc. Sources Anode Production Section	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)
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 8M01	VHAP	40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
4P05-01 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

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

a) A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

This permit contains a PAER formula for non-criteria pollutants (See condition PW 14 in the permit). Therefore, modeling of specific non-criteria pollutants was not performed.

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation; refer to the Arkansas Code for details.

Is the facility exempt from the H_2S Standards Y
If exempt, explain: no H2S emissions

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H_2S	20 parts per million (5-minute average*)	N/A	N/A
	80 parts per billion (8-hour average) residential area	N/A	N/A
	100 parts per billion (8-hour average) nonresidential area	N/A	N/A

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
5N09-02&03	AP-42 Table 1.4-1 Table 1.4-2	VOC: 45cfm 19,391 BTU/lb VOC PM/PM_{10}: 7.6lb/1,000,000scf NO_x: 100lb/1,000,000 scf CO: 84lb/1,000,000 scf SO_2: 0.6 lb/1,000,000 scf	Scrubber	98%	2.5MMBtu/hr NO_x, CO, SO_2: 45 scfm
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/ft3			600 cfm
5M16-01	AP-42	PM/PM_{10} 1 gr/ft3			1000 cfm
5M11-15	AP-42	PM/PM_{10} 2 gr/ft3			1600 cfm
5M01-TSP	Mass balance	PM/PM_{10} 3.1 lb/hr			
5M05-02	Vendor supplied	PM/PM_{10} 0.02 gr/ft3			502 dscfm
5M11-08	Vendor supplied	PM/PM_{10} 0.016 gr/ft3			11585 cfm
5M01-01	Modeling	VOC 0.007 lb/hr			
5M01-02	Modeling	VOC 0.018 lb/hr			
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 other modeling	VOC 1.3 lb/hr 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	Baggins study	VOC 0.32 lb/hr			
5M11-09	Vendor supplied	0.016 gr/ft3			
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 study	VOC 0.9 lb/hr PM/PM_{10} 0.44 lb/hr 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			

14. 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

15. 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

16. 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 6M06-01 6M07-01	Fuel analyses, compliance mechanisms, performance tests	N/A	-	Y
4P05-01	Tune-up	N/A	Initial, 5 years	N
6M06-01 6M07-01	Tune-up	N/A	Initial, 2 years	N

17. 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.

SN	Opacity	Justification for limit	Compliance Mechanism
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	20%	§18.501	Method 9
8M01	20%	§18.501	Method 9
4P05-01	5% except during periods of fuel oil usage, which the permittee is allowed 20%	§18.501	Weekly Method 22 Method 9 if any visible emissions detected.

18. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

19. GROUP A INSIGNIFICANT ACTIVITIES:

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 Process)	5M04-07	A-4							
Storage Tank (Solvent Recovery Process)	4P94-03	A-4							
Storage Tank (Storage	5N03-39	A-4							

Source Name		Group A Category	Emissions (tpy)						
			PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
								Single	Total
Tank Process)									
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

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1085-AOP-R12

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-25-14

Facility Name: FutureFuel Chemical Company
Permit Number: 1085-AOP-R13
AFIN: 32-00036

$/ton factor	23.89	Annual Chargeable Emissions (tpy)	6630.87
Permit Type	Modification	Permit Fee $	1177.0603

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	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	49.27
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		177.3	178.1	0.8		
PM_{10}		177.3	178.1	0.8	0.8	178.1
SO_2		6136.5	6144.1	7.6	0	4000
VOC		478.7	487.77	9.07	9.07	487.77
CO		1128.2	1217.7	89.5		
NO_X		833.9	872.1	38.2	38.2	872.1
Inorganics	☑	1091.7	1092.9	1.2	1.2	1092.9
Organic Pollutants	☐	478.7	487.77	9.07		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Lead	☐	3.5	3.5	0		