169-48019-00068

AI ID: 54440

Title V Air Permit Application Significant Source Modification Significant Permit Modification

State of Ineliana Dept of Environmental Mont Mice of Air Quality

POET Biorefining – North Manchester, LLC North Manchester, Indiana Title V Permit No. 169-45835-00068

June 25, 2024

Modification Description

POET Biorefining – North Manchester, LLC (POET) is submitting the enclosed application for a significant source modification and a significant permit modification for an operational change. POET will introduce a processing aid to mitigate mycotoxins in the dried distiller's grain by-product. The addition of this processing aid will result in SO2 emissions from SV009, SV010, SV011, and SV012.

Regulatory Analysis

The attached Potential to Emit Calculations (PTE) include the potential emissions for each of the above listed stack vents. As indicated on the PTE, the facility wide emissions will remain below PSD major source thresholds.

This operational change may lead to a small amount of additional Hazardous Air Pollutants (HAPs), which are included on the attached PTE. POET will remain an area source of HAPs.

This modification will not impact the applicability of any NSPS or NESHAP to POET.

The existing control devices are not used to reduce SO2 to achieve emission limits, therefore Compliance Assurance Monitoring (CAM) is not impacted by this modification.

This modification does not impact the applicability of 326 IAC 8-5-6 or 326 IAC 8-1-6. POET will continue to comply with these requirements with the existing control equipment and associated air permit requirements.

	AIR PER State Form 500 INDIANA DE	MIT APPLICATION CC 639 (R4 / 1-10) PARTMENT OF ENVIRONME!	OVER SHEET	IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Tetephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem
NOTES:	 The purp process t permit ap top of all 	ose of this cover sheet is to obta he air permit application. This o plications submitted to IDEM, O subsequent forms and attachme	in the core information needed over sheet is required for <u>all</u> air AQ. Place this cover sheet on onts that encompass your air	TO FOR OFFICE USE ONLY PERMIT NUMBER:
	permit ap	plication packet.		169-48019-00068
	 Submit th attachme the upper 	e completed air permit applicati nts, to IDEM Air Permits Admi r right hand comer of this page.	on packet, including all forms a nistration using the address in	DATE APPLICATION WAS RECEIVED:
	IDEM will	I send a bill to collect the filing fe	e and any other applicable fee	s. State of Indiana
	 Detailed i Application 	instructions for this form are ava on Forms website.	lable on the Air Permit	JUN 282024
1. Tax ID N	lumber:			Dept of Environmental Mgmt
				- Onlee of Air Quality
		PART A	Purpose of Applic	ation
Part A ider	ntifies the p	purpose of this air pe	mit application. For	the purposes of this form, the term
"source" re	efers to the	e plant site as a whole	and NOT to individu	ial emissions units.
2. Source	/ Company	Name: POET Biorefinir	ng - North Manchester, Ll	LC 3. Plant ID: 169 - 00068
4. Billing A	Address:	868 E 800 N		
City:	North Manc	hester	State: IN	ZIP Code: 46962 –
5. Permit L	_evel:	Exemption Regist	ration	
6. Applicat	tion Summa	ary: Check all that apply. ow.	Multiple permit numbers	may be assigned as needed based on the
🗌 🗌 Initial	Permit	Renewal of Op	erating Permit	Asphalt General Permit
Revie	w Request	Revocation of	Operating Permit	Alternate Emission Factor Request
🗌 🗌 Interir	m Approval	Relocation of F	Portable Source	Acid Deposition (Phase II)
Site C	Closure	🗌 Emission Redu	ction Credit Registry	
Trans	sition (betwe	en permit levels) F	rom:	То:
🗌 🗌 Admii	nistrative An	nendment: 🗌 Compa	ny Name Change	Change of Responsible Official
		Correct	ion to Non-Technical Inform	nation 🔲 Notice Only Change
		Other	(specify):	
🛛 Modif	fication:	New Emission Unit or Co	ntrol Device 🔲 Modified	d Emission Unit or Control Device
	[🗌 New Applicable Permit Re	equirement 🗌 Change	to Applicability of a Permit Requirement
	Γ	Prevention of Significant I	Deterioration 🛛 🗍 Emissio	on Offset I MACT Preconstruction Review
	[Minor Source Modification	Significant Source	e Modification
	[Minor Permit Modification	🛛 Significant Permi	it Modification
]	Other (specify):		
7. Is this an	application	for an initial construction	and/or operating permit f	or a "Greenfield" Source? 🔲 Yes 🖾 No
8. Is this an	application	for construction of a new	emissions unit at an Exis	sting Source? 🗌 Yes 🖾 No

			PART B: Pre-Application Meeting				
Parl	Part B specifies whether a meeting was held or is being requested to discuss the permit application.						
9. \ F	9. Was a meeting held between the company and IDEM prior to submitting this application to discuss the details of the project?						
	🛛 No	Yes:	Date:				
10. \	Would you like project?	to schedule	a meeting with IDEM management and your permit writer to discuss the details of this				
	🛛 No	Yes:	Proposed Date for Meeting:				
			PART C: Confidential Business Information				
Part info	t C identifies rmation is ke	permit ap opt separa	plications that require special care to ensure that confidential business te from the public file.				
Clain set o OAQ certa Data	ns of confident but in the Indiar } information re ain types of bus i.	iality must b na Administr garding sub iness Inforn	e made at the time the information is submitted to IDEM, and must follow the requirements ative Code (IAC). To ensure that your information remains confidential, refer to the IDEM, mittal of confidential business information. For more information on confidentiality for nation, please review IDEM's Nonrule Policy Document Air-031-NPD regarding Emission				
11.1	s any of the	informatio	on contained within this application being claimed as Confidential				
E	Business In	formation	1? 1?				
	🛛 No 🛛	Yes					
6.88			Contification Of Truth Accuracy and Completeness				
Part	t D is the offi	cial certifi	cation that the information contained within the air permit application packet				
is tri	uthful, accur	ate, and c	omplete. Any air permit application packet that we receive without a signed				
certi	ification will I	be deeme	d incomplete and may result in denial of the permit.				
For a defin Indiv	For a Part 70 Operating Permit (TVOP) or a Source Specific Operating Agreement (SSOA), a "responsible official" as defined in 326 IAC 2-7-1(34) must certify the air permit application. For all other applicants, this person is an "authorized Individual" as defined in 326 IAC 2-1.1-1(1).						
\boxtimes	I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.						
Davie	d Pvle		General Manager				
Nam	e (typed)		Title				
	DE	PC					
Siona	ature	120	0/25/2024 Date				



OAQ AIR PERMIT APPLICATION – FORMS CHECKLIST State Form 51607 (R5 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of this checklist is to help the applicant and IDEM, OAQ ensure that the air permit application packet is administratively complete. This checklist is a required form.
- Check the appropriate box indicating whether each application form is applicable for the current permit application. The source must submit only those forms pertinent to the current permit application.
- Place this checklist between the cover sheet and all subsequent forms and attachments that encompass your air permit application packet.

	Part A: General Source Data					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?		
XY DN	COVER	Application Cover Sheet	50639	Include for every application, modification, and renewal, including source specific operating agreements (SSOA).		
XY DN	CHECKLIST	Forms Checklist	51607	Include for every application, modification, and renewal, including SSOA.		
X IN	GSD-01	Basic Source Level Information	50640	Include for every application, modification, and renewal, including SSOA.		
XY DN	GSD-02	Plant Layout Diagram	51605	Include for every new source application, and modification.		
X IN	GSD-03	Process Flow Diagram	51599	Include one for every process covered by the application.		
N DY	GSD-04	Stack / Vent Information	51606	Include for every new source application, and modification.		
XY DN	GSD-05	Emissions Unit Information	51610	Include for every process covered by the application.		
□Y ⊠N	GSD-06	Particulate Emissions Summary	51612	Include if the process has particulate emissions (PM).		
XY DN	GSD-07	Criteria Pollutant Emissions Summary	51602	Include if the process has criteria pollutant emissions.		
XY DN	GSD-08	HAP Emissions Summary	51604	Include if the process has hazardous air pollutant emissions (HAP).		
□Y ⊠N	GSD-09	Summary of Additional Information	51611	Include if the additional information is included.		
□Y ⊠N	GSD-10	Insignificant Activities	51596	Include if there are unpermitted insignificant activities.		
<u> </u>	GSD-11	Alternative Operating Scenario	51601	Include if an AOS is requested.		
□y ⊠n	GSD-12	Affidavit of Nonapplicability	51600	Include if the standard notification requirements do not apply.		
DY 🛛 N	GSD-13	Affidavit of Applicability	51603	Include if the standard notification requirements apply.		
DY 🛛 N	GSD-14	Owners and Occupants Notified	51609	Include if the standard notification requirements apply.		
DY 🛛 N	GSD-15	Government Officials Notified	51608	Include if the standard notification requirements apply.		
□y ⊠n	RENEWAL	Renewal Checklist	51755	Include with every operating permit renewal packet.		

		Part J: Source Sp	ecific Operat	ing Agreements (SSOA)
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
DY ØN	OA-01	Summary of Application and Existing Agreements	53438	Submit if you are applying for or modifying a Source Specific Operating Agreement.
□Y ⊠N	OA-02	Industrial / Commercial Surface Coating Operations -OR- Graphic Arts Operations (326 IAC 2-9-2.5)	53439	Submit if you are applying for or modifying a SSOA for industrial or commercial surface coating operations not subject to 326 IAC 8-2; or graphic arts operations not subject to 326 IAC 8-5-5.
DY ØN	OA-03	Surface Coating or Graphic Arts Operations (326 IAC 2-9-3)	53440	Submit if you are applying for or modifying a SSOA for surface coating or graphic arts operations.
DY ØN	OA-04	Woodworking Operations (326 IAC 2-9-4)	53441	Submit if you are applying for or modifying a SSOA for woodworking operations.
DY 🛛 N	OA-05	Abrasive Cleaning Operations (326 IAC 2-9-5)	53442	Submit if you are applying for or modifying a SSOA for abrasive cleaning operations.
□y ⊠n	OA-06	Grain Elevators (326 IAC 2-9-6)	53443	Submit if you are applying for or modifying a SSOA for grain elevators.
DY ØN	OA-07	Sand And Gravel Plants (326 IAC 2-9-7)	53444	Submit if you are applying for or modifying a SSOA for sand and gravel plants.
DY ØN	OA-08	Crushed Stone Processing Plants (326 IAC 2-9-8)	53445	Submit if you are applying for or modifying a SSOA for crushed stone processing plants.
DY 🕅 N	OA-09	Ready-Mix Concrete Batch Plants (326 IAC 2-9-9)	53446	Submit if you are applying for or modifying a SSOA for ready-mix concrete batch plants.
DY 🛛 N	OA-10	Coal Mines And Coal Preparation Plants (326 IAC 2-9-10)	53447	Submit if you are applying for or modifying a SSOA for coal mines and coal preparation plants.
DY 🛛 N	OA-11	Automobile Refinishing Operations (326 IAC 2-9-11)	53448	Submit if you are applying for or modifying a SSOA for automobile refinishing operations.
DY 🛛 N	OA-12	Degreasing Operations (326 IAC 2-9-12)	53449	Submit if you are applying for or modifying a SSOA for degreasing operations.
DY ØN	OA-13	External Combustion Sources (326 IAC 2-9-13)	53450	Submit if you are applying for or modifying a SSOA for external combustion sources.
□y ⊠n	OA-14	Internal Combustion Sources (326 IAC 2-9-14)	53451	Submit if you are applying for or modifying a SSOA for internal combustion sources.

	Part G: Plantwide Applicability Limits					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?		
	PAL-01	Actuals Plantwide Applicability Limit	52451	Include if the modification results in emission reductions.		
□Y ⊠N	PAL-02	Revised Plantwide Applicability Limit	52452	Submit whenever registered emission credits are transferred.		
DY 🛛 N	PAL-03	Plantwide Applicability Limit Renewal	52453	Include if the modification requires the use of emission credits for offsets.		
□y ⊠n	PAL-04	Request for Termination of Plantwide Applicability Limit	52454	Submit if you are looking for emission credits for offsets.		

	Part H: Air Toxics				
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?	
□Y ⊠N	FED-01	Summary of Federal Requirements – NSPS & NESHAP	53512	Include for each 40 CFR Part 60 NSPS, 40 CFR Part 61 NESHAP, and 40 CFR Part 63 NESHAP applicable to the process.	
□Y ⊠N	FED-02	MACT Pre-Construction Review	51905	Include if constructing or modifying a process subject to a Part 63 NESHAP.	
DY 🛛 N	No Form ID	MACT Initial Notification	None	This form is available on the U.S. EPA website. Completed notifications should be submitted to the IDEM Compliance Branch.	

Part I: Special Permits				Permits
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
	INTERIM	Interim Approval	None	Submit if you are applying for interim operating approval.
DY 🛛 N	ASPHALT	Asphalt General Permit	None	Submit if you are applying for or modifying an asphalt plant general permit.
□Y ⊠N	NOXBTP	NO _X Budget Permit	None	Submit if you are a power plant or if you have opted in to the NO _X budget trading program.
DY 🛛 N	ACIDRAIN	Phase 2 Acid Rain Permit	None	Submit if you are applying for, modifying, or renewing a Phase 2 Acid Rain permit.

Part D: Compliance Determination for Part 70 Sources					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?	
X IN	CD-01	Emissions Unit Compliance Status	51861	Include for every Title V application, including modifications.	
DY ØN	CD-02	Compliance Plan by Applicable Requirement	51862	Include for every Title V application, including modifications.	
X IN	CD-03	Compliance Plan by Emissions Unit	51863	Include for every Title V application, including modifications.	
XY 🗆 N	CD-04	Compliance Schedule and Certification	51864	Include for every Title V application, including modifications and renewal.	
□y ⊠n	FED-03	Compliance Assurance Monitoring	53377	Include for every Title V application, including modifications.	

Part E: Best Available Control Technology					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?	
□Y ⊠N	BACT-01	Analysis of Best Available Control Technology	None	Include for every BACT application.	
DY ØN	BACT-01a	Background Search: Existing BACT Determinations	None	Include for every BACT application.	
	BACT-01b	Cost/Economic Impact Analysis	None	Include for every BACT application.	
DY ØN	BACT-02	Summary of Best Available Control Technology	None	Include for every BACT application.	
DY ØN	PSD / EO-01	PSD / Emission Offset Checklist	None	Include for every PSD application and every NSR application that requires emission offsets.	

Part F: Emission Credit Registry					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?	
DY 🛛 N	EC-01	Generation of Emission Credits	51783	Include if the modification results in emission reductions.	
□Y ⊠N	EC-02	Transfer of Emission Credits	51784	Submit whenever registered emission credits are transferred.	
DY 🛛 N	EC-03	Use of Emission Credits	51785	Include if the modification requires the use of emission credits for offsets.	
□Y ⊠N	EC-04	Emission Credit Request	51906	Submit if you are looking for emission credits for offsets.	

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	Part B: Process Information					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?		
□y ⊠n	PI-17	Blasting Operations	52558	Include for each blasting process (unless SSOA).		
□Y ⊠N	PI-18	Mineral Processing	52559	Include if the process involves mineral processing (unless SSOA).		
□Y ⊠N	PI-19	Surface Coating & Printing Operations	52560	Include for each surface coating or printing process (unless SSOA).		
□Y ⊠N	PI-20	Woodworking / Plastic Machining	52561	Include for each woodworking or plastic machining process (unless SSOA).		
□Y ⊠N	PI-21	Site Remediation	52570	Include for each soil remediation process.		
DY DN	PI-22	Ethanol Plants (Under Development)	None	Include for each ethanol plant.		

	Part C: Control Equipment				
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?	
□ Y. ⊠ N	CE-01	Control Equipment Summary	51904	Include if add-on control equipment will be used for the process.	
XY 🗆 N	CE-02	Particulates – Baghouse / Fabric Filter	51953	Include for each baghouse or fabric filter.	
<u> </u>	CE-03	Particulates – Cyclone	52620	Include for each cyclone.	
DY 🛛 N	CE-04	Particulates – Electrostatic Precipitator	52621	Include for each electrostatic precipitator.	
DY N	CE-05	Particulates – Wet Collector / Scrubber / Absorber	52622	Include for each wet collector, scrubber, or absorber.	
XY DN	CE-06	Organics – Flare / Oxidizer / Incinerator	52623	Include for each flare, oxidizer, or incinerator.	
□y ⊠n	CE-07	Organics – Adsorbers	52624	Include for each adsorber.	
DY 🛛 N	CE-08	Organics – Condenser	52625	Include for each condenser.	
DY 🛛 N	CE-09	Reduction Technology	52626	Include for each control device using reduction technology (e.g., SCR, SNCR).	
□Y ⊠N	CE-10	Miscellaneous Control Equipment	52436	Include one form for equipment for which there is not a specific CE form.	

Part B: Process Information					
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?	
□Y ⊠N	AEF-01	Alternate Emission Factor Request	51860	Submit if you are requesting to use an emission factor other than AP-42.	
□Y ⊠N	PI-01	Miscellaneous Processes	52534	Include one form for each process for which there is not a specific PI form.	
□y ⊠n	PI-02A	Combustion Unit Summary	52535	Include one form to summarize all combustion units (unless SSOA).	
□Y ⊠N	PI-02B	Combustion: Boilers, Process Heaters, & Furnaces	52536	Include one form for each boiler, process heater, or furnace (unless SSOA).	
□Y ⊠N	PI-02C	Combustion: Turbines & Internal Combustion Engines	52537	Include one form for each turbine or internal combustion engine (unless SSOA).	
□y ⊠n	PI-02D	Combustion: Incinerators & Combustors	52538	Include one form for each incinerator or combustor (unless SSOA).	
DY ØN	PI-02E	Combustion: Kilns	52539	Include one form for each kiln <i>(unless SSOA)</i> .	
DY 🛛 N	PI-02F	Combustion: Fuel Use	52540	Include one form for each combustion unit (unless SSOA).	
DY 🛛 N	PI-02G	Combustion: Emission Factors	52541	Include one form for each combustion unit (unless SSOA).	
□Y ⊠N	PI-02H	Combustion: Federal Rule Applicability	52542	Include one form for each combustion unit (unless SSOA).	
XY DN	PI-03	Storage and Handling of Bulk Material	52543	Include if the process involves the storage and handling of bulk materials.	
□Y ⊠N	PI-04	Asphalt Plants	52544	Include for each asphalt plant process (unless general permit).	
□y ⊠n	PI-05	Brick / Clay Products	52545	Include for each brick and/or clay products process.	
□Y ⊠N	PI-06	Electroplating Operations	52546	Include for each electroplating process.	
DY 🛛 N	PI-07	Welding Operations	52547	Include for each welding process.	
□Y ⊠N	PI-08	Concrete Batchers	52548	Include for each concrete batcher (unless SSOA).	
DY 🛛 N	PI-09	Degreasing	52549	Include for each degreasing process (unless SSOA).	
□Y ⊠N	PI-10	Dry Cleaners	52550	Include for each dry cleaning process	
□Y ⊠N	PI-11	Foundry Operations	52551	Include for each foundry process	
	PI-12	Grain Elevators	52552	Include for each grain elevator (unless SSOA).	
	PI-13	Lime Manufacturing	52553	Include for each lime manufacturing process.	
	PI-14	Liquid Organic Compound Storage	52554 (doc)	Include if the process involves the storage of liquid organic compounds.	
□Y ⊠N	PI-14ALT	Alternate version of Liquid Organic Compound Storage	52555 (xls)	Include if the process involves the storage of liquid organic compounds and there are several storage vessels.	
□Y ⊠N	PI-15	Portland Cement Manufacturing	52556	Include for each Portland cement manufacturing process.	
□ Y ⊠ N	PI-16	Reinforced Plastics & Composites	52557	Include for each reinforced plastics and composites process.	



OAQ GENERAL SOURCE DATA APPLICATION GSD-01: Basic Source Level Information State Form 50640 (R5 (Held) ived INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT State of Indiana \mathcal{TFT}

JUN 282024

NOTES:

- The purpose of CSD-01 is to provide essential information about the entire source of air pollutant emissions. GSD-01 is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for
 public inspection.

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	PART A: Source / Company Location Information				
1.	1. Source / Company Name: POET Biorefining - North Manchester	, LLC 2. Plant ID : 169 – 00068			
3.	3. Location Address: 868 E 800 N				
	City: North Manchester Sta	te: IN ZIP Code: 46962 –			
4.	4. County Name: Wabash 5. Tow	vnship Name: Chester			
6.	6. Geographic Coordinates:				
	Latitude: 40.946364 Lor	ngitude: -85.783219			
7.	7. Universal Transferal Mercadum Coordinates (if known):				
	Zone: 16 Horizontal: 602417.13	Vertical: 4533515.79			
8.	8. Adjacent States: Is the source located within 50 miles of an adjacent states and adjacent states adjacent s	cent state?			
	🛛 No 🗌 Yes – Indicate Adjacent State(s): 🗌 Illinois (IL) 🗌 M	ichigan (MI) 🗌 Ohio (OH) 🛛 🗍 Kentucky (KY)			
9.	9. Attainment Area Designation: Is the source located within a non-atta	ainment area for any of the criteria air pollutants?			
	🛛 No 🔲 Yes – Indicate Nonattainment Pollutant(s): 🗌 CO 🗌 Pt	D NO _x O ₃ PM PM ₁₀ PM _{2.5} SO ₂			
10.	10. Portable / Stationary: Is this a portable or stationary source?				
	PART B: Source Summary				
11.	11. Company Internet Address (optional): www.poet.com/northmanchester				
12.	12. Company Name History: Has this source operated under any other name(s)?				
	🗌 No 🛛 🖂 Yes – Provide information regarding past company names in Part I, Company Name History.				
13.	13. Portable Source Location History: Will the location of the portable source be changing in the near future?				
	Not Applicable INO Yes – Complete Part J, Portable Source Location History, and Part K, Request to Change Location of Portable Source.				
14.	14. Existing Approvals: Have any exemptions, registrations, or permits been issued to this source?				
	□ No				
15.	15. Unpermitted Emissions Units: Does this source have any unpermitted emissions units?				
	No Yes – List all unpermitted emissions units in Part N, Unpermitted Emissions Units.				
16.	16. New Source Review: Is this source proposing to construct or modify any emissions units?				
	No Set Set All proposed new construction in Part O, New or Modified Emissions Units.				
17.	17. Risk Management Plan: Has this source submitted a Risk Management Plan?				
	\boxtimes Not Required \square No \square Yes \rightarrow Date submitted:	EPA Facility Identifier:			

PART C: Source Contact Information				
IDEM will send the original, signed permit decision to the person identified in this section. This person MUST be an employee of the permitted source.				
18. Name of Source Contact Person: Ryan Lindeman				
19. Title (optional): Environmental Health and Safety Specialist				
20. Mailing Address: 868 E 800 N				
City: North Manchester State: IN ZIP Code: 46962				
21. Electronic Mail Address (optional): ryan.lindeman@poet.com				
22. Telephone Number: (260) 774 – 9613 23. Facsimile Number (optional): () –				

PART D: Authorized Individual/Responsible Official Information

IDEM will send a copy of the permit decision to the person indicated in this section, if the Authorized Individual or Responsible Official is different from the Source Contact specified in Part C.

24. Name of Authorized Individual or Responsible Official: David Pyle

25. Title: General Manager

26. Mailing Address: 868 E 800 N

 City:
 North Manchester
 State: IN
 ZIP Code: 46962 –

 27. Telephone Number:
 (260)
 774 – 3532
 28. Facsimile Number (optional):
 (260)
 774 – 3530

29. Request to Change the Authorized Individual or Responsible Official: Is the source officially requesting to change the person designated as the Authorized Individual or Responsible Official in the official documents issued by IDEM, OAQ? The permit may list the title of the Authorized Individual or Responsible Official in lieu of a specific name.

No Yes – Change Responsible Official to:

PART E: Owner Information

30. Company Name of Owner: POET Biorefining - North Manchester, LLC

31. Name of Owner Contact Person: David Pyle

32. Mailing Address: 868 E 800 N

City: North Manchester		State: IN	ZIP Code: 46962
33. Telephone Number : (260) 774 – 3532		34. Facsimile Number	(optional): (260) 774 – 3530
34. Operator: Does the "Owner" company al	so operate the so	ource to which this applic	ation applies?
□ No – Proceed to Part F below. 🛛 Y	es – Enter "SAMI	E AS OWNER" on line 35 and	d proceed to Part G below.

PART F: Operator Information

35. Company Name of Operator: SAME AS OWNER					
36. Name of Operator Contact Person:					
37. Mailing Address:					
City:	State:	ZIP Code: -			
38. Telephone Number: () –	39. Facsimile Number	(optional): () –			

State Form 50640 (R5 / 1-10)			Page 3 of 5		
PART G: Age	nt Information				
40. Company Name of Agent: Not Applicable					
41. Type of Agent: Environmental Consultant	Attorney 🗌 Other (sp	ecify):			
42. Name of Agent Contact Person:					
43. Mailing Address:					
City:	State:	ZIP Code:	_		
44. Electronic Mail Address (optional):					
45. Telephone Number: () –	46. Facsimile Number	(optional): ()	_		
47. Request for Follow-up: Does the "Agent" wish to receiv during the public notice period (if applicable) and a copy	e a copy of the preliminar of the final determination?	y findings 🗌 No	o 🗌 Yes		
PART H: Local Li	brary Information				
48. Date application packet was filed with the local librar	y : 6/25/2024	· · · · · · · · · · · · · · · · · · ·			
49. Name of Library: North Manchester Public Library		· · · · · · · · · · · · · · · · · · ·			
50. Name of Librarian (optional):					
51. Mailing Address: 405 North Market St					
City: North Manchester	City: North Manchester State: IN ZIP Code: 46962 –				
52. Internet Address (optional): www.nman.lib.in.us	52. Internet Address (optional): www.nman.lib.in.us				
53. Electronic Mail Address (optional):					
54. Telephone Number: (260) 982 – 4773 55. Facsimile Number (optional): () –					
PART I: Company Nam	e History (if applicable)				
above in Section A.	ted under a legal name th	at is different from	the name listed		
56. Legal Name of Company		57. Dates of U	se		
North Manchester Ethanol, LLC		8/30/2007	to 9/19/2008		
			to		

58. Company Name Change Request: Is the source officially requesting to change the legal name that will be printed on all official documents issued by IDEM, OAQ?

No Yes – Change Company Name to:

PART J: Portable Source Location History (if applicable)

Complete this section only if the source is portable and the location has changed since the previous permit was issued. The current location of the source should be listed in Section A.

59. Plant ID	60. Location of the Portable Source	61. Dates at this Location
_		to
		to
-		to
		to
<u> </u>		to
		to
		to
<u> </u>		to
		to
		to
_		to
		to
_		to
_		to
		to
_		to

PART K: Request to Change Location of Portable Source (if applicable)					
Complete this section to request a change of location for a po	rtable source.				
62. Current Location:					
Address:					
City:	City: State: ZIP Code: -				
County Name:					
63. New Location:					
Address:					
City: State: ZIP Code: -					
County Name:					

Continued on Next Page

	PART L: Source Process Description		
Complete this section to summariz	te the main processes at the source.		
64. Process Description	65. Products	66. SIC Code	67. NAICS Code
Fuel Ethanol Production	Ethyl Alcohol	2869	325193
Prep feeds/feed ingredients	Other animal food manufacturing	2048	311119

PART M: Existing Approvals (if applicable) Complete this section to summarize the approvals issued to the source since issuance of the main operating permit.				
44369	Title V Operating Permit Renewal	4/25/2027		
· · · · · ·				

PART N: Unpermitted Emissions Units (if applicable) Complete this section only if the source has emission units that are not listed in any permit issued by IDEM, OAQ.							
73. Actual Dates							
71. Emissions Unit ID	72. Type of Emissions Unit	Began Construction	Completed Construction	Began Operation			

			PART O: New or Modified Emissio	ns Units (if applicabl	e)		
Complete this se	ction	only	if the source is proposing to add new emi	ssion units or modify	existing emission	units.	
≥ Ω 78. Estimated Dates							
74. Emissions Unit ID	때 Sions 성 전 Init ID 사 사		77. Type of Emissions Unit	Begin Construction	Complete Construction	Begin Operation	
		ļ					
		ļ!					



OAQ GENERAL SOURCE DATA APPLICATION GSD-02: Plant Layout Diagram State Form 51605 (R3 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of GSD-02 is to provide a diagram of the entire plant site. This form and a Plant Layout diagram are required for all air permit applications. If you do not provide the necessary information, applicable to your source, the application process may be stopped.
 - IDEM, OAQ has provided detailed instructions for this form and an example of a basic plant layout diagram on the Air Permit
 Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Basic Plant Layout

Part A provides IDEM, OAQ with the appropriate information about all buildings and access-limiting features in and around the plant site. **Please use this table as a checklist.** You must provide scaled drawings, with the actual scale shown. All dimensions and units must be clearly indicated with a brief explanation of what is being shown. Include the following (*All measurements should be given in feet.*): **1.** 🛛 Building Location and Dimensions

2.	Property	Lines	and Acc	ess-Limiti	ng Features
----	----------	-------	---------	------------	-------------

3. Surrounding Building Location and Dimensions

4.	Distances to Property	Lines and Access-Limiting Features
----	-----------------------	------------------------------------

6.

5. UTM Location Coordinates

Compass (pointing North)

C Scale

7.

	Part B: Stack Information			
Part B provides IDEM, OAQ with the appropriate information about all stacks, roof monitors, control devices, and process vents at the plant site. Please use this table as a checklist. You must show the location of all applicable emission points and include all relevant stack and emissions unit identification numbers for each. In addition, you will need to identify <u>each</u> of these emission points under "Stack Identification" on form GSD-04, Stack/Vent Information. Include the following (<i>All measurements should be in feet.</i>):				
8. 🛛 Exhaust Stacks				
9. 🛛 Process Vents				
10. 🗌 Roof Monitors	🛛 No Roof Monitors			
11. Control Devices	No Control Devices			
12. 🗌 Interior Vents	☑ No Interior Vents □ Doors and Windows (for processes vented inside a building)			

Part C: Roadway Information			
Part C provides IDEM, OAQ with the appropriate information about the roadways in and around the plant site. Please use this table as a checklist. Include the following (<i>All measurements should be in feet</i> .):			
13. 🛛 Adjacent Roadways 🛛 Interior Roadways			
14. 🛛 Roadway Surface Description (gravel, dirt, paved, etc.)			
15. 🛛 Number of Lanes			

Part D: Source Building Information

This table provides detailed information about each building at the plant site that is part of the source. If additional space is needed, you may make a copy of this table. (All measurements should be given in feet.)

16. Building 17. Building		18. Buildir	ng Dimensio	ons	19. Distance & direction to the nearest property	20. Distance & direction to
ID	Description	Length	Width	Height	line or access limiting feature	the nearest residence
		(feet)	(feet)	(feet)	(feet & compass coordinate)	(feet & compass coordinate)
1	Grains Bldg	136.00	100.00	47.00	1336.00 Northeast	1336.00 Northeast
2	Mech Bldg A	190.00	91.00	44.00	637.00 Northeast	637.00 Northeast
3	Mech Bldg B	84.00	42.00	36.00	778.00 Northeast	778.00 Northeast
4	Process Bldg A	91.00	23.00	50.00	894.00 Northeast	894.00 Northeast
5	Process Bldg B	91.00	29.00	67.00	855.00 Northeast	855.00 Northeast
6	Process Bldg C	168.00	104.00	72.00	792.00 Northeast	792.00 Northeast
7	Process Bldg D	45.00	25.00	95.00	792.00 Northeast	792.00 Northeast
8	Distillation Bldg	64.00	47.00	95.00	811.00 Northeast	811.00 Northeast
9	Fermentation Bldg	142.00	46.00	30.00	958.00 Northeast	958.00 Northeast
10	Storage Bldg	120.00	50.00	120.00	327.00 Northeast	327.00 Northeast
	· · · · · · · · · · · · · · · · · · ·					
	······					
					annan an annan an annan an an an an an a	

Part E: Surrounding Building / Residence Information

This table provides detailed information about each building or residence surrounding the plant site. If additional space is needed, you may make a copy of this table. (All measurements should be given in feet.)

21. Surrounding Building /	22. Surrounding Building / Residence Property Dimensions			23. Distance & direction to the nearest property line or access	24. Building ID of nearest building	25. Distance & direction to the nearest building on
Residence	Length	Width	Height	limiting feature	on the plant site	the plant site
Description	(feet)	(feet)	(feet)	(feet & compass coordinate)		(feet & compass coordinate)
Home 1	45.00	25.00	15.00	0.00 North, West, South	2	637.00 Southwest
Home 2	45.00	25.00	15.00	30.00 North	2	999.00 South
Home 3	45.00	25.00	15.00	210.00 West	1	1546.00 East
Home 4	45.00	25.00	15.00	412.00 West	1	1748.00 East
Home 5	45.00	25.00	15.00	685.00 West	1	2021.00 East

Air Permit Application FORM GSD-02 Page 4 of 4

Part F: Plant Layout Diagram

This space provides a place for a hand drawn plant layout diagram. It is **optional** to use this space to create your plant layout, but you must include the diagram with your application. If you choose to submit the plant layout in a different format, state "plant layout attached" in the space provided, and submit the information with your completed application. IDEM, OAQ has provided an example of a basic plant layout diagram on the Air Permit Applications Forms website.



POET Biorefining - North Manchester, LLC



IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of GSD-03 is to provide a checklist for identifying the information to be included on each Process Flow diagram.
- Complete this form and submit a process flow diagram for each process included in your air permit application.
- IDEM, OAQ has provided detailed instructions for this form and an example of a basic process flow diagram on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for
 public inspection.

Part A: Process Flow Diagram

Part A provides basic information to understanding the nature of the process. Please use this table as a checklist to indicate that you have included the following items on your process flow diagram (*All throughputs should be given in pounds per hour.*):

1. 🛛 Process Descri	ption: Fuel Ethanol Production Fac	ility			
2. 🛛 Process Equipm	ent 3. 🛛 Raw Material Input	4. X Process Throughput			
5. 🗌 Additions 🗌	Deletions 🛛 Modifications				
Use the space below to briefly explain the impacts of the additional equipment, the reason for removing any equipment, and/or the reason for the proposed modification. (If additional space is needed, please attach a separate sheet with the information and indicate in the space below that additional information is attached.)					
No additional equipment, modification is to add SOx emissions and limits to existing emission units.					

	P	art B: Process Operat	ion Schedule		
Par	rt B indicates the actual (or estimated ac	tual) hours of operation	for the process.		
6.	Process Operation Schedule 24	Hours per Day <u>7</u>	Days per Week <u>52</u>	Weeks Per Year	
7.	Scheduled Downtime: Use the space	e below to include as m	uch information as is kno	wn about scheduled period	ls

7. Scheduled Downtime: Use the space below to include as much information as is known about scheduled periods of downtime for this process. (If additional space is needed, please attach a separate sheet with the information and indicate in the space below that additional information is attached.) Not Applicable

Part C: Emissions Point Information

	i are of charged for a high for a				
Par tabl sho	Part C provides information about each potential outlet of air pollutant emissions to the atmosphere. Please use this table as a checklist to indicate that you have included the following items on your process flow diagram (<i>All throughputs should be given in pounds per hour.</i>):				
8.	Stack / Vent Information				
9.	⊠ Pollutants Emitted				
10.	Air Pollution Control				

Part D: Process Flow Diagram

This space provides a place for a hand drawn process flow diagram. It is **optional** to use this space to create your process flow diagram, but you must include the diagram with your application. If you choose to submit the process flow diagram in a different format, state "process flow diagram attached" in the space provided, and submit the information with your completed application. IDEM, OAQ has provided an example of a basic process flow diagram on the Air Permit Applications Forms website.





OAQ GENERAL SOURCE DATA APPLICATION GSD-04: Stack / Vent Information State Form 51606 (R3 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each stack or vent that has the potential to emit air pollutants. If you do not provide enough information to adequately describe each process vent and/or stack, the application process may be stopped. This form is required for all air permit applications.
 - Detailed instructions for this form are available online on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Stack / Vent Information								
This table provides detailed information about each stack or vent through which air pollutants could be released into the atmosphere. If an air stream is vented inside a building, the vent does not need to be listed on this form.								
1. Stack / Vent ID	2. Туре	3. Shape	4. Outlet Dimensions	5. Height	6. Maximum Outlet Flow Rate	7. Outlet Gas Temperature	8. Related Stacks / Vents	
	(V H W O)	(C R O)	(feet)	(feet)	(acfm)	(Degrees F)	(BPO)	
SV008	V	С	2.00	68.00	9000,00	75.0		
SV009	V	С	6.30	100.00	145000.00	320.0		
SV010	V	С	3.00	100.00	23400.00	100.0		
SV011	V	С	1.25	112.00	4000.00	70.0		
SV012	V	С	1.25	30.00	4000.00	70.0		



OAQ GENERAL SOURCE DATA APPLICATION GSD-05: Emissions Unit Information State Form 51610 (R3 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each emissions unit that has the potential to emit air pollutants. This form is required for all air permit applications.
 - Detailed instructions for this form are available online on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the
 information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information
 becoming a public record, available for public inspection.

Emissions Unit Information

This table provides detailed information about each emissions unit that has the potential to emit air pollutants to the atmosphere. Accurate information is needed to determine the total potential to emit. If you do not provide enough information to adequately describe each emissions unit, the application process may be stopped. If additional space is needed, you may make a copy of this form.

					1	1	·····
1, Unit ID	2. Model Number	3. Serial Number	4. Description	5. Manufacturer	6. Installation Date	7. Maximum Capacity	8. Stack / Vent ID
EU012	NA	NA	Fermenter #1	POET	6/1/2007	73000.00	SV008,
						gal/hr	SV009
EU013	NA	NA	Fermenter #2	POET	6/1/2007	73000.00	SV008,
						gal/hr	SV009
EU014	NA	NA	Fermenter #3	POET	6/1/2007	73000.00	SV008,
	N10					gal/hr	SV009
E0015	NA	NA	Fermenter #4	POET	6/1/2007	73000.00	SV008,
FUOTO	N10					gal/hr	SV009
EUUI6	NA		Fermenter #5	POET	6/1/2007	73000.00	SV008,
	λIA	NIA				gal/hr	SV009
20017	N/A	NA	YEAST PROPAGATION TANK	POET	6/1/2007	69000.00	SV008
E11019	ΝΙΔ					gal/hr	SV009
EUUIO	NA	NA	BEEK WELL	POET	6/1/2007	69000.00	SV008
EI 10010	NΙΔ					gal/hr	SV009
1.00019	N/A	NA	BEERSTRIPPER	SIZER CHEMTECH	6/1/2007	69000.00	SV008
EL1020	ΝΔ	ΝΔ	RECTIFIED		0///000	gai/hr	SV009
20020			RECHFIER		6/1/2007	69000.00	SV008
EU021	ΝΔ	ΝΔ			0///0007	gal/hr	SV009
20021			SIDE STRIPPER	SIZER CHEMIECH	6/1/2007	69000.00	SV008
EU022	ΝΔ	ΝΔ			0///0007	gal/hr	SV009
					6/1/2007	69000.00	SV008
EU023	NΔ	ΝΔ			0/4/0007	gal/hr	SV009
	1111		ONE SET OF FOUR EVAPORATORS		6/1/2007	69000.00	SV008
EU024	NA	ΝΔ			0/4/0007	gai/hr	SV009
) N/ V	101	ONE SET OF FOOR GENTRIFUGES		6/1/2007	69000.00	SV008
		1				aai/nr	57009

EU025	NA	NA	DDG DRYER #1	BARR-ROSIN	6/1/2007	42.50 ton/hr	SV009
EU026	NA	NA	DDG DRYER #2	BARR-ROSIN	6/1/2007	42.50 ton/hr	SV009
EU047, EU049, EU051	NA	NA	Fermenter #6 & #7 & #8	POET	6/1/2007	73000.00 gal/hr	SV008, SV009

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OAQ GENERAL SOURCE DATA APPLICATION GSD-05: Emissions Unit Information State Form 51610 (R3 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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- NOTES: The purpose of this form is to provide basic information about each emissions unit that has the potential to emit air pollutants. This form is required for all air permit applications.
 - Detailed instructions for this form are available online on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the
 information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information
 becoming a public record, available for public inspection.

Emissions Unit Information

This table provides detailed information about each emissions unit that has the potential to emit air pollutants to the atmosphere. Accurate information is needed to determine the total potential to emit. If you do not provide enough information to adequately describe each emissions unit, the application process may be stopped. If additional space is needed, you may make a copy of this form.

1. Unit ID	2. Model Number	3. Serial Number	4. Description	5. Manufacturer	6. Installation Date	7. Maximum Capacity	8. Stack / Vent ID
EU029	NÂ	NA	DDG FLUID BED COOLER	BARR-ROSIN	6/1/2007	27.00 ton/hr	SV010
EU030	NA	NA	DDG SILO LOADING	LAIDIG/SMI	6/1/2007	27.00 ton/hr	SV011
EU031	NA	NA	DDG SILO BYPASS	MAC	6/1/2007	27.00 ton/hr	SV012
					·······	· · · · · · · · · · · · · · · · · · ·	
			· · · · · · · · · · · · · · · · · · ·				



OAQ GENERAL SOURCE DATA APPLICATION GSD-07: Criteria Pollutant Emissions Summary State Form 51602 (R3 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of this form is to provide the actual and potential emissions of each criteria pollutant emitted from the source. This form is required for all air permit applications.
 - Detailed instructions for this form are available on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

	Part A: Unit Emissions Summary						
Part A provid adequately d	Part A provides the actual and potential emissions of each criteria pollutant emitted from each emissions unit. If you do not provide enough information to adequately describe the emissions from each emissions unit, the application process may be stopped.						
1. Unit ID	2. Stack / Vent ID	3. Criteria Pollutant	4. Actual Emi	ssions	5. Potential	To Emit	
			Standard Units	Tons Per Year	Standard Units	Tons Per Year	
	See attached PTE calculations						

Part B: Pollutant Emissions Summary

Part B provides the total actual and potential emissions of each criteria pollutant emitted from the source (including all emissions units and fugitive emissions at the source). If you do not provide enough information to adequately describe the total source emissions, the application process may be stopped.

6. Criteria Pollutant	7. Actual En	nissions	8. Potential To Emit	
	Standard Units	Tons Per Year	Standard Units	Tons Per Year
Carbon Monoxide (CO)	See attached PTE calculations		78 - 1 999 - 1990 - 1999 - 19	
Lead (Pb)				
Nitrogen Oxides (NOx)				
Particulate Matter (PM)	······································		· · · · · · · · · · · · · · · · · · ·	
Particulate Matter less than 10µm (PM ₁₀)				·····
Particulate Matter less than 2.5µm (PM _{2.5})				
Sulfur Dioxide (SO ₂)				
Volatile Organic Compounds (VOC)				
Other (specify):				

Part C: Fugitive VOC Emissions (if applicable)

Part C summarizes the sources of fugitive VOC emissions at the source and estimates VOC emissions from these emission points. Complete this table if you are required to provide fugitive emissions data pursuant to 326 IAC 2-2 or 326 IAC 2-3.

9. Fugitive Emissions Source	10. Emission Factor	11. Number	12. Uncontrolled Potential To Emit		
-	(lb/hr)	Leaking	Pounds Per Hour	Tons Per Year	
Compressor Seals				· · · · ·	
Flanges			·····		
Open-Ended Lines	······		· · · · · · · · · · · · · · · · · · ·		
Pressure Relief Seals					
Pump Seals					
Sampling Connections					
Valves					
Other (specify):					



OAQ GENERAL SOURCE DATA APPLICATION GSD-08: Hazardous Air Pollutant Emissions Summary State Form 51604 (R3 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

- NOTES: The purpose of this form is to provide the actual and potential emissions of each hazardous air pollutant emitted from the source. This form is required for all air permit applications.
 - Detailed instructions for this form are available on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Unit Emissions Summary Part A provides the actual and potential emissions of each hazardous air pollutant emitted from each emissions unit. If you do not provide enough information to adequately describe the emissions from each emissions unit, the application process may be stopped. 1. Unit ID 4. CAS 6. Potential To Emit 2. Stack / 3. Hazardous Air 5. Actual Emissions Vent ID Pollutant Number Standard Units **Tons Per Year Standard Units Tons Per Year** See attached PTE calculations

	Part B: P	ollutant Emissions Sun	nmary					
Part B provides the total actual and potentia emissions at the source). If you do not prov	Part B provides the total actual and potential emissions of each hazardous air pollutant emitted from the source (including all emissions units and fugitive emissions at the source). If you do not provide enough information to adequately describe the total source emissions, the application process may be stopped.							
7. Hazardous Air Pollutant	8. CAS	9. Actual Er	nissions	10. Potential	To Emit			
	Number	Standard Units	Tons Per Year	Standard Units	Tons Per Year			
See attached PTE calculations								
		· · · · · · · · · · · · · · · · · · ·						
					·····			
······································								
				······································				
· ·								

	Part C: Fug	gitive HAP Emissions (if a	pplicable)			
Part C summarizes the sources of fugitive required to provide fugitive emissions dated and the second secon	e HAP emissions at the sou ta pursuant to 326 IAC 2-2	rce and estimates HAP em or 326 IAC 2-3.	issions from these	emission points. Complete	e this table if you are	
11. Fugitive Emissions Source	12. Hazardous Air	13. Emission Factor (lb/hr)	14. Number Leaking	15. Uncontrolled Potential To Emit		
	Pollutant			Pounds Per Hour	Tons Per Year	
Compressor Seals	See attached PTE calculations	• • • • • • • • • • • • • • • • • • •				
Flanges						
Open-Ended Lines						
Pressure Relief Seals						
Pump Seals						
Sampling Connections	16 - 16 - 16 - 16 - 16 - 16 - 16 - 16 -					
Valves				······································		
Other (specify):						



OAQ PROCESS INFORMATION APPLICATION PI-03: Storage & Handling of Bulk Material State Form 52543 (R2 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of this form is to obtain detailed information about the storage and handling of bulk materials. Complete one form
 for each process (or group of identical processes). Use additional forms if necessary. This is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

PART A: Storage & Handing Information

Par pro	Part A identifies all process units associated with storage and handling process for bulk materials. If there are multiple process units that are identical in nature, capacity, and use, you may use one form to summarize the data.						
1.	Equipment / Component Type	2. Unit ID	3. Number of Identical Units	4. Installation Date (see instructions)	5. Material Handled/ Stored	6. Maximum Materials Throughput Rate (tons/year)	
	DDG Fluid Bed Cooler	EU029		6/1/2007	DDGS	175200.00	
	DDG Silo Loading	EU030		6/1/2007	DDGS	175200.00	
	DDG Silo Bypass	EU031		6/1/2007	DDGS	175200.00	
			1				
7.	Add-On Control T	echnology: /	dentify all control techn	ologies used for this	s unit, and attach complet	ed CE-01 (unless "none").	
	🗌 None						
	🖾 Baghouse / Fab	ric Filter – Atta	ach CE-02.	Cyclon	ie – Attach CE-03.		
	Electrostatic Pre	ecipitator – Att	ach CE-04.	🗌 Absorp	otion / Wet Collector / S	Scrubber – Attach CE-05	
	Adsorber – Attac	h CE-07.		Other	(specify):	— Attach CE-10.	
8.	Control Techniqu	es: Identify ai	ny other air emission	control options us	ed for the process.		
	Conveyors and trar	nsfer points w	ill be aspired to a fab	ric filter baghouse) .		
9.	Process Limitatio	ns / Addition	al Information: Ider	ntify any acceptab	le process limitations.	Attach additional	
	information if neces	ssary.		···· , ··· , ···	· · ·) ·		

PART B: Process Material Information

Part B summarizes the process material information. Provide the information in the items below for each material stored and/or handled in this process.

10. Material Handled/Stored (from table above)	11. Method of Handling	12. Type of Storage	13. Storage Capacity (tons)	14. Pile Acreage	15. Silt Content (% by weight)	16. Moisture Content (% by weight)
DDG	Conveyor	Silo			0.00%	10.00%
DDG	Conveyor	Flat Building			0.00%	10.00%

PART C: Emission Factors							
Part C identifies all emission fac	stors used to calculate a	ir emissions fro	m the proces	ss units listed on	this form.		
17. Process Equipment & ID 18. Air Pollutant 19. Emission Factor 20. Source of Emission Factor							
(complete for all units listed in Part A of this form)		value units (if i		(if not using A	4P-42, include calculations)		
See attached	РМ			🗌 AP-42	⊠ Other		
See attached	PM-10			AP-42	⊠ Other		
See PTE	SO2			AP-42	⊠ Other		
				AP-42	Other		

PAR	RT D: Federal Rule Applicability	
Part D identifies any federal rules that apply to	the process.	
21. Is a New Source Performance Standard If yes, attach a completed FED-01 for each rule	(NSPS) applicable to this source? • that applies.	🗌 Yes 🛛 No
🔲 40 CFR Part 60, Subpart CC	Glass Manufacturing Plants	
🔲 40 CFR Part 60, Subpart DD	Grain Elevators	
🔲 40 CFR Part 60, Subpart HH	Lime Manufacturing Plants	
🔲 40 CFR Part 60, Subpart LL	Metallic Mineral Processing Plants	
🔲 40 CFR Part 60, Subpart UU	Asphalt Processing and Asphalt Roofing Manufacture	
🗌 40 CFR Part 60, Subpart OOO	Non-Metallic Mineral Processing Plants	
40 CFR Part 60, Subpart UUU	Calciners and Dryers in Mineral Industries	
22. Is a National Emission Standard for Haz source? If yes, attach a completed FED-01 for	ardous Air Pollutants (NESHAP) applicable to this r each rule that applies.	🗌 Yes 🛛 No
☐ 40 CFR Part <u>61</u> , Subpart	(Specify);	
40 CFR Part <u>63,</u> Subpart	(Specify):	
 Non-Applicability Determination: Provid rule title or the source category), but the rule 	e an explanation if the process unit appears subject to a ru le will not apply.	ule (based on the
Grain storage less than 2.5 million bu.		



OAQ CONTROL EQUIPMENT APPLICATION CE-02: Particulate Control – Baghouse / Fabric Filter State Form 51953 (R2 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of CE-02 is to identify all the parameters that describe the baghouse or fabric filter. This is a required form.
- Complete this form once for each baghouse or fabric filter (or once for each set of identical baghouses or fabric filters).
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for
 any one to inspect and photocopy.

PART A: Identification and Description of Control Equipment

Part A identifies the particulate control device and describes its physical properties.						
1.	Control Equipment ID:	CE010				
2.	Installation Date:	6/1/2007				
3.	Bags or Cartridges?	🛛 Bags 🔄 Cartridges				
4.	Filter Material:	Fabric				
5.	Number of Bags/Cartrid	lges per Compartment:				
6.	6. Number of Compartments:					
7.	Mode of Operation:	🗌 Intermittent 🔲 Periodic 🛛 🖾 Continuous				
8.	Cleaning Method:	🗌 Shaking 🔄 Reverse Pulse 🔄 Reverse Air 🖂 Jet Pulse				
9. Cleaning Cycle / Frequency (specify units):						
10. Is a bag leak detector installed on this device?						
11. Type / Description of Bag Leak Detector:						
12. Air to Cloth Ratio (Ex: 1.3 : 1.0): 3.4 : 1.0						
13.	Is Lime Injection used o	n this device? 🔲 Yes 🖾 No				
14.	14. Is Carbon Injection used on this device? Yes No					

PART B: Operational Parameters

Part B provides the operational parameters of the control device and the pollutant laden gas stream. Appropriate units must be included if the standard units are not used. For each applicable parameter, provide the inlet and outlet values or provide the differential value.

	A. Units	B. Inlet	C. Outlet	D. Differential
15. Gas Stream Flow Rate	ACFM	23800.00	23800.00	0.00
16. Gas Stream Temperature	۴	70.00	70.00	0.00
17. Gas Stream Pressure	inches of water			to
18. Moisture Content	%			
19. Particle Size Range	micrometers			to
20. Lime Injection Rate (if applicable)	lb/hr			
21. Carbon Injection Rate (if applicable)	lb/hr			
22. Other (specify):				

		23. Units	24. Inlet	25. Outlet	26. Efficiency (%):		
						Capture	Control
	a. Lead	d (Pb)					
	b. Haz	ardous Air Pollutant (HAP) (specify):					
	c. Part	iculate Matter (PM)					
	d. Part	iculate Matter less than 10µm (PM10)					
	e. Parti	iculate Matter less than 2.5μm (PM _{2.5})					
	f. Othe	er Pollutant (specify): SO2	lb/hr		1.00	0.00%	0.00%

PART D: Monitor	ing, Record Reeping, & Testing Procedure	S
Part D identifies any existing or proposed moni in the permit.	toring, record keeping, & testing procedures t	hat may need to be included
27. Item(s) Monitored:	Visible Emissions	
28. Monitoring Frequency:	Daily	
29. Item(s) Recorded:	Visible Emissions	
30. Record Keeping Frequency:	Daily	
31. Pollutant(s) Tested:	Visible Emissions	
32. Test Method(s):	NA	
33. Testing Frequency:	NA	

PART E: Preventive Maintenance Plan
Part E verifies that a complete Preventive Maintenance Plan (PMP) has been prepared for the control device, if applicable. Use this table as a checklist to ensure that the PMP is complete.
34. Do you have a Preventive Maintenance Plan (PMP)?
⊠ No PMP is needed. □ Yes – the following items are identified on the PMP:
A. Identification of the individual(s) responsible for inspecting, maintaining and repairing emission control devices.
B. Description of the items or conditions that will be inspected.
C. Schedule for inspection of items or conditions described above.
D. Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
PART E: Determination of Integral Control

Part F provides explanation to determine whether the control device should be considered integral to the process.						
35. Has IDEM already made If "Yes", provide the follow	🛛 No	🗌 Yes				
Permit Number:	Issuance Date:	Determin	ation:	Integral	🗌 Not Integral	
36. Is this device integral to the process? If "Yes", provide the reason(s) why the device is integral.		🗌 No	ΠY	′es		
				·		



OAQ CONTROL EQUIPMENT APPLICATION CE-02: Particulate Control – Baghouse / Fabric Filter State Form 51953 (R2 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES;

- The purpose of CE-02 is to identify all the parameters that describe the baghouse or fabric filter. This is a required form.
- Complete this form once for each baghouse or fabric filter (or once for each set of identical baghouses or fabric filters).
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for
 any one to inspect and photocopy.

PART A: Identification and Description of Control Equipment

Pa	Part A identifies the particulate control device and describes its physical properties.						
1.	Control Equipment ID:	CE011, CE012					
2.	Installation Date:	6/1/2007					
3.	Bags or Cartridges?	🛛 Bags 🔲 Cartridges					
4.	Filter Material:	Fabric					
5.	5. Number of Bags/Cartridges per Compartment:						
6.	6. Number of Compartments:						
7.	Mode of Operation:	🗌 Intermittent 🔲 Periodic 🛛 🖾 Continuous					
8.	Cleaning Method:	 Shaking 🛛 Reverse Pulse 🗌 Reverse Air 🛛 Jet Pulse					
9. Cleaning Cycle / Frequency (specify units):							
10.	10. Is a bag leak detector installed on this device?						
11.	11. Type / Description of Bag Leak Detector:						
12.	12. Air to Cloth Ratio (Ex: 1.3 : 1.0): 3.4 : 1.0						
13.	Is Lime Injection used o	n this device? 🗌 Yes 🖾 No					
14	14. Is Carbon Injection used on this device? Yes X No						

PART B: Operational Parameters

Part B provides the operational parameters of the control device and the pollutant laden gas stream. Appropriate units must be included if the standard units are not used. For each applicable parameter, provide the inlet and outlet values or provide the differential value.

	A. Units	B. Inlet	C. Outlet	D. Differential
15. Gas Stream Flow Rate	ACFM	4000.00	4000.00	0.00
16. Gas Stream Temperature	۴F	70.00	70.00	0.00
17. Gas Stream Pressure	inches of water			to
18. Moisture Content	%			
19. Particle Size Range	micrometers			to
20. Lime Injection Rate (if applicable)	lb/hr			
21. Carbon Injection Rate (if applicable)	lb/hr			
22. Other (specify):				

	23. Units	24. Inlet	25. Outlet	26. Efficiency (%):		
				Capture	Control	
] a. Lead (Pb)						
b. Hazardous Air Pollutant (HAP) (speced)	cify):					
c. Particulate Matter (PM)						
] d. Particulate Matter less than 10µm (PM	110)					
] e. Particulate Matter less than 2.5µm (PN	A2.5)					
1 f. Other Pollutant (specify): SO2	lb/hr		0.50	0.00%	0.00%	

PART D: WORITOR	ing, Record Reeping, & Testing Procedure	5
Part D identifies any existing or proposed moni in the permit.	toring, record keeping, & testing procedures t	hat may need to be included
27. Item(s) Monitored:	Visible Emissions	
28. Monitoring Frequency:	Daily	
29. Item(s) Recorded:	Visible Emissions	
30. Record Keeping Frequency:	Daily	
31. Pollutant(s) Tested:	Visible Emissions	
32. Test Method(s):	NA	
33. Testing Frequency:	NA	

PART E: Preventive Maintenance Plan
Part E verifies that a complete Preventive Maintenance Plan (PMP) has been prepared for the control device, if applicable. Use this table as a checklist to ensure that the PMP is complete.
34. Do you have a Preventive Maintenance Plan (PMP)?
No PMP is needed.
A. Identification of the individual(s) responsible for inspecting, maintaining and repairing emission control devices.
B. Description of the items or conditions that will be inspected.
C. Schedule for inspection of items or conditions described above.
D. Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
1
PART F: Determination of Integral Control

	integral control				
determine whether the control devi	ce should be considered	l integral to the	e process.		
35. Has IDEM already made an integral control determination for this device? If "Yes", provide the following:					
Issuance Date:	Determination:	🗌 İntegral	Not Integral		
the process? n(s) why the device is integral.	□ No □ Y	és	······································		
	determine whether the control devia an integral control determination ing: Issuance Date: the process? n(s) why the device is integral.	determine whether the control device should be considered an integral control determination for this device? ing: Issuance Date: Determination: the process? Integral n(s) why the device is integral. No	determine whether the control device should be considered integral to the an integral control determination for this device? Image: Control determination for this device? ing: Issuance Date: Determination: Integral Issuance Date: Determination: Integral the process? Integral. No issuance is integral. Integral.		


OAQ CONTROL EQUIPMENT APPLICATION CE-06: Organics – Flare / Oxidizer / Incinerator State Form 52623 (R / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT IDEM – Office of Air Quality – Permits Branch 100 N. Senate Avenue, MC 61-53 Room 1003 Indianapolis, IN 46204-2251 Telephone: (317) 233-0178 or Toll Free: 1-800-451-6027 x30178 (within Indiana) Facsimile Number: (317) 232-6749 www.IN.gov/idem

NOTES:

- The purpose of CE-06 is to identify all the parameters that describe the oxidizer or incinerator. This is a required form.
- Complete this form once for each oxidizer or incinerator (or once for each set of identical oxidizers or incinerators).
- · Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for
 any one to inspect and photocopy.

PART A: Identification and Description of Control Equipment

Part A identifies the control device and describes its physical properties.						
1. Control Equipment ID:	CE009					
2. Installation Date:	6/1/2007					
3. Incineration Method:	🗌 Flare 🔄 Thermal Oxidizer 🔲 Catalytic Oxidizer	🛛 Other (specify): RTO				
4. Residence Time (specify a	nits):					
5. Hood Static Pressure (s	ecify units): Negative F	Pressure? 🗌 Yes 🗌 No				
6. Bed Temperature at the	Flame Zone: °F					
7. Fuel Used: 🗌 Not App	licable 🛛 🖾 Natural Gas Only 🗌 Other – Attach complete	d PI-02F form.				
8. Is the Gas Stream used	as Overfire Air? 🛛 No 🗌 Yes: Combustion Unit ID:					
9. Location of Flame (flares	only): Ground Level Other (specify elevation and units of	measure):				
10. Are Flame Arrestors use	d? (flares only) 🗌 No 🗌 Yes					
11. Are Steam Jets used? (/	ares only) 🗌 No 🗌 Yes					
12. How is the flare used? (flares only) Emergency only Normal Operation Other (specify):						
13. Catalyst Material: 🖂 None 🗌 Specify:						
14. Number of Catalyst Beds:						
15. Is the Catalyst Cleaned and reused on-site? 🔲 Yes 🔄 No 🖂 Not Applicable						
16. Is a Heat Exchanger used to recover heat on this device? 🛛 Yes 🗌 No						
17. Heat Exchanger Type:	🗌 Recuperator 🛛 Regenerator 🗌 Other (specify):	Not Applicable				

PART B: Operational Parameters								
Part B provides the operational parameters of the control device and the pollutant laden gas stream.								
	A. Units	B. iniet	C. Outlet	D. Differential				
18. Organic Vapor Concentration (by volume)	ppmv							
19. Gas Stream Flow Rate	ACFM	145000.0 0	145000.00					
20. Moisture Content	%	43.00%	43.00%					
21. Heat Content (for Flares)	%							
22. Excess Oxygen (for Oxidizers)	%							
23. Particle Size Range	micrometers			to				
24. Other (specify):								

		PART	C: Pollutant (Concentration	ns				
Par	Part C provides the pollutant concentrations of the pollutant laden gas stream.								
			25. Units	26. Inlet	27. Outlet	28. Efficienc	y (%):		
	AND MER					Capture	Control		
	a.	Carbon Monoxide (CO)							
	b.	Hazardous Air Pollutant (HAP) (specify):							
	c.	Particulate Matter (PM)							
	d.	Particulate Matter less than 10µm (PM10)							
	e.	Particulate Matter less than 2.5µm (PM2.5)							
	f.	Volatile Organic Compounds (VOC)							
\boxtimes	g.	Other Pollutant (specify): SO2	lb/hr		TBD	0.00%	0.00%		

PART D: Monitoring, Record Keeping, & Testing Procedures

Part D identifies any existing or proposed monitoring, record keeping, & testing procedures that may need to be included in the permit.

29. Item(s) Monitored:	Combustion Chamber Temperature	Visible Emissions	
30. Monitoring Frequency:	Continuous	Daily	
31. Item(s) Recorded:	Combustion Chamber Temperature	Normal/Abnormal	
32. Record Keeping Frequency:	3 hr average	Daily	
33. Pollutant(s) Tested:	NA	NA	
34. Test Method(s):	NA	NA	
35. Testing Frequency:	NA	NA	

PART E: Preventive Maintenance Plan

Part E verifies that a complete Preventive Maintenance Plan (PMP) has been prepared for the control device, if applicable. Use this table as a checklist to ensure that the PMP is complete.

36. Do you have a Preventive Maintenance Plan (PMP)?

No I	PMF	is needed. Xes – the following items are identified on the PMP:
	Α.	Identification of the individual(s) responsible for inspecting, maintaining and repairing emission control devices.
	В,	Description of the items or conditions that will be inspected.
\bowtie	C.	Schedule for inspection of items or conditions described above.
	D.	Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

This space is intentionally left blank.



OAQ COMPLIANCE DETERMINATION APPLICATION CD-01: Emissions Unit Compliance Status State Form 51861 (R / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

NOTES:

- The purpose of CD-01 is to identify the requirements that apply to each emissions unit at the permitted source and to determine the compliance status of these emissions units.
 - This is required form for each initial Title V permit application as well as each modification and every renewal.
 - · Detailed instructions for this form are available on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any
 one to inspect and photocopy.

PART A: Identification of Source and Emissions Unit

Part A identifies the source and the emissions unit. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1.	Source Name: POET Bior	2.	Source ID:	069 - 00068	
3.	Emissions Unit Description	Regenerative Thermal Oxidizer	4.	Unit ID:	SV009

PART B: Regulatory Compliance Status

Part B identifies the regulatory requirements that apply to the emissions unit and to determine the compliance status of the emissions unit. These "regulatory requirements" are those required by federal, state, or local law.

5. Rule Cite	6. Description	7. State / Local Only	8. Limitation	9. Test Method	10. In Compliance (y/n)
326 IAC 2-8- 4	PM emission limit		33.1 lb/hr	1,2,3,4,5,202	Y
326 IAC 2-8- 4	PM10 emission limit		33.1 lb/hr	1,2,3,4,5,202	Y
326 IAC 2-8- 4	PM2.5 emission limit		33.1 lb/hr	1,2,3,4,5,202	Y
326 IAC 2-8- 4	VOC emission limit		30.8 lb/hr	1,2,3,4,5,22/25 A	Y
326 IAC 2-8- 4	CO emission limit		41.95 lb/hr	1,2,3,4,10	Ý
326 IAC 2-8- 4	Acetaldehyde emission limit		1.27 lb/hr	1,2,3,4,5,18	Y
326 IAC 2-8- 4	Methanol emission limit		1.0 lb.hr	1,2,3,4,5,18	Y
326 IAC 2-8- 4	Fuel Ethanol BACT		98% control for VOC	1,2,3,4,18,25A	Y
326 IAC 2-8- 4	SO2 emission limit		35.63 lb/hr		

PART C: Compliance Status – Other Requirements

Part C identifies any other requirements that apply to the emissions unit and to determine the compliance status of the emissions unit. These "other requirements" would not be required by federal, state, or local law.

11. Other Requirements	12. State / Local Only	13. In Compliance (y/n)
None		

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OAQ COMPLIANCE DETERMINATION APPLICATION CD-03: Compliance Plan Requirements Per Emissions Unit State Form 51863 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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NOTES:

- The purpose of CD-03 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting)
 required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no
 or inadequate compliance monitoring requirements.
- CD-03 focuses on specific applicable requirements that may apply to a single emission unit or group of emission units.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- · Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims
 of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326
 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any
 one to inspect and photocopy.

PART A: ld	lentification of	Source and Applicable Requirement

Part A identifies the source and the emissions unit. Use one form for each emissions unit. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1.	Source Name: PC	DET Biorefinir	ng - North Manchester	2.	Source ID:	063 –	00068
3.	Emissions Unit Des	scription:	Regenerative Thermal Oxidizer	4.	Unit ID:	SV009	

5. Limitations: List each operational and/or emission limit for this emissions unit.

PM emission limit - 26.64 lbs/hr

PM10 emission limit - 29.70 lbs/hr

PM2.5 emission limit - 28.40 lbs/hr

VOC emission limit -39.49 lbs/hr

CO emission limit - 27.71 lbs/hr

Acetaldehyde emission limit - 1.23 lbs/hr

Methanol emission limit - 1.75 lbs/hr

Acrolein emission limit - 1.00 lbs/hr

Total HAPs emission limit - 2.6 lbs/hr

Proposed SO2 emission limit - 35.63lb/hr

 Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

None

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY State Form XXXXX (6-04)

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PART B: Compliance Plan Components

Part B identifies the main components of each required compliance plan.

						qui eq compnance	, prom.				
7. R C	ule ite	8.	Control Equipment	9.	Parameters Monitored	10. Monitoring Frequency	11. Item Recorded	12. Record Keeping Frequency	13. Pollutants tested	14. Test Method	15. Testing Frequency
											<u></u>
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OAQ COMPLIANCE DETERMINATION APPLICATION CD-04: Compliance Schedule and Certification State Form 51864 (R2 / 1-10) INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.lN.gov/idem

NOTES:

- The purpose of CD-04 is to provide a schedule of for compliance certification submittals, a certification of the source's compliance status with all applicable requirements, and a compliance schedule that details the measures a source will use to address noncompliance.
 - Complete this form once per application (not once for each emissions unit) with respect to all applicable requirements at the source.
 - This is required form for each initial Title V permit application as well as each modification and every renewal.
 - · Detailed instructions for this form are available on the Air Permit Application Forms website.
 - All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

Pa	rt A identifies the r	PART A: Source Identificatio	n and Complia	nce Schedule	
1.	Source Name:	POET Biorefining - North Manchester,	LLC	2. Source ID:	069 – 0068
3.	Permit Term Co	mpliance Certification Schedule	····		•
	Date of first cert	tification submittal:	Frequency	of future submittals:	

PART B: RISK Mana	gement Plan	
Part B indicates whether sources subject to section 112(r), Accid requirement to submit a Risk Management Plan (RMP).	ental Release Preventio	on, are complying with the
4. Statement of Applicability / Non-Applicability: Indicate where requirement to submit and RMP.	nether the source is sub	ject to Section 112(r) and the
Source is subject to Section 112(r) and a Risk Manageme	ent Plan (RMP) is requir	ed.
Source is not subject to Section 112(r) and a Risk Manage	ement Plan (RMP) is no	t required.
RMP Submittal Information: Indicate when the RMP was submitted to any of the listed agencies, indicate the RMP for IDEM is attached to this application, please write "attach	itted to each of the follo date when the RMP wil red" in the Date Submit	wing agencies. If the RMP has I be mailed to that agency. If the ed column.
5. Agency Name	6. Date Submitted	7. Expected Submittal Date
Chemical Safety and Hazard Investigation Board (CSHIB)	_	
Chemical Safety and Hazard Investigation Board (CSHIB) United States Environmental Protection Agency (U.S. EPA)	-	
Chemical Safety and Hazard Investigation Board (CSHIB) United States Environmental Protection Agency (U.S. EPA) Indiana Department of Environmental Management (IDEM)	-	
Chemical Safety and Hazard Investigation Board (CSHIB) United States Environmental Protection Agency (U.S. EPA) Indiana Department of Environmental Management (IDEM) Local Agency responsible for permitting:		
Chemical Safety and Hazard Investigation Board (CSHIB) United States Environmental Protection Agency (U.S. EPA) Indiana Department of Environmental Management (IDEM) Local Agency responsible for permitting:		

	PART C: Co	ertification of Source Co	mpliance Statu	5	
Part C states actions to be	whether the source is or is not in taken in cases of noncompliance	n full compliance with all a e.	applicable require	ements and to ide	ntify corrective
9. Check t	he Most Accurate Statement.	na na na mana na na na na na na na na mana na m			· , · · · · · · · · · · · · · · · · · ·
	source described in this air pollut	ion control permit applica	tion is fully in con	npliance with all a	pplicable
S FOR	M CD-01 includes new requirements	ents that apply or will app	y to the emission	ns unit during the	term of the
The requi	source described in this air pollut irements, except for the emission	ion control permit applica is unit(s) listed below. Co	tion is fully in con mpliance will be	npliance with all a achieved accordi	pplicable ng to the
sche 10 Unit ID	dule identified below.	12. Corrective Action	13. Deadline	14. Progress R	eports
				Start Date	Frequency
	er fan fri de fan Naderson of Franke, men en fan Staat yn gemen fan Berner fan gemen fan gemen fan gemen fan ge	N 1997 7 A MARANA M			
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15. Signatur	e of Responsible Official	! <u></u>	·		
577					
I cer and	tify that, based on informati information presented are t	ion and belief formed rue, accurate and co	after reasonal nplete.	ble inquiry, the	statements
_		-			
David Pyle	1 1	Gener Title	al Manager		
	<151	1400			
)./+	6/25/2	024		
Signature	- Xeeteen	Date			

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Attachment B: Emission Calculations PTE Summary

Address City IN Zip: Significant Source Modification No.: Significant Permit Modification No.:

Company Name: POET Biorefining - North Manchester, LLC Iress City IN Zip: 888 East 800 North, North Manchester, Indiana 46962

Reviewer:

	Uncont	rolled Potenti	al to Emit (ton	s/yr)				
Emission Point	Emission Unit Description	PM	PM10	PM2.5 *	\$0 ₂	NOx	VOC	co
SV/004	Grain Receiving (EU001), Conveyors (EU002), and Grain			Í —				
37001	Storage Bins (EU003)	596,18	596,18	596.18	~	-		-
SV020	Bolt Convoyor El 1002b and Oprin Bins El 1002b	22,53	22.53	22.53			1	
SV021	Ben Conveyor E00020 and Grain Birls E00030	22.53	22.53	22.53				
	Corn Transfer Conveyor / Scalper (EU004, Surge Bin							
SV002	(EU005)	45.05	45.05	45.05	- 1	-	- 1	
SV003	Hammermill #1 (EU006)	180.21	180.21	180,21	-	-	- 1	
SV004	Hammermill #2 (EU007)	180,21	180.21	180.21		-	- 1	-
SV005	Hammermill #3 (EU008)	180,21	180.21	180.21	- 1		- 1	
SV006	Hammermill #4 (EU009)	180.21	180.21	180.21	-	-	-	
SV007	Hammermill #5 (EU010)	180.21	180.21	180.21			- 1	-
SV008***	Fermentation Scrubber / RTO Bypass (EU011-EU023)	-	-	-		-	5,855	-
SV009	Scrubber Bypass	82.81	82.81	82.81	0.39	90.18	8.516	63.85
SV009***	RTO Stack & DOGS Dryers (EU025 & EU026)	481.25	481.25	481.25	156.04	90.18	4,171	1100 48
EU024	Set of four (4) Centrifuges**		-	-	-	-	14.60	
SV010	DDGS Fluid Bed Cooler (EU029)	357,41	357.41	357.41	3.68	-	14.85	-
SV011	DDGS Silo Loading (EU030)	60.07	60.07	60.07	2.19		1.18	-
SV012	DDGS Silo Bypass (EU031)	67,58	67,58	67.58	2.19	<u> </u>	1.18	-
SV018	DDGS Loadout Operations (EU033, EU035)	150,17	150.17	150.17	-	-	7.04	
SV016	Ethanol Loading Rack (EU036)	-	-	-	-	32.48	3 122	81.68
CE015	Enclosed Flare	4.41E-04	1.76E-03	1.76E-03	1.39E-04	0.02	1.28E-03	0.02
SV013 & SV014	Boiler #1 (EU027) & Boiler #2 (EU028)	2.33	9,33	9.33	0.74	36.84	6.75	24.56
T001 - T005, T009	Ethanol , Denaturant, and Gasoline Tanks	-	-	-	- 1	-	3.09	-
EU040 - EU046	Com Oil / Defatted Syrup Tanks	-		-	-		0.01	-
EU038 & EU039	Com Oil Centrifuges	-	-	-	-	-	0.01	-
EU0XX	Grain Loadout to Truck	21.50	7.25	1.23	-	-		
SV015	Diesel Generator (EU037)	8.09	4.64	4.50	0.14	164.85	8.15	63.60
	Total	2337.27	2326.57	2320.41	9.32	324.37	11695.12	233.71
ugitive Emissions								<u> </u>
F001 & F002	Grain Receiving	40,97	11.85	2.00	- T		- 1	
F002	DDGS Loadout	0,53	0,13	0.13	- 1	-	1.18	-
F004	Fugitve Leaks	-	-	-		-	105,14	-
F005	Cooling Tower	8.22	8.22	8,22	-	-		-
F006	Rail Car Venting	-	-	-	-	-	0.65	-
F007	DDGS Storage Building	0.53	0.13	0.13	- 1	-		_
F008****	Wet Cake	4	-	-		-	2.84	-
E003	Paved Roads	16.29	3.26	0.80			·····	

* PM2.5 listed is direct PM2.5

***The centrifuges normally vent to the RTO and are included in the PTE for the RTO Stack; therefore, the uncontrolled centrifuge emissions are not included in the facility totals. ***SV008 and SV009 (RTO Stack and DDGS Dryers) emissions are included for reference, but are not included in the facility total emissions. SV009 and SV008 cover 3 operating

66.54

23.58

11.28

0,00

0.00

109.80

0.00

Total Fugitive

scenarios, and it is not possible to operate all 3 scenarios at encluded for reference, but are not included in the tacky data emissions. Svide and Svide over 3 operating scenarios, and it is not possible to operate all 3 scenarios at once. Emissions from SV009 (Bypass of Scrubber) is worst-case operating scenarios termissions of VOC and HAP; therefore, it is included in the facility total emissions. Svide and svide over 3 operating scenarios at once. Emissions from DDGS handling is included in the total fuglive emissions. EPA published a final rule in the Federal Register on May 1, 2007, that excluded ethanol production facilities that produce ethanol through natural fermentation, from the major source category "Chemical Process Plants". Therefore, the fuglive emissions from ethanol production facilities are not longer counted toward determination of PSD, Emission Offset, and Part 70 Permit applicability.

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Attachment B: Emission Calculations PTE Summary

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.:

	Potenti	Reviewer: al to Emit Afte	r Control (tons	s/vr)				
Emission Point	Emission Unit Description	PM	PM 10	PM2.5*	SO ₂	NOx	voç	со
SV001	Grain Receiving (EU001), Conveyors (EU002), and Grain Storage Bins (EU003)	5.96	5,96	5.96		-		-
. SV020 SV021	Bell Conveyor EU002b and Grain Bins EU003b	0.23	0.23	0.23				
SV002	Com Transfer Conveyor / Scalper (EU004, Surge Bin (EU005)	0.45	0.45	0.45	-	-	~	-
SV003	Hammermill #1 (EU006)	1.80	1.80	1.80	<u> </u>	-	~	
SV004	Hammermill #2 (EU007)	1,80	1.80	1.80				-
SV000	Hammermill #4 (EU008)	1.00	1.00	1.80				-
SV007	Hammermill #5 (EU010)	1.80	1.80	1.80	t	-	- 1	-
SV008***	Fermentation Scrubber / RTO Bypass (EU011-EU023)	-		-	- 1	-	117.11	
SV009	Scrubber Bypass	82.81	82.81	82.81	0.39	90,18	170.32	63.85
SV009***	RTO Stack & DDGS Dryers (EU025 & EU026)	48.13	48.13	48.13	156.04	90,18	83.41	110.05
EU024	Set of four (4) Centrifuges**	-	-	-	-	÷	-	-
SV010	DDGS Fluid Bed Cooler (EU029)	3.57	3.57	3.57	3.68	-	14.85	-
SV011	DDGS Sile Loading (EU030)	0.60	0.60	0.60	2.19	_	1.18	-
SV012	DDGS Silo Bypass (EU031)	0.68	0.68	0.68	2.19		1.18	-
SV018	DDGS Loadout Operations (EU033, EU035)	1.50	1.50	1.50	-	-	7.04	
SV016	Ethanol Loading Rack (EU036)	-		-	-	32.48	62.45	81.68
CE015	Enclosed Flare	4.41E-04	1.76E-03	1.76E-03	1.39E-04	0.02	1.28E-03	0.02
SV013 & SV014	Boller #1 (EU027) & Boiler #2 (EU028)	2,33	9.33	9.33	0.74	36.84	6.75	24.56
T001 - T005, T009	Ethanol , Denaturant, and Gasoline Tanks	-		-	-		3.09	-
EU040 - EU046	Com Oil / Defatted Syrup Tanks	-	· · · · · · · · · · · · · · · · · · ·	-	-		0.01	
EU038 & EU039	Com Oil Centrifuges	-		-		*	0.01	-
EU0XX	Grain Loadout to Truck	21.50	7.25	1.23	<u> </u>	-	-	
SV015	Diesel Generator (EU037)	8.09	4.64	4.50	1 0.14	164,85	8.15	63.60
	Total	136.98	126.26	1 120.16	1 992	374 37	1 275 D2 L	233.71

* PM2.5 listed is direct PM2.5 **The centrifuges are included in the RTO Stack emissions.

***SV008 and SV009 (RTO Stack and DDGS Dryers) emissions are included for reference, but are not included in the facility lotal emissions. SV009 and SV008 cover 3 operating scenarios, and it is not possible to operate all 3 scenarios at once. Emissions from SV009 (Bypass of Scrubber) is worst-case operating scenario for emissions of VOC and HAP; therefore, it is included in the facility total emissions.

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Attachment B: Emission Calculations PTE Summary

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 668 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.:

	D-441-	Reviewer:		- 1 1				
Emission Saint	Potenna Emission Unit Description		Issuance (ton	s/yr)	T		1	
Emission Form	Emission one Description	1 1 1		PM2.51	502	NOx	VOC	<u> </u>
SV001	Grain Receiving (EU001), Conveyors (EU002), and Grain	1,535,135		and any second				
	Storage Bins (EU003)	23.96	25.23	25.23	-	-	-	-
SV020	Belt Conveyor EU002b and Grain Bins EU003b	0.23	0.23	0.23	i			
SV021		0.23	0.23	0.23				
	Com Transfer Conveyor / Scalper (EU004, Surge Bin							
SV002	(EU005)	1.75	1.84	1.84		-	-	-
SV003	Hammermill #1 (EU006)	7.23	7.62	7.62	-	-	-	-
SV004	Hammermill #2 (EU007)	7.23	7.62	7.62	-	-	-	-
SV005	Hammermill #3 (EU008)	7.23	7.62	7.62	-	-	-	-
SV006	Hammermill #4 (EU009)	7.23	7.62	7.62	-	-	-	-
SV007	Hammermill #5 (EU010)	7.23	7.62	7.62	-	_	-	-
SV008***	Fermentation Scrubber / RTO Bypass (EU011-EU023)	-	-	-	-	-	21.05	-
SV009***	Scrubber Bypass	116,68	130.09	124.39	156.04	90.18	172.97	121.37
SV009***	RTO Stack & DDGS Dryers (EU025 & EU026)	116.68	130.09	124.39	156.04	90,18	172.97	121.37
EU024	Set of four (4) Centrifuges**	- ·	-	-	-	-	0.83	-
SV010	DDGS Fluid Bed Cooler (EU029)	0.08	0,08	0.08	4.38		24.90	-
SV011	DDGS Silo Loading (EU030)	2.45	2.58	2.58	2.19	-	1,18	-
SV012	DDGS Silo Bypass (EU031)	2.63	2.76	2.76	2.19	-	1,18	-
SV018	DDGS Loadout Operations (EU033, EU035)	6.00	6.31	6.31	- 1	_	7.04	-
SV016	Ethanol Loading Rack (EU036)	-	-	-	-	2.08	7.34	5.22
CE015	Enclosed Flare	4.41E-04	1.76E-03	1.76E-03	1.39E-04	0.02	1.28E-03	0.02
SV013 & SV014	Boiler #1 (EU027) & Bolier #2 (EU028)	2.33	9.33	9,33	0.74	36.84	6.75	24.56
T001 - T005, T009	Ethanol, Denaturant, and Gasoline Tanks	-	-	-	- 1	-	3.09	-
EU040 - EU046	Corn Oil / Defatted Syrup Tanks	-	-		- 1	-	0.01	_
EU038 & EU039	Corn Oil Centrifuges	-	- 1	-	- 1	-	8,10E-03	_
EU0XX	Grain Loadout to Truck	21.50	7.25	1.23	-	-	-	
SV015	Diesel Generator (EU037)	0.46	0.26	0.26	0.01	9,41	0.47	3.63
	Total	214.45	224.30	212,58	165.54	138.53	236,95	154.80

.

total
 'PM2.5 listed is direct PM2.5
 'The centrifuges are normally controlled by the RTO. Emissions are included in the RTO Stack. During RTO downlime, emissions are uncontrolled and shown here.
 ''The centrifuges are normally controlled by the RTO. Emissions are included in the RTO Stack. During RTO downlime, emissions are uncontrolled and shown here.
 ''SV008 and the two SV009 lines represent 3 operating scenarios involving the scrubber and the RTO. For purposes of worst-case total facility VOC emissions, it was assumed that SV008
 would operate at the permit limit of 500 hours a year and that SV009 (scrubber bypass) would be the operating scenario for the remaining 8260 hours of the year.
 Note: The shaded cells indicate where limits are included.

	Potential to Emi	t After Issuan	ce Nested Sou	rce (tons/yr)				
Emission Point	Emission Unit Description	PM	PM10	PM2.5*	SO2	NOx	voc	co
SV013 & SV014	Boiler #1 (EU027) & Boiler #2 (EU028)	2.33	9.33	9.33	0.74	36.84	6.75	24.56
	Total	2.33	9.33	9,33	0.74	36,84	6.75	24.56

* PM2.5 listed is direct PM2.5

Attachment 8: Emission Calculations HAPs Summary

Cennpary Name: POET Blorenhing - North Manchester, LLC Address City, MZp: 565 East 500 North, North Manchester, Indiana 46962 Significant Source Medification No.: Significant Pentik Medification No.:

										· ISAAAAAA										
									One	toatrolled Pol	ential to Essit (I	tons/yrl								
	CAS	Scrubber/ RTD Bypass	Scrubber Bypass	RTD Stack - Processing	Centrifuges	DDGS Cealer	NG Bollers	Loadbut	Flare Pilot Flame	Equipment Leaks	Diosel Generator	Venting	DDGS Storage Sllb	DDG5 SILD 1 Bypass	DDGS Conveyor and Rail Loading	DDGS Loadout Spout	DDGS Storage Buliding	Tanks001-005, 00 0	Wet Cake**	Total
HAP Poliutant		(lonAr)	(ton/yr)	(lonyr)	(tonyr)	(lon/yr)	(Trynal)	(lon/yr)	(Ionýr)	(lon/yr)	(lon/yr)	(ten/yr)	(lonýr)	(ton/yr)	(tenAr)	(lan/yr)	(ton/yr)	(tonAr)	(ton/yr)	(ton/yr)
Organic HAP																				
Acetaldehyde	75-07-0	75.68	121.92	136.27	1.23	1.89	4	0.45	,	2.995-03	2.04E-D3	2.46E-04	9.8DE-02	9.806-02	5.87E-01	0.10	0.10	2.82E-04	3.42E-02	292.25
Acrolain	107-02-8	3.60	32.85	38.93	0.08	0.36	,	,	•	. ,	6.38E-04		8.90E-02	8.90E-02	5,33E-01	60'0	60.0		6.83E-03	37.69
Benzene	71-43-2	 ,	,	1.35E-03			2.586-03	36.39	4.87E-07	1.58E-03	6.28E-02	7.14E-05		•			•	9.25E-03	,	36.05
Carbon Disulfide				1.96E-01		0.08							4.07E-02	4.07E-02						0.16
Carbonyl Sulfide				1.03E-01		0.07							3.42E-02	3.42E-02						0.14
Curriène	<u> 98-82-8</u>					,		15.19	•	0.00€+00	•			_ •				1.726-03		15.19
Dichlorobenzene	106-46-7			-	•	,	1.47E-03		2.78E-07			•	•				•		•	1.47E-03
Elhylbertzene	100-41-4	,					•	30.37	•	0.00E+00				· ·	,	,	,	3,456-03	,	3.04E+01
Formaldehyde	50-00-0	0.22	25.55	25.55	0.02	0.18	9.21E-02		1.74E-05	,	6.39E-03		1.80E-02	1.80E-02	1.086-01	0,02	0.02		6.83E-02	26.23
Нехвпе	110-54-3	••••	•	1.16	•		2.21	238.13	4.17E-04	1.96E-01	,	0.01						0.55		240.55
Methanol	67-56-1	0.11	251.85	253,07	0.03	0.97		0.22	•	1.49E-03	,	1.23E-04	1.10E-01	1.10E-01	6.58E-01	0,11	110	1.41E-04	1.37E-02	254.17
Naphihalene	91-20-3			3.93E-04	•		•			,	1.726-02				•		•			1.72E-02
Toluene	108-86-3		,	2.19E-03			4.185-03	227.78	7.886-07	0.00E+00	2.27E-02		•			4		2.59E-02		227,81
Xytenes	1330-20-7							227.76	,	0.005+00	1.56E+02		,			•		2.59E-02	1	2.28E+02
Inorganic HAP																				0.00
Arsenic	7440-38-2	-	,	1,296-04					•	,	,		•	•••••		•				0.00E+00
Beryllium	7440-41-7		•	7.736-06	-	,				-		-	,	4 		•			•	0.00E+00
Cadmium	7440-43-7	,		7.09E-04			1.36E-03	,	2.65E-07			,	,				•		•	1.356-03
Chromium	7440-47-3	,		9,02E-04	-		1.726-03		3.25E-07		•••••			,		•	•	•		1.72E-03
Cobalt	7440-48-4	1	,	5.41E-05				,	,	•	•			*	•	•	,		•	0.00E+00
Lead	TRI N420	,		3.22E-04	•	•	6.148-04	1	1.16E-07	,	,			•	ĩ	•	•	•	,	6.14E-04
Manganese	7439-96-5		•	2.45E-04	,		4.67E-04		8.81E-08	•	,	•		••••			•	-	•	4.67E-04
Mercury	7439-97-6	,	·	1.67E-04		,		,		,		•			-		,	,		9.90E+00
Nickel	7440-02-0	,		1.35E-03	-		2.56E-03		4.87E-07	,			,							2.58E-03
Selentum	7782-49-2	•	•	1,55E-05	•			,			•	•	•	•	•	*	-	•	•	9.90E+00

Combined HAPs

1274.69 3.15E-01 3.15E-01 6.11E-01 1.23E-01 1,89E+00 0.20 1.276-01 9.33E-03 3.80E-01 3.90E-91 4.385-04 2.32 775.91 3.55 1.36 455.27 79.80 432.17

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Attachment B: Emission Calculations HAPs Summary

Company Name: POET Biorefining - North Manchester, LLC Address CN (AZI)e: 858 East \$00 North, North, Manchester, Indiana 45962 Significant Source Medification No: Significant Pormt Medification No: Reviewer:

		-4-4	thuritory		00 11	3.05	0.70	8 J C	0.14	0.36	1.475-03	6.072-01	1.32	7.18	9.57	1.725-02	4 4.9	4.57	0.00	0.00E+00	0,005+00	1.356-03	1.72E-03	0.00E+00	6.14E-04	4.67E-04	0.006+00	7.687_03	0.00E+00	The second s	17.70
		Mitch Calcon	rtanArn		1 405 00	6.835-03		1				-	6.83E-02		1.37E-02	,	,				,			,				,			1.23E-01
		Tanks001-005, 000	lonvn	and the second se	2 876. PA		8.255-03	101.0		1.725-03		3.45E-03		0.55	1.41E-04		0.005+00	0.00E+00			,		,								5.59E-01
		DDGS Storage Building	donArr		010	60.0						,	0.02	-	0.11	,	,			,	•		,	,		,		,		ANNANT A DAMAGE AND A	3,15E-01
		DDGS Loadout Soout	(In/Inol)		0.10	60.0						,	0.02	•	0.11		,	,		,	r	,							•		3.15E-01
		DDGS Conveyor and Rail Loading	(ton/r)		0.59	0.53					-	r	0.11	4	0.66	,	,	,			5	•		,	,	1					1.896+00
		DDGS Slip Bypass	(tonAr)		0.10	50.0	-	4.07E-02	3.42E-02		1	•	0.02		0.11						Ľ					•		,			3.90E-01
		DDGS Storage Silo	(ton/yr)		0.10	60.0		4.07E-02	3.42E-02		,	-	0.02		0.11	•	•				•							-	,		3.90E-01
	tans/yr)	Ralicar Venting	(tonýr)		2,46E-04		7.14E-05							0.01	1.23E-04	•	,	,			,	÷	·	•	-	-	•	•			9.33E-03
	tential to Emit (Diesel Generator	(ton/yr)		2.04E-03	6.38E-04	6,28E-02				,	,	6.39E-03	,	•	1.72E-02	2.276-02	1,56E-02				•		,		,	1	1			1.27E-01
Reviewer:	Controlled Po	Equipment Leaks	(tonAr)		2.996-03	-	1.58E-03			00'0	,	0.00E+00	,	0.20	1,496-03	-	0.00	0.00€+00				,		,	,	•	-				0.20
		Flare Pilot Flame	(Tony)				4.87E-07			,	2.786-07		1.74E-05	4.17E-04			7,885-07			-	Ţ	2.65E-07	3.25E-07	-	1.16E-07	B.81E-09	-	4.87E-07			4.38E-04
		Loadout	(tonAr)		0.01	,	0.72			0.30	'	0.61		4.76	0.00	•	4.56	4.56					,	,							15.52
		NG Boilars	(tonyr)			,	2,56E-03			,	1.47E-03		60'0	2.21	•		4,186-03				-	1.36E-03	1.72E-03	,	6.14E-04	4.67E-04		2.585-03	•		2.32
		DDGS Ceoler	(lon/yr)		1.89	0.36	ŧ	0.08	0.07	•		Ŧ	0.18		0.97			,		-	•		1	1		,					3.55
		Centrifuges"	(ten/yr)		-	4	•			ŗ					•		1	,		,	,	ŕ		-	-	-	-	-	-		,
		RTO Stack - Processing	(ton/yr)		4.09	1.17	3.03E-04	1.96E-01	1.03E-01		-	ł	0.77	0.26	7.59	6.80E-05	4.91E-04			1.29E-04	7.736-06	7.09E-04	9,02E-04	5,41E-05	3.22E-04	2.45E-04	1.67E-04	1.35E-03	1.55E-05		14.17
		Scrubber Bypass	(Ion/Vr)		3.66	0.99				,	,		0.77	-	7,56			-		'	-	-					,	,			12.97
		Scrubber/ RTO Bypass	(tanýr)		37.94	1,80	ĩ			,	,		0.11	•	0.06			-		,				_	, 		,	,			39.90
		CAS			75-07-0	107-02-6	71-43-2			98-82-8	106-46-7	100-41-4	50-00-0	110-54-3	67-56-1	91-20-3	109-66-3	1330-20-7		7440-38-2	7440-41-7	7440-43-7	7440-47-3	7440-48-4	TRI N420	7439-96-5	7439-97-6	7440-02-0	7782-49-2	-	_
			HAP Pollutant	Organic HAP	Acetaldehyde	Acrolein	Benzene	Carbon Disulfide	Carbonyl Sulfide	Cumene	Dichlorobenz sne	Ethylbenzene	Formaldehyde	Нехале	Melhanol	Naphihalene	Toluene	Xylenes	Inorganic HAP	Arsenic	Beryllum	Cadmium	Chrombum	Coball	Lead	Manganese	Mercury	Nickel	Selenium		Cambined HAPs

17.20

3.15E-01 3,15E-01 5.59E-01 1.23E-01

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Attachment 8: Emission Calculations HAPs Summary

Cempany Name: POET Blorafining - North Manchester, LLC Address (1) N Zip: 563 East 500 North, North Manchester, Indiana 46952 Significant Source Modification No.: Significant Permit Modification No.:

ILICATE POISSUE INUGATICATION NO.?	Reviewer:	
ufice		

									Pot	ential to Emit.	After Issuance	(tons/yr)								
	CAS	Scrubber/ RTO Bypass	Scrubber Bypass	RTO Stack - Processing	Centrifuges	DDGS Cooler	NG Boilers	Loadout	Flare Pilot Flàme	Equipment Leaks	Diasei Generator	Railcar Venting	DDGS Storage Silo	DDGS SIIo Bypass	DDGS Conveyor and Rall Loading	DDGS Loadout Spout	DDGS Storage Building	Tanks001-005, 009	Wet Cake	totai
HAP Pollutant		(ton/yr)	(tonAr)	(lon⁄yr)	thornyri	tionyry	(tonyr)	(tonyr)	(tenyn)	(tonAyr)	(ton/yn)	(lonýr)	(ton/yr)	(lan/yr)	(lanýr)	(lan/yr)	tionyn	(Inf/mat)	(lon/yr)	(ton/yr)
Organic HAP																				
Acelaidehyde	75-07-0	2.17	5.39	5.39	0.07	1.89		6.10E-04	-	2.99E-03	1.16E-04	2.46E-04	0,10	0.10	0.10	0.10	0.10	2.82E-04	3.42E-02	9.60
Acrolein	107-02-8	0.13	4.38	4.38	4.56E-03	0.36		•			3.64E-05	,	0.09	0.09	0.0	60.0	60.0	,	6.83E-03	4.98
Benzene	71-43-2		•	3.03E-04	•		2.58E-03	2.45	4.87E-07	1.58E-03	3.59E-03	7.14E-05	•	,	•	1	٠	8.25E-03	,	2.49
Carbon Disulfide				1.86E-01		0.06							4.07E-02	4.07E-02		_				0.16
Carbonyi Sulfide				1.032-01		0.07							3.42E-02	3.42E-02		_				0,14
Cumene	38-82-8	1			•		•	2.49		0.00E+00	1	,	,	,	'			1.726-03		2.49
Dichlorobenzene	105-46-7	•	•			-	1,476-03	-	2.78E-07	,	-	4	•	,		-				1.476-03
Ethylbenzene	100-41-4		•	•	•	 -	,	2.49	1	0.00E+00	,		,		,	•	•	3.455-03		2.49E+00
Formaldehyde	50-00-0	0.13	0.77	0.77	8.68E-04	0.18	0.09	5	1.74E-05		3.65E-04		0.02	0.02	0.00	0.02	0.02	1	6.83E-02	1.18
Нехапе	110-54-3			0.26	,	•	2.21	2.49	4.17E-04	0.20	1	0.01	•			•	•	0.55		4.90
Melhanol	67-56-1	0.13	7,67	7.67	1.746-03	0.97	,	3.05E-04	,	1.49E-03	,	1.23E-04	0.11	0.11	0,11	0.11	0.11	1.41E-04	1.37E-02	8.76
Naphthatene	91-20-3		•	B,80E-05	,	,		·	,		9.79E-04		,			ž		,		9.79E-04
Toluena	108-68-3		·	4.91E-04		,	4.18E-03	2.49	7.886-07	0.005+00	1.30E-03		,			,	,	0,000,400	•	2.49
Xylanes	1330-20-7	•		•	•	,		2.49		0.0012400	8.92E-D4	•			•	•	,	0.00€400		2.49E+00
Inorganic HAP																				0.00
Arsenic	7440-38-2		•	1.29E-04	,	,			1		,			,		,		ŗ	•	0.00
Beryllium	7440-41-7			7.73E-06		,		,				-		,	,	,	,	ʻ		0.00
Cadmium	7440-43-7	•		7.09E-04			1.35E-03	,	2.55E-07		•	,	, in the second se				1	,	•	1.356-03
Chromium	7440-47-3			9.02E-04	,		1.72E-03		3.25E-07			,	·			,		'		1.726-03
Cobalt	7440-48-4	•		5.41E-05	1	-			,	•		ŗ	,		_	,		,		0.00
Lead	TRI N420	,	•	3.22E-04	,		6.14E-04		1.16E-07		•		,					,		6.14E-04
Manganese	7439-96-5			2.45E-04		-	4.67E-04	,	8.81E-08	ŕ			-				,	ļ	,	4.67E-04
Mercury	7439-97-6	,	,	1.67E-04	,					,	•			-			•		,	9.90
Nickel	7440-02-0	,	-	1.35E-03	,	,	2.58E-03		4,876-07				,		,	-	,		,	2.58E-03
Selenium	7782-49-2		-	1,55E-05	-			·	,	,					, 	·	,			0,00

Combined MAPs

The contrapole are inclused in the FTO Stack emissions "Well cafe HAP emissions are included for reference on this page. As wet cafe and DDGS cannol both be produced, only the H4P emissions from DDGS handling are included in the facility tolafs. Note The Straded cefts include words *are included*

 2.54
 11.39
 0.08
 3.40
 2.32
 2.49
 4.38E-44
 0.01
 9.33E-41
 3.30E-41
 2.37E-41
 3.15E-41
 3.55E-41
 1.22E-41
 2.34E

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Attachment B: Emission Calculations **Project Parameters**

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: B68 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.:

Reviewer:

Receiving	Current	Proposed	Difference	
Annual Grain Receiving	41,071,429	41,071,429	0 bushel/yr	
Denaturant Delivery (actual):	9,324,324	9,324,324	0 gal/yr	
Grain Receiving Capacity	30,000	30,000	0 bushel/hr	
Grain Receiving Capacity	840	840	0 ton/hr	
Annual Grain Receiving	1,150,000	1,150,000	0 ton/yr	
Annual Grain Loaded Out	0	500,000	500,000 ton/yr	
Grain Density:	56	56	0 (b/bushe)	
Gallons Ethanol Produced per Bushel of Corn:	2.80	2.80	0 gal∕bu	
Production	Current			
Total Production in Gallons Annydrous Ethanol Produced per Year:	115,000,000	115,000,000	0 gal/yr	
E-85 Operation (assume 10% of Anhydrous Ethanol Production is loaded out at E70);				
Gallons E-85 Produced:	12,432,432	12,432,432	0 dal/vr	
Denaturant Throughput:	3,729,730	3,729,730	0 gai/yr	
Gallons Anhydrous Ethanol Loaded out in E-85 Service:	8,702,703	8,702,703	0 gal/yr	
Normal Denatured Ethanol Operation				
Gallons Denatured Ethanol Produced	111 891 892	111 801 802	0 callyr	
Denaturant Throughout	5 594 595	5 594 595	0 gallyr	
Gailons Anhydrous Ethanol I gaded out in Denatured Service	106 297 297	106 207 207	0 galiyr	
	100,237,237	100,231,231	b gaby	
Undenatured Ethanol Production Rate	115,000,000	115,000,000	0 gal/yr	
Combined Denatured Ethanol and E85 Production Rate	124,324,324	124,324,324	0 gal/yr	
Dry Distillers Grain with Solubles (DDGS) Production	Current			
Hourly DDGS Production	36.76	36,76	0 ton/hr	
Annual DDGS Production	322,000	322.000	0 ton/vr	
Percent Grain Throughput that becomes DDGS	28.0%	28.0%		
	Current			
DDGS Haul Out	12,880	12,880	0 truck/vr	
Ethanol Haul Out	16,541	15,541	0 truck/vr	
Denaturant Delivery	1,166	1,166	0 truck/vr	
Grain Delivery	46,000	46,000	0 truck/yr	
Tons Hauled per Truck	25	25	0 ton/truck	
Gallons Hauled per Truck	8,000	8,000	0 gal/truck	
Storage Tanks	Current			
190 or 200 Proof Ethanol Shift Tank (T001)	115,000,000	115.000.000	dal/vr	
Denaturant Storage Tank (T002)	6,184,879	6,184,879 (5)	gal/yr	
200 Proof Ethanol Storage Tank (T003)	115.000.000	115.000.000	gal/yr	
200 Proof Ethanol Storage Tank (T004)	115,000,000	115.000.000	gal/yr	
Denaturant Storage Tank (T005)	3,139,445	3,139,445 (5)	gal/yr	
(1a) Proposed Permit Limit				
(1b) Existing Permit Limit				
(2) Assume 10% of combined production is E-85.				
(3) E-85 can be blended anywhere between 70% to 83% undenatured ethanol, da Assume denaturant is 30% of E-85 product.	epending on atmosphe	eric conditions.		
(4) Assume denaturant is 5% of denatured alcohol product				
 (5) Assumed worst case scenario of denaturant throughput divided through tanks 	T002 and T005 based	l on tank capacities		
<u>-</u>				

			Address City IN Zip; 8 Significant Source Modification No.: Significant Parmir Modification No.: Cantificant Parmir Modification No.:	368 East 800 Nor	th, North Man	chester, indiana 46982	2700 C	and Pointerna	1
Stack/Venc	nbisting Unk	Equipment ID	Deterlation	Cultrant Capacity	Units	Pollutants	Description	Capacity	Units
	EL 1001		Stan Receving	1.150.000 h	inthr artvir	SPIPM10			
TIBAS	E1.602 E1.602		Uofiveryors According to 2	BHUD	ialhr achr	SPIPH10	ה ממוזה את הני	NG+ 127	1000
5 1000	EUOH	CEOD	Gran Scalper	140	1	SP/PM10	² abric Filter	2,600	iştirn
20010	ELISIO6	CE003	statement #1	8	authr -	SPIPHIC.	abric Filler	000'24	1.cm
SVDH	EU(007	CE004	Hammenrat #2 users areas #2	197 197	ardhr Solbr	SP/PN10	Fubric Filler Abov Filler	12,000	locin Profes
5/(06	EU009	CEOUE			ra/hr	SPAPHIU	abric Filler	12,000	scim
2MID	EU010	CEDU	ZSIERREITEIL#5 Faaron in terevisted. #1	0.64	100	SPIPING	- abold Fillter	12,000	coto artice RTO boolece
	EU012		Ferrenter #1					500	trayr scrubber bypast
	EUUIS		restruction #4. Ferritein #3				•		
	Eurots		Fighthentier Md	74 GOD 9	loratin		Clet Scrubbus 610		
	EUD47		Fermenter #5		Iusau	5			
SVIDE SVDD	EU049 F1051		Fernorder #7 Fernorder #8				-		
	E1017	net and and	Yester Propagation Tank #t						
	E1013	LEUUS, LEUUS	Beer Skipper#1					T	
	EU030		Rectitier Column #1 Side Stringer #1	79 000	galifir (theateat	00	Wet Scrubber PTO	Π	
	E1 022	CENTRA CENTRA	One (11 Set of Three [3] Molecular Steves #1 Cone /1 Set of Four (4) Eventratore #1	4	rafte]			T	
		CE009		1.150	aloniminate.		KTO - Na contral during	Γ	
_			Che (1) Set of Four (3) Centriloges #1	492 96	on COGS/hr	OF SP. PM10. NON.	Npass	T	
Svnae	EU025	CEDU8, CE013	DDGS Dyer#1	60.1	INUTER	0. V00	Multicione, KTO		
	EU026	CE008, CE014	D005 Dyer#2	103	IN COGS/Pr	15P, PM10, NO., 50-, VOC	Multiclone, RTO		
		CE009		105	-11 LG 8	ISP, PMIU, NO.,		a 7an	
BVDUB		CEDOR	Fraudover By parts Mode	- RF				(11) (11)	rypass hrshr
SVD17	EU034		Centillage #1 - RTO Byj3454	1.150 0	alleniminute ¹	/oc	RTO Byess:	2005	or parts heavy
EVOID	EU028	CEBID	COG Fluid Bed Cooler #1	35 70 0	núhr	TSP. PIAID, VOC	Fabric Filler	DOC	13.000 12.000
51/011	EL ADA	100	PDGG Storage Silo #1	1 42 35	es in the	CENENT VOC HAP	Bahno Bilter	uru =	to re ar.
SVBN2	EL 1031	CEON	110005 540 84pers #1	000,85	al/hr (fruch)	SHIPHIU, VOC. HAP	rapire hiter	\$,000	1500
Sutas.	at ictais	CENTS	Tues - Truck and Tues. Road or office Park.	of UND PT-1	althe trach	ISP, FM10, ND», SD, VOT	Flyte	10 PS	ddd ETT tehe
10000	- CLUDON	NEW 1		-	firelt ald	TSP, PMID, NO.	1916	5	hited to be
5X813	€U027		Soler#1	951	METUIN	SON, VOC ISP PMR0 NDJ	Low Aux Burner		
SVDIA	£1,1026		Boriet #2	145 1	MET Uhr	50×, v0C	Low No.: Burner		
SVDIB	SEDI (13	CEDIE	DDGS Canvevar	120	onthr .	ISPIPNIO, VOC. HAP	Fabrix Filler		
SV016		CE016	Print & Print Land	1	-	Ball 201 of Mode	. tra 0.		
	critica		and sain the same shore and some			TSP PLUE FIO	L'ADRE PINEL		
SUDIS	E1 1027		Carton Gamerantee	30.17.26	đ	50-, VOC	line.	μUψ	
NUVS	EUUJA	CE009	COS Centrificate	964	slimit.	/oc			
SMORE	JEC 1039	CE003	COS Centrituge PDS: Riversite Trati	30000	alimin -	ice ice			
	EUDAG		COS Signage 1 ant	30000	allors	8			
SV019	EU050	CE017	Rolf Mill Bell Converons	1014	on utter	-14			
SYDZA	E11003b	CE018	2 Grain Storage Bins	683865	ushels	TSP, PU110, PI42 6	Fabric Piltér	1,200	
SVIDT	E0.002b	CEDIS	Belt Conveyors 2 Grain Storade Bins	8404	on 2hr ushels	CSP. PM 10, PM2 5	Fabric Filter	1,200	
	EUDXY	Name	Grain Loadout to Truck	1211	arvhr	01844SZ	None		
			190 Proof Ethanol Story of Tark	000 092	allans	200	Internal Floquera Pao		
	1001		Lienaturied Editariol or 200 Proof Ethanol Starane David read Editoriol or 200 Broad Ethanol Starana	2,000,0001	allens	700	Internal Floating Hoo	Π	
			Denater of Storage Tari,	126.900	allens	202	Internal Fluation Roa	Π	
	TUCH		Diesel Storsge Tank This Station Tank	2,000 r	allans	100			
	TON		Syrup Tank, ten.	1000.10	allont	00		12 230	7 19 :
	Hall		Lasoline storage Tarik	1047	ialians. I			100 61	Jalya
Fugletve Source	EGUT		lüe≂anplion tistalin Recerving	1058 84011	ownr	-olution(s SPAPMILU	c ontrol Equipment Building enclocure		
EH ID SURFLIGHT	5007		CDS Leading (Tarck and Consumer)	1000	andır	TSPIPMID. VOC. HAP	Buiking enclasure		
	Finit		ियेश्वत स्वित्रतः	41	A	Divdesi	Nane Lask Cietection sod		
	EDDE		Fuginve Leaks	NA H	A	3	Repair Frontiers		
87 U 10	5005		Cooking Towers #1	1000 0E	PN	TSP/PM10	AIDR EXTERNOL		
EL Inta	- Norm		Maintenne Mainte	100 OC	aligarayean a				
	FOR		LUDGS Storage Existing Webcske Pad #1	192	on/hr	SPIPMIU, VOU, INFE	YORIE MORE		

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1. Polential to Emil PM/PM10/PM2.5 - Captural Enitations:

	1 Lémetrad P182.55 Lénglique P182,5	88	142 164					111 112		154 25	100 2.12 1 44 6 3:	- 0 0			
	410 Libeled Pert	3.3	21			-4		37	2		631	с., e		<u> </u>	
	Pby Linhou Ps. rt) (lumhr)	576	200	102				1	1/1 mmm	124	1	0.00	200		the man man with
	al PM Llanked Inj (tonery	7 2398	0 175	24.6	<u><u></u></u>	17 F				Street and	600	2		17.1 I I I I I I I I I I I I I I I I I I I	
	2 kaloce Limito. vinsiyo) (fluci	8	5	1 ¹							7 13	100			
	tefare PTE of PN2.	969	45.02	181	- UR			- CO1	100	57.5		13.5	1977	arc -	
	NO PTE of PM101	9 99	50.51	140.71		7 10			1010		1.031	9 X 1		17.61	
	hoy PTE of PM buts Control (tosuey	596.18	4505	12021	1.001	12021	10.041	10.01	50 U	20	15017	55.0	1944	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1 100
	Control Elificity of Control Elificity (ii)	366	÷-66	7-65	1995.	3	The second secon		- Man		ź	740		.50	
	Value PRE of PMC voluti Alter Contri voluti Alter Contri	96.9	3 42	180	8	181			SIL	153	161	50	52.0	212	
	410 PTE of PM25 tol Control" (lbs	*	010	150			170	50	10	0.15	ri C	105	200	155	5
	Mito PTE of Ph traf disc Cost 11 ftonuove	96 9 9	0.45	180	180		140	1.90		058		E0	62.0	1463	20 LL
	Matter PTE of P1 unscyn) atter Com		0	0.41		150			1 0 12		50	200	000	NG 0 0	
	PM after PTE of PL	36 236	10 0.45	41 1 5 K	181	1.00	11 1 1 1		V8 1 1.	16 0.68	150	16 0.75	15 0.15	19 FE	10 10 10
The second secon	num Air Flow PTE of I tə (scrin) Costrol	.1 D0/86	0 000 E	12,000	12 000	12 600 0.	12 000 21	17 a)(4000	450 0.54	10,001	1,780	1.700	H/A 9t	Total 11
	Loutley Radio Loutley Ra (grided) Ra	500	0.004	1,004	1000	102.0	1000	0.04	1001	1011	1001	0.005	0.005	14/4	
	Central Bestae	Bughouse	Bugnowse	Baghouce	Baghou's	Badflow's	Baghbuge	Baphter to	Beahowce	Barhouce	Bayhease	Cardon Filler	Carteriage Filled	Non-	
	Practices Description C	Grain Recarving (E.0001), Cenveyora (ELUU2), and Grain Storage Bins (ELUU2) and Grain Storage Bins	Corn Etandier Conveyor / Scalper (EUDA), Swae Bin (EUDS)	Hammersell #1 / EUG(E)	Hany negatil, M2 (EL 002)	Harmerall #3 (8.008)	H Stry Grant Mek (EU 0091	Hisemonnal #5 (EU010)	CDGS Slo Loading (EUCED)	D(565 S46 B)pace (\$003)1	EDP/S-Loudeur Conneyor and Ruicarffund, Loudour (ESELS). EUCES	Bell Conveyors EUDDb and Grown	Boil: 61(305)	Grain Lead and to Truck (EUDXS)	
	Baylsunze D	CEDOI	0602	CECCO	CE001	CEOIS	CE006	(Ef.02	CEOII	CE012	CED16	CE018	CED19	NA	

— Account controlled PLAE & measures were a PANPMED wers storn: — Outlied Storn Leading - accounding Store score and the store accounding the — Rear multi PE bank - Junes in Microstation activities and any requested period linus; Limited PTE bank - Junes in Microstatio accounding and requested period linus;

Mendelmen Receiveding FFE An instantion of the constrained grading in the An Art Pro Pan Income (R) mounts in 10000 large 4 bits of 1 in 2000 lbr. FFE Anti-Strated Internet: - Data House Carlot and An An Art Pro Raw Received and An a 10000 large 4 bits of 1 in 2000 lbr. FFE Beant Carron discorps in FFE after Learning Densorps (1) "Stand Beanters")

2. Potentisto Eucli PM/Pattil - Fugaline Emissione:

Exhibition Factors ((LAD))	6M FM10 PND 6	Vriety 0.0530 0.18 0.0310 0.031	Mnn 0.025. 1 0.0078 0.0013	0020 00313
		Strashi Thick Recentry	Mugger Fruck Receiving	Srain Shipping

ura Etiliciauzy			100	12	
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Uncantrical Fugitive Patric Englestums			100	8 Ub	750
läncoptusud Fugkive PM Noeloris (turscyr)	9.9				0.73
Uncantralitet Fugliko PS2.5 Emissiums				3 61 6	2.26
Uncontrollod Fuglijva Plant Emisolone (Winuyt)	11 85			F1 0	12.10
Uncontrolled Forgidee PA Entestans Autopri	Jear		4	66 R	12,03
Uncepturod Fugaloe PM2.5 Endustrum (Itulur)	159	200	707	-0.0	0.69
Uncaptword Fugdive PATO Endestorie (Ibdu)	3 TE	60	100		3.56
Micophieod Fayklue Pie Eudesions (Iluibit)	35 13	360			12,35
Bincostitucilar Fugative PM2.5 Espissioner Bibatut	165	018	22112	100	215
Uncentration Fouldive Plate Enclosed on Rules	14 H	0 18		1	1/21
lheantuallod R Fugative HM Emissions (B-hr	59.65	CZ 0	- <u>-</u>		61.70
Uncontrolited II PNDS Enhissio	95000	0 0 0058	N N N N		
Umcantrallud Putit Enisio Factor (Ihuton	9220-0	0.0009	3300		
Uncurintied PM Enission Follor (Iberton)	12010	1002	5003		
Ansual Throughput Linch (tona-yri	1150 (0)	302 (00)	100 JA		
Houdy Throwyhour (con/bi)	5a0	0.X			
Unit Description	Grain Receiving	DDGS Loadaut	DDBS Storyns Building		
Linkt U)	1001	1004	5002	Table	wate a

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Attachinging 8 Entities Catalones and Analogues Pikebatikeng fi Entities from the Grain Racebing and Manding Operations

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Attachment B: Emission Calculations VOC and HAP Emissions from the DDGS Handling Operations

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

1. VOC, HAP, SO2 Stack Test Results from POET Facilities

Test Results	Run 1	Run 2	Run 3	Average
	ib/hr	lb/hr	ib/hr	lb/hr
Total VOC	0.25	0.26	0.25	0.253
Acetaldehyde	0,025	0.042	0.031	0.033
Acrolein	0.031	0.029	0.029	0.030
Methanol	0.032	0.039	0.039	0.037
Formaldehyde	0.008	0.006	0.006	0.006

Tortal HAP

Total HAP

OCtest data from stack test at POET's Gowrie facility on November 9, 2017. HAP test data from stack test as POET's Coming
facility on October 25, 2017.

Process Rates =	Run 1	Run 2	Run 3	Average
	tonar	ton/hr	ton/hr	ton/hr
VOC Testing	104	104	104	104
HAP Testing	161	161	161	161

Marion Engineering Test - 07/12/2018 SV011 (00)	GS Storage Silo)
	7/10/2019
	ងណ
Hydrogen Sulfide	0.0046
Carbonyl Sulfide*	0,0026
Carbon Disulfide*	0.0031
Hazardous Air Pollutant	

2. Potential to Emit - Captured VOC Emissions Safety Factor for VOC Emissions:

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VOC Emissions - Uncontrolled

Stack Vent	Process Description	Hourty Throughput {tan/hr}	Annual Throughput (ton/year)	Uncontrolled VOC (ib/hr)	Uncontrolled VOC (ton/year)
SV011	DDGS Storage Silo #1	36.76	322,000	0.27	1.18
SV012	DDGS Silo Bypass #1	36.76	322,000	0.27	1.18
SV018	DDGS Loadout Conveyor and Railcar/Truck Loadout (EU033, EU035)	220.00	1,927,200	1.61	7.04
Total					939

VOC Emissions - Controlled

Stack Vent	Process Description	Hourly Throughput (ton/hr)	Annual Throughput {ton/year}	Uncontrolled VOC (lb/hr)	Uncontrolled VOC (ton/year)
SV011	DDGS Storage Silo #1	36.76	322,000	0.27	1.18
SV012	DDGS Silo 8ypass #1	36,76	322,000	0.27	1,18
SV018	DDGS Loadout Conveyor and Railcar/Truck Loadout (EU033, EU035)	220.00	1,927,200	1.61	7.04
Total					9.39

* Baghouse provides no control for VOC; therefore controlled emissions = uncontrolled emissions

Methodology Uncontrolled PTE (lbs/hr) = stack test result (lb/hr) / tested throughput (ton/hr) x proposed throughput (ton/hr) x safely factor Uncontrolled PTE (tons/yr) = Uncontrolled PTE (lb/hr) x 8760 hours/yr / 2000 lbs/hon Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr); baghouse provides no control for VOC or HAP emissions

3. Potential to Emit - Captured HAP Emissions Safety Factor for HAP Emissions:

HAP Emissions - Uncontrolled

Stack Vent	SVO	11	S	/012		SV018		
Process Description	DDGS Stora	ige Siło #1	DDGS Sil	o Bypass #1	DDGS Load Railcar/Truck Lo	out Conveyor and adout (EU033, EU035)		
Hourly Throughput (ton/hr)	37			37	-	220		
Annual Throughput (ton/year)	322,	000	322	2,000	1	927,200	Tol	al
Emissions	(ib/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(ib/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Acetaldehyde	0,02	0.10	0.02	0.10	0.13	0.59	0,18	0.78
Acrotein	0.02	0.09	0,02	0.09	0.12	0,53	0.16	0.71
Methanol	0.03	0.11	0.03	0.11	0.15	0.66	0.20	0.68
Formaldehyde	0.00	0.02	0.00	0.02	0.02	9.11	0.03	0.14
Carbonyl Sulfide	0.01	0.03	0.01	0.03			0.02	0.07
Carbon Disulfide	0,01	0.04	0.01	0.04			0,02	0.08
Total HAP	0.09	0.39	0.09	0,39	0.43	1.89	0,61	2.67

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Attachment B: Emission Calculations VOC and HAP Emissions from the DDGS Handling Operations

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

MAP Emissions - Controlled

Stack Vent	SVO	11	\$\	/012	1	SV018		
Process Description	DDGS Storz	ige Silo #1	DDGS Si	o Bypass #1	DDGS Load Railcan/Truck Lo	out Conveyor and adout (EU033, EU035)		
Hourly Throughput (ton/hr)	37	7		37]	220		
Annual Throughput (ton/year)	322,0	000	322	2,000	1 10	927.200	To	al
Emissions	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/vr)
Acetaldehyde	0.02	0.10	0.02	0.10	0.13	0.59	0.18	0,78
Acrolein	0.02	0.09	0.02	0,09	0.12	0.53	0.16	0.71
Methanol	0.03	0.11	0.03	0.11	0.15	0.66	0.20	0.88
Formaldehyde	0,00	0.02	0.00	0.02	0.02	0.11	0.03	0.14
Carbonyl Sulfide	0.01	0.03	0.01	0,03			0.02	0.07
Carbon Disulfide	0.01	0.04	0.01	0,04			0.02	0.08
Total HAP	0.09	0.39	0.09	0.39	0,43	1,89	0,61	2.67

* Baghouse provides no control for HAP; therefore controlled emissions = uncontrolled emissions

HAP Emissions - Limited

Stack Vent	SVO	11	S\	/012		V018		
Process Description	DDGS Storz	ıge Silo #1	DDGS SI	o Bypass #1	DDGS Load Railcar/Truck Loa	out Conveyor and idout (EU033, EU035)		
Hourly Throughput (ton/hr)	37	7		37		220		
Annual Throughput (ton/year)	322,	000	322	000	3	22,000	Το	lai
Emissions	(lb/hr)	(ton/yr)	(lb/ħr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Acetaldehyde	0.02	0.10	0.02	0,10	0.13	0,10	0,18	0,29
Acrolein	0.02	0,09	0.02	0.09	0.12	0.09	0,16	0.27
Methanol	0.03	0.11	0.03	0.11	0,15	0.11	0,20	0.33
Formaldehyde	0.00	0.02	0.00	0.02	0.02	0.02	0.03	0.05
Carbonyl Sulfide	0.01	0.03	0.01	0.03			0.02	0.07
Carbon Disulfide	0.01	0.04	0.01	0.04	1		0.02	0.08
Total HAP	0.07	0.32	0.07	0.32	043	0.32	0.57	0.95

4. Potential to Emit - SO2

SO2 Emis	sions	Uncontrolled Pot	ential to Emit	Controlled P	plential to Emit	Limited	Potential to Emit
Stack Vent	Process Description	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year
SV011	ODGS Storage Silo #1	0.50	2.19	0.50	2.19	0,50	2.19
SV012	DDGS Silo Bypass #1	0,50	2.19	0.50	2,19	0.50	2.19

Baghouse provides no control for SO2; therefore controlled emissions = uncontrolled emissions SO2 emissions are assumed to be haif of the emission rate for the fluid bed

4. Potential to Emit - Fugitive Emissions

Stack Vent	Process Description	Annual Throughput (ton/vear)	VOC Emissions (ton/year)	Acetaldehyde Emissions (ton/year)	Acroelin Emissions (ton/year)	Methanol Emissions (top/year)	Formaldehyde Emissions (ton/year)	Total HAP Emissions (top/year)
F002	DDGS Loadout Spout (EU034, EU051)	322,000	1.18	0.10	0.09	0.11	0,02	0.32
F007	ODGS Storage Building	322.000	1.19	010	0.0	0.11	0.02	0.12

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Attachment B: Emission Calculations VOC and HAP Emissions From the Distillation and Fermentation Scrubber / RTO Bypass (Stack SV008)

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962

Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

1. Process Description: The RTO must occasionally be temporarily shut down for unscheduled maintenance or other operational reasons. In this event, the DDGS dryers will be shut down, however, the fermentation tanks and distillation systems will continue to be operated in normal mode. The emissions from these sources will be vented to the scrubber stack (RTO by-pass stack) SV008. The emissions will be controlled by the wet scrubber, CE008.

2. VOC and Acetaldehyde Stack Test Results from 2013 Stack Test

Test Results	Run 1	Run 2	Run 3	Average
	lb/hr	lb/hr	lb/hr	lb/hr
Total VOC	15.42	11.95	10.73	12.70
Acetaldehyde	2,200	1.720	1.200	1.71
Process Rate	Run 1	Run 2	Run 3	Average
	gpm	gpm	gpm	gpm
Beerfeed	855	855	855	855

HAP Stack Test Results from Scrubber from Alexandria Stack Test

Test Results	Run1	Run 2	Run 3	Average
	lb/hr	lb/hr	lb/hr	lb/hr
Total VOC	15.59	14.56	14.78	14,98
Acetaldehyde	3.60	3.33	3.41	3.45
Acrolein	0.16	0.16	0.17	0.16
Formaldehyde	0.01	0.01	0.01	0.01
Methanol	0.005	0.005	0.005	0.01
	· · · · · · · ·			

Process Rate	Run 1	Run 2	Run 3	Average
	gpm	gpm	gpm	gpm
Beerfeed	955.159	954.896	954.931	955

3. Potential to Emit (PTE) of VOC and HAP from the scrubber: Scrubber VOC

Scrubber HAP

OC Control Efficiency =	98,0%
AP Control Efficiency =	50.0%
Yearly operation limit =	500 hours
Beerfeed Rate =	72,000 gal/hr
VOC Safety Factor =	1.5
HAP Safety Factor =	2.0

		@ 500 hrs	@ 8760 h/s
PTE Before Control	Ib/hr	ton/yr	ton/yr
VOC	1336.84	334.21	5,855
Acetaldehyde	17.32	4.33	75.88
Formaldehyde	0.05	0.01	0.22
Methanol	0.03	0.01	0.11
Acrolein	0.82	0.21	3.60
Total Uncontrolled HAP	18.22	4.55	79.B0

		@ 500 hrs	@ 8760 hrs
PTE After Control (500 hrs)	lb/hr	ton/yr	ton/yr
voc	26.74	6,68	117.11
Acetaldehyde	8,66	2.17	37.94
Formaldehyde	0.03	0.01	0.11
Methanol	0.01	3,14E-03	0.06
Acrolein	0.41	0.10	1.80
Total Controlled HAP	9.11	2.28	39.90

Limited PTE	lb/hr	ton/yr	
voc	84.21	21.05	
Acetaldehyde	8.66	2.17	UPDATED PERMIT LIMIT
Formaldehyde*	0.5	0.13	
Methanol*	0,5	0.13	
Acrolein*	0.5	0.13	
Total Limited HAP	10.16	2,54	UPDATED PERMIT LIMIT

*The emission rates used to calculate limited PTE for formal dehyde, methanol, and acrolein are based on scaled stack test data plus an additional safety factor;

these emission rates are not limits in the current permit.

Methodology:

1

PTE Before Control (lb/hr) = PTE After Control (lb/hr) / 100% - Control Efficiency) PTE Before Control (ton/yr) = PTE Before Control x hours / 2,000 lbs PTE After Control (lbs/hr) = stack test result (lb/hr) / tested throughput (ton/hr) x proposed throughput (ton/hr) x safety factor

Limited PTE (lb/hr) = lb/hr emission rate in current permit or requested permit limit Limited (ton/yr) = Limited PTE (lb/hr) x 500 hours / 2,000 lbs

Atlachment B: Emission Calculations PM, PM10, NOx, SOx, VOC, CO and HAP Emissions From the RTO controlling the Fermenters, Distifiation System, and DDGS Dryers while Scrubber is bypassed

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

1. Process Description:

To rocess description: The Scrubber must occasionally be temporarily shut down for unscheduled maintenance or other operational reasons. In this event, the fermentation lanks and distillation systems will continue to be operated in normal mode. The emissions from these sources will bypass the scrubber (CE008) and will be controlled by the RTO only (CE009).

2. Potential to Emit (PTE) from fermentation, distillation and drivers;

RTO VOC Control Efficiency =	98,00%
RTO HAP Control Efficiency =	97.00%
RTO NOx Control Efficiency =	0.00%
RTO CO Control Efficiency =	0.00%
RTO PM Control Efficiency =	0,00%
RTO SO2 Control Efficiency =	0.00%
Proposed Beerfeed =	72,000 gph
Criteria Pollutant Safety Factor =	1.25
HAP Safety Factor =	1,5

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Natural Gas Combustion Each dryer has a 60 MMBlu/hr natural gas fired burner. The dryers do not have the capacity to combust any other fuel. The dryers are connected in series, therefore, all of the DDGS is processed by each erger. The RTO is equipped with five natural gas fired burners rated at 6 MMBtu/hr each for a total of 30 MMBTU/hr. The RTO is not equipped with burners to combust any other fuel.

Unit	Ra	ted Capacity
DDGS Dryer EU025	60	/MBTU/Hr
DDGS Dryer EU026	60 1	//MBTU/Hr
810	301	AMBTUAAr
KTO		
	Ém	ission Factor
Pollutant	En Ib/MMBTU	ission Factor Source
Pollutant SO2	Em 16/MMBTU 0.0006	ission Factor Source AP-42 Section 1.4

gpm 960

855

Test Results	Runi	Run 2	Run 3	Average
	lb/hr	lb/hr	lb/hr	lb/hr
CO	3,36	14.26	10.37	9,33
VOC	24.97	23.06	26.63	24.89
PM	11.75	10,56	13.99	12.10
Acetaldehyde*	0.23	0,23	0.23	0.23
Formaldehyde	0,09	0.08	0.11	0.09
Methanol	1.02	0.77	0.97	0.92
Acrolein	0.12	0.12	0.12	0.12
Total HAP	1,46	1.21	1.42	1,36
Branace Pate	0	Que 0		1

gpm 960

Beerfeed North Manchester Stack Test - 9/23/2013 Test Results Run 1 Run 2 Run 3 Average (b/hr 0,42 lb/hr 0,40 lb/br 8b/h Acetaldehyde* Process Rate 0.23 Run 3 0.54 Run1 Run 2 Average gpm nqp gpn gpm

855 Acetaldehyde results during the 2013 stack testing were higher than during 2017 stack testing; therefore, the 2013 results are used for potential-to-emit calculations. The total HAPs emission rates specified below represent the sum of 2017 formaldehyde, methanol, and acrotein results with 2013 acetaldehyde results.

gpm

960

gpm 960

855

	Uncontrolle	Uncontrolled Potential to Ernit		Controlled Potential to Emit		Limited Potential to Emit	
	lbs/hr	TPY	ibs/hr	TPY	lbs/hr	TPY	
VOC	1944.27	8515.91	38.89	170.32	39.49	172.97	
HAPs	98.67	432.17	2.96	12.97	2.60	11,39	
NOx	20.59	90,18	20.59	90.18	20,59	90.18	
co	14.58	63,85	14.58	63.85	27.71	121.37	
PM	18,91	82.81	18.91	82.81	26.64	116,68	
PM10	18.91	82.81	18.91	82.81	29.70	130,09	
PM2.5	18.91	82.81	18.91	82.81	28.40	124.39	
SO2	0.09	0.39	0.09	0,39	35.63	156.04	
Acetaldehyde	27.84	121.92	0.84	3,66	1.23	5.39	
Acrolein	7.50	32.85	0.23	0.99	1.00	4.38	
Methanol	57,50	251.85	1.73	7.56	1.75	7.67	
Formaldehyde	5,83	25.55	0.18	0.77	0.18	0.77	

Methodology:

Beerfeed

Methodology: PTE Before Control (Ib/hr) = PTE After Control (Ib/hr) / 100% - Control Efficiency) PTE Before Control (Ib/hr) = PTE Before Control x 8760 hours / 2,000 lbs PTE After Control (Ib/hr) = bit (bestrr) = stack test result (Ib/hr) / tested throughput (ton/hr) x proposed throughput (ton/hr) x safety factor Umited PTE (Ib/hr) = Ib/m emission rate in ourrent permit or requested permit limits Umited (ton/yr) = Limited PTE (Ib/hr) x 8760 hours / 2,000 lbs

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Attachment B: Emission Calculations PM, PM10, NOx, SOx, VOC, CO and HAP Emissions From the RTO controlling the Fermenters, Distillation System, and DDGS Dryers

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

1. Process Description:

Emission point SV009 includes the emissions from the fermentation system, the distillation system, and the DDGS dryers. The fermentation system and distillation system vent to a scrubber which then exhausts into the regenerative thermal oxidizer (RTO). The DDGS dryers vent directly to the RTO. The RTO exhausts through stack SV009. The RTO is scheduled to operate 8760 hr/yr, however by permit it is allowed to be by-passed up to 500 hr/yr.

2. Potential to Emit (PTE) from fermentation, distillation and dryers:

RTO VOC Control Efficiency =	98.00%
RTO HAP Control Efficiency =	97.00%
RTO NOx Control Efficiency =	0.00%
RTO CO Control Efficiency =	90,00%
RTO PM Control Efficiency* =	90.00%
RTO SO2 Control Efficiency =	0.00%
Proposed Beerfeed =	72,000 gph
Criteria Pollutant Safety Factor =	1.5
HAP Safety Factor =	2

*PM Control efficiency inludes remoal provided by the multiclones.

Natural Gas Combustion

Each dryer has a 60 MMBtu/hr natural gas fired burner. The dryers do not have the capacity to combust any other fuel. The dryers are connected in series, therefore, all of the DDGS is processed by each dryer.

The RTO is equipped with five natural gas fired burners rated at 6 MMBtu/hr each for a total of 30 MMBTU/hr. The RTO is not equipped with burners to combust any other fuel.

Unit	Rated	Capacity
DDGS Dryer EU025	60	MMBTU/Hr
DDGS Dryer EU026	60	MMBTU/Hr
RTO	30	MMBTU/Hr

	Emission Factor				
Pollutant	Ib/MMBTU	Source			
SO2	0.0006	AP-42 Section 1.4			
NOx	0.1373	AP-42 Section 1.4			

North Manchester Stack Test - 2/28/2017

Test Results	Run 1	Run 2	Run 3	Average
	lb/hr	lb/hr	lb/hr	lb/hr
co	12.37	13.09	14,74	13.40
VOC	8.77	10.77	10.93	10.16
PM	9.9	3.3	4.38	5.86
Acetaldehyde	0.24	0.25	0,25	0.25
Formaldehyde	0.06	0.07	0.06	0.06
Methanol	0.52	0.74	0.82	0.69
Acrolein	0.09	0.11	0.12	0.11
Total HAP	0.91	1.16	1.25	1,11
Process Rate	Run1	Run 2	Run 3	Average
	gpm	gpm	gpm	gpm
Beerfeed	960	960	960	960

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Attachment B: Emission Calculations PM, PM10, NOx, SOx, VOC, CO and HAP Emissions From the RTO controlling the Fermenters, Distillation System, and DDGS Dryers

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.:

North Manchester Stack Test - 2/28/2013

Test Results	Run 1	Run 2	Run 3	Run 4	Average
 A description 	lb/hr	lb/hr	b/hr.	lb/hr	lb/hr
Acetaldehyde*	0.27	0.37	0.23	0,46	0.33
Process Rate	Runt	Run 2	Run 3	Run 3	Average
	gpm	gpm	gpm	gpm	gpm
Beerfeed	855	855	855	855	855

*Acetaldehyde results during the 2013 stack testing were higher than during 2017 stack testing; therefore, the 2013 results are used for potential-to-emit calculations.

POET Marion E	Ingineering Test	- 04/22/2024 - 04/25/202	4 - SV009 (RTO)

	4/22/2024	4/25/2024	4/25/2024	4/25/2024	
	15:10 - 16:10	15:30-16:30	16:30-17:30	17:30-18:30	Average
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
SO2	19.2	26.3	24.8	24.7	23.8

POET Marion Engineering Test - 07/10/2018 - 7/11/2018 - SV009 (RTO)

	7/10/2018	7/11/2018	Average
	lb/hr	lb/hr	lb/hr
Hydrogen Sulfide	0.0158	0.0252	0.021
Carbonyl Sulfide*	0.0136	0.0177	0.016
Carbon Disulfide*	0,0181	0.0384	0.028

*Hazardous Air Pollutant

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The 2024 and 2018 engineering tests were completed with the processing aid online

	Uncontrolled	Potential to Emit	Controlled Po	tential to Emit	Limited Potenti	al to Emit	1
	lbs/hr	TPY	lbs/hr	TPY	lbs/hr	TPY	1
VOC	952.19	4170.58	19.04	83,41	39,49	172.97	PERMIT LIMIT
HAPs	105.81	463,43	3.17	13,90	2.60	11.39	JUPDATED PERMIT LIMIT
NOX	20.59	90,18	20.59	90.18	20.59	90.18	1
CO	251.25	1100.48	25.13	110.05	27.71	121.37	PERMIT LIMIT
PM	109.88	481.25	10.99	48.13	26,64	116.68	PERMIT LIMIT
PM10	109.88	481.25	10.99	48,13	29.70	130.09	PERMIT LIMIT
PM2.5	109.88	481.25	10.99	48.13	28.40	124.39	PERMIT LIMIT
SO2	35,63	156.04	35.63	156.04	35.63	156.04	1
Acetaldehyde	31.11	136.27	0,93	4.09	1.23	5.39	PERMIT LIMIT
Acrolein	8.89	38,93	0.27	1.17	1.00	4,38	PERMIT LIMIT
Methanol	57.78	253.07	1.73	7.59	1.75	7.67	PERMIT LIMIT
Formaldehyde	5.83	25,55	0.18	0.77	0,18	0,77	1
Carbonyl Sulfide	0.02	0.10	0.02	0.10	0.02	0.10	4
Carbon Disulfide	0.04	0.19	0.04	0.19	0.04	0.19	1

Methodology:

PTE Before Control (lb/hr) = PTE After Control (lb/hr) / 100% - Control Efficiency)

PTE Before Control (ton/yr) = PTE Before Control x 8760 hours / 2,000 ibs

PTE Afer Control (lbs/hr) = stack test result (lb/hr) / tested throughput (ton/hr) x proposed throughput (ton/hr) x safety factor

Limited PTE (lb/hr) = lb/hr emission rate in current permit and requested permit limits Limited (ton/yr) = Limited PTE (lb/hr) x 8760 hours / 2,000 lbs

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Attachment B: Emission Calculations HAP Combustion Emissions from the Dryers and RTO

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.:

Reviewer:

1. Process Description:

POET Biorefining - North Manchester operates two DDGS dryers. Each dryer is 60 MMBtw/hr and be fired on natural gas. There is no backup fuel. The dryer exhaust is directed to the RTO at all times the dryers are operating. The RTO has an estimated organic HAP control efficiency of 97%.

2. Potential to Emit (PTE) Combustion HAPs from the dryers:

	Emission Factor ¹	Potential to Emit Emissions (Uncontrolled)		Potential to E (Contr	mit Emissions rolled)
HAP Pollutant	(Ib/MMSCF)	(ib/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Benzene	2.10E-03	2.47E-04	1.08E-03	7.41E-06	3,25E-05
Formaldehyde	7.50E-02	8.82E-03	3.86E-02	2.65E-04	1.16E-03
Hexane	1,80	2.12E-01	0.93	6.35E-03	2,78E-02
Naphthalene	6.10E-04	7.18E-05	3.14E-04	2.15E-06	9.43E-06
Toluene	3.40E-03	4.00E-04	1.75E-03	1.20E-05	5.26E-05
Arsenic	2.00E-04	2.35E-05	1.03E-04	2.35E-05	1.03E-04
Beryllium	1.20E-05	1.41E-06	6.18E-06	1.41E-06	6.18E-06
Cadmium	1.10E-03	1.29E-04	5.67E-04	1.29E-04	5.67E-04
Chromium	1.40E-03	1.65E-04	7.21E-04	1.65E-04	7.21E-04
Cobalt	8.40E-05	9.88E-06	4,33E-05	9.88E-06	4.33E-05
Lead	5.00E-04	5.88E-05	2.58E-04	5.88E-05	2.58E-04
Manganese	3.80E-04	4.47E-05	1.96E-04	4.47E-05	1.96E-04
Mercury	2.60E-04	3.06E-05	1.34E-04	3.06E-05	1.34E-04
Nickel	2.10E-03	2.47E-04	1.08E-03	2.47E-04	1.08E-03
Selenium	2.40E-05	2.82E-06	1.24E-05	2.82E-06	1.24E-05
	· · · · · · · · · · · · · · · · · · ·	0.22	0.97	0.01	0.03

1 - Emission factor is from AP-42, 5th Edition, Section 1.4, 7/98

1. Process Description:

POET Biorefining - North Manchester operates an RTO to control emissions from the DDGS dryers. The RTO is equipped with five natural gas fired burners rated at 6 MMBtu/hr each for a total of 30 MMBTU/hr. The RTO burners are not equipped with burners to combust any fuel other than natural gas.

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Attachment B: Emission Calculations HAP Combustion Emissions from the Dryers and RTO

Company Name:	P
Address City IN Zip:	86
Significant Source Modification No.:	
Significant Permit Modification No.:	
- Reviewer:	

OET Biorefining - North Manchester, LLC 38 East 800 North, North Manchester, Indiana 46962

2. Potential to Emit (PTE) Combustion HAPs from the RTO:

	Emission Factor ¹	Potential to Emit Emi	ssions (Uncontrolled)	
HAP Pollutant	(Ib/MMSCF)	(lb/hr)	(ton/yr)	
Benzene	2.10E-03	6.18E-05	2.71E-04	
Formaldehyde	7.50E-02	2.21E-03	9,66E-03	
Hexane	1.80	5.29E-02	0.23	
Naphthalene	6.10E-04	1.79E-05	7.86E-05	
Toluene	3.40E-03	1.00E-04	4,38E-04	
Arsenic	2.00E-04	5.88E-06	2.58E-05	
Beryllium	1.20E-05	3.53E-07	1.55E-06	
Cadmium	1.10E-03	3.24E-05	1.42E-04	
Chromium	1.40E-03	4.12E-05	1.80E-04	
Cobait	8.40E-05	2,47E-06	1.08E-05	
Lead	5.00E-04	1.47E-05	6.44E-05	
Manganese	3.80E-04	1.12E-05	4.90E-05	
Mercury	2.60E-04	7.65E-06	3.35E-05	
Nickel	2.10E-03	6.18E-05	2.71E-04	
Selenium	2.40E-05	7.06E-07	3.09E-06	
		0.06	0.24	

1 - Emission factor is from AP-42, 5th Edition, Section 1.4, 7/98

3. Total Combustion HAPs from Dryers and RTO

	CAS	Potential to Emit Emis	sions (Uncontrolled)	Potential to Emit Emissions (Controlled)		
HAP Pollutant		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Benzene	71-43-2	3.09E-04	1.35E-03	6.92E-05	3.03E-04	
Formaldehyde	50-00-0	1.10E-02	4.83E-02	2.47E-03	1.08E-02	
Hexane	110-54-3	0.26	1.16	0.06	0.26	
Naphthalene	91-20-3	8.97E-05	3.93E-04	2.01E-05	8.80E-05	
Toluene	108-88-3	5.00E-04	2.19E-03	1.12E-04	4.91E-04	
Arsenic	7440-38-2	2.94E-05	1.29E-04	2.94E-05	1.29E-04	
Beryllium	7440-41-7	1.76E-06	7.73E-06	1.76E-06	7.73E-06	
Cadmium	7440-43-7	1.62E-04	7.09E-04	1.62E-04	7.09E-04	
Chromium	7440-47-3	2.06E-04	9.02E-04	2.06E-04	9.02E-04	
Cobait	7440-48-4	1.24E-05	5.41E-05	1.24E-05	5.41E-05	
Lead	NA	7.35E-05	3.22E-04	7.35E-05	3.22E-04	
Manganese	7439-96-5	5.59E-05	2.45E-04	5,59E-05	2.45E-04	
Mercury	7439-97-6	3.82E-05	1.67E-04	3.82E-05	1.67E-04	
Nickel	7440-02-0	3.09E-04	1.35E-03	3.09E-04	1.35E-03	
Selenium	7782-49-2	3.53E-06	1.55E-05	3.53E-06	1.55E-05	
		0.28	1.22	0.06	0.28	

Methodology

Potential Emission (Ibs/hr) = Throughput (MMBtu/hr) x Emission Factor (Ib/MMCF) x 1 MMCF/1,020 MMBtu Potential Emission (tons/yr) = Throughput (MMBtu/hr) x Emission Factor (Ib/MMCF) x 1 MMCF/1,020 MMBtu/2,000 Ib/ton x 8,760 hrs/yr

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Attachment B: Emission Calculations Centrifuges (EU024)

Company Name: Address City IN Zip: Significant Source Modification No.: Significant Permit Modification No. Reviewer;

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962

600 East 600 North, North Manchester, mulana 4650

Whole stillage is pumped to the centrifuges where the solids (wet cake) is separated from the liquid (thin stillage). A fraction of the residual VOC and HAP contained in the whole stillage is emitted from the centrifuges during the separation process.

Emission data from a performance test completed on April 18, 2017 for the centrifuge stacks at the POET plant in Mitchell, SD was used to calculate the potential to emit. The maximum performance test run result for each pollutant is increased linearly to correspond with the proposed centrifuge pocess rate and then a safety factor is added.

The centrifuges (EU024) are normally vented to the RTO. It has been determined that during RTO downtime, the centrifuges are not required to be controlled. During RTO downtime, emissions are vented to stack SV017. See TSD for 169-37113-00068.

POET - Mitchell Stack Test Results April 18, 2017

Test Results	Run 1	Run 2	Run 3	Average	Maximum
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
VOC	1.92	1.82	1.57	1,77	1.920
Formaldehyde	0.0020	0.0020	0.0020	0.002	0.002
Methanol	0.0040	0.0040	0.0040	0.004	0.004
Acetaldehyde	0.1620	0,1580	0.1230	0.148	0,162
Acrolein	0.0092	0.0105	0.0019	0.0072	0.011
Total HAP				0.1609	0,1785
Process rates associated w	ith above stack test results				_
Process Rates =	Run 1	Run 2	Run 3	Average	
	gpm	gpm	gpm	gpm	
Centrifuges 1-4	831.68	831.43	821.48	828.2]
Total				828.20	1

1,150 gallons liquid per minute through all centrifuges

69,000 gallons liquid per hour through all centrifuges

604,440,000 gallons liquid per year through all centrifuges

500 Limited RTO Bypass Condition hours per year

1.3 Safety Factor

	Uncontrolled	Emission Rate	Limited Emission Rate			
	lb/hr	tpy	lb/hr	tpy		
Total VOC	3,33	14.60	3,33	0.83		
Formaldehyde	0.003	0.015	0.003	0.001		
Methanol	0.007	0,030	0.007	0.002		
Acetaldehyde	0,281	1.232	0.281	0,070		
Acrolein	0.018	0.080	0.018	0.005		
Total HAP	0.31	1.36	0.31	0.08		

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Attachment B: Emission Calculations Wet Cake

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Wet cake production storage and loadout is a source of VOC and HAP emissions because the wet cake contains a small quantity of ethanol and HAPs. This source is not controlled. The emission factors for this process come from emissions testing at a similar facility. The operation of the dryers and DDGS cooler represent the "worst case" emission scenario and thus are presented in the potential to emit summary.

Wetcake is the grain solids from the whole stillage centrifuges, before being conveyed to the DDGS dryers. If it is not dried to produce DDGS, wetcake is stored on an outdoor pad located adjacent to the process building. Wetcake contains a small amount of residual VOC and HAP which are emitted during storage. Wetcake is loaded into trucks using a frontend loader. Since the wetcake has a high moisture content, wetcake loadout is not a source of particulate matter emissions.

Modified wetcake is being produced as local users may prefer the product over DDGS. DDGS is produced by the two dryers operating in series. Modified wet cake has been dried by only one dryer. It is drier than wet cake but not as dry as DDGS, and contains approximately 50% moisture.

The production of DDGS represent the "worst case" emission scenario as emissions from the dryers/TO and the fluid bed cooler are greater than partially dried wet cake. The worst case emissions are presented in the potential to emit summary.

Wet cake production, storage and loadout is a source of VOC and HAP emissions because the wet cake contains a small quantity of ethanol and HAPs. This source is not controlled. The emission factors for this process were based on a wet cake analysis completed in April 2015. All VOC and HAP in the wet cake are assumed to be emitted. This operating scenario will be limited based on production per calendar year. Wetcake will be produced when the dryers are off-line. Based on customer demand, a portion of the distillers grains production may be diverted from the dryers to the wetcake pad for off-site sale. Therefore, wetcake may be stored on the wetcake pad at the same time that the dryers and DDGS cooler are operating at full or partial capacity.

Given:

Capacity = 78 tons/hr maximum wetcake production rate 683,280 tons/yr

1. Emission Factors

VOC	0.008300 lb/ton of wet cake produced
Acetaldehyde	0.000100 lb/ton of wet cake produced
Methanol	0.000040 lb/ton of wet cake produced
Formaldehyde	0.000200 lb/ton of wet cake produced
Acrolein	0.000020 lb/ton of wet cake produced

2. Potential to Emit

Pollutant	lb/hr	Ton/yr
VOC	0.6474	2.8356
Acetaldehyde	0.0078	0.0342
Methanol	0.0031	0.0137
Formaldehyde	0.0156	0.0683
Acrolein	0.0016	0.0068

Data Source
DENCO 2004 Test

Attachment B: Emission Calculations PMPM10/PM2.5 and VOC Errissions • From the DDGS Cooler (EU029)

Company Name: POET Blocefining - North Manchester, LLC Address City. Nr Zip: 868 East 800 North, North Manchester, Indiana 4962 Significant Permit Modification No.: Reviewer :

1. Potential to Emit PM/PM 10/PM2.5:

		_
PTE of (200 [**] (***)	tonAr	0.08
Limited PM ₂ hrs/y1)	14/QI	0.82
PTE of hrs/yr) m	ton/vr	6.03
Limited PM ₁₀ (20) (") {	ib/hr	0.82
PTE of hriyn) m	Ionyr	90.0
Làmited PM (200 C) (th/hr	0.82
' PM2A Control	tonyr	357.41
PTE of befare (10/01	81.60
of PM ₁₀ e Cantrol	ton/yr	357.41
PTE befor	lb/hr	B1.60
of PM Control	tonlyr	357.41
PTE before	lb/hr	81.60
Contral Efficiency (%)	<u>%</u>	1665
l ₂₅ after ol	ton/yr	3.57
PTE of PN Cantr	ID/N	0.82
A ₁₀ after ol ⁵	tonlyr	3.57
PTE of Ph Contr	thing	0.82
ter Control *	tonAr	3.57
PTE of PM af	ibihr	0.82
Flow (scfm)	-	800
Alr Rate		23
Outlet Grain Loading (gridsef		0.004
Control Davic a		Baghouse CE010
Process Description		DDGS Cooler
Baghouse ID	1	CE010

Assume all PM emissions equal PM₁₀ emissions

** Assume controlled PM_{1,9} emissions equal -PMPPM₀ emissions *** Alarmete Operating Scenario: PM emissions are exhausted as controlled and VOC/HaP emissions are exhausted as uncontrolled through the DDGS Cooler beginetee stack.

Methodology PTE dire Contral (tashr) = Outlei Grain Loading (gritach) x Max. Air Flow Pale tachn) x 60 minshir x 1/7000 lbigr PTE dire Contral (tashry) = Outlei Grain Loading (gritach x Max. Air Flow Fale (actim) x 60 minshir x 1/7000 lbigr x 200 htyr x 1 tarp200 bas PTE dire Contral (tantary) = PTE of dire Contral (tansyn) / (ti-Contral Efficiency)

ars of Operation= 8760 trisyear 1.5 1.5 1.5 1.5 1.5 2.5 afery Factor = 2 2.5 Safery Factor = 2	°otential to Emit VDC: poxed Beerfeed ≃	1,200 GPM
° \$alety Factor = 2	urs of Operation= C Safety Factor =	8760 trrs/year 1.5
	P Salety Factor =	2

			~ ~	
I ESC KESUICS	רמשא		2 UNA	Average
	lb/hr	ht/di	D/hr	lb/hr
200	1.74	1.85	1.24	1.61
Acelaidehyde	0.16	41.0	0.13	0.15
Process Rale	Runt	t una	Run 3	Average
	dpm	Шdb	udë	udb
Bearfaed	995	855	855	855
	Groton Stack	< Test - 6/26/2003		
Test Results	Run 1	Ran 2	Run 3	AVerane

									_		
										Average	lb/hr
	Average	la/hr	0.05	20.0	10.0	Average	Шdб	580	(pe	4/24/2024	lb/hr
	Run 3	ib/hr	0.05	0.02	0.01	Run 3	gpm	580	24 - SV010 (Fluid B	4/23/2024	1b/hr
(Test - 6/26/2003	Run 2	Juj/qt	0.06	20'0	10:0	Run 2	Шdb	580	04/23/2024 04/24/20	4/23/2024	iD/Uc
Groton Stack	Run 1	D/hr	0.05	0,02	0.01	Run1	gpm	580	Marion Engineering Test -	4/22/2024	bûr
	Test Results		Methanol	Acrolein	Form aldehyda	Process Rate		Beerfeed			

				PERMIT LIMIT			
	indial to Emit	Yett	4.38	24.90			
0.23	Limited Pote	ib/hr	1.00	5.69			-
0.055	tial to Emit	ЪY	3,69	14.85	1.69	16'0	
0.052	Controlled Poten	lb/hr	0.84	3.39	0.43	0.22	
0.26	ial to Endt	사태	3,68	14.85	1.89	46'0	
0.56	Uncontrolled Potent	10/UI	0.84	3.39	0.43	0.22	
S02			\$02	VOC	Acetaldehyde	Methanol	

Acetaldehyde	0.43	1.89	0.43	1.69	
Methanol	0.22	46'0	0.22	16.0	
Acroietn*	0.08	0.36	80.0	0.36	
Formaldehyde'	0.04	D,18	0.04	0.18	
Carbonyl Sulfide	0.02	70.0	0.02	0.07	
Carbon Disulfide	0.02	0.08	0.02	0.08	
Tolat HAPs	0.78	3.40	0.78	3.40	
The emission rates	used to calculate limited PTE f	or formaldehyde an	d acrolein are based	on scaled stac	k lest data plus an additio
Sulfar LaDe are are	umed to be fields the amierian	rate of the DDGC 5	No Bachavon		

onal safety factor; these emission rates are not limits in the current permit. Sufur HAPs are assumed to be twice the emission rate of the DDGS Silo Baghouse SO2 is calculated based on maximum engineering test result and a 1.5 safety factor. Limited PTE of 1.00 lb/hr adds additional burfer.

Nethradolegy: The Balove Control (MM) = PTE Aller Control (takin) PTE Balove Control (tarkyn) = PTE Aller Control (takin) PTE Aller Control (tarkyn) = Attack (tasi result (takin) / Jastad throughpul (tanihn) x proposed throughpul (tanihn) x safaty factor PTE Aler Control (tasin) = attack tasi result (takin) / Jastad throughpul (tanihn) x proposed throughpul (tanihn) x safaty factor Limiked PTE (takin) = lakin eautistoin rate in current parmit and requested permit fimits Limiked (torkyn) = Limiked PTE (takin) x 6/50 hours /2,000 bs

Attachment B: Emission Catculations VOC Emission Calculations - EthanoVESS Load-out Racks (EU03S) and Flare (CE015)

Company Name: POET Blorefining-North Manchastar, LLC Address City, N. Zip: 863 East 800 North, North Manchester, Indiana, 48962 Significant Seurce Modification No.: Significant Permit Modification No.: Reviewer:

Emission Factors: AP-42, Section 5.2, June 2008

Denatured almanol (95% to 95% almono) and ESS (70% to 85% almanol) will be shipped by almon funct loading rack or raiker loading rack. Raikers will be dedicated fleets, but the uncks may be used to carry gasoline prior filling with attenue). Both alkers and trucks will be filled by states and trucks and be and and states and trucks and be and and states and trucks and be associated by a state (2501%), which has a control afficiency of 95% for VOC and HAPS. The calculations on this page do not differential euroheadured attrand loadout from denatured elitarely leadout, benatives at the and truck and has a control afficiency of 95% for VOC and HAPS. The calculations of the page do not differential euroheadured ethanol (sector). Eventatived ethanol (sector) were attracted to a state of a denatured attrack and these calculations conservatively assume that all defined balanced.

According to AP-42. Chepter 6.2 - Transportation and Markating of Petroleum Liquids (06/08), the VOC emission factors for the fruck and rail loading racks can be estimated from the following equation:

L= 1246x(SxPxM)/T

w/tere;

L = toading toss (toeKgal) 5 = 4 suturgion Etocr, Fact, Teble 5.2-1) P = thu very prosenur of the liquid loaded goals) based on TANKS 4.0.3d from December 2016 for Forte Wayne, IN M = motecular veight of vapors T = temperature of the burk tiquid loaded (degree R)

Previous Stored Liquid	ស្	P (psla)	M (ibs/mole ibs)	T (degree R)	1. (bs/koaf)
Gasoline (dedicated vapor balance)	0'1	5,58	66.00	516	8.83
Gasoline (clean cargo)	0.5	5,58	66.00	516	4,44
E-85 Ethanol (dedicated normal)	0.6	2.16	56.02	516	175
E-85 Ethanol (clean cargo)	0.5	2.16	55.02	516	1.46
Denatured Ethanol (dedicated normal)	0.6	95.0	49,34	616	0,68
Denatured Ethanol (clean cargo)	0.5	0.95	49.34	516	0.57
Undenatured Ethanol (dedicated normal)	0.6	0.75	46.07	516	0.60
Undenstured Ethanol (clean cargo)	0.6	0.75	46.07	516	0.42
Denaturar	nt Content				
Denalured Ethanoi =	%9	Denaturant			
E85 ×	30%	Denaturant			
Undenatured Ethanof =	50%	Denaturant	1		

Denaturan	nt Content		
nalured Ethanoi =	5.6	Denaturant	
5 ×	30%	Denaturant	
idenstured Ethanof =	0%	Denalurant	

elon Saclace o line ŝ

					-
The emission factor for loading denatured sthenoi to reli which previously contained denatured ethenol	a L (Denatured sthanot, normai). ≂	the emission factor for loading E-65 to rail which previously contained denatured ethanol or E-85	≍ L (Denatured ethanot, normei) ≚	the emission factor for loading undenatured ethanol to rail which praviously contained denatured ethanol	≂ L (gènektrèsé éthanol, deditated vabor balance) + Lidenaturad athanis, rialaon sansist + Lisodanateres atheord. Viaso Aaroo) =

<u>1188/1981)</u> 0.68 1.75

> Denatured Ethanol to Rail E-85 to Raj

Undenatured Ethanol to Truck	= Ligasolitre, ovolteded väpör balance) - Ligasome, dean cargo) + Litatdenaturas ethanol, ciean cargo) ∞
	The emission factor for loading undenatured elhanoi to Irucks which stored gasoiine previously
E-85 to Truck	‴ L (gasoline, dedicated vapor balance) - L (gasoline, clean cargo) + L (E-85. clean cargo) ≕
	The emission factor for loading E-85 to frucks which stored gasoline prevlously.
Danatured Ethanot to Truck	∞ L (gasoline, dedicated vapor balance) - L (gasoline, clean cargo) + L (denalured ethanol, clean cargo) =
	The emission factor for loading denetured eliterroi to inucks which stored gasoline previously
Undenstured Ethanol lo Rail	z L (drinklund stharo), aediceted vapor balarce) - L (denatured ethanu), clean cargo) + L (undanatored ethano), clean cargo) =
	The emission factor for loading undenaitived ethanol to rail which previously contained denatured ethano?

09.0	5.01	5.30	
Undenatured Ethanol lo Rail	Danatured Ethanot to Truck	E-85 to Truck	
an cargo)=			

5.90	
E-85 to Truck	

4,86 Undenstured Ethanol to Truck

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Worst case scenario ¤ Límited Emissions ≖	All E65 loaded out via truck: All E85 loaded out via Rail;	Ail undenatured ethanol loaded out via truck Ail undenatured ethanol loaded out via rail	All denaturad ethanol loaded out via truck: All denaturad ethanol loaded out via rall:		3. Limited Annual Potential to Emit:	Emissions Uncontrolled (b/hr) = Throughput (K Emissions Controlled (b/hr) = Emissions Unco	Worst case scenario =	285 loaded out via rail:	E85 loaded out via truck;	Undenalured ethanol loaded out via rail:	Undenslured ethanol loaded out via truck;	Denatured Ethanol loaded out via rait:	Denalured Ethanol loaded out via truck:			2. Hourly Potential to Emit (Annual Unlimit	Elhanoi an	Denatured and Undenatured Eth	1. Throughputs:		
124,324	12,432 12,432	111.692 111,892	111,892 111,892	Limited" Throughput kgal/yr	:	gel/hr) x Emtssion Fe htrolled (lb/hr) x (1 - (144 5,834,160	78	144	78	144	78	Kgal/m	Capacity	Maximum	nd E85 Combined	anol (anticipated) 5-85 (anticipated)	Pail Combined (Milds	y Significant Sour Significant Pem	£
	5.90 1.75	4,86 0.50	5.01 0.68	Emission Factor Ibs/kgai	Uncentrolled	ictor (Ib/kgal) Control Efficiency)		1.75	5,90	0.50	4.86	0.58	5.01	lb/kgał	Factor	Uncontrolied	124.32	111.89 12.43		Company Name: Address City IN Zip: ce Medification No.: nit Modification No.: Reviewer:	OC Smission Calcula
317.36 7.34	36.71 10.89	271.97 27.95	280.45 38.14	Emissions Uncontrolled Ion/yr	Limited		712.87	252.29	460.58	71.95	379.18	98.16	391.01	1b/hr	Cincontrolled	Emirel one				PORT Blorestining - No 868 East 800 North, N	Attachment B: Emissi lons - Ethanol/E85 Loa
	%86 %86	98% 98%	%86 %86	Control Efficiency	•		3122.35	1105,01	2017.34	315.14	1660.80	429.93	1712.52	lonýr	Uncontrolled	Fraincious	124,324,324	Truck (ga//hr) 78,990		rtti Manchester, LLC orth Manchester, Ind	on Calculations d-out Racks (EV036)
1,69	0,118 0,035	0.097 0.010	0.100 0.014	Emission Factor Ibs/kgal	Controlled			98%	88%	%86	98%	36.85	38%	8	Efficiency	Tested	124,324	Reil (gal/hr) 144,000	al Southing Com	lana 46967	and Flare (CE01
			i				14.26	5.05	9.21	1,44	7.58	1.96	7.82	b/hr	Cantrolied	Carlosson		<u>Telel (MMgei/yr)</u> 1.945			15)
							52.45	22,10	40.35	6.30	33.22	9.60	34.25	lon/yr	Controlled	English					

Worst case scenario :
 United Emissions = 124.334
 Influed Emissions = 124.334
 Total throughput is limited in order for HAP emission to be less than major source levels.
 Emissions Uncontrolled (ton/yr) = Throughput (tggd/yr) £ Emission for Controlled (ton/yr) = Emissions Uncontrolled (ton/yr) = Emissions (ton/yr) = Emis

98%

Flare Control Efficiency =

Attachment B. Ernission Calculations VOC Emission Calculations - Ethanolle83 Load-out Racks (EU036) and Flare (CE015)

Company Name: POET Bloceflaing - Nocth Manchester, LLC Address City, Nr Zip: 868 East 800 North, North Manchester, Indiana 4595 Significant Source Modification No.: Reviewer: Reviewer:

4. Potential to Emit HAPs:

₽¥A	Gasallae HAP Fraction'	Denaturaat HAP Fractious ²	Undenatured Ethanol HAP Fraction ³	Denatured Ethanei to Raii	Undenatured Ethanol to Rail	E85 to Rail	Denatured Ethanol to Truck	Uadenatured Ethanol to Truck	₩85 ta Truck
				Jb/kgal	ib/kgal	lb/kga!	lb/kqaf	Ib/Kgal	lb/koal
Acetaldehyde	0.005+00	0.00E+00	4.008-04	2.596-04	2.10E-04	4,91E-04	2.166-04	1.67E-04	4.09E-04
Benzene	2.30E-02	2.20E-03	0.00E+00	7.50E-05	1.266-06	1.165-03	T 1.02E-01	1.02E-01	1.036-01
Cumene	1.00E-02	D.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.44E-02	4.44E-02	4.44E-02
Eitylbenzene	2.005-02	0.00E+00	00+300,0	0.00E+00	0.0000400	0.00E+00	8,896-02	8.89E-02	3.89E-02
Hexane	7.00E-02	2.74E-01	0.00E+00	9.34E-03	1.56E-03	1,44E-01	3.19E-01	3.11E-01	4.31E-01
Melhanof	0.00E+00	0.00E+00	2.00E-04	1.30E-04	1.05E-04	2.45E-04	1.08E-04	B.33E-05	2.04E-04
Toluene	1.50E-01	0.0015+00	0.00E+00	0.0013400	0.00E+00	0.000+00	6.67E-01	6.67E-01	6.67E-01
Xylenes	1,506-01	0.00E+00	0.00E+00	0.00E+00	0.00 0.00	0.00E+00	5.67E-01	6.67E-01	6.67E-01
Total	0.42	0.28	0.00	0.01	0.00	0.15	1.85	1.88	2.00
is is the highest HAP percentage for gast sed on the average weight fraction of the sumed weight fraction in 200 proof ethan	oline vapors as par th denalurant used al l id, based on lesting	te Flint Hills gasoline SDS fite plant (Markwest 2016 4 sone by POET in Feb and	, issue dale of 12-03-2014 data) March 2016.	 Assumed Iruck (an) 	ker hauled gasoline	s for prior load.			

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Attachment B: Emission Calculations VOC Emission Calculations - Ethanoves Laad-out Racks (EU036) and Flare (CE015)

Company Name: POET Blorefining - North Manchester, LLC Address City /M Zip: 568 East 580 North, North Manchester, Indiana 45952 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

			_			_	_	_	_	_			After	E.T.	306	Land Land
	Uniimited PTE Before Control	ton/year	0.45	35.99	15.19	30.37	238.13	0.22	227.78	227.78	775,91		Unitmited FTE After	Centrol	ton/year	0.000
	Worst Case Total	hihr	B,10	B.22	3,47	6,93	64.37	0.05	52.01	52.01	177.15		Worst Case	1 DIGI	là/hr	0 00
	E85 to Truck	shift	0.03	8.05	3.47	6'93	33,63	0.02	52.01	52.01	156.14		E85 to Truck		lb/hr	000
	Undenatured Ethano! to Track	lb/hr	10,0	7.97	3.47	6.93	24.27	0.01	52.01	52.01	146,67		Undenatured Ethanol to	Truck	14/41)	0.00
9	Denatured Ethanol to Truck	ibihr	0.02	7.98	3.47	E,93	24.88	0.01	52.01	52.01	147.29		Denatured Ethanol	TO JUJCK	lb/hr	000
to Emit Before Contro	E\$5 to Rail	îb/îhr	2010	0.17	0.0	00'0	20.74	D.04	0.0	0,00	21.01	I to Emit After Contro	E85 to Rall		là/hr	0.00
Hously Potential	Undenatured Ethanol to Rail	lb/hr	0.03	0.00	0,00	0.00	0.22	0.02	0.00	000	0.27	Hourly Potentia	Undenatured Ethanol to	KAII	lb/hr	000
	Denatured Ethanol to Rail	lb/hr	0.04	0.01	0.00	0.00	1.34	0.02	0.00	00.0	1.41		Denatured	Ethanol (0 Kal)	lb/hr	000
	НАР		Acetaidehyde	Sanzena	Nimene	thylbenzene	Hexane	dethanol	foluene	(yienes	Total			HAP		tealaidahyde

		HOUNTY FOTER12	I SO EMILAROL CONTROL							
Чч	Denatured Ethanol to Rajj	Undenatured Ethanol to Rail	E85 to Rall	Denatured Ethanol to Truck	Undenatured Ethanol to Truck	E85 to Truck	Worst Case Totai	Unitmited FTE After Control	After Control Emission Factor	Permit Limits
	lb/hr	lb/ħr	là/hr	lb/hr	14/41	lb/hr	b/hr	ton/year	1b/kqat	lb/kgal
Acelaidehyde	00.0	0.00	0,00	00'à	0.00	0,00	00.0	0.009	0.0000	STATISTICS AND A DESCRIPTION OF
Benzone	00.0	00'0	00'0	0.16	0.16	0.16	0.16	0.720	0.0021	0.04
Cumene	0.00	0.00	0.00	0.07	0.07	0.07	40'0	0.304	0.000	0.00 0.04 0.000
E(hylbenzene	0,00	0,00	0.00	0.14	0.14	0.14	0.14	0.607	8109.9	0.04
Нехале	0.03	0.00	0.41	0'20	0.43	0.67	1.09	4.763	0.0086	0.04
Melhanoi	0:00	0.00	0.00	0.0	0.00	00'0	00.0	0.004	0.000	
Toluene	0.00	00.0	00'0	1.04	1.04	1.04	1.04	4.556	0.0133	0.04
Xylanes Xylanes	0'00	0.00	0.00	1,04	1.04	1.04	1.04	4.556	0.0133	0.04
Yolal	0.03	0.01	0.42	2.95	2.93	3.12	3,54	15.518	0.0400	0,04
		i imited Anni	usi Borantial to Emit							

Ч. Ч.	Denatured Ethanol to Rail	Undenaturad Ethanol to Rail	E85 to Rail	Denatured Ethand to Truck	Undenatured Ethanoi to Truck	E85 to Truck	Limited Potential to Emit After Control	Limited PT based on perrat limi
*******	tartyr	toralyr	taniyr	tentyr	tenlyr	toniyr	tonlyr	tontyr
tetaldehyde	0,000	0,00	0,00	00.00	0.00	00.00	0.00	COCC000
Izene	0.000	0.00	0.00	0.11	0.11	0.01	0.13	2.49
imene	0.000	0.00	00.0	0.05	0.05	0.01	0.06	2.49
trylbenzene	000'0	0.00	0,0	0.10	0.10	10'0	0,11	2,49
axane	0.010	0.00	0.02	96,0	0.35	0,05	0.41	2.49
ethanol	0.000	00.00	0.00	0.00	0.00	00'0	00.0	00'0
siuene	0.000	0.00	00'0	0.75	0,75	90.0	0.83	2.49
lenes	0.000	00.0	00'0	0.75	0.75	80.0	0,83	2,49
Total	10,0	00'D	0,02	2.11	2.10	0.25	2.36	2.49

Methodology HAP emissions are based on vorst-case emission scenario. HAP emissions are based on vorst-case emission scenario. HAP emissions are based on content of HAP in product (dendurent, gasoline, or ethano), content of a farmation or undendured ethanol, and VOC emission factor calculations above FTE of HAP before control (hap) = Vincentrolled HAP Emission Except (Hasy) / 2,000 (pation) FTE of HAP before control (hap) = Vincent case of the factor (hap) / 2,000 (pation) FTE of HAP before control (hap) = PTE of HAP before control (hab) x 0,500 (hashor) FTE of HAP before control (hap) = Vincent case of HAP efficiency) FTE of HAP before control (hap) = Vincent case of HAP efficiency / 2,000 (habion) FTE of HAP before control (hap) = Vincent case of HAP efficiency / 1,000 (habion) FTE of HAP before control (hap) = Vincent case of HAP efficiency / 1,000 (habion) / 2,000 (tahon) Limit of FTE of HAP before control (habit) = Uncontrolled HAP Emission Factor (labitga) x (hroughput (AM)gal/y) x (r.control Emclenccy) x 1,000 (KgaMMAgal) / 2,000 (tahon) Limit of FTE of HAP before control (habit) = Uncontrolled HAP Emission Factor (labitga) x (hroughput (AM)gal/y) x (r.control Emclency) x 1,000 (KgaMMAgal) / 2,000 (tahon) Limit of FTE of HAP before control (habit) = Uncontrolled HAP Emission Factor (labitga) x (hroughput (AM)gal/y) x (r.control Emclency) x 1,000 (KgaMMAgal) / 2,000 (tahon)

Flare Emissions from Combustion of VO from the Ethanol Loading Rack

Max Hourty Rate (Truck + Rail) kgal/hr 222.0

Pollutant NOx⁴ 0.0334 32.48 2.08 CO⁻⁻⁻ CO⁻⁻⁻ 19.65 91.68 5.22 Emission Factor (brkga) Potential to Emil in Itskin UNRES TRICTED Potential Io Emil (TPY) LIIM TED Potential Io Emil (TPY)

Emission factors for NO, and CO are based on the information provided by the flare manufacturer (John Zink Company). For CO and NO×, unrestricted PTE is equal to the controlled PTE, as these poliutants are generated at the flare, PMS, PMS, and CO, emission factors are negligible due to the smokeless design and minimal H₁S levels in the hel. Polential emissions from natural gas for the pilot flame are estimated to the flate, and CO, emission factors are negligible due to the smokeless design and minimal H₁S levels in the hel. Polential emissions from natural gas for the pilot flame are estimated or the following page. VOC emission calculations can be found above in isoading rack calculations.

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Attachment B: Emission Calculations Flare Pilot Flame - Natural Gas Combustion < 100 MMBtu/hr

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Max. Heat Input Capacity	Potential Throughput
MMBtu/hr	MMCF/yr
0.054	0.4638

				Pollutant			
	PM*	PM ₁₀ *	PM _{2.5} *	SO ₂	NO _x **	VOC	co
Emission Factor in Ib/MMCF	1.9	7.6	7.6	0.6	100	5.5	84
Potential Emission in tons/yr	4.41E-04	1.76E-03	1.76E-03	1.39E-04	2.32E-02	1.28E-03	1.95E-02

*PM emission factor is filterable PM only. PM 10 emission factor is condensable and filterable PM 10 combined. PM 2.5 emission factor is equal to PM 10.

**The Emission Factor for NOx is from AP-42 Chapter 1 Table 1-4.1 for natural gas combustion for uncontrolled emissions from small boilers rated less than 100 MMBtu/hr.

Methodology

All emission factors are based on normal firing. MMBtu = 1,000,000 Btu MMCF = 1,000,000 Cubic Feet of Gas Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAP emissions calculations			HAPs - Organics		
	Benzene	Dichlorobenzene	Formaldehyde	Нехапе	Toluene
Emission Factor in Ib/MMcf	2.1E-03	1.2E-03	7.5E-02	1.80	3.4E-03
Potential Emission in tons/yr	4.87E-07	2.78E-07	1.74E-05	4.17E-04	7.88E-07

			HAPs - Metals			Total
	Lead	Cadmium	Chromium	Manganese	Nickel	HAP
Emission Factor in Ib/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.16E-07	2.55E-07	3.25E-07	8.81E-08	4.87E-07	4.38E-04

Methodology is the same as above

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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Attachment B: Emission Calculations Boilers - Natural Gas Combustion > 100 MMBtu/hr

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962

Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Combined Heat Individual Heat Input Capacity for Boiler Potential Particulate Emission Limitations for Sources of Indirect Heating: Input Capacity #1 & Boiler #2 Throughput Emission Limitations for facilities specified in 326 IAC 6-2-1(d) for Boiler #1 & MMCF/yr Pt = 1.09 / Q 0.26 MMBtu/hr MMBtu/hr 0.25 lb/MMBtu -143 286 2,456

				Pollutant			
	PM*	PM10*	PM _{2.5} *	SO ₂	NO _x **	VOC	CO***
Emission Factor in Ib/MMCF (AP-42)	1.9	7.6	7.6	0.6		5.5	
Emission Factor in Ib/MMCF (test data)					30		20
Potential Emission in tons/yr	2.33	9,33	9.33	0.74	36.84	6.75	24.56

*PM emission factor is filterable PM only. PM₁₀ emission factor is condensable and filterable PM₁₀ combined. PM₂₅ emission factor is condensable and filterable PM₂₅ combined.

**The Emission Factor for NOx from AP-42 Chapter 1 Table 1-4.1 (for natural gas combustion for low NOx burners) is 140 lb/MMCF. The source used manufacturer's certified emission factors for the low NOx burners in a previous FESOP permit. The manufacturer's emission factors are less than the AP-42 values (30 lb of NOx/MMCF) and have been verified by performance testing.

***The Emission Factor for CO is 84 from AP-42 Chapter 1 Table 1-4.1 for natural gas combustion. The source used manufacturer's certified emission factors in a previous FESOP permit. The manufacturer's emission factors are less than the AP-42 values (20 lb of CO/MMCF) and have been verified by performance testing.

Methodology

All emission factors are based on normal firing. MMBtu = 1,000,000 Btu MMCF = 1,000,000 Cubic Feet of Gas Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (tb/MMCF)/2,000 lb/ton

HAP emissions calculations			HAPs - Organics		
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in Ib/MMcf	2.1E-03	1.2E-03	7.5E-02	1.80	3,4E-03
Potential Emission in tons/yr	2.58E-03	1.47E-03	9.21E-02	2.21	4.18E-03

			HAPs - Metals			Total
	Lead	Cadmium	Chromium	Manganese	Nickel	HAP
Emission Factor in Ib/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	6.14E-04	1.35E-03	1.72E-03	4.67E-04	2.58E-03	2.32

Methodology is the same as above

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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Attachment B: Emission Calculations VOC Emission Calculations - Storage Tanks and Centrifuges

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Emissions were calculated using the TANKS 4.0 Program.

		VOC Emission Calcu	llations - Stora	age Tanks T00	01 - T005, T009]	
		T		Avg.			Emissions			
Tank	Contonto 1	Annual	Capacity	Capacity	No. of Turn				1	
TOO1	Contents	Inroughput (gai)	(gai)	(gal/min)	Overs	lb/year	lb/hr	Ton/year	4	
T001	190 Proof Ethanol	115,000,000	250,000	219	460.0	878.68	0.10	0.44		
1002	Denaturant	6,184,879	250,000	12	24.7	1,981	0.23	0.99		
1003	200-Proof Ethanol	115,000,000	2,000,000	219	57.5	532.09	0.06	0.27		
1004	200-Proof Ethanol	115,000,000	2,000,000	219	57.5	532.09	0.06	0.27	1	
1005	Denaturant	3,139,445	126,900	6	24.7	1,912	0.22	0.96		
T009	Gasoline	2,200	265	0.00	8.3	345	0.04	0.17		
	Tota					6,181	0.71	3.09		
190-Proof Ethanol is Denaturant is 100% g 200-Proof Ethanol is	100% ethyl alcohol in TANKS c asoline (RVP 15) in TANKS ca 100% ethyl alcohol in TANKS c	alculations. Iculations. alculations. Total am	ount meeting d	efinition of "ga	soline" under 40) CFR 63.11100:	. 0	gal/day		
	······	HAP Emis	sion Calculati	ons - Storage	- Tanks T001 - 1	F005, T009		·····		
						Emissions				
		Acetaldehyde	Benzene	Cumene	Ethylbenzene	Hexane	Methanol	Toluene	Xylenes	Total HAP
Tank	Contents	ton/year	ton/year	ton/year	ton/year	ton/year	ton/year	ton/year	ton/year	ton/year
T001	190 Proof Ethanol	1.76E-04	0.00	0.00	0.00	0.00	8.79E-05	0.00	0.00	2.64E-04
T002	Denaturant	0.00	2.18E-03	0.00	0.00	2.71E-01	0.00	0.00	0.00	0.27
T003	200-Proof Ethanol	1.06E-04	0.00	0.00	0.00	0.00	5.32E-05	0.00	0.00	1 60E-04
T004	200-Proof Ethanol	0.00	0.00	0.00	0.00	5.32E-05	0.00	0.00	0.00	5.32E-05
T005	Denaturant	0.00	2.10E-03	0.00	0.00	2.62E-01	0.00	0.00	0.00	0.26
T009	Gasoline	0.00	3.97E-03	1.72E-03	3.45E-03	1.21E-02	0.00	2.59E-02	2.59E-02	0.07
	Total	2.82E-04	0.01	1.72E-03	3.45E-03	0.55	1.41E-04	0.03	0.03	0.61
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Attachment B: Emission Calculations VOC Emission Calculations - Storage Tanks and Centrifuges

Company Name: Address City IN Zip: Significant Source Modification No.: Significant Permit Modification No.:

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962

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				Reviewer:
	Gasoline	Denaturant	Undenatured	
	HAP	HAP	Ethanol HAP	
HAP	Fraction ¹	Fraction ²	Fraction ³	
Acetaldehyde	0.00E+00	0.00E+00	4.00E-04	
Benzene	2.30E-02	2.20E-03	0.00E+00	
Cumene	1.00E-02	0.00E+00	0.00E+00	
Ethylbenzene	2.00E-02	0.00E+00	0.00E+00	
Hexane	7.00E-02	2.74E-01	0.00E+00	
Methanol	0.00E+00	0.00E+00	2.00E-04	
Toluene	1.50E-01	0.00E+00	0.00E+00	
Xylenes	1.50E-01	0.00E+00	0.00E+00	

¹This is the highest HAP percentage for gasoline vapors as per the Flint Hills gasoline SDS, issue date of 12-03-2014. Assumed truck tanker hauled gasoline for prior load.

²Based on the average weight fraction of the denaturant used at the plant (Markwest 2016 data)

³Assumed weight fraction in 200 proof ethanol, based on testing done by POET in Feb and March 2016.

		VOC Emission	Calculations -	Tanks EU040) - EU046			
			I	Avg.			Emissions	
		Annual	Capacity	Capacity	No. of Turn			
Tank	Contents	Throughput (gal)	(gal)	(gal/min)	Overs	lb/year	lb/hr	Ton/year
EU040	corn oil / defatted syrup	70,956,000	1,000	135	70,956	10.19	1.16E-03	5.10E-03
EU041	corn oil / defatted syrup	42,048,000	1,000	80	42,048	6.05	6.91E-04	3.03E-03
EU042	corn oil / defatted syrup	26,280,000	500	50	52,560	3.78	4.32E-04	1.89E-03
EU043	corn oil / defatted syrup	15,768,500	2,350	30	6,710	2.59	2.96E-04	1.30E-03
EU044	corn oil / defatted syrup	7,884,000	200	15	39,420	1.13	1.29E-04	5.65E-04
EU045	corn oil / defatted syrup	2,628,000	30,000	15	263	0.34	3,88E-05	1.70E-04
EU046	corn oil / defatted syrup	2,628,000	30,000	15	263	0.34	3.88E-05	1.70E-04
	Total					24.42	2.79E-03	1.22E-02
		VOC Emission Ca	Iculations - Ce	entrifuges EU	038 - EU039			
			Avg.	Avg.			Emissions	
		Annual	Capacity	Capacity	No. of Turn			
Unit	Contents	Throughput (gal)	(gal/min)	(gal/min)	Overs	lb/year	lb/hr	Ton/year
EU038	corn "syrup"	70,956,000	135	135	NA	10.17	1.16E-03	5.09E-03
EU039	corn "syrup"	42,048,000	80	80	NA	6.02	6.87E-04	3.01E-03
	Total					16,19	1.85E-03	8.10E-03

Attachment 8: Emission Calculations VOC and HAP Emissions From Equipment Leaks

Company Name: POET Biorefung - North Manchester, LLC Address City IN Zip: 866 East 800 North, North Manchester, Indiana 4696: Significant Permit Molificadon No.: Gignificant Permit Molificadon No.:

1. Fugitive VOC Emissions:

							TSubnart Was					
							Control					
	Equipment		Component				Effectivenes	Controlled	10C	Emitted		
Process Stream	Companent Source	Product	Count	Emission Factor	Uncontre	hied Rate	a	Rate	Weight	Water	Control	ed TOC
				(lb/comphr)	(Ithdi)	(tonAr)		(lb/hr)	(%)	(Ib/hr)	(Ib/hr)	(ton/yr)
	Valves	GasNapor	37	0.013134	0.49	2,13	92%	50	Y-001	0	950.D	0.170
	Valves	Light Liquid	299	0.0089	2.66	11.66	88%	0.32	2001	0	0.319	1.399
	Pump Seals	Light Liquid	80	0.04378	0.35	1.53	75%	0.09	*001	0	0.088	0.384
EU011 - EU023	Compressors	GasWapor	•	0.5016	•	¢		a	100%		-	-
Distillation	Relief Valves	GasNapor	ħ	0.2268	2.52	11.02	92%	0.20	100%		0.201	0.882
	Sampling Connections	M	a	0.033	9	¢		0	100%	0	•	
	Open Ended Lines	A	9	0.00374	0	•			100%	0	•	• •
	Connectors	All	1314	0,004026	5.29	23.17	33%	0.37	100%	0	0.370	1.622
	Valves	GasNapor	2	0.013134	0.03	0.12	92%	0.00	15%	0.002	0.000	0.001
	Valves	Light Liquid	175	0.0089	1.56	6.82	%89	0.19	15%	0.159	0.028	0.123
	Pump Seals	Light Liquid	9	0.04378	0.44	1.92	75%	0.11	15%	0.093	0.016	0.072
EU011 - EU023	Compressors	Gas/Vapor	9	0.5016	0	•		0	15%	0	0	•
Fermentation	ReliefValves	GasNapor	Ð	0.2288	9	•	92%	0	15%	0	•	•
	Sampling Connections	AI	¢	0.033	ð	•		0	15%	0	•	•
	Open Ended Lines	P	đ	0.00374	0	•		a	15%	0		•
110	Connectors	Ai	554	0.004026	2.23	9.77	93%	0,16	15%	0.133	0.023	0.103
	Valves	Gas/Vapor	0	0.013134	0.00	0,00	92%	00.00	100%	¢	0.000	0.000
	Valves	biupi.Liquid	4	6800.0	0.39	1.72	%86	0.05	100%	•	0.047	0.206
	Pump Seals	Light Liquid	÷	0.04378	0.13	0.58	. 76%	0.03	100%	¢	0.033	0.144
1002, 1005	Compressors	Gas/Vepor	0	0.5016	0	•		0	100%	a	0	•
Denaturant Tanks	ReliefValves	GasNepor	2	0.2286	0.46	2.00	92%	9.0	100%	0	700,0	0.160
	Sampling Connections	R	•	0.033	•	0		0	100%	0	0	•
	Open Ended Lines	đ	0	0.00374	•	0		0	100%	0	¢	•
	Connectors	Al	167	0.004026	0.67	294	33%	0.05	100%	•	0.047	0.206
	Valves	Gas/Vapor	0	0.013134	00'0	0.00	92%	00.0	100%	D	0,000	0.000
	Valves	Light Liquid	187	0.0089	1.66	7.29	88%	0.20	100%	0	0.200	0.875
	Pump Seals	Light Liquid	9	0.04378	D.26	1.15	75%	0.07	100%	0	0.066	0.288
T 001, T003 - T004	Compressors	Gas/Vapor	•	0.5016	•	•		0	100%	÷	•	ð
Non-denaturant tanks	Relief Valves	GasNapor	9	0.2288	1.37	6.01	92%	0,11	100%	0	0.110	0.481
(200-Proof Tanks)	Sampling Connections	¥	•	0.003	•	•		0	100%	0		0
	Open Ended Lines	¥	•	0.00374	0	•		0	100%	0	•	0
	Conhectors	AI	868	0.004026	3.49	15.31	83%	0.24	+00%	0	0.245	1.071
	Totais				24.00	105.14		2.26		0.39	1.87	8.19

ł

Methodology • Component court provided initially by source for initial permit. Source performed audit and updated component count SSM 168-37113-00068. • Emission factors are from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017. Table 2-1 and Table 5-2

2. Fughtive HAP Emissions:

Fuglitive HAP Emissions (tons/yr) = Controlled TOC (tons/yr) x HAP Fraction

(lb/hr) ttans/yr)	04 2.99E-03	04 1.58E-03	00 0.00E+00	00 0.00E+00	02 1.96E-01	04 1.49E-03	00 0.00E+00	00 0.00E+00	0.20
Fugitive Emissions	6.82E-	3.60E-	0.00E+	1300.0	4.48E	3.41E-	+300.0	1 0.00E4	50'O
Ethanol HAP Fraction*	4.00.5-04	00+300.0	0.00E+00	0.00E+00	0.00E+00	2.00E-04	0,00E+00	0.00E+00	
Denaturant HAP Fraction*	0.00E+00	2.206-03	0.00E+00	0.00E+00	2.74E-01	0.006+00	0.00E+00	0.00E+00	
HAP	Acetaldehyde	Benzene	Cumene	Ethylbenzene	n-Hexane	Methanol	Toluene	Xylenes	Total

· Demanment HAP fraction based on the evengeweight fraction of the demanment used at the plant (Markwest 2016 data). · · Undematured atharnoi HAP content is the assumed weight fraction in 200 proof ethanol, based on testing done by POET in Fab and March 2016.

Attachment B: Emission Calculations **Diesel Generator (for Electricity)**

Company Name: POET Biorefining - North Manchester, LLC Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	2640.0
Unlimited Hours of Operation per Year	8760
Limited Hours of Operation per Year	500
Unlimited Potential Throughput (hp-hr/yr)	23, 126, 400
Limited Potential Throughput (hp-hr/yr)	1,320,000
Sulfur Content (S) of Fuel (% by weight)	0.002

	1			Pollutant			
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	co
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	3.89E-04	1.21E-05	1.43E-02	7.05E-04	5,50E-03
				(.00809S)	**see below		
Unlimited Potential Emissions in tons/yr	8,09	4.64	4.50	0.14	164.85	8.15	63.60
Limited Potential Emissions in tons/yr	0.46	0.26	0.26	0.01	9.41	0.47	3.63

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.4-1).

**NOx emission factor based on rated speed "Not to exceed data" from the manufacturer

Hazardous Air Pollutants (HAPs)

				Pollutar	nt		
	Benzene	Toluene	Xylene	Formal- dehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in Ib/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Unlimited Potential Emission in tons/yr	6.28E-02	2.27E-02	1.56E-02	6,39E-03	2.04E-03	6.38E-04	1.72E-02
Limited Potential Emission in tons/yr	3.59E-03	1.30E-03	8.92E-04	3.65E-04	1.16E-04	3.64E-05	9.79E-04
***PAH = Polyaromatic Hydrocarbon (PAHs	are considere	d HAPs, sinc	e they are co	nsidered Polyc	yclic Organic Mal	ter)	

****Emission factors in Ib/hp-hr were calculated using emission factors in Ib/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.4-1).

Unlimited Potential Emissions of Total HAPs (ton/yr)	1.27E-01
Limited Potential Emissions of Total HAPs (ton/vr)	7.27E-03

Methodology

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours of Operation per Year]

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Attachment B: Emission Calculations PM, PM10, and PM2.5 Emissions from Cooling Tower

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962 Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Water circulation flow =	30,000 gallons per minute
Water circulation flow =	113,562 liters per minute
Drift loss =	0.005%
Drift loss =	5.7 liters per minute
Total Dissolved Solids in cooling tower =	2500 mg/l
Total Dissolved Solids in cooling tower =	2.5 g/l
PM-10 = Drift loss (I/min) x TDS (g/I)	14.2 grams/minute
g/min x 60 =	851.7 grams/hr
1 pound =	453.6 grams
Fugitive emissions=	1.9 lbs/hr
Fugitive emissions=	8.22 TPY

Freivenst B: Ernssiker-Celculat VOC Entratores Rate of Vonting for Report Company Name: POS? Benchange, Stath Unicheader, LLC Autores City 87 Zpc: 482 cet 850 Hours, Nach Housheeds, Ndaine 14342 Signale art Pennet Indekt alam Ita-

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Attachment B: Ernission Calculations PM, PM10 and PM2.6 Emissions - Paved Road Traffic

Company Name: POEF Blovenning - North Manchester, LLC Address City, 1N Zpp: 868 East 000 Narth, North Manchestor, Indiana 4692 Significant Source Modification No.: Significant Permit Modification No.:

Raviewer:

Al trucks are assumed to here an empty weight of 15 tons and a full weight of 40 tons. Actual ethanol and denaturant trucks have a capacity of 8,000 galtons and DDGS trucks have a capacity of 5,000 galtons and DDGS trucks have a capacity of 25 tons.

Assume for the limited potentile to emit calculations that 100% of the enhance and DDGS are intricted off-sile Also assume that 100% of the denaturant and grain is received by Inuck. Actual operations will result in some of the enhanced and DGS being shipped enfaite by rail.

Vehicle Information

nce	Annual VMT	.75 9,660	11,665	75 874	75 34,500	.76 34,500	.75 616	.75 600	75 20,498	92,406	
e Total dist	(mile)				6				6	17000 AV	
Truck Averag	WI. (ton)	27.1	42	27.	27.1	12	27.	27.	27.	2010/02/02/02/02/02/02/02/02/02/02/02/02/02	46
Truck Full WL	(ton)	40	40	40	40	40	40	40	40	Shined Water Living	40.0
Truck Empty	WL (Ion)	15	15	15	15	15	15	151	15	HERE WARRANT AND A DESCRIPTION OF A DESC	15.0
Max No. of Trucks	Annually	12.880	15,541	1,166	45.000	46,000	821	908	27,331	150,539	
ransponed	Pick	ton	gat	gai	tan	ton	ton	ton	ton	:	A CONTRACTOR OF
Ouantity T	per	25	8,000	8.000	25	25	25	25	25		
lm i led	rucked	lon	.gei	gai	lan	lan	lan	lon	ton		
Annual L	Amount 1	322,000	124.324.324	9,324.324	1,150,000	1,150.000	20,536	20.000	683,290		
	Vehicle Type	DDGS Haul dul	Ethanol Haul Out	Denaturant Delivery	Grain Delivery	Grain Loadoul	Com Oil Haul Out	Syrup Haul Oul	Wetcake Haul Oul	Fleet Totals	Fieel Averages (weighted)

rene i tructos tructuras de Ouently Transported per Truck values are linked to Project Parameters (ab. Annuel Linked Annuel amount trucked cakculated based on 1 ib of com oli per bushel of grain received.

Unmitigated Emission Factor, Er = [k*(sLy0.91*(W)v1.02] (Equation 1 from AP-42 13.2.1)

	o//MT == particle size multipiler (AP-42 Table 13.2.1-1)	ons = average vehicle weight (provided by source)	ψ m^2 $=$ slit loading value for paved roads at com wel mills - Table 13.2.1-3)
PM2.5	0.00054	27.5	1,1
PM10	0.0022	27.5	1.1
PM	0.011	27.5	1.1
`	where k =	3	ي 19

Taking naturai miligalion due lo practipitation into consideration. Miligaled Emission Factor. Eaxi = E' 11 - (p.4WN) (Equation 2 from AP-42 13.2.1) Miligaled Emission Factor. Exat = <u>E' 11 - (p.4WN)</u> When P = <u>125</u> days per year N = <u>355</u> days per year



Urmiligaled Emission Factor, Ef = Miligaled Emission Factor, Eext = Dust Control Efficiency =

		Unmiligated	Unmitigaled		Miligated PTE	Miligated PTE	Controlled	Controlled
	Unmiligated PTE	PTE of PM10	PTE of PM2.5	Mitigaled P TE	of PM10	of PM2.5	PTE of PM	PTE of PM10
C055	of PMi (tons/yr)	(Ints/yr)	(tons/yr)	of PM (tonsArt)	(tons/yr)	(tons/yr)	(lons/yr)	(lons/yr)
GS Haul Out	1.70	0.34	80.0	1.56	0.31	0.08	0.78	0.16
anol Hauł Out	2.05	0.41	0.10	1.68	0.38	0.09	0.94	0.19
naturent Delivery	0.15	0.03	0.01	0.14	0.03	0.01	20.0	0.01
					and the second se			

		Unmiligated	Unmitigaled		Miligated PTE	Miligeled PTE	Controlled	Controlled	Controlled
	Unmiligated PTE	PTE of PM10	PTE of PM2.5	Mitigaled P TE	of PM10	of PM2.5	PTE of PM	PTE of PM10	PTE of PM2.5
Process	of PM (tons/yr)	(TonsA)T)	(tons/yr)	of PM (tonsArt)	(tons/yr)	tonsyn	(lons/yr)	(lons/yr)	(IonsAr)
DDGS Haul Out	1.70	0.34	80'0	1.56	0.31	0.08	0.78	0.16	0.04
Ethanol Haul Out	2.05	0.41	0.10	1.68	0.38	0.09	0.94	0.19	0.05
Denaturent Delivery	0.15	0.03	0.01	0.14	0.03	0.01	40'0	0.01	00.0
Grain Dalivery	6.08	1.22	0.30	6.66	1,15	0.27	2.78	0.56	. 0.14
Grain Loadout	6.08	1.22	0.30	5,56	1.11	0.27	2.78	0.56	0,14
Com Oli Haul Oul	0.11	0.02	0.0	0.10	0.02	0.00	0.05	0.01	0,00
Syrup Haul Out	0.11	0.02	10'0	0.10	0.02	0.00	0.05	0.01	0.00
Welceke Heul Out	3.61	0.72	0.18	3,30	0.66	0.16	1.65	0.33	90.0
Totals	16.29	3.26	0.80	14.89	2.98	0.73	9,10	1,82	0,45

Methodology Total Wught thrvan per day (torriday) Maximum con-way miles critikas/day) Maximum con-way miles critikas/day) Average Vahica Wolght Per Trip (tordrop) Average Miles Per Trip (tordrop) Average Miles Per Trip (tordrop) Average Miles Per Trip (tordrop) Miligaide PTE (tors/y) Ecotrolied PTE (tors/y)

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Abhrevlations

PM = Particulate Matter PM 0 = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particle Matter (<2.5 um) PTE = Potential to Emil

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Affachment B: Emission Calculations Greenhouse Gas Emissions

Company Name: POET Blorefining - North Manchester, LLC dress City IN Zip: 868 East 800 North, North Manchester, indiana 46962 Address City IN Zip: Significant Source Modification No.:

Significant Permit Modification No.:	
Reviewer:	

Conversion Factors:

026 E	tu/scf
000 1	o
760 h	ours
	026 E 000 II 760 h

Assumptions;

Generator Operating Time = 500

Combustio	on Emission Factors			Global Warmi	ng Potenlial Factor
	Natural Gas ¹	Dieset ²		CO2	1
	lb/mmBtu	ib/mmBtu		CH4	25
CO2	116,98	163,1		N2O	298
CH4	0.0000	0.007	•		

N2O 0.0002 0.001 Greenhouse gas emission factors are taken from 40 CFR Part 98, Subpart C, Table C-1.

²Greenhouse gas emission factors are taken from 40 CFR Part 98, Subpart C, Table C-1 for distillate fuel oil no. 2.

hr/vear

1. Green House Gas from Natural Gas Combustion

			1 002	- C114	1420	1 0010
	MMBtu/hr	MMCF/yr*	tons/yr	tons/yr	tons/yr	tons/yr
Boiler #1	145.0	1,238	74,292	1.40	0.14	74,368
Boller #2	145.0	1,238	74,292	1.40	0.14	74,368
Dryer #1	60	512	30,741	0.58	0.06	30,773
Dryer #2	60	512	30,741	0.58	0.06	30,773
RTO	30	256	15,371	0.29	0,03	15,387
Flare	0,054	0.461	27.67	5.21E-04	5.21E-05	28
Potential Emission (tonsArt)	440.1	3 757	225 464	4.2	0.4	225 697

2. Green House Gas from Diesel Combustion

			CO2	CH4	N2O	CO2a
	kW	MM Btu/yr	tons/yr	tons/yr	tons/yr	tons/yr
Diesel Generator	2250	161885	13,198	5.35E-01	1.07E-01	13,243

Methodology All emission factors are based on normal firing. MMBtu = 1,000,000 Btu MMCF = 1,000,000 Cubic Feet of Gas

*Potential Throughput (MMCF) = Heat input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A. Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (tb/MMCF)/2,000 ibAon CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O CMR (2000) GWP (298).

3. Green House Gas from Fermentation (Biogenic)

Fermentation Process

C	i.,	0	n	٠
U U	ŧ٧	e	15	٠

115,000,000 gallons of undenatured (200-proof) EtOH / year 46.06844 [g/mol] mole weight of EtOH 0.789 [g/cm³] density of liquid EtOH 44.0095 [g/mol] mole weight of CO2

and:	$C_8H_{12}O_5$ + yeast = 2 CH ₃ CH ₂ OH + 2 CO ₂					
	sugar	ł	yeast =	ethanol	+	carbon dioxide

Therefore: 115,000,000 gal 200-proof EtOH 0.789 g EtOH 3,785.41 cm³ 1 gal year 1 cm³ 1 mol ElOH 46.06844 g ElOH 3.43E+11 g EtOH vear 2 mol CO2 7,455,628,546 mol EtOH year 2 mol EtOH 7,455,628,546 mol CO2 44.0095 g CO₂ 1 ton year 1 mol CO₂ 907,184.74 g 361,689 tons CO₂ / year **=**

> Biogenic GHG≓ 361,689 CO2e Total in tons/yr

Total GHG Emissions (Combustion and Biogenic)				
CO2	CH4	N20	CO2e	
tons/yr	tons/yr	tons/yr	tons/yr	
600,350,52	4.78	0.53	600,628.66	

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Attachment B: Emission Calculations 326 IAC 6-3-2 Particulate Emission Limitations for Manufacturing Processes

Significant Source Modification No.: Significant Permit Modification No.: Reviewer:

Company Name: POET Biorefining - North Manchester, LLC Address City IN Zip: 868 East 800 North, North Manchester, Indiana 46962

		Process Weight, P		P<=60,000 lb/hr	P>60,000 lb/hr	PTE	PTE
		each unit	each unit	E = 4.10 P ^{0.67}	E = 55 P ^{0.11} - 40	Uncontrolled	Controlled
PM Control Device	Process	P (lb/hr)	P (ton/hr)	E (lb/hr)	E (lb/hr)	(lb/hr)	(lb/hr)
CE001	Grain Receiving (EU001), Conveyors (EU002), and Grain Storage Bins (EU003)	1,680,000	840	-	75,4	136,11	1.36
CE018	Belt Conveyors EU002b and Grain Bins EU003b	1,680,000	840	-	75.4	5 14	0.05
CE019	Belt Conveyors EU002b and Grain Bins EU003b	1,680,000	840	~	75.4	5 14	0.05
CE002	Corn Transfer Conveyor / Scalper (EU004, Surge Bin (EU005)	280,000	140	_	54.7	10.29	0.10
CE003	Hammermill #1 (EU006)	90,000	45	-	43.6	41.14	0.41
CE004	Hammermill #2 (EU007)	90,000	45	-	43.6	41.14	0.41
CE005	Hammermill #3 (EU008)	90,000	45	N	43.6	41.14	0.41
CE006	Hammermill #4 (EU009)	90,000	45	-	43.6	41.14	0.41
CE007	Hammermill #5 (EU010)	90,000	45	-	43.6	41.14	0.41
CE009	DDGS Dryer (EU025)	73,516	36.8	*	41.8	109.88	10.99
CE009	DDGS Dryer (EU026)	73,516	36.8	_	41.8	109.88	10.99
CE010	Fluidized DDGS Cooler (EU029)	73,516	36.8	-	41.8	81.60	0.816
CE011	DDGS Silo Loading (EU030)	73,516	36.8	•	41.8	0.56	0.14
CE012	DDGS Silo Bypass (EU031)	73,516	36.8	-	41.8	0.60	0.15
CE016	DDGS conveyor (EU033)	440,000	220	-	59.5	21.66	0.00
	DDGS rail or truck loadout spout (EU035)	440,000	220	-	59.5	0.00	0.00

(c) This rule shall not apply if a particulate matter limitation established in:

(1) 326 IAC 2-2-3, concerning prevention of significant deterioration (PSD) best available control technology (BACT) determinations contained in a permit;

(2) 326 IAC 2-3-3, concerning lowest achievable emission rate (LAER) determinations contained in a permit;

(3) 326 IAC 6.5 and 326 IAC 6.8, concerning particulate matter emissions:

(4) 326 IAC 11, concerning existing emission limitations for specific operations;

(5) 326 IAC 12, concerning new source performance standards; or

(6) 326 IAC 20, concerning national emission standards for hazardous air pollutants.

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