

Concerns regarding the Sunnyside Renewable Natural Gas (SS RNG) Biodigester

1. Bait and Switch

The 2023 SEPA Checklist that Pacific Ag submitted to obtain a Mitigated Determination of Non-Significance stated: ¹

“Total RNG production is expected to be between 800,000 and 950,000 MMBTU² per year.”

The 2025 New Source Review Application submitted by Pacific Ag to the Yakima Regional Clean Air Agency stated ³:

“Production Output per Year \approx 1,800,000 MMBTU methane/year”

Pacific Ag received a mitigated determination of non-significance in 2023. Then they quietly doubled the size of the project in 2025. Bait and Switch!!!

2. Who will profit from construction of the Sunnyside RNG biodigester?

Pacific Ag estimates costs to construct the SS RNG biodigester at \$94 million to \$120 million. An average on-farm anaerobic manure methane biodigester costs between \$1 million and \$10 million. SS RNG would be one of the largest, if not the largest, dairy biodigester in the nation, and it would be located inside the Sunnyside City Limits.

Part of the funding would come from taxpayer monies but a large portion would come from private parties who expect a significant return on their investment.

Under current Washington laws SS RNG would be allowed to sell credits for producing RNG. If SS RNG sells RNG credits simply based on carbon intensities for natural gas relative to gasoline, the operation can generate 26,639 metric tons of carbon dioxide equivalents per year. If SS RNG sells RNG credits using avoided methane⁴ carbon

¹ SEPA Checklist 2023, page 5/21 - [Notice of Environmental Review SEPA-2023.0200 Complete Notice.pdf](#)

² A BTU is the amount of energy needed to raise the temperature of one pound of water one degree Fahrenheit. One MMBTUs is a million BTUs.

³ SS RNG Application at [NoC Application-Pacific Ag Renewables-February 2026.pdf](#)

⁴ Avoided methane means biodigesters receive credit for diverting emissions of methane that would be produced by anaerobic manure lagoons from release to the atmosphere.

How Much Should Dairy Farms Get Paid for Trapping Methane? [How Much Should Dairy Farms Get Paid for Trapping Methane? – Energy Institute Blog](#)

intensities the operation can generate 459,819 metric tons of carbon dioxide equivalents per year.⁵ There is a potential for investors to make a lot of money, at least during the 15 – 20 year lifetime of a biodigester.

3. Magnitude of the Project

In 2023 Pacific Ag submitted a Notice of Construction (NOC) to the Yakima Regional Clean Air Agency for a project that would deliver 850,000 to 950,000 MMBTUs of energy from renewable natural gas or manure methane per year.⁶ The NOC was returned for more work.

In 2025 Pacific Ag submitted the revised NOC that led to the current Draft Order of Approval for a facility that would deliver 1.8 million MMBTUs of energy from renewable natural gas or manure methane per year.⁷

There were changes in the project design. The number of digester trains remained the same at five trains with four tanks each. But tank diameters decreased and tank height increased from 59 ft to 83 ft, or from 5 stories high to 7 stories high. This will be a huge tank farm.

Here is a picture of tanks that are 65 ft tall and full of manure. SS tanks would be larger.



Stallkamp's tall digester CSTRs have a diameter of 15 m and a height of almost 20 m.

From [Stallkamp Builds It's First Mega Tall Digester CSTRs \(IFAT\)](#)

⁵ See Attachment 1

⁶ Available at [SKM_C30823061416570](#)

⁷ Available at [Supporting_Documents-Pacific_Ag_Renewables-February_2026.pdf](#)

The number of flares increased from one to four and the maximum number of hours of flaring increased from 176 to 438. This is flaring such as we see in petroleum refineries.

Plans for two steam boilers and two hot water boilers changed to plans for two much larger hot water boilers.

Maximum hours of non-emergency usage of the emergency generators decreased from 160 hours per year to 80 hours per year.

Building and Structure Information⁸

	Length (ft)		Width/Diameter (ft)		Height(ft)		Volume (cu ft)	
	2023	2025	2023	2025	2023	2025		
Lab Storage	20		10		14			
Digester Tanks (20)			100	80	59	83	463,386	417,204
Mix Tanks (3 to 5)			76	106	45	83	204,141	732,455
Biogas Pre Treatment	100		50		40			
Amine Building	100	57	75	53	52	26		
Gen Enclosure	20		8		17			
Administration	50		50		16			
Grindhouse	212	182	119	134	24	24		
Maintenance Control	105	136	70	81	16	16		
Fiber Storage	101	200	273	85	16	16		
Boiler House	121	115	73	45	17	17		

Emission estimates changed, but not always proportionally.

Emissions from boilers doubled except for VOC's.

Emissions from the scrubber more than doubled.

Emissions from the emergency generator decreased by about half.

Emissions from flares increased by 2 to 3 except for sulfur dioxide which decreased. Why would sulfur dioxide decrease?

Surprisingly estimated emissions from straw grinding and roadway emissions remained the same.

⁸ See Attachment 2 for more detailed information

SS RNG Projected Emissions in tons per year

Pollutants	Boilers		Upgrader/Scrubber		Emerg. Generator		Flares	
	2023	2025	2023	2025	2023	2025	2023	2025
NOx	1.2	2.2			3.5	1.7	1.32	3.52
CO	2.3	7.9			0.8	0.4	6	16.1
PM 10	0.8	1.6			0.112	0.056	0.145	0.386
PM 2.5	0.8	1.6			0.112	0.056	0.145	0.386
SO2	0.062	0.125			0.0028	0.0014	13.7	13.2
VOC	0.57	0.76			0.062	0.031	0.023	0.062
CO2e	12,309	24,748	34,857	81,780	271	136	3,855	9,236
Pollutants	Straw Grinding		Roadway Fugitives		Digestate		Totals	
	2023	2025	2023	2025	2023	2025	2023	2025
NOx							5.98	7.49
CO							9.1	24.4
PM 10	0.44	0.44	1.8	1.77			3.28	4.24
PM 2.5	0.44	0.44	0.31	0.32			1.78	2.78
SO2							13.75	13.36
VOC							0.65	0.85
CO2e							51,293	115,900

4. Emissions from Trucking

Pacific Ag accounts for PM 2.5 and PM 10 from traffic at the SS RNG site. See this table from page 61/131 of the Support Documents.⁹

Source type	Class		Trips/day	Trips/year	Miles/trip	VMT/year	Veh. Wt. (tons)	Annual Emission Factors		
								E for PM lbs/VMT	E for PM10 lbs/VMT	E for PM2.5 lbs/VMT
Feedstock Delivery Trucks	Paved	Loaded	125	35,750	0.40	14,452	52.75	1.59	0.32	0.08
	Paved	Empty	125	35,750	0.40	14,201	15	0.44	0.09	0.02
External Supplier Trucks	Paved	Loaded	2	520	0.16	85	40	1.20	0.24	0.06
	Paved	Empty	2	520	0.21	107	15	0.44	0.09	0.02
Fiber Export Truck	Paved	Loaded	19	4,940	0.21	1,015	52.75	1.59	0.32	0.08
	Paved	Empty	19	4,940	0.16	806	17.5	0.52	0.10	0.03
Straw Trucks	Paved	Loaded	11	2,860	0.16	467	52.75	1.59	0.32	0.08
	Paved	Empty	11	2,860	0.21	588	17.5	0.52	0.10	0.03
Sunnyside - Personal Vehicles	Paved	Loaded	17	5,356	0.02	119	2.5	0.07	0.014	0.003
	Paved	Empty	17	5,356	0.02	119	2.5	0.07	0.014	0.003
Truck Driver - Personal Vehicles	Unpaved	Loaded	17	5,148	0.13	655	2.5	10.05	4.06	0.41
	Unpaved	Empty	17	5,148	0.13	655	2.5	10.05	4.06	0.41

⁹ Note - there are 136 feedstock deliveries per day and only 19 fiber export (digestate) trips per day. At what point in time would the tanks be full and then overflow ? There are no documented trips per day to export liquid digestate.

Total mileage from this table equals 31,721 miles.

Pacific Ag does not account for vehicle exhaust emissions. Here are FOTC’s estimates of those emissions using data provided by the EPA that averages exhaust emissions over a wide range of variables for heavy duty gasoline powered trucks. ¹⁰

	Grams per Mile	Lbs. per Mile*	x 31,721 Miles per year	
VOC	1.5860	0.0035	110.6809	Lbs. per year
CO	13.1300	0.0289	916.2928	Lbs. per year
NOx	2.9140	0.0064	203.3570	Lbs. per year
PM 2.5	0.0440	0.0001	3.0706	Lbs. per year
PM 10	0.0510	0.0001	3.5591	Lbs. per year

* 1 gram = 0.0022 lbs.

But those numbers only account for 0.4 miles of travel per trip on the facility site. To our understanding Pacific Ag employs a fleet of trucks to transport manure from dairies to the digester and transport digestate from the digester. By our calculations those trucks collectively travel 1,500 miles per day.¹¹ Here is a more realistic estimate of emissions.

	Lbs. per Mile	X 1,500 Miles per Day	Lbs. per Year	Tons per Year
VOC	0.0035	52.3380	19,103.3700	9.5517
CO	0.0289	43.3290	15,815.0850	7.9075
NOx	0.0064	9.6162	3,509.9130	1.7550
PM 2.5	0.0001	0.1452	52.9980	0.0265
PM 10	0.0001	0.1683	61.4295	0.0307

This would increase potential annual emissions in Table 1 of the Supporting Documents and Section 5 of the Draft permit by:

- NOx = 7.5 + 1.755 = 9.26 tons per year
- CO = 24.4 + 7.908 = 32.31 tons per year
- VOCs = 0.85 + 9.552 = 10.40 tons per year

For additional data on gasoline powered trucks and more see Attachment 6.

Pollutants from vehicle exhausts include benzene, carbon monoxide, nitrogen oxides, volatile organic compounds, particulate matter, and sulfur dioxide.

¹⁰ Average In-Use Emissions from Heavy Duty Trucks. [Average In-Use Emissions from Heavy-Duty Trucks - Emission Facts \(EPA-420-F-08-027\)](#)

¹¹ See FOTC Evaluation of SS RNG Traffic Analysis at [SS RNG FOTC Comments regarding the SS RNG Traffic Impact Analysis \(1\).pdf](#)

5. Estimated Ammonia Levels at SS RNG

The Draft Permit Approval says on page 12/46: “Modeled project impacts were combined with regional background concentrations to assess cumulative ambient concentrations.” What were the regional background levels for ammonia that Landau used in this modeling? Cumulative ambient concentrations will be underestimated if background levels are underestimated.

We ask because actual measurements are more reliable than modeled measurements. In 2019 Friends of Toppenish Creek performed a study that found ammonia levels in the Sunnyside Grandview area were 63 times higher than levels in west Yakima.¹² This means that the baseline to which SS RNG adds ammonia is elevated. In addition there are periodic releases of ammonia from cold storage facilities in the area. There are real risks to public health from ammonia in the ambient air.

Pacific Ag did not elaborate on the process in buffer tanks that would separate digestate into fiber (solid) and thin (liquid) fractions. We do not know the percentage of digestate that would become solid and the percentage in liquid form. We do not know how much ammonia would remain in the solid fraction and how much in the liquid.

Nevertheless, it is reasonable to assume that significant amounts of ammonia stay with the liquid effluent and this gives rise to a potential for ammonia emissions from SS RNG lagoons. Covering lagoons does not stop chemical and microbial processes. Covering lagoons only confines gases to the immediate area. Those gases are released when the coverings are pulled back so that liquids can be transported off site. Projected ammonia levels in Table 2 Toxic Air Pollutant Emissions Summary on page 34/46 should be > SQER .

6. SS RNG Lagoon(s) are not adequately addressed

The Draft Air Permit says on page 9/46, “the thin fraction will be directed to an on-site covered lagoon.” Table 2 on page 14/46 of the Draft Air Permit says there will be 2 lagoons. Section 4.1.11 uses the plural – lagoons.

In any case none of the figures on pages 44 to 46 of the Draft Permit show lagoons on site. There is no description of processes on lagoons or air monitoring on lagoons. There are no dimensions for lagoons and no liner description. There is no retention time for lagoon

¹² Study Finds Elevated Ammonia Levels at Lower Yakima Valley Site Near Large CAFO Dairies. [EPA Air Attachment 19 Ammonia Levels in Yakima County FOTC.pdf](#)

contents and no description of how lagoon contents will be managed or the end point for export of lagoon contents. Gases under the lagoon covering cannot remain there forever.

Lagoons are not listed in Table 1 of the Draft Order of Approval: Parameters used in air emissions calculations, but they are listed in Table 2: Authorized emission units and emission-generating activities list.

The Draft Order states in a footnote on page 14/46, “Since the lagoon maintains a liquid-based digester mixture and is equipped with a cover, fugitive gaseous emissions are expected to be limited under normal operating conditions.” Limited is not the same as zero. What are the anticipated emissions from lagoons on site? How much methane is likely to emit from digestate lagoons? How much ammonia, or hydrogen sulfide, or VOC? This information should be included in a proper NOC and an effective Order of Approval.

7. Management of Solid Digestate Needs an Update

Section 4.1.10 of the Draft Air Permit Approval states that dimensions of the fiber storage building would be 85’ x 200’ x 40’ (WxLxH). The building would be 2 ½ stories tall and enclosed on two sides. Square footage for the building would be 17,000 square feet. Presumably this building is where digestate is stored prior to export and is Emission Point 6 in maps of the proposed facility. However, maps provided in the Draft Order of Approval and Supporting Documents do not agree on the location of Emission Point 6. See Attachment 5. This makes it very difficult to follow and analyze the flow of inputs and outputs. Readers are left to guess on proposed pathways at SS RNG.

Section 6.14.1 says the area used for digestate cannot exceed 12,917 square feet or 76% of the floor space in the fiber storage building. Apparently stacks of digestate could be as high as 40 feet. There are requirements to cover the digestate during high wind events. Pacific Ag acknowledges that wind can enter this building. Where are estimates of PM 2.5 and PM 10 emissions from digestate?

There are no source testing requirements for solid digestate. The only monitoring requirements are for daily visual inspections. This is not good enough.

The only emissions estimated for solid digestate are ammonia emissions as described on page 41/46 of the Draft Order of Approval. See Table 12 below. This is not good enough.

Table 12. Total ammonia emissions from solid digestate storage.

Toxic Air Pollutant	CAS	Hourly Emissions (g/hr)	Hourly Emissions (lb/hr)	Daily Emissions ¹ (lb/day)	Annual Emissions ² (lb/yr)	Annual Emissions (tons/year)
Ammonia	7664-41-7	633.9	1.4E+00	3.4E+01	1.2E+04	6.1E+00

In fact digestate emits methane, hydrogen sulfide, VOCs and especially nitrous oxide.¹³ The Draft Order of Approval is deficient when it posts Tables 1 & 2 on page 34, because it ignores significant CO₂e emissions, toxic air pollutant emissions, and possibly hazardous air pollutant emissions from digestate.

Pacific Ag cannot comply with Sections 3.11, 3.12, 3.13, and other sections of the Order of Approval without testing or at least modeling to measure emissions from solid digestate.

8. Handling Manure Feedstock

Pacific Ag states on page 12/131 of Supporting Documents:

“3.1.1 Feedstock Delivery and Handling Facility feedstocks will include dairy manure slurry and cellulosic material. Incoming manure will be received at one of five “reception pits” and then pumped to five mix tanks.”

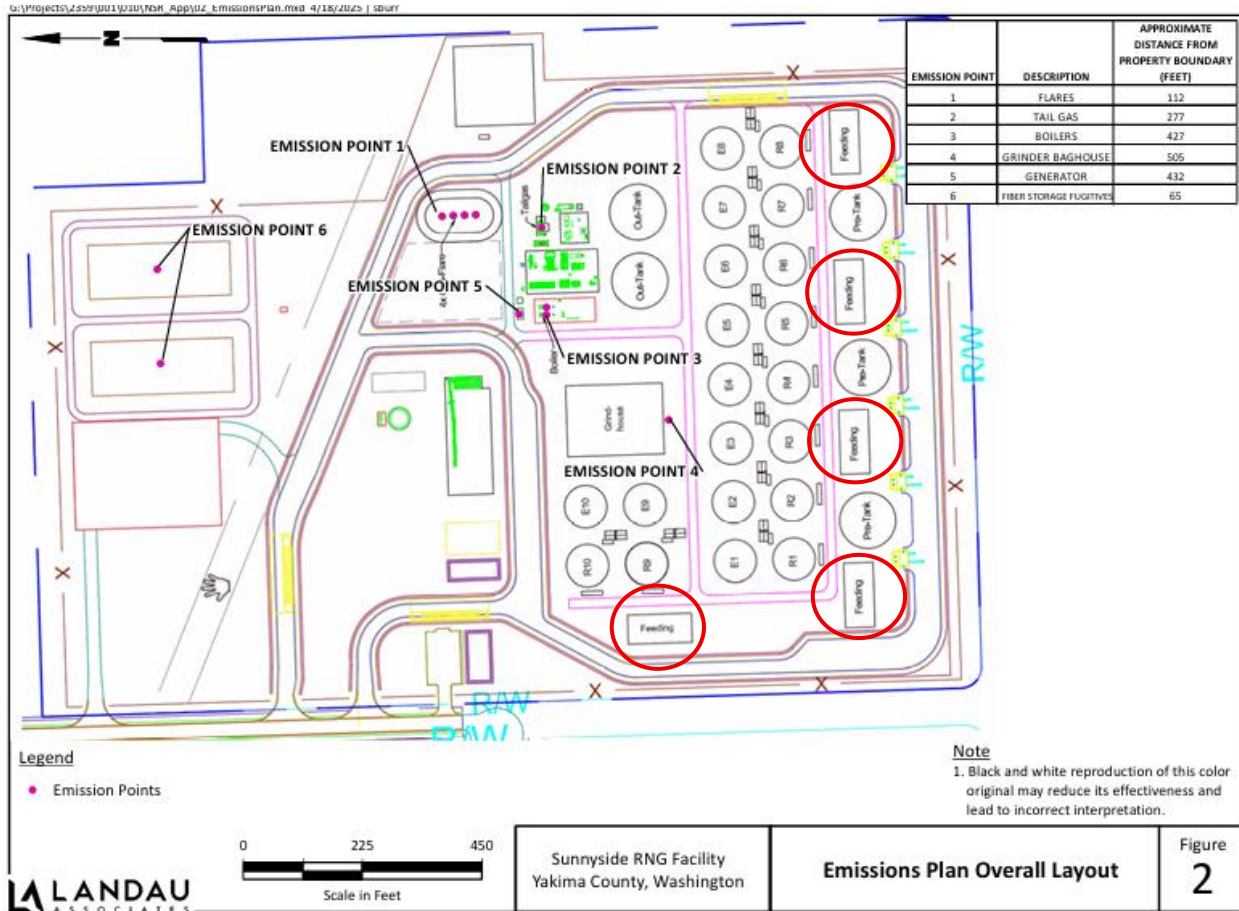
There is no reference to “reception pits” in the Draft Order of Approval. According to that document on page 9/46:

“2.4 Feedstocks, including dairy manure slurry and cellulosic material, will be delivered to the Facility by truck. Manure slurry will be pumped to mix tanks while cellulosic material will be ground in an enclosed structure using an electric grinder equipped with a baghouse for dust control. The ground material will then be conveyed in an enclosed system to the mix tanks. Mix tanks will feed the digester trains.”

We do not know whether “reception pits” are above ground or below ground. If they are below ground we do not know how deep, whether pits are lined or type of liner. We do not know how emissions are contained when manure is pumped from trucks to the pits. We do not know the temperature in the pits or average pH. There is no description of pumping manure or slurry from pits to mixing tanks. Presumably some type of engine or motor is required to accomplish this.

¹³ Monitoring methane and nitrous oxide emissions from digestate storage following manure mono-digestion. [Monitoring methane and nitrous oxide emissions from digestate storage following manure mono-digestion - ScienceDirect](#)

FOTC presumes that the “reception pits” are labeled “feeding” in Figure 4, copied below with “feeding” circled in red.



The “reception pits” are not identified as emission sources. There are zero estimates of emissions from “reception pits” or from pumping activities related to mixing tanks.

No emissions from “reception pits” or “mixing tanks” are listed in Table 1, page 14/131 of the Supporting Document. Receptor pits are not listed as authorized emission units in Table 2 on page 14/46 of the Order of Approval.

Nevertheless, Table 1 purports to summarize all emissions from the facility.

Table 1: Potential Annual Emissions Summary

Pollutant	Boilers (tpy)	Biogas Upgrading & Scrubber (tpy)	Emergency Generator (tpy)	Enclosed Flares (tpy)	Straw Grinding (tpy)	Roadway Fugitives (tpy)	Project Total (tpy)
NO _x	2.2	--	1.7	3.5	--	--	7.5
CO	7.9	--	0.4	16.1	--	--	24.4
PM ₁₀	1.6	--	0.06	0.4	0.44	1.8	4.2
PM _{2.5}	1.6	--	0.06	0.4	0.44	0.32	2.8
SO ₂	0.1	--	0.001	13.2	--	--	13.4
VOCs	0.76	--	0.031	0.062	--	--	0.85
Total HAPs	0.02		0.02	0.004	--	--	0.04
CO ₂ e	24,748	81,780	136	9,236	--	--	115,900

There is no description of “reception pits” anywhere in the NSR application, unless these are the “solid feedstock buildings” listed in table 5 on page 25/131 of the Supporting Documents.

Table 5: Building and Structure Information

Building/Structure Description	Length (feet)	Width (feet)	Height (feet)
Digester Tanks (a)	--	80	83
Mix Tanks (b)	--	106	83
Amine Building	57	53	52
Solid Feedstock Buildings	121	55	26
Grindhouse	182	134	24
Maintenance Control Room	136	81	16
Fiber Storage	200	85	16
Boiler House	115	45	17

It would be challenging to contain manure slurry in a building. There is no documentation on the type of foundation for solid feedstock buildings or whether there is a “basement”. Is it possible, or even desirable, to have an air tight building for manure storage?

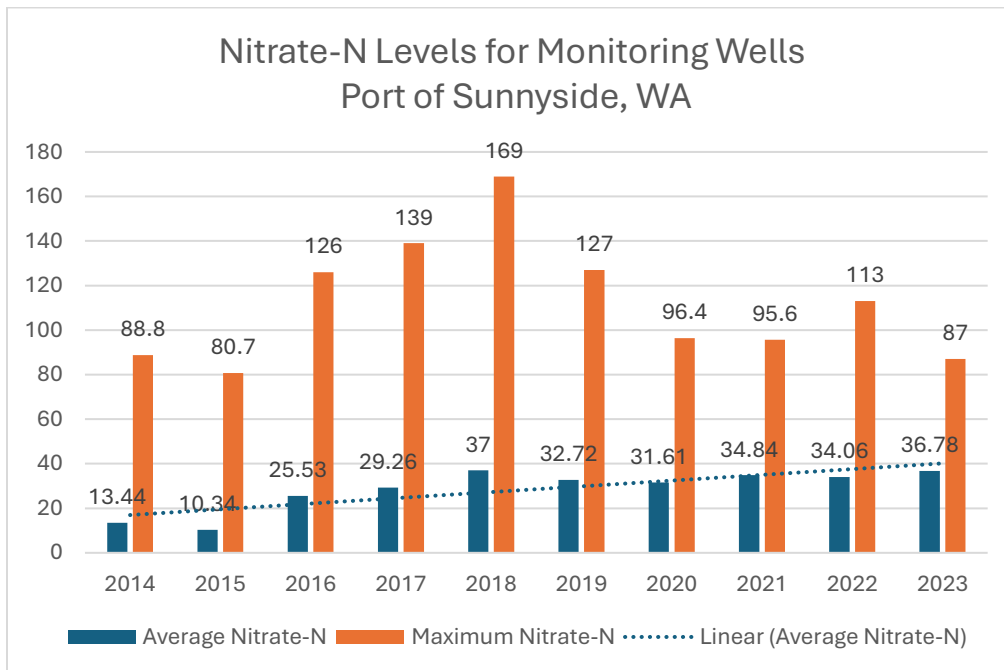
If manure is delivered to SS RNG in solid form¹⁴, then SS RNG must add water to the manure to create a slurry. In that case SS RNG is deliberately manufacturing methane and not interrupting methane emissions from dairy lagoons.

¹⁴ See Figure 3 on page 45/46 of the Notice of Approval. That simplified process flow diagram lists pathways for manure feedstock (slurry) and manure feedstock (solid).

10. Concerns Related to the SS RNG Notice of Construction

The NSR application does not list emissions from cow manure as an air contaminant that will be produced or controlled at the site. It is impossible to handle this amount of cow manure without generating emissions. Cow manure contains ethanol, cresol, acetaldehyde, ammonia, trimethylamine, methanethiol, dimethyl sulfide, phenols, indoles, terpenes, and halogenated compounds.^{15,16} A third of all Washington dairy cows are housed in the Lower Yakima Valley. The SS RNG project would funnel most of the manure from 80,000 milk cows through the biodigester site at one time or another. This means an extremely high concentration of manure on 50 acres. To pretend that there are no emissions from this amount of manure is inexcusable.

We do not find a depth to groundwater study or a soil permeability study as required by the SEPA Mitigated Determination of Non-Significance. The water table is shallow in this area, probably < 20 ft. Monitoring wells at the Port of Sunnyside have some of the highest nitrate levels of any wells in the Lower Yakima Valley.¹⁷



¹⁵ Chemical characterization of volatile organic compounds emitted by animal manure. [Chemical characterization of volatile organic compounds emitted by animal manure - ScienceDirect](#)

¹⁶ Emissions Data from Two Dairy Freestall Barns in Washington – National Air Emissions Monitoring Study available at [ASAE Journal | US EPA ARCHIVE DOCUMENT](#)

¹⁷ Groundwater at the Port of Sunnyside. [Port of Sunnyside Ground and Surface Water Pollution.pdf](#)

We do not find a stormwater control plan as required by the SEPA Mitigated Determination of Non-Significance. About 36% of the site will be paved over. Runoff must go somewhere. Nearby Sulfur Creek Wasteway is a potential destination.

There are no entries in the BACT Analysis Work Sheet on page 11/33 of the NSR Application.

There are three different Mitigated Determinations of Non-Significance in the NSR Application, the Supporting Documents and the Draft Order of Approval with differing mitigation requirements. The MDNS determinations cite RCW 197-11-350 which does not exist.

Would this digester be mesophilic or thermophilic? This information is important because both energy usage and digestate characteristics change depending on the type of digester.

Pacific Ag did not account for nitrous oxide emissions from stored digestate and these emissions can be significant.¹⁸ Why was this not done?

There are many different types of lagoon covers. What is the quality and permeability of the covers proposed for the SS RNG lagoons? What are leakage rates for the proposed lagoon covers?

What are the dimensions of the proposed SS RNG lagoons?

Would the lagoons be lined? If so what are the liner properties?

Where will SS RNG delivery trucks be kept when not in use?

What fuels will SS RNG delivery trucks burn?

Is there a reason why there are no requirements for fence line monitoring? This would be the most accurate way to ensure the health of neighbors. This would be the only way to ensure that harmful air emissions do not leave the SS RNG site.

What happens to the elemental sulfur produced by the Thiopaq scrubber? This is a flammable hazardous substance. Dust from stored sulfur at Nutrien Solutions at the Port of Sunnyside caught fire in 2022.¹⁹ The risk is real.

¹⁸ Monitoring methane and nitrous oxide emissions from digestate storage following manure mono-digestion. [Monitoring methane and nitrous oxide emissions from digestate storage following manure mono-digestion - ScienceDirect](#)

¹⁹ Chemical Fire at Fertilizer Plant Causes Several Homes to be Evacuated. [Chemical Fire at Fertilizer Plant Causes Several Homes to be Evacuated](#)

The life span of anaerobic digesters is about 20 years. Is there a decommissioning plan in place? Are there provisions to prevent abandonment of the SS RNG site if manure methane is no longer profitable?

11. Attainment and Non-Attainment

Pacific AG used background numbers for particulate matter that are below actual numbers measured by certified monitors in Yakima County. If more realistic numbers were used, then emissions in the lower valley would likely cause concentrations of some criteria pollutants in the area to exceed NAAQS standards and push Yakima County into non-attainment. See the table below from page 28/131 from Pacific Ag’s Supporting Documents, available at [Supporting Documents-Pacific Ag Renewables-February_2026.pdf](#)

Table 7: Results for Cumulative Analysis

Pollutant	Averaging Period	Modeled Design Concentration	Background Concentration	Total Impact	NAAQS
		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$)
PM _{2.5}	24-hour (a)	4.3	27	31.3	35
	Annual (b)	1.7	7.1	8.8	9
PM ₁₀	24-hour (c)	44.2	79	123.2	150
NO ₂	1-hour (a)	137.8	49	186.8	188
SO ₂	1-hour (d)	181.7	12.1	193.8	200
	3-hour (e)	117.5	17	134.5	1,300

The actual background concentration of PM 2.5 in Yakima County is almost always > 7.1 micrograms per cubic meter. If that number was 7.3 micrograms per cubic meter in Table 7 the projected concentration of PM 2.5 in the ambient air would exceed the NAAQS.

Table 7 in Pacific Ag’s Support Documents gives numbers in micrograms per cubic meters for the criteria pollutants Nitrogen Dioxide and Sulfur Dioxide. The EPA does not use micrograms per cubic meter in NAAQs for these pollutants. The EPA uses parts per million and parts per billion which are quite different. The entries for Nitrogen Dioxide and Sulfur Dioxide in Table 7 do not make sense.

12. Would SS RNG be a major source of air emissions?

Does the SS RNG project require a Title V permit? Pacific Ag has significantly underestimated emissions of criteria pollutants, hazardous air pollutants, and toxic air pollutants. A comprehensive study of all emission sources is in order.

1. Are SO₂ emissions properly quantified? Probably not.

When Pacific Ag applied for an air quality permit in 2023 they estimated that the total project would emit 13.75 tons per year of SO₂.

- Boilers – 0.062 tons
- Generator - 0.0028 tons
- Flares – 13.7 tons

When Pacific Ag submitted a revised application for an air quality permit in 2025 with a doubling of RNG production, they estimated that the total project would emit 13.36 tons per year of SO₂.

- Boilers – 0.125 tons
- Generator – 0.0014 tons
- Flares – 13.2 tons

What changed?

Plans for two steam boilers and two hot water boilers changed to plans for two much larger hot water boilers.

Maximum hours of non-emergency usage of the emergency generators decreased from 160 hours per year to 80 hours per year.

The number of flares increased from one to four and the maximum number of hours of flaring increased from 176 to 438, yet SO₂ emissions for flares decreased.

The big change occurred in the estimation of emissions from flaring.

Flaring estimates for SO₂ were based on the assumption that all H₂S in the flared biogas would be combusted to SO₂.

In 2023 Pacific Ag said that “generated biogas is expected to contain H₂S at a maximum concentration of 2,500 ppm”

In 2025 Pacific Ag said that “generated biogas is expected to contain H₂S at a maximum concentration of 991 ppm”

The YRCAA Draft Order of Approval says that “the concentration of H₂S in the biogas routed to any enclosed flare shall not exceed 991 ppm”

The YRCAA Draft Order of Approval requires testing for H₂S “between the diverter valve from the digester and the enclosed flare inlet at a location representative of the biogas entering the enclosed flare” which means testing of raw biogas from the digesters.

Is a concentration of < 991 ppm H₂S in raw biogas achievable?

Cornell University states, “H₂S is found in biogas, with concentrations in dairy manure-derived biogas generally varying from 600 to sometimes over 7,000 ppm.”²⁰

Studies from the European Union found that, “the highest level of sulphur was found in digester gas obtained from manure and dairy waste.” And “the largest amounts are observed in agriculture biogas, where it reaches maximum values of 6,570 ppm”²¹

Studies from Australia found that, “H₂S concentration in biogas varies from 100 to 10,000 ppmv depending on the feedstock’s sulphur content”²²

The Green Gas Digester in Stanfield Arizona processes manure from 32,500 milk cows on 5 dairies to produce renewable natural gas. This digester recently had to apply for a Title V permit due to increasing SO₂ emissions.²³

Side Note regarding Flares:

The Draft Order of Approval says on page 23:

“Each enclosed flare shall be equipped with a continuous flame-presence detection system and an alarm capable of alerting operators if combustion at any enclosed flare ceases and does not automatically re-light within five (5) minutes. If operators are not on-site, the alarm system shall automatically notify an off-site operator or responsible person.”

²⁰ Cornell University, Hydrogen Sulfide Removal from Biogas. [1a-H2S-in-biogas-Basics.pdf](#)

²¹ Pera, L., Gandiglio, M., Marocco, P., Pumiglia, D., & Santarelli, M. (2024). Trace contaminants in biogas: Biomass sources, variability and implications for technology applications. *Journal of Environmental Chemical Engineering*, 12(6), 114478. [Trace contaminants in biogas: Biomass sources, variability and implications for technology applications](#)

²² Vu, H. P., Nguyen, L. N., Wang, Q., Ngo, H. H., Liu, Q., Zhang, X., & Nghiem, L. D. (2022). Hydrogen sulphide management in anaerobic digestion: A critical review on input control, process regulation, and post-treatment. *Bioresource Technology*, 346, 126634. [Hydrogen sulphide management in anaerobic digestion: A critical review on input control, process regulation, and post-treatment - ScienceDirect](#)

²³ WOF SW GGP 1 LLC – STANFIELD. [V20702R1ISS-PDF](#)

Activation of this alarm constitutes an excess emissions event and shall be reported to YRCAA in accordance with the requirements in this Order.”

It appears that flares could be burning and malfunction without a responsible person on site. What happens if raw biogas is diverted to flares, the pilot light goes out, and there is no one to respond?

This seems unnecessarily dangerous. According to the Occupational Safety and Health Administration Hydrogen sulfide levels above 1,000 PPM lead to “nearly instant death.”²⁴

2. What is Missing?

The SS RNG Notice of Construction lists these emission points: boilers, biogas upgrading & Thiopaq, emergency generator, and flares. There are particulate matter estimates for straw grinding and roadway fugitives.

Neither the Notice of Construction nor the Draft Order of Approval list the following important emission points: roadway exhaust, feedstock storage, leakage from piping and pumping, mixing tanks, digester tanks, buffer tanks, liquid digestate (lagoons), biogas dehydration, or biogas compression.

There is no documentation of the type of pumps required to move manure slurry from trucks, to feedstock storage, to mixing tanks, to digester tank 1, to tank 2, to tank 3, to tank 4, to buffer tanks, to solid digestate storage or liquid digestate storage, to trucks for export. A single truck load of manure slurry weighs 37 tons. It takes a lot of horsepower to keep things moving on a mega digester operation.

Raw manure emits methane, ammonia, other nitrogenous compounds, hydrogen sulfide, and volatile organic compounds some of which are hazardous air pollutants. Raw manure contains sulfurous organic compounds that micro-organisms convert to hydrogen sulfide under anaerobic conditions.

There is no documentation of the machinery needed to perform biogas dehydration or biogas compression.

The Draft Order of Approval states on page 10/46:

“Collected biogas will be cooled before entering the amine-based biogas upgrading system. This system utilizes an absorption column containing a lean amine solution that removes CO₂, H₂S, and other trace gases from the biogas. The cleaned methane

²⁴ Occupational Safety and Health Administration Hydrogen Sulfide. [Hydrogen Sulfide - Hazards | Occupational Safety and Health Administration](#)

(scrubbed methane), obtained from the top of the absorption column, is dehydrated, compressed, and injected into the natural gas pipeline.”

Dehydration: To the best of our understanding the most commonly used dehydration process at methane refineries is Glycol Dehydration which is regulated under 40 CFR § 63.1282 and 40 CFR § 63.772.

By our calculations the dehydration unit at SS RNG would be a Large Glycol Dehydration Unit with the potential to emit large quantities of BTEX – Benzene, Toluene, Ethyl Benzene and Xylenes.

Compression: There are three types of natural gas compressors - Reciprocating Piston Compressors, Rotary Screw Compressors, and Centrifugal Compressors. We do not know which type is proposed for SS RNG because that information has not been included in the Notice of Construction or the Supporting Documents. Natural gas compressors are regulated by 40 CFR § 60.5365.

But all three types of compressors are significant emitters of methane, volatile organic compounds, nitrogen oxides and sulfur dioxide.

13. Legal Issues

A. From Supporting Documents

“4.0 AIR POLLUTANT EMISSION ESTIMATES Criteria pollutant and TAP emissions were calculated for each emission unit proposed by Sunnyside RNG for the facility per the requirements of Washington Administrative Code (WAC) 173-400-103 and WAC 173-460-050. Worst-case short-term and annual maximum emission rates were calculated for criteria pollutants and TAPs based on peak hourly and annual operating scenarios.”

WAC 173-400-103 does not apply in this case. WAC 173-400-103 only applies to counties without a local air pollution control authority.

B. WAC 173-400-171 (6) requires:

“(a) The notice must include:

(iv) A description of the air contaminant emissions including the type of pollutants and quantity of emissions that would increase under the proposal;”

The YRCAA Public Announcement for a hearing on the SS RNG proposal lists categories of air pollutants but fails to inform the public about the significant quantities involved.

C. WAC 173-400-111 Processing notice of construction applications for sources, stationary sources and portable sources says:

“(1) Completeness determination.

(b) A complete application contains all the information necessary for processing the application. At a minimum, the application must provide information on the nature and amounts of emissions to be emitted by the proposed new source or increased as part of a modification, as well as the location, design, construction, and operation of the new source as needed to enable the permitting authority to determine that the construction or modification will meet the requirements of WAC 173-400-113. Designating an application complete for purposes of permit processing does not preclude the reviewing authority from requesting or accepting any additional information.”

But Pacific Ag’s NOC fails to provide sufficient information. Without adequate data neither YRCAA nor the public can properly determine whether the proposed plan for a manure methane biodigester at the Port of Sunnyside endangers the quality of life and the lives of people who live in Sunnyside.

D. 40 CFR § 63.2 requires an applicant for an air permit to identify each type of emission point and the hazardous air pollutants that are emitted. Pacific Ag omitted several important emission points, including:

a. Receptor pits and transfer of manure from trucks to receptor pits. HAPs include the following compounds that were identified on a Washington dairy farm in the EPA National Air Emissions Monitoring System (NAEMS) research.²⁵

- Acetaldehyde
- Methanol
- Toluene
- Phenol
- Benzene
- Formaldehyde

b. Leakage from piping and connectors used to transfer manure & cellulosic materials from tank to tank.

²⁵ *Emissions Data from Two Dairy Freestall Barns in Washington* – National Air Emissions Monitoring Study available at [ASAE Journal | US EPA ARCHIVE DOCUMENT](#)

c. Lagoons used to store liquid digestate, plus transfer of liquid digestate to trucks for export, plus solid digestate storage and transfer. HAPs include the same pollutants found in raw manure.

E. 40 CFR § 63.11 provides regulations for flares and equipment leaks. This part of the code addresses a missing piece in YRCAA's Draft Order of Approval, the error that pretends there are no emissions from valves, connectors, pipes, and pumping that would move gasses, manure and digestate from place to place at the site.

F. 40 CFR § 63.772 Test methods, compliance procedures, and compliance demonstrations describes approved methods for measuring leakage from equipment used on refinery sites. This part of the code should be incorporated into the YRCAA Order of Approval.

One example: Section (b) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions says, "The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions."

G. Subpart HH of CFR 40 § 63.760 Applicability and designation of affected source applies to "(3) Facilities that process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user." This part of the code addresses both compressors and dehydrators and should be incorporated into the YRCAA Order of Approval.

H. 40 CFR § 60.5360b says that this section of the Clean Air Act:

"establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification, or reconstruction after December 6, 2022. This subpart also establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities in the crude oil and natural gas source category that commence construction, modification, or reconstruction after December 6, 2022."

Which facilities are subject to this sub chapter? § 60.5365b designates:

"(b) Each centrifugal compressor affected facility, which is a single centrifugal compressor. A centrifugal compressor located at a well site is not an affected

facility under this subpart. A centrifugal compressor located at a centralized production facility is an affected facility under this subpart.

(c) Each reciprocating compressor affected facility, which is a single reciprocating compressor. A reciprocating compressor located at a well site is not an affected facility under this subpart. A reciprocating compressor located at a centralized production facility is an affected facility under this subpart.”

I. Subpart HHH of CFR 40 § 63.1270 Applicability and designation of affected source says, “This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in [§ 63.1271](#).”

To our understanding most dehydration processes on natural gas refineries are glycol dehydration units which are categorized according to volume of throughput per day. By our calculations the proposed SS RNG biodigester would have a throughput of up to 134,725 m³ per day of natural gas.²⁶ This would put a SS RNG Dehydration Unit in the category of large glycol dehydration units.²⁷

J. 40 CFR § 63.1275 Glycol dehydration unit process vent standards provides regulatory criteria for venting emissions from glycol dehydration units. This part of the code should be incorporated into the YRCAA Order of Approval.

K. 40 CFR 60.18 contains requirements for control devices used to comply with applicable subparts of 40 CFR parts 60 and 61. There are requirements for flares, for monitoring equipment for leaks, and for record keeping. This part of the code should be incorporated into the YRCAA Order of Approval.

L. 40 CFR § 63.1282 outlines test methods, compliance procedures, and compliance demonstrations for determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. If the SS RNG project employs glycol dehydration, this part of the code should be incorporated into the YRCAA Order of Approval.

²⁶ At standard conditions, 1 MMBtu \approx 27.3192 m³ of natural gas. 1.8 million MMBTUs x 27.3192 = 49,174,560 m³ per year of natural gas = 134,725 m³ per day of natural gas.

²⁷ Subpart HHH of CFR 40 § 63.1270. Definitions. [eCFR :: 40 CFR Part 63 Subpart HHH -- National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities](#)

14. Environmental Justice

The population of the Lower Yakima Valley in the Sunnyside Grandview area is over 80% Latino. About 25% of the population does not speak English well.

Over the past several years Friends of Toppenish Creek and others have repeatedly asked involved agencies and officials to provide information regarding the proposed SS RNG biodigester to the public in both English and Spanish. The response has been silence.

The Yakima Regional Clean Air Agency boasts of community service in their official documents. It is unfortunate that YRCAA actions do not live up to their words.

YRCAA Regulation 1:

1.03 POLICY. This section implements the Washington Clean Air Act (WCAA) by doing the following:

A. PUBLIC POLICY. Securing and maintaining levels of air quality that will:

1. Protect human health and safety;
2. Prevent injury to plant and animal life and property;
3. Foster comfort and convenience;
4. Promote economic and social development;
5. Facilitate the enjoyment of natural attractions;
6. Prevent or minimize the transfer of air pollution to other resources;
7. Ensure equity and consistency with the Federal Clean Air Act (FCAA) and WCAA;
8. Educate and inform the citizens of Yakima County on air quality matters;
9. Maintain accurate and current policies, regulations, and rules;
10. Perform administrative actions in a timely and effective manner; and
11. Cooperate with the local governments, the Yakama Nation, organizations or citizens on air quality matters.

Notice of Non-Discrimination

“The Yakima Regional Clean Air Agency (YRCAA) does not discriminate on the basis of race, color, national origin, disability, age, or sex in administration of its services,

programs or activities, and the YRCAA does not intimidate, threaten, coerce or discriminate against any individual or group because they have exercised their rights to participate in actions protected, or oppose actions prohibited by the EPA’s nondiscrimination regulation, or for the purpose of interfering with such rights that are guaranteed by 40 C.F.R. Parts 5 and 7, or the Acts (Title VI of the Civil Right Act of 1964, as amended; Section 504 of the Rehabilitation Act 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972; and Section 13 of the Federal Water Pollution Control Act Amendments of 1972 (collectively as the federal non discrimination statutes)).”

On February 12, 2026 the YRCAA posted a “Notice of Construction application from Pacific Ag Renewables (PAR), dba Sunnyside RNG, LLC, for a Renewable Natural Gas (RNG) production facility” on the agency website in English and Spanish.²⁸ This was the only public notice for this NOC.

Although the notice was posted in English and Spanish, none of the relevant materials – the Notice of Construction, the Supporting Documents, and the Draft Approval – were translated into Spanish.

A bi-lingual “Public Hearing” was held at YRCAA offices in Terrace Heights, WA, forty miles from the City of Sunnyside where the proposed project would be constructed.²⁹ There were no chairs for half the people who attended. People had to stand for three hours.

The YRCAA presented a brief power point summary of the permitting process that was filled with acronyms and legal jargon that only those already immersed in the permitting could understand.

The YRCAA refused to take questions at the hearing. To our understanding a hearing is an opportunity for sworn testimony and cross examination. But the YRCAA simply refused to engage.

There was no sign in sheet where attendees could provide contact information and receive follow up from the YRCAA.

²⁸ YRCAA. Notice of Construction. [YRCAA Letter](#)

²⁹ Yakima Herald Republic. Sunnyside residents voice concerns over proposed biodigester at air permit hearing. [Sunnyside residents voice concerns over proposed biodigester at air permit hearing | Lower Valley | yakimaherald.com](#)

It appears that the YRCAA only complies with the bare minimum requirements of the law and makes no effort to involve people in Yakima County who do not speak English, even when that population is most heavily affected by air pollution.

15. Yakima Regional Clean Air Agency ability to administer permits

The Yakima Regional Clean Air Agency (YRCAA) Air Pollution Control Officer (APCO) has no education in air science, or the law, or engineering, or environmental science. The totality of his experience has been on the job training since he was hired by the YRCAA in the fall of 2022. Until January of 2025 the APCO benefited from the expertise of the agency's longtime Permitting and Planning Supervisor. Now this backup is missing.

Today the YRCAA Permitting and Planning Division consists of two engineers, although this division traditionally had a staff of three. A long time employee in permitting left the agency in 2024 after filing a whistle blower complaint. Two engineers are responsible for managing all air quality permits for Washington's eighth largest county by population, second largest county by land area, tenth highest for GDP, and first or second worst for air quality.

The YRCAA has been unable to keep up with the work required to process air quality permits and to make sure permit requirements are met. For half of 2025 the YRCAA resorted to hiring an outside contractor to help with permitting.

The YRCAA has issued numerous permits "after the fact" which means businesses are allowed to begin or expand with the understanding that permits will be approved at a later date. Here is a partial list of some "after the fact" permits:

- Cargill Feed Mill, Granger, WA
- TTC Construction, Yakima WA
- DTG Recycling and Landfill, Yakima WA
- Ostrom Mushroom Farm (aka Greenwood Mushrooms) Sunnyside, WA

The fact that YRCAA staff missed so many important requirements in the SS RNG permit application is further evidence that the YRCAA is not adequately staffed to complete all the important tasks involved in Yakima County air permitting.

16. SEPA Appeal

FOTC hereby appeals the 2024 SEPA Mitigated Determination of Non-Significance for the Sunnyside RNG project. We state for the record that it is impossible to construct a manure methane biodigester that may be the largest dairy digester in the nation, that will produce 1.8 million MMBTUs of energy, that will involve 25 tanks of manure and methane that are 83

ft high, that will concentrate manure from 25 to 35 dairy farms in one place inside the second largest city in Yakima County, that will require 140 truck trips a day on two lane county roads, that will emit in excess of 50 tons per year of major air pollutants - without incurring adverse environmental impacts. This project requires an Environmental Impact Statement and meaningful community involvement.

We make this appeal due to:

- Increased public expenditures to upgrade and maintain state and county roadways used to transport materials to and from the proposed operation.
- Incentivizing one form of manure management that is arguably more costly than alternative methods.
- Likely manure spills on residents who live near the roads traveled by vehicles that transport manure to the proposed operation. Manure spills on public roadways, even on areas where children wait for school busses, are well known to the people who live near concentrated animal feeding operations (CAFOs).
- Worsening air pollution in South Yakima County by potentially increasing the number of milk cows in the area, by increasing air emissions from vehicles that transport materials to and from the proposed operation, by increasing emissions of toxic air pollutants from the proposed operation.
- Increased risk of explosions and fires at the Port of Sunnyside without ensuring adequate safety precautions. Assurances in the documents we have reviewed are vague and unenforceable. Methane leaks from improperly maintained operations are commonplace and risks increase as time passes and equipment ages. Although the chances of explosions are low, the consequences of explosions when they occur can be deadly.
- Increased groundwater pollution at the Port of Sunnyside. A LYV GWMA monitoring well with one of the highest LYV nitrate concentrations is on the Port of Sunnyside. There are insufficient guarantees that stormwater and wastewater from the facility will not leach into the already contaminated aquifer.
- There is no documentation of conversations with the Yakima Health District, the agency tasked with protection of public health in Yakima County. Without this input it is not possible to know how this project will:
 - Impact those who live in the immediate vicinity through increases in toxic air pollutants such as ammonia and hydrogen sulfide at the fence line, and exposure to manure pathogens.
 - Impact those who live distant from the proposed facility through increases in greenhouse gasses including nitrous oxide, increases in criteria air pollutants

including fine particulate matter and ozone, and increases in toxic air pollutants including ammonia and hydrogen sulfide.

- The SEPA checklist states on page 3/13, “Digestate and other residues produced at the plant will be carefully managed, along with strict wastewater management, emissions management, odor control and other state-of-the art practices.” This statement provides insufficient information for the public to evaluate adequacy of the “state-of-the art practices.” Those proposed practices must be identified so citizens can evaluate whether all Reasonable Available Control Technology (RACT) will be achieved.
- The SEPA checklist does not estimate the cumulative impacts when a manure bio digester is located next to a mushroom factory with known air emissions and odor problems, a fertilizer plant with a history of fires and spills, and the Sunnyside Waste Water Treatment Plant.
- The SEPA checklist states that the digestate lagoon will be lined. The checklist does not state whether this will be a clay liner or a synthetic liner. The checklist does not provide permeability criteria for proposed lagoon liners.
- The SEPA checklist does not provide parameters for a “gas tight” cover for the digestate lagoon. How much gas will escape from the proposed cover?
- Manure bio-digesters increase conversion of organic nitrogen to ammonia as part of routine operations. This information is available to the applicants and should have been answered in the SEPA checklist.
- Manure bio-digesters increase conversion of sulfur containing organic compounds to hydrogen sulfide, a toxic air pollutant.
- The SEPA checklist does not quantify the amount of ammonia, hydrogen sulfide, volatile organic compounds, and particulate matter that will be released into the atmosphere during on farm production of the manure that will be processed to extract RNG.
- The SEPA checklist does not quantify the amount of ammonia, hydrogen sulfide, volatile organic compounds, and particulate matter released into the atmosphere by digestate from the operation, both at the site and after transport offsite.
- Regarding air emissions the SEPA checklist states: “Background concentrations will be accounted for in the Air Permit.” The area surrounding the Port of Sunnyside already has problems with air emissions and odor. Using the current air quality as a baseline is not the same as defining a baseline with healthy air. Adding emissions from a manure bio digester could push air quality at the fenceline above standards for human health.
- The SEPA checklist states on page 4, “These emissions quantities are being refined currently as part of the Clean Air Permit Application with Yakima County.” The SEPA review was completed before the YRCAA provided information on air impacts.

Thank you for addressing these serious concerns.

Friends of Toppenish Creek

Attachment 1: Revenue from carbon credits under Washington’s Clean Fuel Standard

Washington’s Clean Fuel Standard is codified in WAC 173-424. Instructions for calculating credits and deficits are found in WAC 173-424-540, copied on page 5 of this paper.

Here is a simplified instruction flow sheet based on those calculations:

1. Determine energy produced in mega joules
2. Use Energy Economy Ratio in Table 4 to calculate adjusted energy in mega joules
 Adjusted energy in mega joules = energy in mega joules x EER
3. Carbon Intensity Difference = (Carbon Intensity Standard from Table 1) – (the fuel’s carbon intensity from Table 6)
4. (Adjusted energy) x (Carbon Intensity difference) = grams of carbon dioxide equivalent
5. Grams of carbon dioxide equivalent/1,000,000 = metric tons of carbon dioxide equivalent = Credits or Deficits

Methane from dairy or swine manure has a temporary carbon intensity (CI) of -150 with a potential to reduce this number further under GREET 3.0.³⁰

Currently there are seven manure bio-digesters in Washington State.³¹

Name	Type	kWh/yr	MMBTU/yr	Biogas cu ft/day
Farm Power Lynden Digester	Mixed Plug Flow	6,175,800	21,072	
Farm Power Rexville Digester	Mixed Plug Flow	6,175,800	21,072	
George DeRuyter & Son Dairy Digester	Mixed Plug Flow	9,881,280	33,715	387,360

³⁰ Actual pathway CIs could be much lower. In California’s program, the average CI for all RNG pathways is -219. See CARB LCFS Quarterly Data Summary data for Q3 2025.

³¹ From EPA AgSTAR [agstar-livestock-ad-database.xlsx](#)

Qualco Energy Digester	Mixed Plug Flow	3,705,480	12,643	
Rainier Biogas Digester	Mixed Plug Flow	8,234,400	28,096	
Van Dyk Dairy Digester	Complete Mix	2,803,200	9,565	
Vander Haak Digester	Mixed Plug Flow	4,467,600	15,243	
Totals		41,443,560	141,406	

A group of ag entrepreneurs has been working on plans for a Hub and Spoke Digester in Yakima County for several years. This digester would produce 1,800,000 MMBtus per year of RNG, much more than the other seven combined. Although most publications estimate cost to construct bio-digesters at \$1 to \$10 million, the Yakima digester would cost \$94 - \$100 million for construction. Proponents estimate the cost to operate at several million per year.^{32, 33}

This short paper describes potential income from credit generation in Washington’s Clean Fuel Standard for an on-farm digester (page 3), for the proposed hub and spoke digester (page 4), and for a hypothetical solar farm (page 5).

³² SUNNYSIDE RNG Renewable Natural Gas Project Introduction to the Port of Sunnyside September 6, 2022. [PowerPoint Presentation](#)

³³ Sunnyside RNG NSR Review Application Supporting Documents. [Supporting Documents- Pacific Ag Renewables-February 2026.pdf](#) Note increase in estimated energy production from 830,000 in the 2022 PP Presentation MMBTUs to 1,800,000 MMBTUs in the 2025 permit application.

Farm Power Lynden with 2,000 cows - calculations for methane as natural gas

1. Farm Power Lynden produces 6,175,800 kWh of energy per year or 21,072 MMBTUs of energy per year.

1 MMBTU = 1,055.06 mega joules

21,072 MMBTUs = 22,232,224 mega joules

2. If the RNG is used for an internal combustion engine, multiply by 1 to obtain 22,232,224 mega joules of adjusted energy.

3. $92 \text{ gCO}_2\text{e}/\text{mega joules} - 77.98 \text{ gCO}_2\text{e}/\text{mega Joule} = 14.02 \text{ gCO}_2\text{e}/\text{mega joule}$

4. $(22,232,224 \text{ mega joules}) \times (14.02 \text{ gCO}_2\text{e}/\text{mega Joule}) = 311,695,780 \text{ gCO}_2\text{e}$

5. Metric tons of CO₂e = $311,695,780 \text{ gCO}_2\text{e} / 1,000,000 = 311.696 \text{ MTCO}_2\text{e}$ per year from Farm Power Lynden

If Farm Power Lynden sells credits at \$50 per credit, the dairy can earn \$15,585 per year from cow manure used to make natural gas without avoided methane.

Farm Power Lynden - Calculations using avoided methane

1. Farm Power Lynden produces 6,175,800 kWh of energy per year or 21,072 MMBTUs of energy per year.

1 MMBTU = 1,055.06 MJ

21,072 MMBTUs = 22,232,224 mega joules

2. If the RNG is used for an internal combustion engine, multiply by 1 to obtain 22,232,224 mega joules of adjusted energy.

3. $92 \text{ gCO}_2\text{e}/\text{mega joules} - (-150 \text{ gCO}_2\text{e}/\text{mega joules}) = 242 \text{ gCO}_2\text{e}/\text{mega joules}$

4. $(22,232,224 \text{ mega joules}) \times (242 \text{ gCO}_2\text{e}/\text{mega joule}) = 5,380,198,208 \text{ gCO}_2\text{e}$

5. Metric tons of CO₂e = $5,380,198,208 \text{ gCO}_2\text{e} / 1,000,000 = 5,380.2 \text{ MTCO}_2\text{e}$ per year from Farm Power Lynden

If Farm Power Lynden sells credits at \$50 per credit, the dairy can earn \$269,010 per year from cow manure used to make natural gas with avoided methane crediting.

Sunnyside Renewable Natural Gas – About 80,000 cows from about 30 dairies

The facility will produce approximately 1,800,000 million British thermal units (MMBtu) of RNG per year through anaerobic digestion of feedstocks delivered from several dairies located near the facility.

[Supporting Documents-Pacific Ag Renewables-February 2026.pdf](#) page 9

Proposed SS RNG Biodigester using credits for Fossil Natural Gas

1 MMBTU = 1,055.06 MJ

1. 1,800,000 million British thermal units (MMBtu) = 1,900,080,000 mega joules
2. If the RNG is used for an internal combustion engine, multiply by 1 to obtain 1,900,080,000 mega joules of adjusted energy.
3. $92 \text{ gCO}_2\text{e}/\text{megaJoule} - 77.98 \text{ gCO}_2\text{e}/\text{megaJoule} = 14.02 \text{ gCO}_2\text{e}/\text{megaJoule}$
4. $1,900,080,000 \text{ mega joules} \times 14.02 \text{ gCO}_2\text{e}/\text{megaJoule} = 26,639,121,600 \text{ gCO}_2\text{e}$
5. $26,639,121,600/1,000,000 = 26,639 \text{ metric tons of carbon dioxide equivalent}$

If the SS RNG Digester sells credits at \$50 per credit the company can earn \$1,331,950 from cow manure used to make natural gas without avoided methane.

Proposed SS RNG Biodigester with avoided methane

1. 1,800,000 million British thermal units (MMBtu) = 1,900,080,000 mega joules
2. If the RNG is used for an internal combustion engine, multiply by 1 to obtain 1,900,080,000 mega joules of adjusted energy.
3. $92 \text{ gCO}_2\text{e}/\text{mega Joule} - (-150 \text{ gCO}_2\text{e}/\text{mega joules}) = 242 \text{ gCO}_2\text{e}/\text{mega joules}$
4. $1,900,080,000 \text{ mega joules} \times 242 \text{ gCO}_2\text{e}/\text{megaJoule} = 459,819,000,000 \text{ gCO}_2\text{e}$
5. $459,819,000,000 \text{ gCO}_2\text{e} / 1,000,000 = 459,819 \text{ metric tons of carbon dioxide equivalent}$

If SS RNG sells credits at \$50 per credit the company can earn \$22,990,950 in a year from cow manure used to make natural gas with avoided methane crediting.

Credits for Electricity used in Light-Duty Electric Vehicles from directly supplied Solar Panels

1. 500,000 kWh per year per acre (maximum)

3.6 mega joules per kWh.

500,000 kWh x 3.6 megajoules per kWh = 1,800,000 mega joules per acre

2. Adjusted energy (multiply by EER = 3.4)

1,800,000 x 3.4 = 6,120,000 mega joules of adjusted energy.

3. 92 gCO₂e/megaJoule – 0 = 92 gCO₂e/mega joule

4. 6,120,000 mega joules x 92 gCO₂e/mega joule = 563,040,000 gCO₂e

5. 563,040,000 gCO₂e/1,000,000 = 563 MTCO₂e per year

If the solar farm sells credits at \$50 per credit the solar farm can earn \$28,150 per year per acre

WAC 173-424-540

Calculating credits and deficits.

(1) **General credit or deficit calculation method.** Except as provided in subsections (2) and (3) of this section, credit and deficit generation must be calculated for all fuels included in WAC [173-424-520](#):

(a) Using credit and deficit basics as directed in WAC [173-424-510](#);

(b) Calculating energy in mega joules by multiplying the amount of fuel by the energy density of the fuel in Table 3 under WAC [173-424-900](#);

(c) Calculating the adjusted energy in mega joules by multiplying the energy in mega joules from (b) of this subsection by the energy economy ratio of the fuel listed in Table 4 under WAC [173-424-900](#) or as approved by ecology under WAC [173-424-620](#), as applicable;

(d) Calculating the carbon intensity difference by subtracting the value in (d)(i) from (ii) of this subsection:

- (i) The fuel's carbon intensity as approved under WAC [173-424-600](#) through [173-424-630](#), adjusted for the fuel application's energy economy ratio as listed in Table 4 under WAC [173-424-900](#) or as approved under WAC [173-424-620](#) as applicable;
- (ii) The carbon intensity standard for gasoline or gasoline substitutes listed in Table 1 under WAC [173-424-900](#) or diesel fuel and diesel substitutes listed in Table 2 under WAC [173-424-900](#), as applicable;
- (e) Calculating the grams of carbon dioxide equivalent by multiplying the adjusted energy in mega joules in (c) of this subsection by the carbon intensity difference in (d) of this subsection;
- (f) Calculating the metric tons of carbon dioxide equivalent by dividing the grams of carbon dioxide equivalent calculated in (e) of this subsection by 1,000,000; and
- (g) Determining under WAC [173-424-510](#)(5) whether credits or deficits are generated.

Attachment 2: The SS RNG Biodigester might be the largest dairy digester in the nation

The YRCAA NSR Application says that SS RNG will produce 1,800,000 MMBTUs of bio methane per year

This equals 4,932 MMBTU per day – See calculations below for volume of biogas

Converting to cu ft per day

1. 1 cubic foot=1,036 BTU from [Energy conversion calculators - U.S. Energy Information Administration \(EIA\)](#)
2. 1 BTU = 1/1,036 = 0.000965 cu ft
3. 4,932 MMBTU = 4,932,000,000 BTU
4. 4,932,000,000 x 0.000965 = 4,759,380 cu ft of biogas per day – more than any digester listed by the EPA

Comparing SS RNG to the largest dairy biodigesters on the EPA list of manure biodigesters, available at [Livestock Anaerobic Digester Database | US EPA](#)

Exum Dairy Digester	Dalhart	TX	Covered Lagoon	Pipeline Gas	2019	Dairy	No	Animals: 32,500 dairy; Biogas Production: 2,000,000 ft ³ /day
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Exum Digester sends RNG to California

Green Gas Partners Stanfield Digester	Maricopa	AZ	Complete Mix	Pipeline Gas	2018	Dairy	No	Animals: 30,000 dairy; Biogas Production: 3,454,500 ft ³ /day
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The Stanfield Digester is a Title V source of air pollution. [WOF SW GGP1, LLC. | Pinal County, AZ](#)

Grimmius Cattle Company Digester	Hanford	CA	Covered Lagoon	CNG	2021	Cattle; Dairy	No	Animals: 40,000 cattle; 39,000 dairy; Biogas Production: 1,365,000 ft ³ /day
---	---------	----	----------------	-----	------	---------------	----	--

Threemile Canyon Farms Digester	Boardman	OR	Mixed Plug Flow	Pipeline Gas	2012	Dairy	No	Animals: 33,000 dairy;
--	----------	----	-----------------	--------------	------	-------	----	-------------------------------

Three Mile Canyon has been fined for exceeding emission limits and for failure to properly monitor air quality. [WOF PNW Threemile Project fined as Ore. weighs halting industrial ag](#)

Three Mile Canyon produces between 1,200,000 and 1,400,000 cu ft of natural gas per day and sends RNG to California

Westside Dairy Digester	Dumas	TX	Covered Lagoon	Pipeline Gas	2020	Dairy	No	Animals: 37,500 dairy;
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Westside sends RNG to California

When applying for and receiving SEPA approval of the SS RNG project, Pacific Ag said the operation would produce between 800,000 and 950,000 MMBTUs of natural gas per year.

The NSR Application for an air permit now says that Pacific Ag will produce 1,800,000 MMBTUs of natural gas per year or double the amount stated in Pacific Ag’s environmental checklist.

Pacific Ag Presentations and Applications

Presentation to the Port of Sunnyside in 2022 - [PowerPoint Presentation](#)

“Produce 830K MMBtus per year of RNG – making it one of the largest ag waste anaerobic digesters in the nation.”

New Source Review Application Supporting Information Report Sunnyside RNG LLC Proposed Renewable Natural Gas Facility Yakima County, Washington 2023 - [SEPA#2023-0200-Addendum-Addendum Letter to SEPA Checklist \(1\).pdf](#) page 14/294

“The RNG facility will produce between 800,000 and 950,000 million British thermal units (MMBtu) of RNG per year through anaerobic digestion of feedstocks delivered from several dairies located near the facility.”

SEPA Checklist 2023 - [Notice of Environmental Review SEPA-2023.0200 Complete Notice.pdf](#) page 5/21

“Total RNG production is expected to be between 800,000 and 950,000 MMBTU per year.”

New Source Review Application in 2025 - [NoC_Application-Pacific_Ag_Renewables-February_2026.pdf](#)

Process: Production Output per Year (tons, pounds, etc)	~1,800,000 MMBtu methane/year
Maximum Output per Hour (tons, pounds, etc)	~205 MMBtu methane/hour

Attachment 3: Tables from the 2023 NOC and the 2025 NOC

2023

Table 2: Project Emissions Compared to Small-Quantity Emission Rates

Pollutant	CAS No.	Averaging Period	Emission Rate	SQER (a)	Modeling Required?
			(pounds per averaging period)		
Nitrogen Dioxide	10102-44-0	1-hr	29	0.87	Yes
Carbon Monoxide	630-08-0	1-hr	36	43	--
Sulfur Dioxide	7446-09-05	1-hr	68	1.2	Yes
Diesel Engine Exhaust Particulate Matter	DPM	year	102	0.54	Yes
1,3-Butadiene	106-99-0	year	5.2	5.4	--
Acetaldehyde	75-07-0	year	20	60	--
Acrolein	107-02-8	24-hr	0.01	0.026	--
Ammonia	7664-41-7	24-hr	28.2	37	--
Arsenic	7440-38-2	year	0.038	0.049	--
Benzene	71-43-2	year	6	21	--
Cadmium	7440-43-9	year	0.036	0.039	--
Chlorobenzene	108-90-7	24-hr	1.5E-05	74	--
Chromium VI	18540-29-9	year	2.4E-03	0.00065	Yes
Copper	7440-50-8	1-hr	3.1E-04	0.19	--
Ethylbenzene	100-41-4	year	2.5	65	--
Formaldehyde	50-00-0	year	45	27	Yes
Hexane	110-54-3	24-hr	0.02	52	--
Hydrogen Chloride	7647-01-0	24-hr	0.014	0.67	--
Hydrogen Sulfide	7783-06-4	24-hr	19.03	0.15	Yes
Lead	7439-92-1	year	0.20	14	--
Manganese	7439-96-5	24-hr	2.3E-04	0.022	--
Mercury	7439-97-6	24-hr	1.5E-04	0.0022	--
Naphthalene	91-20-3	year	0.5	4.8	--
Nickel	7440-02-0	year	0.093	0.62	--
Propylene	115-07-1	24-hr	1.7	220	--
Selenium	7782-49-2	24-hr	1.6E-04	1.5	--
Toluene	108-88-3	24-hr	0.09	370	--
Xylene	1330-20-7	24-hr	0.064	16	--

Notes:

(a) Small-quantity emission rates from WAC 173-460-150.
CAS = Chemical Abstracts Service

Table 2: Project Emissions Compared to Small-Quantity Emission Rates

Pollutant	CAS No.	Averaging Period	Emission Rate	SQER (a)	Modeling Required?
			(lbs/averaging period)		
Nitrogen Dioxide	10102-44-0	1-hr	38	0.87	Yes
Carbon Monoxide	630-08-0	1-hr	80	43	Yes
Sulfur Dioxide	7446-09-05	1-hr	60	1.2	Yes
Diesel Engine Exhaust Particulate Matter	DPM	year	51	0.54	Yes
1,3-Butadiene	106-99-0	year	2.6	5.4	--
Acetaldehyde	75-07-0	year	11	60	--
Acrolein	107-02-8	24-hr	0.02	0.026	--
Ammonia	7664-41-7	24-hr	33.54	37	--
Arsenic	7440-38-2	year	0.019	0.049	--
Benzene	71-43-2	year	5	21	--
Cadmium	7440-43-9	year	0.018	0.039	--
Chlorobenzene	108-90-7	24-hr	1.5E-05	74	--
Chromium VI	18540-29-9	year	1.2E-03	0.00065	Yes
Copper	7440-50-8	1-hr	3.1E-04	0.19	--
Ethylbenzene	100-41-4	year	3.7	65	--
Formaldehyde	50-00-0	year	26.9	27	--
Hexane	110-54-3	24-hr	0.03	52	--
Hydrogen Chloride	7647-01-0	24-hr	0.014	0.67	--
Hydrogen Sulfide	7783-06-4	24-hr	18.52	0.15	Yes
Lead	7439-92-1	year	0.10	14	--
Manganese	7439-96-5	24-hr	2.3E-04	0.022	--
Mercury	7439-97-6	24-hr	1.5E-04	0.0022	--
Naphthalene	91-20-3	year	0.4	4.8	--
Nickel	7440-02-0	year	0.046	0.62	--
Propylene	115-07-1	24-hr	3.6	220	--
Selenium	7782-49-2	24-hr	1.6E-04	1.5	--
Toluene	108-88-3	24-hr	0.19	370	--
Xylene	1330-20-7	24-hr	0.135	16	--

Notes:

(a) Small-quantity emission rates from WAC 173-460-150.

CAS = Chemical Abstracts Service

lbs = pounds

2023

Sunnyside RNG Project
Sunnyside, WA

Summary of Project Emissions

Pollutant		Boilers	Thiopaq	Emergency Gen.	Flare	Straw Grinding	Roadway Fugitives	Digestate	Totals
NO _x	lb/hr	0.26	--	21.9	6.6	--	--	--	28.74
	tpy	1.2	--	3.5	1.32	--	--	--	5.98
CO	lb/hr	0.53	--	5.0	30	--	--	--	35.65
	tpy	2.3	--	0.80	6.0	--	--	--	9.1
PM ₁₀	lb/hr	0.18	--	0.70	0.72	0.10	0.50	--	2.21
	tpy	0.8	--	0.112	0.145	0.44	1.80	--	3.28
PM _{2.5}	lb/hr	0.18	--	0.70	0.72	0.10	0.09	--	1.79
	tpy	0.8	--	0.112	0.145	0.44	0.31	--	1.78
SO ₂	lb/hr	0.014	--	0.018	68	--	--	--	68.44
	tpy	0.062	--	0.0028	13.7	--	--	--	13.75
VOC	lb/hr	0.13	--	0.38	0.12	--	--	--	0.63
	tpy	0.57	--	0.062	0.023	--	--	--	0.65
CO ₂ e	tpy	12,309	34,857	271	3855	--	--	--	51,293

2025

Sunnyside RNG Project
Sunnyside, WA

Summary of Project Emissions

Pollutant	Units	Boilers	Upgrader & Thiopaq Scrubber	Emergency Generator	Flares	Grinder Baghouse	Roadway Fugitives	Digestate	Totals
NO _x	lb/hr	0.51	--	21.9	16.1	--	--	--	38.45
	tpy	2.2	--	1.7	3.52	--	--	--	7.49
CO	lb/hr	1.81	--	5.0	73	--	--	--	80.09
	tpy	7.9	--	0.40	16.1	--	--	--	24.4
PM ₁₀	lb/hr	0.36	--	0.70	1.76	0.10	0.51	--	3.43
	tpy	1.6	--	0.056	0.386	0.44	1.77	--	4.24
PM _{2.5}	lb/hr	0.36	--	0.70	1.76	0.10	0.09	--	3.02
	tpy	1.6	--	0.056	0.386	0.44	0.32	--	2.78
SO ₂	lb/hr	0.028	--	0.018	60	--	--	--	60.46
	tpy	0.125	--	0.0014	13.2	--	--	--	13.36
VOC	lb/hr	0.17	--	0.38	0.28	--	--	--	0.84
	tpy	0.76	--	0.031	0.062	--	--	--	0.85
CO ₂ e	tpy	24,748	81,780	136	9,236	--	--	--	115,900

2023

Table 5: Building and Structure Information

Building/Structure Description	Length (feet)	Width (feet)	Height (feet)
Lab Storage	20	10	13
Digester Tanks (a)	--	100	59
Mix tanks (b)	--	76	45
Biogas Pretreatment	100	50	40
Amine Building	100	75	52
Gen Enclosure	20	8	17
Administration	50	50	16
Grindhouse	212	119	24
Maintenance Control Room	105	70	16
Fiber Storage	101	273	16
Boiler House	121	73	17

2025

Table 5: Building and Structure Information

Building/Structure Description	Length (feet)	Width (feet)	Height (feet)
Digester Tanks (a)	--	80	83
Mix Tanks (b)	--	106	83
Amine Building	57	53	52
Solid Feedstock Buildings	121	55	26
Grindhouse	182	134	24
Maintenance Control Room	136	81	16
Fiber Storage	200	85	16
Boiler House	115	45	17

Attachment 4: Spills, Fires and Explosions Involving Anaerobic Digesters

Digester Accidents in North Carolina

In North Carolina, there have been several incidents involving digester accidents, particularly in the context of anaerobic digesters. Here are some notable incidents:

- [**3 Rivers Energy Partners:** A tank at their anaerobic digester collapsed, spilling 2.2 million gallons of lake water. The incident occurred during testing, and local officials described the scene as resembling a natural disaster.](#)
- [**White Oak Farms:** A biogas digester cover rupture released 806,868 gallons of liquid waste, with significant portions entering the nearby Nahunta Swamp. The farm shut down in 2023 after multiple violations of permits.](#)
- [**Transfarmation Project:** In May 2022, a manure digester cover broke, releasing around 1 million gallons of foam and slurry, including liquified dead pigs and hog feces. The farm shut down in 2023, and Biox Renewables purchased the farm to operate the digester again, but it violated the permit shortly after.](#)

Explosions:

[Avonmouth explosion: Investigation after four killed in blast](#)

[Paper mill is back in business after dramatic explosion | AP News](#)

[Company fined after an explosion seriously injured two employees - GOV.UK](#)

[AD plant collapses at Harper Adams - Farmers Weekly](#)

[My Heart Sank: Mill Manager Speaks Out About Explosion, Future Of IP : NorthEscambia.com](#)

[Lightning-hit plant near Oxford gets go-ahead for protection measures](#)

[EPDM failure causes anaerobic digester... | Treatment Plant Operator](#)

[Digester Methane Explosion](#)

[Noblehurst Farms loses digester in fire - Manure Manager](#)

[Methane fueled explosion at Aumsville dairy farm causes fire - oregonlive.com](#)

[Manure digester explosion in Wisconsin sparks fire - Manure Manager](#)

[Michigan Biodigester Explodes from Methane Gas Buildup](#)

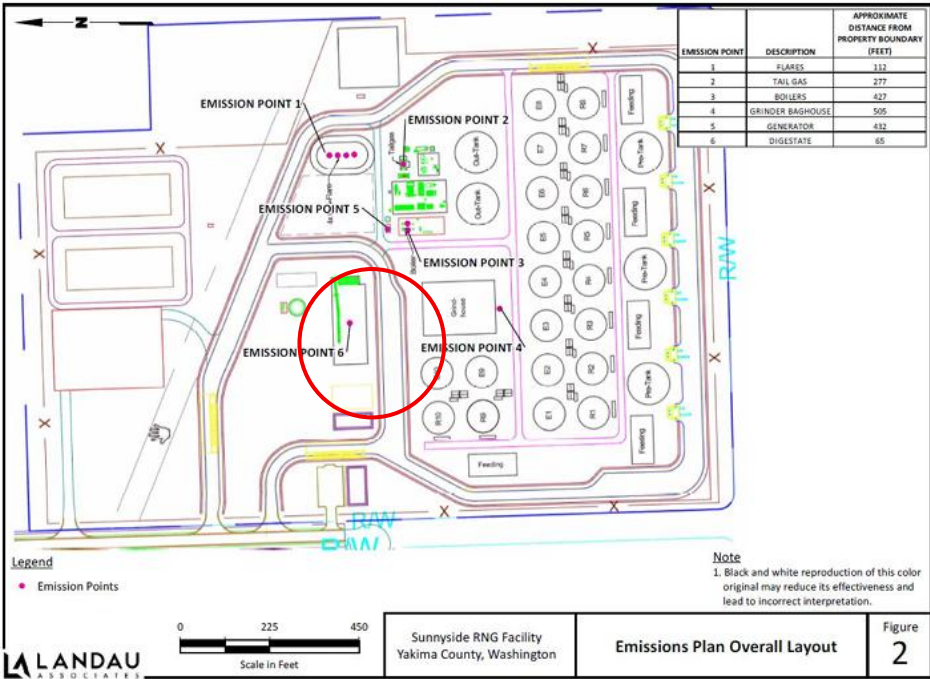
[No one hurt in water treatment plant explosion](#)

[Explosion At Chicago Water Reclamation Plant Injures 10](#)

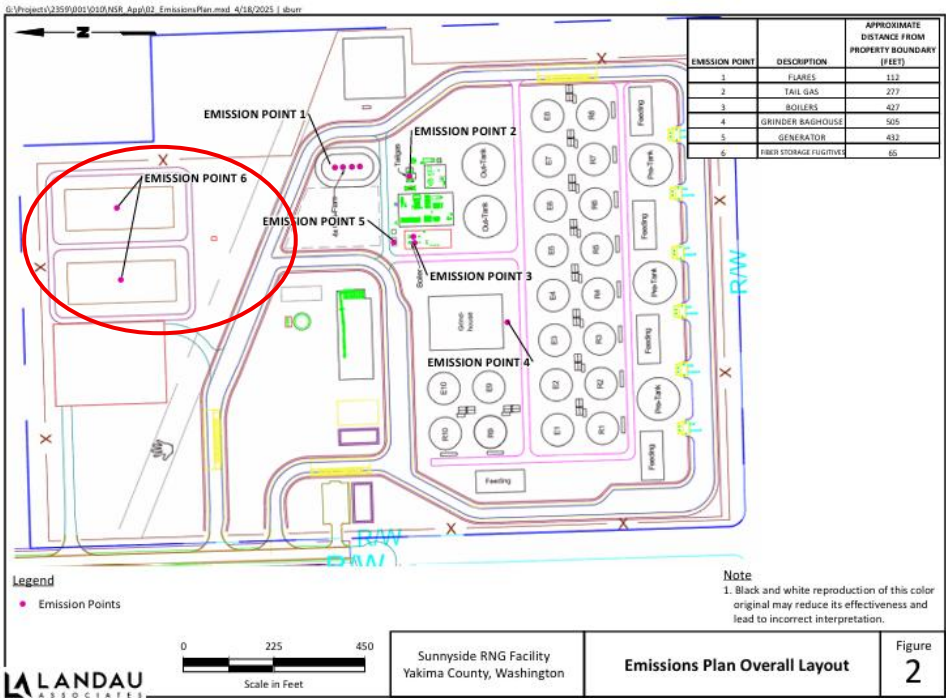
[Maine paper mill damaged by 2020 blast to close for good | AP News](#)

Attachment 5: Emission Point 6

From the Draft Order of Approval on page 44/46



From page 36/131 of Supporting Documents



These figures do not agree on the location of Emission Point 6.

Attachment 6: Vehicle Emissions for transport of manure and digestate at SS RNG

Average Emissions for Heavy Duty Diesel Powered Trucks on site

	Grams per mile	Lbs. per mile	x 31,721 miles	
VOC	0.447	0.001	31.23	Lbs. per yr
THC	0.453	0.001	31.65	Lbs. per yr
CO	2.311	0.0051	161.47	Lbs. per yr
NOx	8.613	0.019	601.79	Lbs. per yr
PM 2.5	0.202	0.0004	14.11	Lbs. per yr
PM 10	0.219	0.0005	15.3	Lbs. per yr

Average Emissions for Heavy Duty Diesel Powered Trucks from Dairies to SS RNG

	Lbs. per mile	x 1,500 miles per day	Lbs. per year	Tons per year
VOC	0.001	1.48	539.29	0.27
THC	0.001	1.5	546.41	0.27
CO	0.0051	7.64	2,786.78	1.39
NOx	0.019	28.46	10,386.62	5.19
PM 2.5	0.0004	0.67	243.64	0.12
PM 10	0.0005	0.72	263.9	0.13

Average Emissions for Heavy Duty Gasoline Powered Trucks on site

	Grams per Mile	Lbs. per Mile	x 31,721 Miles per year	
VOC	1.5860	0.0035	110.6809	Lbs. per year
CO	13.1300	0.0289	916.2928	Lbs. per year
NOx	2.9140	0.0064	203.3570	Lbs. per year
PM 2.5	0.0440	0.0001	3.0706	Lbs. per year
PM 10	0.0510	0.0001	3.5591	Lbs. per year

Average Emissions for Heavy Duty Gasoline Powered Trucks from Dairies to SS RNG

	Lbs. per Mile	X 1,500 Miles per Day	Lbs. per Year	Tons per Year
VOC	0.0035	52.3380	19,103.3700	9.5517
CO	0.0289	43.3290	15,815.0850	7.9075
NOx	0.0064	9.6162	3,509.9130	1.7550
PM 2.5	0.0001	0.1452	52.9980	0.0265
PM 10	0.0001	0.1683	61.4295	0.0307

Emissions for Type VIIIa Heavy Duty Gasoline Powered Vehicles

	Grams per mile Gasoline fueled	Lbs. per mile	x 31,721 mi - on site per yr	X 1,500 miles per day	Lbs. per year	Tons per year from farms
VOC	3.628	0.007982	253.18433	11.9724	4,369.926	2.184963
CO	28.56	0.062832	1,993.0939	94.248	34,400.52	17.20026
NOx	4.892	0.010762	341.39409	16.1436	5,892.414	2.946207
PM 2.5	0.049	0.000108	3.4195238	0.1617	59.0205	0.029510
PM 10	0.061	0.000134	4.2569582	0.2013	73.4745	0.036737

Emissions for Type VIIIa Heavy Duty Diesel Powered Vehicles

	Grams per mile Diesel fueled	Lbs. per mile	x 31,721 miles - on site per yr	X 1,500 miles per day	Lbs. per year	Tons per yr from farms
VOC	0.455	0.001001	31.752721	1.5015	548.0475	0.274024
CO	2.395	0.005269	167.13795	7.9035	2884.7775	1.442389
NOx	9.191	0.02022	641.40496	30.3303	11070.5595	5.535280
PM 2.5	0.215	0.000473	15.004033	0.7095	258.9675	0.129484
PM 10	0.233	0.000513	16.260185	0.7689	280.6485	0.140324

Data Source: Average In-Use Emissions from Heavy Duty Trucks. [Average In-Use Emissions from Heavy-Duty Trucks - Emission Facts \(EPA-420-F-08-027\)](#)

Attachment 7 The Yakima Valley is at risk of non-attainment.

Here is PM 2.5 data from EPA Outdoor Air Quality Report at [Air Data: Air Quality Data Collected at Outdoor Monitors Across the US | US EPA](#) and PM 2.5 Weighted Annual Mean for Yakima County from EPA Monitor Values Report at [Monitor Values Report | US EPA](#)

	Sunnyside - 1	Yakima - 1	Yakima - 3	Yakima - 5	Toppenish - 1	Toppenish - 5
2015	9.1	8.1	8.9	9.7	14.4	
2016	12.1	8.5	8.6	10.2		9.7
2017		12.8		10.3		13.5
2018		8.6		10.6		10.4
2019		9.2		9.2		9.8
2020		11.6		12.3		14.1
2021		13.1		11		11.5
2022		8.3		9.1		9.6
2023	9.1	8.1		8.8		9.5
2024	6.8	6.4		7.1		7.6
2025	7.3	6.4		7.6		8.2

From [Air Quality Statistics Report | US EPA](#) Exceptional Events Excluded. PM 2.5 Data for Yakima County from the EPA Outdoor Air Monitoring Report at [Air Data: Air Quality Data Collected at Outdoor Monitors Across the US | US EPA](#)

Year	PM 2.5 98 th Percentile	PM 2.5 Weighted Mean
2016	31	8.6
2017	55	13.5
2018	48	10.6
2019	37	9.8
2020	No Data	
2021	69	11.5
2022	29	9.6
2023	26	9.5
2024	31	7.6

Attachment 8: SS RNG Compressors

A brief internet search tells us that a typical natural gas well produces between 250 and 350 MMBTUs of methane per day. This translates to approximately 250,000 to 350,000 MMBTU annually.

The proposed SS RNG manure methane biodigester would produce approximately 1.8 million MMBTUs of methane per year. This is 5 to 7 times the output of a typical natural gas well. Precautions for the SS RNG facility should be equal to or more stringent than precautions for a natural gas well. Right now let us address compression of natural gas for pipeline transport.

40 CFR Part 60, Chapter C, Subpart OOOOb, available at [eCFR :: 40 CFR Part 60 Subpart OOOOb -- Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification or Reconstruction Commenced After December 6, 2022](#) says that this section of the Clean Air Act:

“establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification, or reconstruction after December 6, 2022. This subpart also establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities in the crude oil and natural gas source category that commence construction, modification, or reconstruction after December 6, 2022.”

Which facilities are subject to this sub chapter? § 60.5365b designates:

“(b) Each centrifugal compressor affected facility, which is a single centrifugal compressor. A centrifugal compressor located at a well site is not an affected facility under this subpart. A centrifugal compressor located at a centralized production facility is an affected facility under this subpart.

(c) Each reciprocating compressor affected facility, which is a single reciprocating compressor. A reciprocating compressor located at a well site is not an affected facility under this subpart. A reciprocating compressor located at a centralized production facility is an affected facility under this subpart.”

40 CFR Part 60, Chapter C, Subpart OOOOb is long and complex. This rule addresses many facets of oil and gas production facilities in addition to compressors.

From the YRCAA Draft Order of Approval for SS RNG, page 10/46

Collected biogas will be cooled before entering the amine-based biogas upgrading system. This system utilizes an absorption column containing a lean amine solution that removes CO₂, H₂S, and other trace gases from the biogas. The cleaned methane (scrubbed methane), obtained from the top of the absorption column, is dehydrated, compressed, and injected into the natural gas pipeline.

The proposed SS RNG biodigester would compress renewable natural gas prior to injection into the Williams pipeline.

The Pacific AG Notice of Construction and Supporting Documents and the YRCAA Draft Notice of Approval do not address compressors or compression of RNG at the site. They do not cite 40 CFR Part 60, Chapter C, Subpart OOOOb.

Given the fact that the SS RNG biodigester will likely produce as much methane as 5 to 7 natural gas wells, and will compress that methane prior to injection into the Williams pipeline, the Friends of Toppenish Creek respectfully ask: Does 40 CFR Part 60, Chapter C, Subpart OOOOb apply to the SS RNG biodigester?

This is obviously important because the requirements in 40 CFR Part 60, Chapter C, Subpart OOOOb are quite detailed with many safety provisions.

This is obviously important to the people of Sunnyside because failure to take appropriate precautions could lead to explosions and fires such as the 1999 Olympic Pipeline explosion in Bellingham WA that killed three people.³⁴



Olympic Pipeline Explosion - The Seattle Times

³⁴ How a tragedy unfolded, step by step. [How a tragedy unfolded, step by step - Salish Current](#)

Attachment 9: SS RNG Dehydration

It appears that YRCAA has not properly accounted for emissions from the dehydration processes at the proposed SS RNG biodigester.

This is the only reference to dehydration in the YRCAA Draft Order of Approval

2.6 Collected biogas will be cooled before entering the amine-based biogas upgrading system. This system utilizes an absorption column containing a lean amine solution that removes CO₂, H₂S, and other trace gases from the biogas. The cleaned methane (scrubbed methane), obtained from the top of the absorption column, is dehydrated, compressed, and injected into the natural gas pipeline.

This is the only reference to dehydration in Pacific Ag's Supporting documents

3.1.3 Biogas Upgrading Biogas leaving the anaerobic digester storage tank membranes will be chilled and transferred to the biogas upgrading plant. An amine-based gas upgrading system will be used. The lean amine solution absorbs carbon dioxide (CO₂), hydrogen sulfide (H₂S) and other acidic gases from the raw biogas. Raw biogas flows first through the absorption column, where the lean amine solution washes the biogas and absorbs the CO₂, H₂S, and other acidic gases. Scrubbed methane (99.9 percent pure) exits the top of the absorption column. Following dehydration using a liquid desiccant to remove water vapor, the methane will be compressed and injected into the natural gas pipeline.

Pacific Ag does not describe the dehydration process.

To the best of our understanding the most commonly used dehydration process at methane refineries is Glycol Dehydration which is regulated under CFR Title 40 , Chapter I , Subchapter C , Part 63, Subpart HH.

If the proposed SS RNG project plans to use Glycol Dehydration, then FOTC believes CFR Title 40 , Chapter I , Subchapter C , Part 63, Subpart HH applies and should be incorporated into the YRCAA Air Permit.

By our calculations the dehydration unit at SS RNG would be a Large Glycol Dehydration Unit as defined in the code:

Large glycol dehydration unit means a glycol dehydration unit with an actual annual average natural gas flowrate equal to or greater than 85 thousand standard cubic meters per day and actual annual average benzene emissions equal to or greater than 0.90 Mg/yr, determined according to [§ 63.772\(b\)](#). A glycol dehydration unit

complying with the 0.9 Mg/yr control option under [§ 63.765\(b\)\(1\)\(ii\)](#) is considered to be a large dehydrator.

There are significant emissions of hazardous air pollutants from the dehydration process that the draft permit does not acknowledge. For example see this summary of emissions from a table on page 34/46 of the draft permit. (The only place where dehydration might be located is under Upgrader and Thiopaq Scrubber).

Summary of Project Emissions

Table 1. Summary of project emissions.

Pollutant	Units	Boilers	Upgrader & Thiopaq Scrubber	Emergency Generator	Flares	Grinder Baghouse	Roadway Fugitives	Digestate	Totals
NO _x	lb/hr	0.51	--	21.9	16.1	--	--	--	38.45
	tpy	2.2	--	1.7	3.52	--	--	--	7.49
CO	lb/hr	1.81	--	5.0	73	--	--	--	80.09
	tpy	7.9	--	0.40	16.1	--	--	--	24.4
PM ₁₀	lb/hr	0.36	--	0.70	1.76	0.10	0.51	--	3.43
	tpy	1.6	--	0.056	0.386	0.44	1.77	--	4.24
PM _{2.5}	lb/hr	0.36	--	0.70	1.76	0.10	0.09	--	3.02
	tpy	1.6	--	0.056	0.386	0.44	0.32	--	2.78
SO ₂	lb/hr	0.028	--	0.018	60	--	--	--	60.46
	tpy	0.125	--	0.0014	13.2	--	--	--	13.36
VOC	lb/hr	0.17	--	0.38	0.28	--	--	--	0.84
	tpy	0.76	--	0.031	0.062	--	--	--	0.85
CO ₂ e	tpy	24,748	81,780	136	9,236	--	--	--	115,900
HAPs	tpy	0.02	--	0.02	4.16E-03	--	--	--	0.04

As you can see there are no estimated emissions of volatile organic compounds (VOCs) or hazardous air pollutants (HAPs) for any emission points other than boilers, flares and the emergency generator.

Thanks for reading

Attachment 10: SS RNG Benzene Emissions

Benzene is a major hazardous air pollutant³⁵ (HAP) and a carcinogen³⁶. Benzene is a commonly used chemical belonging to the class aromatic hydrocarbons.³⁷ Benzene is one of the volatile organic compounds (VOCs) emitted by animal manure, although it is not among the most prevalent.³⁸

* * * * *

Benzene was the eleventh most prevalent VOC measured on a Yakima dairy during the National Air Emissions Monitoring Study (NAEMS) and constituted .58% of total VOCs.³⁹ In that study VOC emissions averaged between 0.09 kg/day/cow and 0.15kg/day/cow.

Based on these estimates and an estimate of 80,000 milk cows in the Lower Yakima Valley, we calculate that LYV cows emit between 17 and 28 tons of benzene per year. Of course not all of this benzene would be emitted from manure and digestate at the SS RNG facility.

* * * * *

Benzene is one of the most important VOCs emitted by compressors and dehydrators that are used when refining methane for injection into natural gas pipelines.⁴⁰ Benzene in the context of methane refining is often addressed as part of BTEX (Benzene, Toluene, Ethyl Benzene and Xylene) under VOC regulations.

Pacific Ag included data on HAP or VOC emissions from the proposed SS RNG biodigester in their Supporting documents.⁴¹ That document did not attribute any HAP or VOC emissions to the Upgrader and Scrubber. According to Pacific Ag the only SS RNG HAP or VOC emissions come from boilers, flares and an emergency generator. We question

³⁵ 40 CFR § 61.01 Lists of pollutants and applicability of part 61. [eCFR :: 40 CFR 61.01 -- Lists of pollutants and applicability of part 61.](#)

³⁶ American Cancer Society. Benzene and Cancer Risk. [Benzene and Cancer Risk | American Cancer Society](#)

³⁷ Pub Chem. Benzene. [Benzene | C6H6 | CID 241 - PubChem](#)

³⁸ Chemical characterization of volatile organic compounds emitted by animal manure. [Chemical characterization of volatile organic compounds emitted by animal manure - ScienceDirect](#)

³⁹ Emissions Data from Two Dairy Freestall Barns in Washington. Table 16. [ASAE Journal | US EPA ARCHIVE DOCUMENT](#)

⁴⁰ An Analysis of BTEX emissions from Amine Sweetening and Glycol Dehydration Facilities. <http://www.bre.com/technicalpapers/technicalpaper.asp?articlenu>

⁴¹ YRCAA. New Source Review Application Supporting Information Report Sunnyside Renewable Natural Gas, LLC. [Supporting Documents-Pacific_Ag_Renewables-February_2026.pdf](#)

whether this is accurate. It might be wise to estimate benzene emissions from all sources at the site.

From page 52/131 of Pacific Ag’s Supporting Documents

Summary of Project Emissions

Table 1. Summary of project emissions.

Pollutant	Units	Boilers	Upgrader & Thiopaq Scrubber	Emergency Generator	Flares	Grinder Baghouse	Roadway Fugitives	Digestate	Totals
NO _x	lb/hr	0.51	--	21.9	16.1	--	--	--	38.45
	tpy	2.2	--	1.7	3.52	--	--	--	7.49
CO	lb/hr	1.81	--	5.0	73	--	--	--	80.09
	tpy	7.9	--	0.40	16.1	--	--	--	24.4
PM ₁₀	lb/hr	0.36	--	0.70	1.76	0.10	0.51	--	3.43
	tpy	1.6	--	0.056	0.386	0.44	1.77	--	4.24
PM _{2.5}	lb/hr	0.36	--	0.70	1.76	0.10	0.09	--	3.02
	tpy	1.6	--	0.056	0.386	0.44	0.32	--	2.78
SO ₂	lb/hr	0.028	--	0.018	60	--	--	--	60.46
	tpy	0.125	--	0.0014	13.2	--	--	--	13.36
VOC	lb/hr	0.17	--	0.38	0.28	--	--	--	0.84
	tpy	0.76	--	0.031	0.062	--	--	--	0.85
CO ₂ e	tpy	24,748	81,780	136	9,236	--	--	--	115,900
HAPs	tpy	0.02	--	0.02	4.16E-03	--	--	--	0.04

* * * * *

According to the Environmental Protection Agency combustion of natural gas can produce benzene.

“Volatile Organic Compounds - The rate of VOC emissions from boilers and furnaces also depends on combustion efficiency. VOC emissions are minimized by combustion practices that promote high combustion temperatures, long residence times at those temperatures, and turbulent mixing of fuel and combustion air. Trace amounts of VOC species in the natural gas fuel (e.g., formaldehyde and benzene) may also contribute to VOC emissions if they are not completely combusted in the boiler.”⁴²

* * * * *

There are certain federal regulations concerning benzene emissions that are likely relevant to the SS RNG project. Pacific Ag did not estimate emissions from several sources covered by these parts of the code, specifically emissions from compressors and dehydrators.

40 CFR § 63.772 Test methods, compliance procedures, and compliance demonstrations describes approved methods for measuring leakage from equipment used on refinery sites.

Section (b) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions says, “The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.”

⁴² EPA. Natural Gas Combustion. [1.4 natural_gas_combustion.pdf](#)

Subpart HH of CFR 40 § 63.760 Applicability and designation of affected source applies to “(3) Facilities that process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user.” This part of the code addresses both compressors and dehydrators.

Subpart HHH of CFR 40 § 63.1270 Applicability and designation of affected source says, “This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in [§ 63.1271](#).”

To our understanding most dehydration processes on natural gas refineries are glycol dehydration units which are categorized according to volume of throughput per day. By our calculations the proposed SS RNG biodigester would have a throughput of up to 134,725 m³ per day of natural gas.⁴³ This would put a SS RNG Dehydration Unit in the category of large glycol dehydration units.⁴⁴

40 CFR § 63.1275 Glycol dehydration unit process vent standards provides regulatory criteria for venting emissions from glycol dehydration units.

* * * * *

The Friends of Toppenish Creek believe that the Yakima Regional Clean Air Agency erred by not requiring documentation of emissions from compressors and dehydrators at the proposed SS RNG facility.

Based on our concerns about the volatile organic compound benzene it is possible that the SS RNG facility should be regulated as a Title V or major source. The only way to make this determination is to accurately estimate potential emissions of hazardous pollutants from all emission points at the facility.

We note that 40 CFR 63.2 says, “*Fugitive emissions* means those emissions from a stationary source that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Under section 112 of the Act, all fugitive emissions are to be considered in determining whether a stationary source is a major source.”

⁴³ At standard conditions, 1 MMBtu \approx 27.3192 m³ of natural gas. 1.8 million MMBTUs x 27.3192 = 49,174,560 m³ per year of natural gas = 134,725 m³ per day of natural gas

⁴⁴ Subpart HHH of CFR 40 § 63.1270. Definitions. [eCFR :: 40 CFR Part 63 Subpart HHH -- National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities](#)

Attachment 11: Concerns Related to Statements in Pacific Ag’s Supporting Documents

A. Page 13/131 states, “Following dehydration using a liquid desiccant to remove water vapor, the methane will be compressed and injected into the natural gas pipeline.”

There is no documentation of the equipment, presumably power equipment, used to compress the renewable gas prior to injection into the Williams pipeline. How much energy is required? Are there emissions from the compressors?

B. Page 13/131 states, “Tailgas emitted from the amine-based upgrading system will go through a Thiopaq scrubber, where the tailgas containing H₂S comes in contact with a wash solution to form an H₂S liquid that enters a bioreactor where the sulfide oxidizes into elemental sulfur.”

There is no documentation describing storage or export of elemental sulfur. This is a hazardous chemical with a potential for emissions, explosions, and fire. How will Pacific Ag dispose of this by-product? Data sheets from the Thiopaq scrubber on page 73/131 of the Supporting Documents state that the scrubber can handle a sulfur load up to 600 kg S/day or 1320 lbs. S/day.

C. Page 14/131 purports to summarize emissions from the proposed digester.

Table 1: Potential Annual Emissions Summary

Pollutant	Boilers (tpy)	Biogas Upgrading & Scrubber (tpy)	Emergency Generator (tpy)	Enclosed Flares (tpy)	Straw Grinding (tpy)	Roadway Fugitives (tpy)	Project Total (tpy)
NO _x	2.2	--	1.7	3.5	--	--	7.5
CO	7.9	--	0.4	16.1	--	--	24.4
PM ₁₀	1.6	--	0.06	0.4	0.44	1.8	4.2
PM _{2.5}	1.6	--	0.06	0.4	0.44	0.32	2.8
SO ₂	0.1	--	0.001	13.2	--	--	13.4
VOCs	0.76	--	0.031	0.062	--	--	0.85
Total HAPs	0.02		0.02	0.004	--	--	0.04
CO ₂ e	24,748	81,780	136	9,236	--	--	115,900

There are no emission estimates for “Reception Pits” – We assume that “Reception Pits” are the same structures labeled “Feed” and “Feeding” in Figures 2 and 4 of the Supporting Documents. If these structures hold manure waiting to be fed into mixing tanks, then these

structures emit ammonia, nitrogen oxides, particulate matter, hydrogen sulfide, greenhouse gases (methane and nitrous oxide) and volatile organic compounds. These structures emit criteria pollutants as well as precursors to criteria pollutants. Remember that manure from a third of all WA dairy cows will pass through this 50 acre facility. This is a heavy concentration of manure.

Leakage from pipes and connections is missing from this list.

Emissions from mixing tanks are missing from this list.

Emissions from digester tanks are missing from this list.

Emissions from solid digestate storage are missing from this list.

Emissions from lagoons that hold liquid digestate are missing from this list.

Exhaust emissions from heavy duty trucks that deliver feedstocks are missing from this list.

This table does not quantify emissions from the proposed SS RNG facility because too many emissions and sources are missing from the table.

D. Page 15/131 contains Table 2: Project Emissions Compared to Small-Quantity Emission Rates. If ammonia emissions were properly accounted for, then ammonia emissions on site would exceed the SQER and modeling would be required for ammonia. The same could be said for formaldehyde. Ammonia and formaldehyde are emitted by raw manure that is present in “reception pits”. There are no monitoring or estimation requirements to document levels of these pollutants in the air at the proposed facility.

E. Page 19/131 contains Best Available Control Technology. This is inadequate because it does not address BACT for Reception Pits, Mixing Tanks, Digester Tanks, Outflow Tanks, Onsite Piping, Storage of Elemental Sulfur, TAP emissions from solid digestate storage, Emissions from lagoons, emissions from pumps and compressors, and exhaust emissions from heavy duty trucks.

F. Page 20/131 contains 5.3 New Source Performance Standards

Pacific Ag did not cite 40 CFR Part 60, Chapter C, Subpart OOOOb, available at [eCFR :: 40 CFR Part 60 Subpart OOOOb -- Standards of Performance for Crude Oil and Natural Gas](#)

[Facilities for Which Construction, Modification or Reconstruction Commenced After December 6, 2022](#)

Do parts of this chapter apply to the SS RNG proposal, specifically the parts that address compression of natural gas? It certainly seems so.

In order to efficiently ship natural gas it must be compressed. The YRCAA Draft Order of Approval states on page 10/46:

“Collected biogas will be cooled before entering the amine-based biogas upgrading system. This system utilizes an absorption column containing a lean amine solution that removes CO₂, H₂S, and other trace gases from the biogas. The cleaned methane (scrubbed methane), obtained from the top of the absorption column, is dehydrated, compressed, and injected into the natural gas pipeline.”

There are no descriptions of compressors or how methane from the SS RNG digester will be compressed prior to injection into the Williams pipeline in the Notice of Construction or the Supporting documents, but there should be. Compressors should be part of the SS RNG Draft Order of Approval.

G. Page 23/131 says,

“As discussed in the following subsections, the modeled ambient impacts expected from project emissions are either less than the significant impact levels (SILs) or less than the NAAQS and WAAQS, after summing with background concentrations. All model-predicted ambient TAP impacts are less than the ASILs.”

This statement is misleading and even untrue because projected emissions for criteria pollutants, TAPs and HAPs were only provided for boilers, flares and the emergency generator. There were estimates just for particulate matter from grinders and roadways. Only greenhouse gas emissions were estimated for the biogas upgrader and scrubber.

Pacific Ag provided no estimate of emissions from reception pits. How can Pacific Ag pretend that there are no emissions from five buildings that are 121'x 55' x 26' and filled with raw manure or slurry?

Pacific Ag provided no estimate of emissions from manure and digestate transfer or from leakage.

Pacific Ag provided no estimate of emissions from compressors or dehydrators or from stockpiling of elemental sulfur.

Pacific Ag only estimated ammonia emissions from solid digestate storage. Digestate also emits hydrogen sulfide, VOCs and greenhouse gasses.

There was no estimate at all for emissions from lagoons on site.

It is clear that SS RNG would exceed multiple SILs and ASILs if all emission points were properly evaluated.

Attachment 12: Health Concerns

Highly Toxic Chemicals On Site

According to Supporting Documents the biogas upgrading process employs the use of a powerful chemical monoethanolamine also known as ethanolamine. The Safety Data Sheets for prevention for this chemical advise workers:

- Keep away from heat/ sparks/ open flames/ hot surfaces.
- No smoking.
- Wash skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear protective gloves, protective clothing, eye protection and/or face protection.

There are no required precautions in the Draft Order of Approval regarding monoethanolamine or other hazardous chemicals at the proposed SS RNG site.

The proposed biogas upgrading process would produce elemental sulfur as an end product. Elemental sulfur is a hazardous substance.⁴⁵ There is no documentation regarding how this sulfur would be stored or exported. There are no estimates of the quantity of sulfur produced. But data sheets from the Thiopaq scrubber on page 73/131 of the Supporting Documents state that the scrubber can handle a sulfur load up to 600 kg S/day or 1320 lbs. S/day.

Infectious Micro-Organisms in Manure and Digestate

Infectious organisms found in cow manure include

- Salmonella spp. - Killed at 145° Fahrenheit

⁴⁵ Chemical Safety Data Sheet MSDS / SDS Sulfur. [Sulfur - Safety Data Sheet](#)

- Campylobacter spp. – Killed at 165° Fahrenheit
- Listeria monocytogenes – Killed at 165° Fahrenheit
- Yersinia enterocolitica – Killed at 160° Fahrenheit
- Escherichia coli – Killed at 160° Fahrenheit
- Cryptosporidium parvum – Killed at 140° Fahrenheit or below -4° Fahrenheit
- Giardia lamblia – Killed at 140° Fahrenheit

Our best guess, based on information on pages 65 – 67 of Pacific Ag’s Supporting Document, is that the proposed SS RNG Digester will employ temperatures as high as 140° Fahrenheit. This means that many infectious organisms in cow manure may survive the digestion process and pose a risk to workers. Disease on one dairy could be spread to other dairies when co-mixed digestate is returned to the farms.

We are especially concerned about the spread of the parasite cryptosporidium with oocytes that commonly infect young calves and survive for long periods of time in soil.

FOTC has asked both Pacific Ag and the WA State Dept of Agriculture about spread of infectious disease in digestate. Neither provided reassuring replies.

Risk of Fires and Explosions

Methane and hydrogen sulfide are flammable and explosive. We do not see adequate safety requirements in the Draft NSR permit. Over recent decades there are multiple cases of explosions and fires involving anaerobic digesters used to produce methane gas.⁴⁶

No Documentation of Insurance

There is no requirement for Pacific Ag to obtain liability insurance to cover reparations in the event that the SS RNG facility suffers a fire or explosion. The City of Sunnyside has already experienced a serious fire in 2022 when as much as 1.7 million pounds of sulfur burned at the Nutrien Solutions Fertilizer plant that lies just west of the proposed SS RNG. That fire released clouds of toxic SO₂ gas into the ambient air that threatened people who live in the area. To the best of our knowledge Nutrien Solutions still does not have an NSR permit.

⁴⁶ See Attachment 4