From: Ritz, William
To: Marmo, Brian
Cc: Greener, Kevin; Manuel Vizcaya
Subject: [EXTERNAL] RE: Questions for Anheuser-Busch"s New Modification (BOP200001)
Date: Friday, October 9, 2020 3:19:39 PM
Attachments: AB- Boiler PTE_10_2020_V2.xlsx

Hi Brian – See attached. Let me know if any issues.

Will

William Ritz
Newark Brewery
Environmental Manager
Work: 973-645-8966
Cell: 203 278 7366

From: Marmo, Brian [mailto:Brian.Marmo@dep.nj.gov]
Sent: Friday, October 09, 2020 1:57 PM
To: Ritz, William <William.Ritz@anheuser-busch.com>
Cc: Greener, Kevin <Kevin.Greener@dep.nj.gov>; Manuel Vizcaya <vizcayam@air-engineering.net>
Subject: Re: Questions for Anheuser-Busch's New Modification (BOP200001)
Importance: High

EXTERNAL E-MAIL:brian.marmo@dep.nj.gov

Hi Will,

Thanks for the updated calculations. I have one quick note. The federal requirements (40 CFR Part 63 Subpart JJJJJJ) sets the fuel oil limit at 48 hours. So to be consistent with federal requirements, the calculations should be based off of **8,712 hours of natural gas** (column "M" of excel spreadsheet) and **48 hours of fuel oil** (column "O" of excel spreadsheet).

Please resubmit calculations reflecting these minor changes as soon as possible.

Brian

From: Ritz, William <William.Ritz@anheuser-busch.com>
Sent: Thursday, October 8, 2020 2:33 PM
To: Marmo, Brian <Brian.Marmo@dep.nj.gov>
Cc: Greener, Kevin <Kevin.Greener@dep.nj.gov>; Manuel Vizcaya <vizcayam@air-engineering.net>
Subject: [EXTERNAL] RE: Questions for Anheuser-Busch's New Modification (BOP200001)

Hi Brian – Thanks for your patience with this. Attached are the calculations.

William Ritz
Newark Brewery
Environmental Manager
Work: 973-645-8966
Cell: 203 278 7366

From: Marmo, Brian [mailto:Brian.Marmo@dep.nj.gov]
Sent: Thursday, October 08, 2020 1:10 PM
To: Ritz, William <William.Ritz@anheuser-busch.com>
Cc: Greener, Kevin <Kevin.Greener@dep.nj.gov>; Manuel Vizcaya <vizcayam@air-engineering.net>
Subject: Re: Questions for Anheuser-Busch's New Modification (BOP200001)
Importance: High

EXTERNAL E-MAIL:brian.marmo@dep.nj.gov

Hi Will,

I wanted to reach out regarding the email below. We need these calculations by tomorrow in order to send you a predraft by Tuesday.

Please confirm receipt of this email.

Brian

From: Marmo, Brian <Brian.Marmo@dep.nj.gov>
Sent: Monday, October 5, 2020 2:27 PM
To: Ritz, William <William.Ritz@anheuser-busch.com>
Cc: Greener, Kevin <Kevin.Greener@dep.nj.gov>; Manuel Vizcaya <vizcayam@air-engineering.net>
Subject: Re: Questions for Anheuser-Busch's New Modification (BOP200001)

Hi Will,

No problem, I am glad we finally had a chance to have a conference call.

In regard to #1 for U3003 and U3004, the hourly emissions for TSP, PM2.5, PM10 and SO2 are higher for OS4 (oil/biogas) than OS3 (NG/biogas). Thus we believe by reducing the operating hours to 48 hours for fuel oil, the annual emissions will be reduced. Please provide updated annual emissions for these pollutants.

Brian

From: Ritz, William <William.Ritz@anheuser-busch.com>
Sent: Monday, October 5, 2020 8:04 AM
To: Marmo, Brian <Brian.Marmo@dep.nj.gov>
Cc: Greener, Kevin <Kevin.Greener@dep.nj.gov>; Manuel Vizcaya <vizcayam@air-engineering.net>
Subject: [EXTERNAL] RE: Questions for Anheuser-Busch's New Modification (BOP200001)

Good Morning Brian,

Thanks again for setting up the conference call last week! See responses to your questions below concerning the Title V Modification for boilers:

1. **With the reduction of operating hours to 48 hours for fuel oil, the annual emissions will be reduced. Please provide updated annual emission limits in tons/yr.**

   The worst-case annual emission rates for Boilers #3 and #4 result for the natural gas/biogas operating scenario running at 100% load, 8,760 hr/yr (U3003 OS3 and U3004 OS3). Therefore lowering the fuel oil use from 500 to 40 hr/yr, does not affect the annual ton/yr emission rates for all the criteria pollutants.

2. **Based on our understanding of Federal requirements, these two boilers will be subjected to 40 CFR Part 63 Subpart JJJJJJ. This is because an area source is defined as any stationary source that emits under 25 tons/yr for total HAPs or 10 tons/yr for any individual HAP. The facility is under those thresholds (total of 2.46 tons/yrs of HAPs). However in the reason for application, the facility mentions 40 CFR Part 63 Subpart DDDDD. Please confirm what statute the facility is subject to: whether it is 40 CFR Part 63 Subpart JJJJJJ or DDDDD.**

   You are correct that the boilers are subject to 40 CFR Part 63 Subpart JJJJJJ- National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. Please disregard the inadvertent reference to Subpart DDDDD.

3. **Does the facility plan on using Fuel oil and biogas (OS4) in emergency situations? Is OS4 necessary for U3003 and U3004? If not, the Department will remove these operating scenarios.**

   There may be a future situation where the facility is curtailed on natural gas requiring the simultaneous use of fuel oil and biogas. Therefore, AB would like to maintain this operating scenario in the operating permit. Please note that the use of biogas would actually result in reducing the amount of fuel oil that would be required during a natural gas curtailment event. If the biogas is not fired in the boiler, it would have to be flared and thus the energy recovery lost.

Let me know if you have any questions or require additional information.

William Ritz
Newark Brewery
Environmental Manager
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Cell: 203 278 7366

From: Marmo, Brian [mailto:Brian.Marmo@dep.nj.gov]
Sent: Thursday, October 01, 2020 2:48 PM
To: Ritz, William <William.Ritz@anheuser-busch.com>
Cc: Greener, Kevin <Kevin.Greener@dep.nj.gov>
Subject: Questions for Anheuser-Busch's New Modification (BOP200001)

EXTERNAL E-MAIL:brian.marmo@dep.nj.gov

Hi Again Will,

The department has a few questions regarding the recently submitted modification (BOP200001):

1. With the reduction of operating hours to 48 hours for fuel oil, the annual emissions will be reduced. Please provide updated annual emission limits in tons/yr.
2. Based on our understanding of Federal requirements, these two boilers will be subjected to 40 CFR Part 63 Subpart JJJJJJ. This is because an area source is defined as any stationary source that emits under 25 tons/yr for total HAPs or 10 tons/yr for any individual HAP. The facility is under those thresholds (total of 2.46 tons/yrs of HAPs). However in the reason for application, the facility mentions 40 CFR Part 63 Subpart DDDDD. Please confirm what statute the facility is subject to: whether it is 40 CFR Part 63 Subpart JJJJJJ or DDDDD.
3. Does the facility plan on using Fuel oil and biogas (OS4) in emergency situations? Is OS4 necessary for U3003 and U3004? If not, the Department will remove these operating scenarios.

Please reply to these questions and provide the requested information by next Monday (10/5). Thank you.

Brian

Anheuser-Busch InBev Email Disclaimer:http://www.ab-inbev.com/email-disclaimer.html

Table 2-10
Anheuser Busch Inc.
Boiler No. 3 Worst Case Potential Emissions
Natural Gas/Biogas - All Year Round Operation

Fuel Type	Natural Gas	Fuel Oil	Biogas - Hourly Max	Biogas - Annual Avg
Heat Input	149.3 MMBtu/hr	0.0 MMBtu/hr	30 MMBtu/hr	18.75 MMBtu/hr
Heating Value	1,030 Btu/ft^3	138,500 Btu/gal	750 Btu/ft^3	750 Btu/ft^3
Fuel Sulfur Content	1 gr/100 ft^3	0.0015 % by wt	2,000 ppmv	200 ppmv
Hourly Fuel Firing Rate	0.145 MMft^3/hr	0 gal/hr	0.960 MMft^3/hr	0.600 MMft^3/hr
Annual Hours of Operation	8,712 hr/yr	0 hr/yr		48 hr/yr
Annual Fuel Consumption.	1,262 MMft^3/yr	0.0 MMgal/yr		164,250 MMft^3/yr
Annual Energy Consumption	1,300,266 MMBtu/yr	0 MMBtu/yr		900 MMBtu/yr
Total Annual Energy Consumption	1,301,166 MMBtu/yr			

	Emission Rates				Hourly Emission Rates				Annual Operation[6]				Annual Emission Rates[7]			
Pollutant	Natural Gas lb/MMBtu	Natural Gas/Biogas lb/MMBtu	Distillate Oil lb/MMBtu	Distillate Oil/Biogas lb/MMBtu	Natural Gas lb/hr	Natural Gas/Biogas lb/hr	Distillate Oil lb/hr	Distillate Oil/Biogas lb/hr	Natural Gas hr/yr	Natural Gas/Biogas hr/yr	Distillate Oil hr/yr	Distillate Oil/Biogas hr/yr	Natural Gas ton/yr	Natural Gas/Biogas ton/yr	Distillate Oil ton/yr	Distillate Oil/Biogas ton/yr
NO_x[1]	0.20	0.20	0.20	0.20	33.60	33.60	33.60	33.60	0	8712	0	48	0.00	146.36	0.00	0.81
CO[2]	0.09	0.09	0.09	0.09	15.03	15.03	15.03	15.03	0	8712	0	48	0.00	65.45	0.00	0.36
VOC[2]	0.026	0.026	0.026	0.026	4.29	4.29	4.29	4.28	0	8712	0	48	0.00	18.71	0.00	0.10
TSP[2]	0.0049	0.0049	0.04	0.04	0.82	0.82	6.70	6.70	0	8712	0	48	0.00	3.57	0.00	0.16
PM_{10}[2]	0.0049	0.0049	0.03	0.03	0.82	0.82	6.70	6.70	0	8712	0	48	0.00	3.57	0.00	0.16
SO_2 (Primary Fuel)[2]	0.0006	0.0006	0.0016	0.002	0.10	0.09	0.27	0.24	0	8712	0	48	0.00	0.39	0.00	0.01
SO_2 (Biogas-Max)[3]	0.000	0.450	0.000	0.000	0.00	13.51	0.00	13.51		8712						
SO_2 (Biogas- Avg)[4]	0.000	0.045	0.000	0.000	0.00	0.8	0.00	0.84	0	8712	0	48	0.00	3.68	0.00	0.02
SO_2 (Total)[5]		0.0057			0.10	0.95	0.27	1.11	0	8712	0	48	0.00	4.07	0.00	0.03

Notes:

1: NO_x emission rate based on Subchapter 19 NO_x RACT limit of 0.2 lb/MMBtu for dual fuel boilers greater than 100MMBtu/hr (natural gas and/or fuel oil) and other gaseous fuels (biogas).

2: lb/hr emission rates per boiler based on currently permitted emission rates contained in the Title V Operating Permit.

3: Maximum hourly SO_2 emission rate from burning biogas. 60 MMBtu/hr / 750 Btu/ft^3 / 379 ft^3/lb-mol * 2,000 ppmv H_2S * 64 lb SO_2/lb-mol H_2S based on maximum hourly biogas flow and H_2S concentration.

4: Maximum annual SO_2 emission rate from burning biogas. 37.5 MMBtu/hr / 750 Btu/ft^3 / 379 ft^3/lb-mol * 200 ppmv H_2S * 64 lb SO_2/lb-mol H_2S based on annual average biogas flow and concentration.

5: Total SO_2 emissions from primary fuel and biogas. Lb/hr = lb/hr$_{pri}$ + lb/hr$_{bio}$

6: Proposed annual operation for Boiler Nos. 3 and 4 fuel for each operating scenario.

7: Proposed annual emissions per boiler per fuel. Ton/yr = (lb/hr x hr/yr)/2000 lbs/ton. Emissions shown are per individual boiler.

Table 2-12
Anheuser Busch Inc.
Boiler No. 4 Worst Case Potential Emissions
Distillate Fuel Oil/Biogas - All Year Round Operation

Fuel Type	Natural Gas	Fuel Oil	Biogas - Hourly Max	Biogas - Annual Avg
Heat Input	0.0 MMBtu/hr	134.3 MMBtu/hr	30 MMBtu/hr	18.75 MMBtu/hr
Heating Value	1,030 Btu/ft^3	138,500 Btu/gal	750 Btu/ft^3	750 Btu/ft^3
Fuel Sulfur Content	1 gr/100 ft^3	0.0015 % by wt	2,000 ppmv	200 ppmv
Hourly Fuel Firing Rate	0.000 MMft^3/hr	969 gal/hr	0.040 MMft^3/hr	0.025 MMft^3/hr
Annual Hours of Operation	8,712 hr/yr	48 hr/yr		48 hr/yr
Annual Fuel Consumption.	0.0 MMft^3/yr	0.0 MMgal/yr		1.2 MMft^3/yr
Annual Energy Consumption	0 MMBtu/yr	6,444 MMBtu/yr		900 MMBtu/yr
Total Annual Energy Consumption	7,344 MMBtu/yr			

	Emission Rates				Hourly Emission Rates				Annual Operation[6]				Annual Emission Rates[7]			
Pollutant	Natural Gas lb/MMBtu	Natural Gas/Biogas lb/MMBtu	Distillate Oil lb/MMBtu	Distillate Oil/Biogas lb/MMBtu	Natural Gas lb/hr	Natural Gas/Biogas lb/hr	Distillate Oil lb/hr	Distillate Oil/Biogas lb/hr	Natural Gas hr/yr	Natural Gas/Biogas hr/yr	Distillate Oil hr/yr	Distillate Oil/Biogas hr/yr	Natural Gas ton/yr	Natural Gas/Biogas ton/yr	Distillate Oil ton/yr	Distillate Oil/Biogas ton/yr
NO_x[1]	0.20	0.20	0.20	0.20	30.60	30.60	30.60	30.60	0	8712	0	48	0.00	133.29	0.00	0.73
CO[2]	0.09	0.09	0.09	0.09	13.68	13.68	13.68	13.68	0	8712	0	48	0.00	59.61	0.00	0.33
VOC[2]	0.026	0.026	0.026	0.026	3.91	3.91	3.91	3.9	0	8712	0	48	0.00	17.04	0.00	0.09
TSP[2]	0.0049	0.0049	0.04	0.04	0.75	0.75	6.10	6.10	0	8712	0	48	0.00	3.25	0.00	0.15
PM_{10}[2]	0.0049	0.0049	0.04	0.04	0.75	0.75	6.10	6.10	0	8712	0	48	0.00	3.25	0.00	0.15
SO_2 (Primary Fuel)[2]	0.0006	0.0006	0.0016	0.0016	0.09	0.08	0.24	0.21	0	8712	0	48	0.00	0.35	0.00	0.01
SO_2 (Biogas-Max)[3]	0.000	0.450	0.000	0.450	0.00	13.51	0.00	13.51		8712						
SO_2 (Biogas- Avg)[4]	0.000	0.028	0.000	0.045	0.00	0.84	0.00	0.84	0	8712	0	48	0.00	3.68	0.00	0.02
SO_2 (Total)[5]				0.01	0.09	0.94	0.24	1.09	0	8712	0	48	0.00	4.03	0.00	0.03

Notes:

1: NO_x emission rate based on Subchapter 19 NO_x RACT limit of 0.2 lb/MMBtu for dual fuel boilers greater than 100MMBtu/hr (natural gas and/or fuel oil) and other gaseous fuels (biogas).

2: lb/hr emission rates per boiler based on currently permitted emission rates contained in the Title V Operating Permit.

3: Maximum hourly SO_2 emission rate from burning biogas. 60 MMBtu/hr / 750 Btu/ft^3 / 379 ft^3/lb-mol * 2,000 ppmv H_2S * 64 lb SO_2/lb-mol H_2S based on maximum hourly biogas flow and H_2S concentration.

4: Maximum annual SO_2 emission rate from burning biogas. 37.5 MMBtu/hr / 750 Btu/ft^3 / 379 ft^3/lb-mol * 200 ppmv H_2S * 64 lb SO_2/lb-mol H_2S based on annual average biogas flow and concentration.

5: Total SO_2 emissions from primary fuel and biogas. Lb/hr = lb/hr_{pri} + lb/hr_{bio}

6: Proposed annual operation for Boiler Nos. 3 and 4 fuel for each operating scenario.

7: Proposed annual emissions per boiler per fuel. Ton/yr = (lb/hr x hr/yr)/2000 lbs/ton. Emissions shown are per individual boiler.