

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Asheville Regional Office
County: Caldwell
NC Facility ID: 1400204
Inspector's Name: Amro Ali
Date of Last Inspection: 06/18/2020
Compliance Code: 3 / Compliance - inspection

Facility Data Applicant (Facility's Name): Tapaha Dynamics, LLC Facility Address: Tapaha Dynamics, LLC 708 Lynhaven Drive Lenoir, NC 28645 SIC: 7374 / Data Processing Services NAICS: 51821 / Data Processing, Hosting, and Related Services Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V				Permit Applicability (this application only) SIP: 02D .0516, 02D .0521, 02D .0524, 02D .1111 NSPS: Subpart IIII NESHAP: Subpart ZZZZ PSD: PSD Avoidance: 02Q .0317 NC Toxics: 112(r): Other:			
Contact Data						Application Data	
Facility Contact Jon Rogers EHS Specialist (828) 758-3888 708 Lynhaven Drive Lenoir, NC 28645	Authorized Contact Christopher Williams Facility Manager (980) 222-1312 708 Lynhaven Drive Lenoir, NC 28645	Technical Contact Jon Rogers EHS Specialist (828) 758-3888 708 Lynhaven Drive Lenoir, NC 28645	Application Number: 1400204.21A and 1400204.18A Date Received: 02/04/2021 and 5/21/2018 Application Type: Renewal and Modification Application Schedule: TV-Renewal and TV-502(b)(10) Existing Permit Data Existing Permit Number: 09733/T08 Existing Permit Issue Date: 02/21/2017 Existing Permit Expiration Date: 01/31/2022				
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	0.1500	7.21	0.4500	1.09	0.2600	0.0108	0.0030 [Xylene, m-]
2018	0.0900	11.07	0.3200	1.36	0.3200	0.0113	0.0030 [Benzene]
2017	0.3160	32.42	0.7950	2.85	0.4550	0.0163	0.0053 [Benzene]
2016	0.1980	30.48	2.37	20.60	1.44	0.0215	0.0076 [Benzene]
2015	0.2000	37.71	0.8100	3.92	0.4400	0.0181	0.0058 [Benzene]
Review Engineer: Urva Patel Review Engineer's Signature: _____ Date: _____				Comments / Recommendations: Issue 09733/T09 Permit Issue Date: Permit Expiration Date:			

1. Purpose of Application:

Currently, Tapaha Dynamics, LLC holds Air Permit No. 09733T08 with an expiration date of January 31, 2022 for a data processing/storage facility in Lenoir, Caldwell County.

This permit consolidates two separate permit applications. (**Application Nos. 1400204.21A and 1400204.18A**).

Application ID No. 1400204.21A

The Title V renewal permit application (**Application No. 1400204.21A**) was received on February 4, 2021, which was at least six months prior to the expiration date of the Title V permit. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

In addition, the facility requested following:

- To install 4,344 gallon diesel fuel engine belly storage tank (**ID No. I-BT**) as an insignificant activity.
- To install two 128 gpm new cooling towers (**ID No. I-CT**) as insignificant activities.
- To revise the description of thirteen emergency generators (**ID No. EG-76 to EG-107**) output to 2725 kW, 4034 break horsepower.

Application ID No. 1400204.18A

The Title V – 502(b)(10) permit application (**Application No. 230037.18A**) was received on May 21, 2018. The facility requested the following:

- To install thirteen diesel-fired Emergency Generators (**ID No. EG-108 through EG-120**) 2000 kW, 2937 break horsepower

2. Facility Description:

Tapaha Dynamics, LLC is a data processing/storage facility in Lenoir, Caldwell County. It requires a substantial amount of dependable electrical power. The facility has 120 permitted emergency generators. The sources at this facility consist of diesel-fired generators used for emergency purposes only and are not used for peak shaving purposes. The emergency generator's potential-to-emit totals are based upon a maximum operating schedule of 500 hours per year per engine.

The emergency generators have belly diesel fuel storage tanks. The diesel fuel tanks are double-walled and equipped with vents to the atmosphere. The diesel fuel storage tanks are insignificant activities per 15 NCAC 02Q .0503(8).

The facility has thirty-eight (38) natural gas-fired heating units for a total potential of 14,380,500 Btu/hr for building heat. These heating units are insignificant activities per 15A NCAC 02Q .0503(7)(d).

The facility has several non-contact cooling towers that are insignificant activities per 15A NCAC 02Q .0503(8).

Tapaha Dynamics, LLC has a federally enforceable permit limit of 249.9 tons per year for nitrogen oxides (NOx) to remain a minor source under Prevention of Significant Deterioration (PSD). The facility is classified as minor for Hazardous Air Pollutants (HAPs) because emissions are below the major source thresholds of 10 tons per year of any single HAP and 25 tons per year of all HAPs combined.

3. History / Background / Application Chronology:

Permit History Since Last Permit Renewal

December 14, 2007	Air Permit No. 09733R01 issued. This permit included 54 Emergency Electricity Generators (2,000 kW, each) and the following insignificant activities: 15 non-contact wet cooling towers (2,500 GPM of cooling water, each), 24 non-contact cooling-towers (1,300 GPM of cooling water, each), and 54 diesel fuel engine belly tanks.
March 7, 2012	Air Permit No. 09733R02 issued. Under this modification, the design capacity of four previously permitted emergency generator (EG-51 through EG-54) changed from 2,000 kW to 750 kW.
July 20, 2012	Air Permit No. 09733R03 issued. Under this modification, two emergency generators (EG-55 and EG-56; 2,000 kW, each) and two emergency generators (EG-57 and EG-58; 1,500 kW, each) were added to this permit. Four diesel fuel engine belly tanks (4,500 G, each) were added as insignificant activities.
September 16, 2013	Air Permit No. 09733R04 issued. The modified permit included: (1) removal of their synthetic minor permit limits and reclassification of the facility as a major facility under Title V; (2) addition of 16 emergency generators (2,500 kW, each) and one 2000 kW emergency generator; (3) addition of several insignificant activities including two booster pump emergency generators (60 kW, each), a 99 HP diesel fire pump, 16 diesel storage tanks (5,500 gallons each), one diesel fuel storage tank (4,000 gallons), and four non-contact cooling towers (4,608 GPM each); and (4) removal of their 15A NCAC 02D .1100 permit condition. The permit retained their PSD avoidance limit to remain a minor source with respect to PSD.
May 13, 2014	Air Permit No. 09733R05 issued. Under this modification, four previously permitted emergency generators were modified from 750 kW to 1000 kW and two proposed 60 kW booster pump emergency generators were removed from the insignificant activities list.
September 26, 2014	Air Permit No. 09733R06 issued. Under this modification, the permit included the addition of 32 emergency engines (2,750 kW each); and added 32 diesel fuel engine belly tanks, one for each generator set, and seven two-cell non-contact cooling towers to the list of insignificant activities.
January 26, 2017	Air Permit No. 09733R07 issued with expiration date December 31, 2024. This permit application requested a permit renewal to Air Permit No. 09733R06 for construction and operation issued in accordance with 15A NCAC 02Q .0300. The regional office of DAQ received this application (Application No. 1400204.16A) on November 18, 2016. This application will be processed separately from the application for first time TV (Application No. 1400204.14C).
February 21, 2017	Air Permit No. 09733T08 issued with expiration date January 31, 2022. This permit represents the 1 st time Title V permit and included the addition of one insignificant natural gas fired heating unit (I-NGHU).

Application Chronology

May 21, 2018	Received application (Application No. 1400204.18A) for 502(b)(10) notification of TV Permit.
February 4, 2021	Received application (Application No. 1400204.21A) for renewal of the TV Permit.
February 4, 2021	Sent acknowledgement letter indicating that the application (1400204.21A) for Title V permit renewal was incomplete (missing required signed forms).
February 10, 2021	Assigned the 502(b)(10) notification of TV Permit to Permit Review Engineer: Urva Patel.
February 17, 2021	Received signed Form A and E5 for this TV renewal (application deemed complete for processing).
March 29, 2021	Applicant sent cooling towers emissions calculations and number of units in response to request from review engineer.
April 7, 2021	Based on email response from Mr. Joe Sullivan, emission source description for ID No. I-CT has changed. It included a change in emission source description and number of cooling towers (insignificant activities).
April 13, 2021	Draft to supervisor for comment.
April 30, 2021	Draft to regional office, SSCB, and applicant for comment.
Date	Draft permit sent to 30-day public comment period and 45-day EPA review period.

4. Summary of Changes to the Existing Permit (Permit No. 09733 T08):

Page No.	Section	Description of Changes
Cover Letter	N/A	Update cover letter for application, permit numbers, dates, PSD increment statement and Chief name.
Permit Cover	N/A	Insert new issuance and complete application date and application number.
--	Insignificant Activities List	<ul style="list-style-type: none"> Added “I-BT: Diesel fuel engine belly tanks (13 – 4344 gallon ea.)” and “I-CT: Non-contact, wet cooling towers (2 – 128 gpmea.)” in the insignificant activity list.” Modified “I-CT: Non-contact, wet cooling towers (from 7 to 10 – 4608 gpmea.)” Removed “I-CT: Non-contact, wet cooling towers (8 – 2306 gpmea. And 4 – 6912 gpmea.)”
3	Section 1, able	<ul style="list-style-type: none"> Revised emission source description for all emergency generators (ID Nos. EG-1 through EG-120)
3, 4	Section 1, Table 2.1 A	<ul style="list-style-type: none"> Added 13 2,000 kW emergency generators – No. 2 Diesel (ID Nos. EG-108 through EG-120) Revised engine size of 2750 kW to 2725 kW for 32 emergency generators (ID Nos. EG-76 to EG-107)
5	2.1 A.3	<ul style="list-style-type: none"> Updated condition (NSPS, 4I) with most recent language.
7	2.1 A.4	<ul style="list-style-type: none"> Updated condition (MACT, 4Z) with most recent language.
9	Section 3	<ul style="list-style-type: none"> Section was revised from v.4 (12/17/2015) to current shell version 5.5 (08/25/2020).

5. Compliance Status:

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on June 18, 2020, Amro Ali of the Asheville Regional Office indicated that the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was submitted with Application No. 1400204.21A on February 4, 2021.

- The facility was inspected on March 26, 2019 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on July 31, 2018 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on September 21, 2017 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on September 23, 2016 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on March 12, 2015 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on March 21, 2014 and appeared to be in compliance with all applicable air quality regulations.

6. New/Modified Equipment/Changes in Emissions

Application ID No. 1400204.21A

This is submitted as permit renewal with modification.

On April 29, 2014, a permit application was submitted by Tapaha to the NC Division of Air Quality for 32 (**ID Nos. EG-76 through EG-107**) 2500 kW or 3000 kW emergency generators. A follow-up was submitted by Tapaha on June 23, 2014, revising the initially proposed engine sizes to either 2725 kW or 2750 kW, and the engines were permitted with this flexibility (Emission Source ID Nos. EG-76 through EG-107).

Tapaha ultimately installed thirty-two **2,725 kW** emergency generators and is requesting that the emission source description be updated as a part of this permit renewal as specified in the A2 form (see Appendix A - Application ID No. 1400204.21A). The calculations for these engines in Appendix B are based on an engine size of 2,725 kW.

Number of generators = 32
 Rated Capacity = 4034 hp = 2725 kW
 Fuel consumption = 191.2 gal/hr
 Diesel fuel sulfur content = 0.0015%
 Potential runtime hours = 500 hours per year
 Limited runtime hours = 93 hours per year

Emissions summary from thirty-two **2725 kW** emergency generators (ID Nos. **EG-76 through EG-107**)

Pollutant	Potential runtime Emissions - Emission calculations (Appendix B)	Limited runtime Emissions - Emission calculations (Appendix B)
	Tons per year (tpy)	
Particulate Matter (PM)	4.05	0.75
PM<10 µm (PM ₁₀)	4.05	0.75
PM<2.5 µm (PM _{2.5})	4.05	0.75
Sulfur dioxide (SO ₂)	0.39	0.07
Nitrogen oxides (NO _x)	536.30	99.40
Carbon monoxide (CO)	66.65	12.35
Volatile Organic Compounds (VOC)	7.07	1.31
Lead	2.03E-03	3.77E-04
Hazardous Air Pollutants (HAP)		
GREENHOUSE GASES (GHG)		
CO ₂ Equivalent (CO ₂ e)	34347.70	6366.06

Equipment being added to the list of Insignificant activities:

- Thirteen 4344-gallon diesel fuel engine belly storage tanks (**I-BT**)

No. of Tanks	Tank Size, Gallons (each)	VOC Emissions (lb/year)			
		Standing Loss	Working Loss	Total per Tank	Total All Tanks
13	4344	2.3154	0.8943	3.2097	41.73

- Two 128 gpm (two-cells) new cooling towers (**I-CT**)
 Recirculation rate per module: 128 gpm
 Drift Loss: 0.0005%
 Operating hours: 8760 hours per year
 Drift loss mass Dispersion factor: 31.3% (per EPA Document: Effect of Pathogenic and Toxic Material Transport Via Cooling Device Drift Vol. I Technical Report, EPA 600/7-79-251a, Nov. 1979,)

Annual Drift = 128 gpm x 8.345 lb/gal of water x 60 min/hr x 8760 hr/yr x 0.0005%
 = 2807 lb water per year

Cooling tower water quality

Cooling Tower, Total Dissolved Solids (TDS) = 8 x supply water TDS
 = 8 x 50 ppm
 = 400 ppm

2807 lb water/yr x 31.3% x (400 lb PM/1.06E06 lb water) x (1 ton/2000 lb) x 2 units
 = 3.51E-04 tons/yr PM

= 1.76E-04 tons/yr per unit
 = 8.79E-05 tons/yr per cooling tower cell
 = 4.01E-05 lb/hr per cooling tower
 = 2.01E-05 lb/hr per cooling tower cell

These sources (**ID Nos. I-BT and I-CT**) qualify as insignificant activities due to amount of emissions pursuant to 15A NCAC 02Q .0503(8). An insignificant activity means any activity

“...whose emissions potential emission of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide before air pollution control devices, i.e., potential uncontrolled emissions, are each no more than five tons per year and whose potential emissions of hazardous air pollutants before air pollution control devices, are each below 1000 pounds per year.”

Uncontrolled emissions of VOC and PM from the proposed emission sources are less than five tons per year as shown in the calculations above. No permit is required for installation and operation of this equipment.

General Fuel usage:

	Number	Fuel Usage (gals/hr ea)	Fuel Usage (gals/hr total)	NOx Emissions (lbs/hr ea)	NOx Emissions (lbs/hr total)
Tomcat	13	138	1794	42.46	552.03
Bldgs 3B & 3C 2725	32	191.2	6118.4	67.04	2145.21
Bldg 3A 2500	16	173.5	2776	51.09	817.37
614 2000	1	141.3	141.3	43.44	43.44
Bldg 2 2000	15	141.3	2119.5	34.10	511.46
Bldg 1 & 2 2000	37	137.9	5102.3	32.88	1216.38
Bldg 2 750	4	72.2	288.8	12.90	51.61
Bldg 2 1500	2	109.4	218.8	27.70	55.40
Fire Pump	1	7.9	7.9	0.40	0.40
Total	121		18,567.000		5,393.287
2.70 tons NOx/hr					

On April 7, 2021, Mr. Joe Sullivan responded via email, number of cooling towers and their emission description has changed. It included Form D4 and Cooling tower emission calculations. Please, see appendix A for more details.

Equipments to be MODIFIED:

Emission Source ID No.	Proposed Emission Source Description	Previous Permit Emission Source Description
I-CT	10 – 4608 gpmea. (two-cells)	7 – 4608 gpmea. (two-cells)

Equipments to be REMOVED:

Emission Source ID No.	Emission Source Description
I-CT	8 – 2306 gpmea. (two-cells)
I-CT	4 – 6912 gpmea. (two-cells)

Based on telephonic conversation with Mr. Joe Sullivan on April 30, 2021 @ 3:30 pm, Emission Source Description of Emergency Generators (**ID Nos. EG-1 through EG-120**) has changed.

Equipments to be MODIFIED:

Emission Source ID No.	Proposed Emission Source Description	Previous Permit Emission Source Description
EG-1 through EG-50	Fifty (50) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (2,919 brake horsepower, 2,000 kW electrical output, each)	Fifty (50) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (2,919 brake horsepower, 2,000 kW electrical output, each)
EG-51 through EG-54	Four (4) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (1,482 brake horsepower, 1,000 kW electrical output, each)	Four (4) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (1,482 brake horsepower, 1,000 kW electrical output, each)
EG-55 and EG-56	Two (2) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (2,919 brake horsepower, 2,000 kW electrical output, each)	Two (2) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (2,919 brake horsepower, 2,000 kW electrical output, each)
EG-57 and EG-58	Two (2) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (2,205 brake horsepower, 1,500 kW electrical output, each)	Two (2) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (2,205 brake horsepower, 1,500 kW electrical output, each)
EG-59	One (1) emergency electricity generator powered by one stationary diesel-fired internal combustion engine (2,919 brake horsepower, 2,000 kW electrical output)	One (1) emergency electricity generator powered by a stationary diesel-fired internal combustion engine (2,919 brake horsepower, 2,000 kW electrical output)
EG-60 through EG-75	Sixteen (16) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (3,614 brake horsepower, 2,500 kW electrical output, each)	Sixteen (16) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (3,614 brake horsepower, 2,500 kW electrical output, each)
EG-76 through EG-107	Thirty-two (32) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (4,034 brake horsepower, 2,725 kW electrical output, each)	Thirty-two (32) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (4,034 brake horsepower, 2,725 kW electrical output, each)
EG-108 through EG-120	Thirteen (13) emergency electricity generators each powered by one stationary diesel-fired internal combustion engine (2,937 brake horsepower, 2,000 kW electrical output, each)	Thirteen (13) emergency electricity generators powered by a stationary diesel-fired internal combustion engine (2,937 brake horsepower, 2,000 kW electrical output, each)

Application ID No. 1400204.18A

This permit application submitted on May 21, 2018 as a 502(b)(10) modification for the installation of thirteen 2000 kW Emergency Generators. The emergency generators provided power to the Data Center in the event of power supply interruption. In accordance with 15A NCAC 02Q .0523, the Permittee may make Section 502(b)(10) off-permit changes without having a permit revised as long as the modification does not require any changes to the current monitoring, recordkeeping, or reporting conditions of any applicable regulations.

Number of generators = 13

Rated Capacity = 2937 hp = 2000 kW = 138,000 Btu/gal

Fuel consumption = 138 gal/hr

Diesel fuel sulfur content = 0.0015%

Potential runtime hours = 500 hours per year

Limited runtime hours = 93 hours per year

Air Emissions from 13 generators (ID Nos. EG-108 through EG-120):

Pollutant	Potential runtime Emissions - Emission calculations (Appendix B)	Limited runtime Emissions - Emission calculations (Appendix B)
	Tons per year (tpy)	
Particulate Matter (PM)	1.86	0.34
PM<10 µm (PM ₁₀)	1.86	0.34
PM<2.5 µm (PM _{2.5})	1.86	0.34
Sulfur dioxide (SO ₂)	0.12	0.02
Nitrogen oxides (NO _x)	138.01	25.58
Carbon monoxide (CO)	12.84	2.38
Volatile Organic Compounds (VOC)	3.64	0.68
Lead	6.01E-04	1.11E-04
Hazardous Air Pollutants (HAP)		
GREENHOUSE GASES (GHG)		
CO ₂ Equivalent (CO ₂ e)	10071.22	1866.62

Source: Manufacturer Data except SO₂ which is from AP-42 Table 3.4.1

Maximum PM emissions at 25% load – 838 hp

Maximum CO emissions at 10% load – 411 hp

Maximum VOC emissions at 75% load – 2212 hp

7. Regulatory Review

Unless specifically noted, a detailed discussion of the following list of applicable permit conditions is not included as applicability status as a result of these applications has not changed. The facility is expected to be in continued compliance.

- A. Fifty (50) 2,000 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-1 through EG-50)**
Four (4) 1,000 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-51 through EG-54)
Two (2) 2,000 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-55 and EG-56)
Two (2) 1,500 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-57 and EG-58)
One (1) 2,000 kW Emergency Generators – No. 2 Diesel (ID No. EG-59)
Sixteen (16) 2,500 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-60 through EG-75)
Thirty-two (32) 2,750 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-76 through EG-107)
Thirteen (13) 2,725 kW Emergency Generators – No. 2 Diesel (ID Nos. EG-108 through EG-120)

Applicable Regulatory Requirements:

- 15A NCAC 02D .0516: Sulfur Dioxide Emissions from Combustion Sources
- 15A NCAC 02D .0521: Control of Visible Emissions
- 15A NCAC 02D .0524: New Source Performance Standards (Subpart IIII)
- 15A NCAC 02D .1111: Maximum Achievable Control Technology
- 15A NCAC 02Q .0317: Avoidance Conditions (Prevention of Significant Deterioration)
- 40 CFR 63, Subpart ZZZZ

8. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

This facility is subject to New Source Performance Standards (NSPS), 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. This Subpart is applicable to all diesel-fired emergency generators (**ID Nos. EG-1 through EG-120**). The facility is required to comply with all applicable provisions including the notification, testing, reporting, record-keeping, and monitoring requirements. This permit renewal does not affect this status. Continued compliance with these standards is expected.

NESHAP/MACT

This facility is classified as an area source for HAP emissions and is subject to General Available Control Technology (GACT) standards under 40 CFR 63 Subpart ZZZZ. These standards for area sources apply to each emergency engines. Compliance is demonstrated through meeting NSPS Subpart IIII standards. This permit renewal does not affect this status.

NSR/PSD

Tapaha Dynamics is a minor source with respect to PSD. The permit limits facility-wide NO_x emissions to less than 250 tpy. Potential emissions of all other criteria pollutants are below 250 tpy without limits. Caldwell County is in attainment or unclassified for all pollutants. Caldwell has not been triggered for increment consumption according to the memo "North Carolina Counties with Triggered PSD Minor Baseline Dates (for PM-10, SO and NO_x)". See https://files.nc.gov/ncdeq/Air%20Quality/permits/psd/docs/PSD_County_Minor_Baseline_Dates_20200814.pdf

112(r)

This facility is **NOT** subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements. This permit renewal does not affect this status.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all of the following criteria:

- Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;
- Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source (i.e., 100 tpy of any criteria pollutant or 10 tpy of any HAP, North Carolina); and,
- Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

The following table summarizes CAM applicability at Tapaha Dynamics, LLC:

Emission Unit	Criteria #1: Does the Source Use a Control Device?	Criteria #2: Pre-control PTE ≥100% of major source thresholds?	Criteria #3: Exempt Under 40 CFR 64.2(b)?	CAM Source?
EG-1 through EG-120	No	No	No	No

Currently, the facility is NOT subject to CAM because there are control devices used in this facility. This permit renewal does not affect this status.

9. Facility-Wide Air Toxics:

The permit originally contained modeled emission limits for several toxic air pollutants (TAPs) from the diesel-fired emergency generators (**ID Nos. EG-1 through EG-120**) under 15A NCAC 02D .1100. The diesel-fired emergency generators (**ID Nos. EG-1 through EG-120**) are subject to 40 CFR 63, Subpart ZZZZ. Therefore, they are exempt from NC air toxics per 15A NCAC 02Q .0702(b)(27), provided they pose no unacceptable risk to human health.

Under revision R05, the facility requested that 15A NCAC 02D .1100 conditions be removed from their permit as it does not pose risk to human health. The DAQ has made the determination that the permitted sources will not present risk to human health and subsequently removed those conditions. For detailed information, please see Charles F. Yirka's **September 26, 2014** permit review. This permit renewal does not affect this status.

10. Facility Emission Review:

Actual emissions for 2015 through 2019 are reported in the header of this permit review.

Facility-wide Emissions as per Form D1:

Pollutant	Potential runtime Emissions – Form D1 (Before controls / Limitations)	Limited runtime Emissions – Form D1 (After controls / Limitations)
	Tons per year (tpy)	
Particulate Matter (PM)	12.30	2.40
PM<10 µm (PM ₁₀)	12.30	2.40
PM<2.5 µm (PM _{2.5})	12.30	2.40
Sulfur dioxide (SO ₂)	10.08	1.87
Nitrogen oxides (NO _x)	1348.32	249.9
Carbon monoxide (CO)	124.52	23.08
Volatile Organic Compounds (VOC)	32.46	6.27
Lead	6.33E-03	2.93E-04
Hazardous Air Pollutants (HAP)	1.207	0.224
GREENHOUSE GASES (GHG)		
CO ₂ Equivalent (CO ₂ e)	108239.90	20061.35

11. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. Tennessee is within 50 miles of the facility and will be notified accordingly.

12. Other Regulatory Considerations:

- Application fee is NOT required for Permit Application No. 1400204.21A.
- Application fee is NOT required for Permit Application No. 1400204.18A.
- A Professional Engineers Seal is NOT required for Permit Application No. 1400204.21A
- A Professional Engineers Seal is required for Permit Application No. 1400204.18A and was provided in the permit application.
- A zoning consistency determination is NOT required for Permit Application No. 1400204.21A.
- A zoning consistency determination is required for Permit Application No. 1400204.18A. The facility has provided Zoning Consistency Determination with this application.
- A 30-day public notice and 45-day EPA review is NOT required for Permit Application No. 1400204.18A.
- A 30-day public notice and 45-day EPA review is required for Permit Application No. 1400204.21A as noted above.

13. Recommendations/Conclusion:

TBD

Appendix A

RE: [EXTERNAL] Re: FW: Query regarding Tapaha Dynamics (1400204)

Sullivan, Joe (Morrisville) <joe.w.sullivan@aecom.com>

Wed 4/7/2021 3:38 PM

To: Patel, Urva P

Cc: Jon Rogers <jonrogers@google.com>

Permit Renewal Application Forms - updated cooling towers 3-30-21.pdf

123 KB

Renewal LNR Cooling Tower Calcs 3-30-21.pdf

157 KB

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to [Report Spam](#).

Hello, Urva. AS discussed in detail in the March 30 email below, the current insignificant activities list in T08 is not accurate. T08 should not be used for the list. Please use the attached information instead. It should be noted that the insignificant activities list is not part of the permit (as permitted sources), but under the Title V regulations a list of activities that are exempt based on de minimis emission rate is to be attached to the permit for clarity to ensure that an inspector clearly knows why sources are not permitted. The list must be accurate, so we cannot use T08 because it is not accurate.

Kind regards,
Joe

Joe Sullivan, PE, CM

Principal Project Engineer

D 1-919-461-1237 C 1-919-685-7915

AECOM

1600 Perimeter Park Drive, Suite 400, Morrisville, North Carolina 27560

T 1-919-461-1100 F 1-919-461-1415

www.aecom.com

From: Patel, Urva P <Urva.Patel@ncdenr.gov>

Sent: Wednesday, April 7, 2021 2:45 PM

To: Sullivan, Joe (Morrisville) <joe.w.sullivan@aecom.com>

Cc: Jon Rogers <jonrogers@google.com>

Subject: [EXTERNAL] Re: FW: Query regarding Tapaha Dynamics (1400204)

Good Afternoon Mr. Sullivan,

Please, see following table for Cooling towers from Insignificant activity list (in the permit no. 09733T08).

I-CT	Non-contact, wet cooling towers 8 – 2306 gpm ea. (two-cell) 15 – 2500 gpm ea. (single-cell) 7 – 4608 gpm ea. (two-cell) 4 – 6912 gpm ea. (two-cell)
------	---

Please, see recirculation rate for each cooling towers in the above table and revise emission calculation and form D4 accordingly.

Let me know if you have any more concern.

Regards,
Urva

Urva Patel
Engineer
Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8405 office
Urva.Patel@ncdenr.gov

217 West Jones Street
1641 Mail Service Center
Raleigh, NC 27699-1641

From: Sullivan, Joe (Morrisville) <joe.w.sullivan@aecom.com>
Sent: Tuesday, April 6, 2021 2:29 PM
To: Patel, Urva P <Urva.Patel@ncdenr.gov>
Cc: Jon Rogers <jonrogers@google.com>
Subject: [External] FW: Query regarding Tapaha Dynamics (1400204)

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to [Report Spam](#).

Hello, Urva. The calculations were attached to last week's email. I think they are correct, but please let me know if you find otherwise.

Kind regards,
Joe

Joe Sullivan, PE, CM
Principal Project Engineer
D 1-919-461-1237 C 1-919-685-7915

AECOM
1600 Perimeter Park Drive, Suite 400, Morrisville, North Carolina 27560
T 1-919-461-1100 F 1-919-461-1415
www.aecom.com

From: Patel, Urva P <Urva.Patel@ncdenr.gov>
Sent: Thursday, April 1, 2021 4:56 PM
To: Sullivan, Joe (Morrisville) <joe.w.sullivan@aecom.com>
Cc: Jon Rogers <jonrogers@google.com>, Christopher Williams <CJWilliams@google.com>
Subject: [EXTERNAL] Re: FW: Query regarding Tapaha Dynamics (1400204)

Good Afternoon Mr. Sullivan,

I have reviewed your response and our Departmental database.

I have made changes to the permit R07 insignificant activity list (I-CT emission source description) based on Mr. Roger's email response on December 27, 2016. Please, verify that.

Once again, I would like you to verify the provided (email on March 30, 2021 - Form D4) information with the emission description.

Thank you.

Regards,
Urva

Urva Patel
Engineer
Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8405 office
Urva.Patel@ncdenr.gov

217 West Jones Street
1641 Mail Service Center
Raleigh, NC 27699-1641

From: Patel, Urva P <Urva.Patel@ncdenr.gov>
Sent: Wednesday, March 31, 2021 11:31 AM
To: Sullivan, Joe (Morrisville) <joe.w.sullivan@aecom.com>
Cc: Jon Rogers <jonrogers@google.com>, Christopher Williams <CJWilliams@google.com>
Subject: [EXTERNAL] Re: FW: Query regarding Tapaha Dynamics (1400204)

I appreciate your quick response, Mr. Sullivan.

I'll let you know, if I have any more concerns.

Once again, Thankyou.

Regards,
Urva

Urva Patel
Engineer
Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8405 office
Urva.Patel@ncdenr.gov

217 West Jones Street
1641 Mail Service Center
Raleigh, NC 27699-1641

From: Sullivan, Joe (Morrisville)
Sent: Tuesday, March 30, 2021 5:08 PM
To: Patel, Urva P <Urva.Patel@ncdenr.gov>
Cc: Jon Rogers <jonrogers@google.com>; Christopher Williams <cjwilliams@google.com>
Subject: FW: Query regarding Tapaha Dynamics (1400204)

Hello, Urva. The T08 permit is in error. I'm not sure how the list got convoluted like it did, but I will attempt to explain.

1. At R06 the insignificant activities list covered 35 cooling towers. Though not specifically delineated at the time, they consisted of 20 – 1,300 gpm towers and 15 – 2,500 towers for Buildings permitted prior to Building 3. I don't know why, but the IA list was never updated to include additional cooling towers during the permitting for Building 3A, which were permitted in the R06 permit. The 3A application submitted in 2013 included 4 – 4,608 gpm towers, which were included on the IA form. Eventually only 3 were actually installed.
2. At R07, something inexplicable happened in the list of cooling towers in the permit. A permit application was submitted for an expansion to Buildings 3B/3C to add 7 more 4,608 gpm cooling towers. The updated IA list attached to the permit by DAQ did not correspond to the information submitted in that application.
3. The current Title V included a modification to add 2 – 138 gpm cooling towers, which were installed along with several generators under a 502(b)(10) application.

The numbers of cooling towers identified in the calculations included in the application is correct, though I did find a few typos. I have attached a revised set of calculations for the towers and an amended IA form for you to use to amend the cooling tower IA list. Please let me know if you have any questions. If this is confusing, it may be helpful to set up a short teams meeting and I can step you through this information.

Kind regards,
Joe

Joe Sullivan, PE, CM
Principal Project Engineer
D 1-919-461-1237 C 1-919-685-7915

AECOM
1600 Perimeter Park Drive, Suite 400, Morrisville, North Carolina 27560
T 1-919-461-1100 F 1-919-461-1415
www.aecom.com

From: Patel, Urva P <Urva.Patel@ncdenr.gov>
Sent: Tuesday, March 30, 2021 8:29 AM
To: Sullivan, Joe (Morrisville) <joe.w.sullivan@aecom.com>
Cc: CJWilliams@google.com
Subject: [EXTERNAL] Query regarding Tapaha Dynamics (1400204)

Good Morning Mr. Sullivan,

I am a review engineer for this project. I have reviewed permit renewal application, sent on February 04, 2021.

I found discrepancies in the permit application for number of Cooling towers and their recirculation rate per module . The data does not match with current permit 09733T08 Insignificant Activity List for I-CT).

- Please, send revised emission calculations Page 47 to Page 51.
- Please, confirm number of emission sources and their recirculation rate (gpm).

Please, respond to this email by April 14 COB.

Thank you.

Regards,
Urva

Urva Patel
Engineer
Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8405 office
Urva.Patel@ncdenr.gov

217 West Jones Street
1641 Mail Service Center
Raleigh, NC 27699-1641