



Section I - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: **615085**
 Equipment Category: **Boiler < 20 MMBTU/HR**
 Equipment Subcategory: **Fire-tube, Natural Gas Fired**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Williams and Davis		B. MODEL: WDNP2-G-840	
C. DESCRIPTION: Boiler, Fire-tube Type, with a Low NOx Burner			
D. FUNCTION: Mizkan America, Inc. manufacturers a variety of vinegars (5 – 15% acetic acid). The facility has inactivated two of their older 3.985 MMBtu/hr boilers from service and has replaced them with this larger one. This boiler is currently used to produce steam to heat up their process water.			
E. SIZE/DIMENSIONS/CAPACITY: 8.4 MMBtu/hr			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 8.4 MMBTU/hr			
G. BURNER INFORMATION:			
TYPE		INDIVIDUAL HEAT INPUT	
Low NOx Burner		8.4 MMBtu/hr	
H. PRIMARY FUEL: Natural Gas		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: Hours 24 HRS//DAY 7 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS: Boiler with 10 HP Combustion Air Blower. Per Rule 1146, this boiler is considered a Group III Unit (5 MMBtu/hr – 20 MMBtu/hr) boiler.			

2. COMPANY INFORMATION

A. COMPANY: Mizkan America, Inc.		B. FAC ID: 39855	
C. ADDRESS: 10037 E. 8th Street CITY: Rancho Cucamonga STATE: CA ZIP: 91730		D. NAICS CODE: 2099	
E. CONTACT PERSON: Wayne Musselman		F. TITLE: Maintenance Manager	
G. PHONE NO.: 909-989-4211		H. EMAIL: Wayne.Musselman@mizkan.com	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Christopher Gill	
D. PERMIT INFORMATION: P/O NO.: G61375	PC ISSUANCE DATE: N/A (PO no PC) PO ISSUANCE DATE: 4/21/2020
E. START-UP DATE: 2020	
F. OPERATIONAL TIME: 2+ years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O ₂ , %CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit		7 PPMV	*	50 PPMV	*	
Averaging Time		15 MIN**		15 MIN**		
Correction		3 % O ₂		3 % O ₂		
B. OTHER BACT REQUIREMENTS: * Using Natural Gas ** Per condition (5)(d), the sampling times shall be at least 15 consecutive minutes for maximum and minimum loads and at least one hour for normal operating load.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: This equipment is subject to the applicable NOx requirements of Rule 1146.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: William and Davis	B. MODEL: WDNP2-G-840		
C. DESCRIPTION: Low NOx burner			
D. SIZE/DIMENSIONS/CAPACITY: 8.4 MMBTU			
E. CONTROL EQUIPMENT PERMIT INFORMATION: See Section 3			
APPLICATION NO.:	PC ISSUANCE DATE: Click here to enter a date.		
PO NO.:	PO ISSUANCE DATE: Click here to enter a date.		
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: N/A			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source test																																										
B. DATE(S) OF SOURCE TEST: September 5, 2020																																										
C. COLLECTION EFFICIENCY METHOD: N/A																																										
D. COLLECTION EFFICIENCY PARAMETERS: N/A																																										
E. SOURCE TEST/PERFORMANCE DATA:																																										
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Parameter</th> <th style="padding: 5px;">Units</th> <th style="padding: 5px;">Minimum</th> <th style="padding: 5px;">Average</th> <th style="padding: 5px;">Maximum</th> <th style="padding: 5px;">Limit</th> <th style="padding: 5px;">Rule/ Regulation</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">NO_x</td> <td style="padding: 5px;">ppm @ 3% O₂</td> <td style="padding: 5px;">3.75</td> <td style="padding: 5px;">5.04</td> <td style="padding: 5px;">5.70</td> <td style="padding: 5px;">7</td> <td style="padding: 5px;">Condition 10</td> </tr> <tr> <td></td> <td style="padding: 5px;">lb/hr</td> <td style="padding: 5px;">0.0165</td> <td style="padding: 5px;">0.0347</td> <td style="padding: 5px;">0.0507</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">CO</td> <td style="padding: 5px;">ppm @ 3% O₂</td> <td style="padding: 5px;">0.566</td> <td style="padding: 5px;">0.187</td> <td style="padding: 5px;">0.0</td> <td style="padding: 5px;">50</td> <td></td> </tr> <tr> <td></td> <td style="padding: 5px;">lb/hr</td> <td style="padding: 5px;">0.00152</td> <td style="padding: 5px;">0.000783</td> <td style="padding: 5px;">0.0</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">O₂</td> <td style="padding: 5px;">%</td> <td style="padding: 5px;">9.02</td> <td style="padding: 5px;">8.27</td> <td style="padding: 5px;">8.03</td> <td></td> <td></td> </tr> </tbody> </table>	Parameter	Units	Minimum	Average	Maximum	Limit	Rule/ Regulation	NO _x	ppm @ 3% O ₂	3.75	5.04	5.70	7	Condition 10		lb/hr	0.0165	0.0347	0.0507			CO	ppm @ 3% O ₂	0.566	0.187	0.0	50			lb/hr	0.00152	0.000783	0.0			O ₂	%	9.02	8.27	8.03		
Parameter	Units	Minimum	Average	Maximum	Limit	Rule/ Regulation																																				
NO _x	ppm @ 3% O ₂	3.75	5.04	5.70	7	Condition 10																																				
	lb/hr	0.0165	0.0347	0.0507																																						
CO	ppm @ 3% O ₂	0.566	0.187	0.0	50																																					
	lb/hr	0.00152	0.000783	0.0																																						
O ₂	%	9.02	8.27	8.03																																						
F. TEST OPERATING PARAMETERS AND CONDITIONS: The boiler was tested at three loads: minimum, average, and maximum.																																										
G. TEST METHODS (SPECIFY AGENCY): SCAQMD 100.1 for NO _x , CO, O ₂ and CO ₂ .																																										

<p>H. MONITORING AND TESTING REQUIREMENTS:</p> <p>Condition (5) The owner or operator of this equipment shall conduct an initial source test and subsequent source test every five years.</p> <p>Condition (7) The operator shall conduct periodic monitoring of NO_x and CO emissions pursuant to the schedule in Rule 1146 with a portable NO_x, CO and Oxygen analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast AQMD Rule 1146.</p>
<p>I. DEMONSTRATION OF COMPLIANCE COMMENTS: Unit has shown compliance from source test.</p>

b

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 011003	B. CCAT: 81	C. APPLICATION TYPE CODE: 30	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): PR 20291	
G. SCAQMD SOURCE SPECIFIC RULES: Rule 1146			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



Section I - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: **584656**
 Equipment Category: **Dryer – Aggregate Facility**
 Equipment Subcategory: **Rotary Dryer, Natural Gas Fired**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Gencor		B. MODEL: N/A	
C. DESCRIPTION: Rotary Dryer, Drum/Mixer, with a Gencor Equinox Natural Gas Fired Burner			
D. FUNCTION: The facility is in the business of producing asphaltic concrete. The raw aggregate, recycled asphalt product and recycled asphalt shingles are fed into a rotary dryer from an on-site cold feed system. The material is heated to temperature under specification to remove moisture. Asphalt oil is fed directly into the dryer and mixed with raw aggregate. The asphaltic concrete is discharged into an incline slat conveyor which feeds silo loading batches via a series of drag slat conveyors. The exhaust from the dryer and conveyor is vented to a hot baghouse.			
E. SIZE/DIMENSIONS/CAPACITY: 135 MMBtu/hr			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 135 MMBTU/hr			
G. BURNER INFORMATION:			
	TYPE	INDIVIDUAL HEAT INPUT	NUMBER
	Low NOx Burner	135 MMBtu/hr	one
H. PRIMARY FUEL: Natural Gas		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: Hours 24 HRS//DAY 7 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS: Two combustion air blowers, 155 HP total.			

2. COMPANY INFORMATION

A. COMPANY: Granite Construction Co.		B. FAC ID: 178534	
C. ADDRESS: 35100 Dillon Rd. CITY: Indio STATE: CA ZIP: 92203		D. NAICS CODE: 324121	
E. CONTACT PERSON: Jayne Powell		F. TITLE: Environmental Manager	
G. PHONE NO.: 760-775-7500		H. EMAIL: Jayne.Powell@gcinc.com	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Marilyn Potter	
D. PERMIT INFORMATION: P/O NO.: G44681	PC ISSUANCE DATE: 5/5/2016 PO ISSUANCE DATE: 1/30/2017
E. START-UP DATE: 2017	
F. OPERATIONAL TIME: 5 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (% O ₂ , % CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit		33 PPMV				
Averaging Time		-				
Correction		3 % O ₂				
B. OTHER BACT REQUIREMENTS: N/A						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: The manufacturer provided an emission guarantee for 33 ppm. The source test showed an average of 29 ppm @ 3% O ₂ , demonstrating compliance with Rule 1147.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: -		B. MODEL: -	
C. DESCRIPTION: Low NOx burner			
D. SIZE/DIMENSIONS/CAPACITY: 135 MMBTU/hr			
E. CONTROL EQUIPMENT PERMIT INFORMATION: See Section 3			
APPLICATION NO.:		PC ISSUANCE DATE: Click here to enter a date.	
PO NO.:		PO ISSUANCE DATE: Click here to enter a date.	
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: N/A			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source test						
B. DATE(S) OF SOURCE TEST: September 7, 2016						
C. COLLECTION EFFICIENCY METHOD: N/A						
D. COLLECTION EFFICIENCY PARAMETERS: N/A						
E. SOURCE TEST/PERFORMANCE DATA:						
Parameter	Units	Run #1	Run #2	Run #3	Limit	Rule/Regulation
NOx	ppm @ 3% O ₂	27.7	29.6	29.8	33	Condition 4
	lb/MMBtu	0.034	0.036	0.037		
CO	ppm @ 3% O ₂	763	815	398	2000	
	lb/MMBtu	0.572	0.611	0.299		
O ₂	%	13.5	13.8	12.9		
F. TEST OPERATING PARAMETERS AND CONDITIONS: N/A						
G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 100.1 for NOx, CO, O ₂ and CO ₂ .						
H. MONITORING AND TESTING REQUIREMENTS: Permit to Construct - Condition (12): The owner or operator of this equipment shall conduct an initial source test.						
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Rotary Dryer has shown compliance with SCAQMD Rule 1147 through the source test.						

b

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 000293	B. CCAT: .	C. APPLICATION TYPE CODE: 10	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): PR 16172A	
G. SCAQMD SOURCE SPECIFIC RULES: Rule 1147			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

DRAFT



Section 1 - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: **557373, 563695, 556097, and 555096**
 Equipment Category: **Flow Coater with Regenerative Thermal Oxidizer**
 Equipment Subcategory: **Paper and Film**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Faustel		B. MODEL: N/A	
C. DESCRIPTION: Arlon produces adhesive and decorative films. All four production lines are vented along with their mixing rooms to a regenerative thermal oxidizer (RTO) to control emissions of VOC. Four permanent total enclosures (PTEs), one around each coating head, are vented to the RTO.			
D. FUNCTION: Casting of paper and vinyl film and application of an adhesive on to the film			
E. SIZE/DIMENSIONS/CAPACITY: N/A			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: N/A			
G. BURNER INFORMATION			
TYPE		INDIVIDUAL HEAT INPUT	
N/A		N/A	
H. PRIMARY FUEL: N/A		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS: Knife-over-roll type			

2. COMPANY INFORMATION

A. COMPANY: Arlon Graphics LLC		B. FAC ID: 174406	
C. ADDRESS: 200 Boysenberry Lane CITY: Placentia STATE: CA ZIP:92870		D. NAICS CODE: 322222	
E. CONTACT PERSON: Robert Nicholson		F. TITLE: Engineering Manager	
G. PHONE NO.: 714-431-4221		H. EMAIL: rnicholson@arlon.com	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: OTHER
C. SCAQMD ENGINEER: Jeanne Pendes Villacorte	
D. PERMIT INFORMATION: P/O NO.: G51869	PC ISSUANCE DATE: 1/7/15 PO ISSUANCE DATE: 12/2/2016
E. START-UP DATE: 2016	
F. OPERATIONAL TIME: 5+years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit						
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: N/A						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: N/A						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Adwest Technologies, Inc.		B. MODEL: 50.0 RTO-97	
C. DESCRIPTION: Regenerative thermal oxidizer with a Maxon low-NOx burner			
D. SIZE/DIMENSIONS/CAPACITY: 14.45 MMBtu/hr low-NOx natural gas burner			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 587507 PC ISSUANCE DATE: Click here to enter a date. PO NO.: G51846 PO ISSUANCE DATE: 4/18/2018			
F. REQUIRED CONTROL EFFICIENCIES: Minimum efficiencies of the system control equipment as required by permit, or the most stringent rule requirement. The control or destruction efficiency is determined across the control device (e.g. inlet-outlet). Collection or capture efficiency is based at each point of contaminant collection in the system. Enter each contaminant that applies. Add rows as needed.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	97%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS : The operation of the RTO to control VOC emissions is in compliance with requirements of South Coast AQMD Rules 1128 and 1171. The RTO burner is only used to pre-heat the ceramic beds to establish an initial temperature of 1500F.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test
B. DATE(S) OF SOURCE TEST: April 20, 2016
C. COLLECTION EFFICIENCY METHOD: The VOC destruction efficiency was determined at the inlet and outlet of the RTO, simultaneously, by SCAQMD Methods 25.1/25.3. The enclosures were certified as PTEs for 100% capture of the VOC by EPA Method 204.
D. COLLECTION EFFICIENCY PARAMETERS: See Part C
E. SOURCE TEST/PERFORMANCE DATA: VOC removal efficiency for the oxidizer is 98.9%. Use of PTEs yielded a collection efficiency of 100% and therefore the overall control efficiency is 98.9%.

F. TEST OPERATING PARAMETERS AND CONDITIONS: List any important operating conditions maintained during the source test or normal operations. Examples include, but may not be limited to, pressure differentials across control devices, feed rates, firing rates, temperatures, flow rates, or other parameters used to evaluate the level of operation of the equipment during the test or operations that may affect emissions from the equipment.
G. TEST METHODS (SPECIFY AGENCY): South Coast AQMD Methods 25.1/25.3
H. MONITORING AND TESTING REQUIREMENTS: Source test was conducted with all four coating lines operating.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: The permit requires source testing on the RTO to verify that the overall control efficiency is a minimum of 97%.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 000211	B. CCAT: N/A	C. APPLICATION TYPE CODE: 60	
D. RECLAIM FAC? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): PR15245A	
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



Section II - Other LAER/BACT Determination

Source Type: **Major/LAER**
 Application No.: **5299**
 Equipment Category: **Fumigation Chamber**
 Equipment Subcategory: **Methyl Bromide**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Custom		B. MODEL: Custom	
C. DESCRIPTION: Methyl Bromide fumigation and control system consisting of carbon adsorption control device with onsite reactivation using a chemical scrubber.			
D. FUNCTION: Guadalupe Cooling is a produce cooling facility for vegetables, including broccoli, lettuce, cauliflower and celery, and berries. The produce is fumigated with methyl bromide prior to export overseas.			
E. SIZE/DIMENSIONS/CAPACITY: One 10,097 cu. ft. and two 19,189 cu. ft. in volume fumigation chambers. One methyl bromide volitizer and injection system. one USDA-APHIS-approved methyl bromide monitor and control room with methyl bromide cylinder storage.			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: N/A			
G. BURNER INFORMATION			
TYPE	INDIVIDUAL HEAT INPUT	NUMBER	
N/A	N/A	N/A	
H. PRIMARY FUEL: N/A		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: Hours 8 Days 7 Weeks 46			
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS: N/A			

2. COMPANY INFORMATION

A. COMPANY: Guadalupe Cooling Company		B. FAC ID: 2825	
C. ADDRESS: 2040 Guadalupe Road CITY: Nipomo STATE: CA ZIP: 93444		D. NAICS CODE: 561710	
E. CONTACT PERSON: Danny Vincent		F. TITLE: Representative	
G. PHONE NO.: (805) 343-2331 ext 108		H. EMAIL: sales@freshkist.com	

3. PERMIT INFORMATION

A. AGENCY: San Luis Obispo County APCD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: PLR from SLOCAPCD	
D. PERMIT INFORMATION: P/O NO.: 1713-2	PC ISSUANCE DATE: 8/24/10 PO ISSUANCE DATE: 2/18/2014
E. START-UP DATE: N/A	
F. OPERATIONAL TIME: 8 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit						
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: 86% overall control efficiency (capture and control) on carbon adsorption system.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: N/A						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Custom		B. MODEL: Custom	
C. DESCRIPTION: Methyl Bromide fumigation and control system consisting of carbon adsorption control device with onsite reactivation using a chemical scrubber.			
D. SIZE/DIMENSIONS/CAPACITY: One carbon adsorption bed with 15.6" inner diameter exhaust stack, 40 ft. from ground level and 5,350 cubic feet per minute exhaust blower. One chemical scrubber, 15,229 gallon tank with 2.54" inner diameter exhaust stack, 50 ft. from ground level with minimum 250 cfm. desorption blower.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 5299 PC ISSUANCE DATE: 8/18/10 PO NO.: 1713-2 PO ISSUANCE DATE: 2/18/2014			
F. REQUIRED CONTROL EFFICIENCIES: 86% overall control efficiency (capture and control) on carbon adsorption system.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	86%	___%	___%
NO _x	--%	___%	___%
SO _x	--%	___%	___%
CO	--%	___%	___%
PM	--%	___%	___%
PM ₁₀	--%	___%	___%
INORGANIC	--%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: The overall control efficiency was established and conditioned based on source testing conducted at the facility.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Tests conduction every 24 months since 2013
B. DATE(S) OF SOURCE TEST: Every 24 months since 2013
C. COLLECTION EFFICIENCY METHOD: See EPA Method below
D. COLLECTION EFFICIENCY PARAMETERS: See EPA Method below
E. SOURCE TEST/PERFORMANCE DATA: Demonstrate 86% overall control efficiency from carbon adsorption system.
F. TEST OPERATING PARAMETERS AND CONDITIONS: During venting of fumigation chambers. Sampling ports and access for source testing shall be provided in accordance with the provisions of SJVAPCD Rule 209 -Provision for Sampling and Testing Facilities.
G. TEST METHODS (SPECIFY AGENCY): EPA Method 2, 2A, or 2D for flow rate and Method 25, 25A, 25B, or 25D for measuring total gaseous organic concentrations at the inlet and outlet of the control device.

- H. MONITORING AND TESTING REQUIREMENTS: (USDA-APHIS)-approved methyl bromide monitors on the inlet and outlet of both the carbon bed and chemical scrubber shall be installed, operated and maintained in accordance with the procedure listed in EPA Test Method 1 or 1A. USDA-APHIS-approved methyl bromide monitors shall be operated and maintained to demonstrate compliance with hourly, daily, and annual emission limits, and control efficiencies of the carbon bed and scrubber system. Each monitor shall be calibrated at least once every twelve (12)-months. Source testing required at least once every twenty-four (24) months.
- I. DEMONSTRATION OF COMPLIANCE COMMENTS: N/A

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: Click here to enter text.	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: Click here to enter text.	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): Click here to enter text.	
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



Section II - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: Approval Order 20AQ-E005
 Equipment Category: **Diesel Internal Combustion Engine**
 Equipment Subcategory: **Stationary, Emergency ICE ≥1,000 BHP**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Caterpillar		B. MODEL: C175-16	
C. DESCRIPTION: Diesel powered electric emergency generator			
D. FUNCTION: The emergency engine generators approved for operation by this order were installed at Microsoft Data Center in Quincy, Washington to provide backup/standby electrical power in case of emergency and loss of grid power.			
E. SIZE/DIMENSIONS/CAPACITY: 3.0 MWe (4,277 BHP)			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 26.51 MMBtu/hr			
G. BURNER INFORMATION			
TYPE	INDIVIDUAL HEAT INPUT		NUMBER
N/A	N/A		N/A
H. PRIMARY FUEL: DIESEL		I. OTHER FUEL: Supplementary or standby fuels	
J. OPERATING SCHEDULE: Hours HRS/DAY DAYS/WEEK WKS/YR			
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines			
L. EQUIPMENT INFORMATION COMMENTS: Under the State of Washington permit, each engine shall not exceed 86 hours per year of operation averaged across all generators in service over a 12-month rolling average.			

2. COMPANY INFORMATION

A. COMPANY: Microsoft Corporation (MWH Data Center)		B. FAC ID:	
C. ADDRESS: 1515 Port Industrial Pkwy CITY: Quincy STATE: WA ZIP: 98848		D. NAICS CODE: 511210	
E. CONTACT PERSON: Jaymes Kirkham		F. TITLE: Data Center Operations Manager	
G. PHONE NO.: (509) 237-3633		H. EMAIL: jayki@microsoft.com	

3. PERMIT INFORMATION

A. AGENCY: State of Washington -Department of Ecology	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Jenny Filipy	
D. PERMIT INFORMATION: P/O NO.: 20AQ-E005 Approval Order No. 20AQ-E005: Microsoft MWH Data Center (wa.gov)	PC ISSUANCE DATE: 2/27/20 PO ISSUANCE DATE: 2/27/2020
E. START-UP DATE: 9/29/2020	
F. OPERATIONAL TIME: 1+ year	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O₂, %CO₂, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM ₁₀	INORGANIC
BACT Limit	0.19 gr/kW-hr*	0.67 gr/kW-hr		3.5 gr/kW-hr	0.03 gr/kW-hr	
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: Concise description of the BACT requirements for each regulated contaminant from the equipment, other than the requirements list in Section 4(A).

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS:
According to the permit, for the five load tests, testing shall be performed at each of the five engine torque load levels described in Table 2 of Appendix B to Subpart E of 40 CFR Part 89, and data shall be reduced to a single-weighted average value using the weighting factors specified in Table 2.

*NMHC/VOC

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Caterpillar	B. MODEL: Model name and number		
C. DESCRIPTION: All generators are Tier 2-certified and each engine shall be equipped with urea-based selective catalytic reduction (SCR) and catalyzed diesel particulate filter (DPF) controls to meet the emission requirements of EPA Tier 4 engines.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. _____ PC ISSUANCE DATE: 2/27/20 PO NO.: 20AQ-E005 PO ISSUANCE DATE: 2/27/2020			
F. REQUIRED CONTROL EFFICIENCIES: N/A			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS :			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test												
B. DATE(S) OF SOURCE TEST: September 29, 2020												
C. COLLECTION EFFICIENCY METHOD:												
D. COLLECTION EFFICIENCY PARAMETERS: The quantitative parameters used to verify the method or procedures in Section 6(C). Examples include static pressure measurements, anemometer measurements, and mass balance results.												
E. SOURCE TEST/PERFORMANCE DATA:												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Parameter</th> <th style="text-align: center;">Test Methods</th> </tr> </thead> <tbody> <tr> <td>Filterable PM: 0.006 g/kWm-hr</td> <td>40 CFR 1065</td> </tr> <tr> <td>CO: 0.10 g/kWm-hr</td> <td>ASTM D-6348</td> </tr> <tr> <td>NO_x: 0.47 g/kWm-hr</td> <td>ASTM D-6348</td> </tr> <tr> <td>NMHC: 0.004 g/kWm-hr</td> <td>EPA 25A</td> </tr> <tr> <td>NH₃: 0.17* lb/hr</td> <td>ASTM D-6348</td> </tr> </tbody> </table>	Parameter	Test Methods	Filterable PM: 0.006 g/kWm-hr	40 CFR 1065	CO: 0.10 g/kWm-hr	ASTM D-6348	NO _x : 0.47 g/kWm-hr	ASTM D-6348	NMHC: 0.004 g/kWm-hr	EPA 25A	NH ₃ : 0.17* lb/hr	ASTM D-6348
Parameter	Test Methods											
Filterable PM: 0.006 g/kWm-hr	40 CFR 1065											
CO: 0.10 g/kWm-hr	ASTM D-6348											
NO _x : 0.47 g/kWm-hr	ASTM D-6348											
NMHC: 0.004 g/kWm-hr	EPA 25A											
NH ₃ : 0.17* lb/hr	ASTM D-6348											
Engine brake mechanical output (kWm) * Arithmetic average of three runs reported for ammonia emissions, not weighted average												

F. TEST OPERATING PARAMETERS AND CONDITIONS:
 Emission tests were performed while the source/units and air pollution control devices were operating at the conditions required by the permit. The units were tested when operating within 2% of the following target load values: 100%, 75%, 50%, 25%, and 10% load. The load was based on mechanical load. For the five load tests, testing shall be performed at each of the five engine torque load levels. Three test runs shall be conducted for each engine, except as allowed by the sampling protocol from 40 CFR 1065.

Each engine shall be equipped with a properly installed and maintained non-resettable meter that records total operating hours.

Each engine shall be connected to a properly installed and maintained fuel flow monitoring system (either certified physical or generator manufacturer provided software) that records the amount of fuel consumed by the engine.

G. TEST METHODS (SPECIFY AGENCY):

Pollutant	Load Test	Test Method ^(a)	Emission Limits	Compliance Test Frequency
PM	Five-load weighted avg.	EPA Method 5 or alternative method from 40 CFR 1065	0.03 g/kW-hr	See Approval Conditions 4.d.iv, 4.d.v, 4.d.vi.
NO _x	Five-load weighted avg.	EPA Method 7E, or alternative method from 40 CFR 1065	0.67 g/kW-hr	
CO	Five-load weighted avg.	EPA Method 10, or alternative method from 40 CFR 1065	3.5 g/kW-hr	
NMHC/ VOC	Five-load weighted avg.	EPA Method 25A and EPA Method 18; or alternative method from 40 CFR 1065	0.19 g/kW-hr	
Ammonia	100%-load (± 2%)	BAAQMD Method ST-1B or EPA Method 320 or EPA CTM-027; or alternative method suitable for use with 40 CFR 1065	0.19 lb/hr (0.75 MWe)	
			0.50 lb/hr (1.5 MWe)	
			0.48 lb/hr (2.0 MWe)	
			0.61 lb/hr (2.5 MWe)	
			0.95 lb/hr (3.0 MWe)	
(a) In lieu of these requirements, Microsoft may propose an alternative test protocol to Ecology in writing for approval.				

H. MONITORING AND TESTING REQUIREMENTS: Every 60 months after initial source testing, Microsoft shall test at least one engine, including the engine with the most operating hours as long as it is a different engine from that which was tested during the previous 60 month interval testing

I. DEMONSTRATION OF COMPLIANCE COMMENTS: AIP established through source test and over one year of operation of the engines.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: Click here to enter text.	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: Click here to enter text.
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): W021AS-698877-RT-1155
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.		

7. ADDITIONAL SCAQMD REFERENCE DATA

H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

DRAFT



Section II - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: Approval Order 20AQ-E005
 Equipment Category: **Diesel Internal Combustion Engine**
 Equipment Subcategory: **Stationary, Emergency ICE ≥ 1,000 BHP**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Caterpillar	B. MODEL: 3512C	
C. DESCRIPTION: Diesel powered electric emergency generator		
D. FUNCTION: The emergency engine generators approved for operation by this order were installed at Microsoft Data Center in Quincy, Washington to provide backup/standby electrical power in case of emergency and loss of grid power.		
E. SIZE/DIMENSIONS/CAPACITY: 1.5 MWe (2,104 BHP)		
COMBUSTION SOURCES		
F. MAXIMUM HEAT INPUT: 14.20 MMBtu/hr		
G. BURNER INFORMATION		
TYPE	INDIVIDUAL HEAT INPUT	NUMBER
N/A	N/A	N/A
H. PRIMARY FUEL: DIESEL	I. OTHER FUEL: Supplementary or standby fuels	
J. OPERATING SCHEDULE:	Hours HRS/DAY	DAYS/WEEK WKS/YR
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines		
L. EQUIPMENT INFORMATION COMMENTS: Under the State of Washington permit, each engine shall not exceed 86 hours per year of operation averaged across all generators in service over a 12-month rolling average.		

2. COMPANY INFORMATION

A. COMPANY: Microsoft Corporation (MWH Data Center)	B. FAC ID:
C. ADDRESS: 1515 Port Industrial Pkwy CITY: Quincy STATE: WA ZIP: 98848	D. NAICS CODE: 511210
E. CONTACT PERSON: Jaymes Kirkham	F. TITLE: Data Center Operations Manager
G. PHONE NO.: (509) 237-3633	H. EMAIL: jayki@microsoft.com

3. PERMIT INFORMATION

A. AGENCY: State of Washington -Department of Ecology	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Jenny Filipy	
D. PERMIT INFORMATION: P/O NO.: 20AQ-E005 Approval Order No. 20AQ-E005: Microsoft MWH Data Center (wa.gov)	PC ISSUANCE DATE: 2/27/20 PO ISSUANCE DATE: 2/27/2020
E. START-UP DATE: 9/29/2020	
F. OPERATIONAL TIME: 6+ months	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O₂, %CO₂, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM ₁₀	INORGANIC
BACT Limit	0.19 gr/kW-hr*	0.67 gr/kW-hr		3.5 gr/kW-hr	0.03 gr/kW-hr	
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: Concise description of the BACT requirements for each regulated contaminant from the equipment, other than the requirements list in Section 4(A).

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS:
According to the permit, for the five load tests, testing shall be performed at each of the five engine torque load levels described in Table 2 of Appendix B to Subpart E of 40 CFR Part 89, and data shall be reduced to a single-weighted average value using the weighting factors specified in Table 2.

*NMHC/VOC

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Caterpillar		B. MODEL: Model name and number	
C. DESCRIPTION: All engines are Tier 2 certified, and each engine is equipped with urea-based selective catalytic reduction (SCR) and catalyzed diesel particulate filter (DPF) controls to meet the emission requirements of EPA Tier 4 engines.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. _____ PC ISSUANCE DATE: 2/27/20 PO NO.: 20AQ-E005 PO ISSUANCE DATE: 2/27/2020			
F. REQUIRED CONTROL EFFICIENCIES: N/A			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS :			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test	
B. DATE(S) OF SOURCE TEST: July 2, 2021	
C. COLLECTION EFFICIENCY METHOD:	
D. COLLECTION EFFICIENCY PARAMETERS: The quantitative parameters used to verify the method or procedures in Section 6(C). Examples include static pressure measurements, anemometer measurements, and mass balance results.	
E. SOURCE TEST/PERFORMANCE DATA:	
Parameter	Test Methods
Filterable PM: 0.004 g/kWm-hr	40 CFR 1065
CO: 0.02 g/kWm-hr	ASTM D-6348
NO _x : 0.64 g/kWm-hr	ASTM D-6348
NMHC: 0.005 g/kWm-hr	EPA 25A
NH ₃ : 0.14* lb/hr	ASTM D-6348
Engine brake mechanical output (kWm)	
* Arithmetic average of three runs reported for ammonia emissions, not weighted average	

F. TEST OPERATING PARAMETERS AND CONDITIONS:

Emission tests were performed while the source/units and air pollution control devices were operating at the conditions required by the permit. The units were tested when operating within 2% of the following target load values: 100%, 75%, 50%, 25%, and 10% load. The load was based on mechanical load. For the five load tests, testing was performed at each of the five engine torque load levels. Three test runs were conducted for each engine, except as allowed by the sampling protocol from 40 CFR 1065.

Each engine shall be equipped with a properly installed and maintained non-resettable meter that records total operating hours.

Each engine shall be connected to a properly installed and maintained fuel flow monitoring system (either certified physical or generator manufacturer provided software) that records the amount of fuel consumed by the engine.

G. TEST METHODS (SPECIFY AGENCY):

Pollutant	Load Test	Test Method ^(a)	Emission Limits	Compliance Test Frequency
PM	Five-load weighted avg.	EPA Method 5 or alternative method from 40 CFR 1065	0.03 g/kW-hr	See Approval Conditions 4.d.iv, 4.d.v, 4.d.vi.
NO _x	Five-load weighted avg.	EPA Method 7E, or alternative method from 40 CFR 1065	0.67 g/kW-hr	
CO	Five-load weighted avg.	EPA Method 10, or alternative method from 40 CFR 1065	3.5 g/kW-hr	
NMHC/ VOC	Five-load weighted avg.	EPA Method 25A and EPA Method 18; or alternative method from 40 CFR 1065	0.19 g/kW-hr	
Ammonia	100%-load (± 2%)	BAAQMD Method ST-1B or EPA Method 320 or EPA CTM-027; or alternative method suitable for use with 40 CFR 1065	0.19 lb/hr (0.75 MWe)	
			0.50 lb/hr (1.5 MWe)	
			0.48 lb/hr (2.0 MWe)	
			0.61 lb/hr (2.5 MWe)	
			0.95 lb/hr (3.0 MWe)	
(a) In lieu of these requirements, Microsoft may propose an alternative test protocol to Ecology in writing for approval.				

H. MONITORING AND TESTING REQUIREMENTS: Include any monitoring or testing requirements and their frequency that will be enforced to maintain emission levels reported for the BACT Determination.

I. DEMONSTRATION OF COMPLIANCE COMMENTS: AIP established through source test and over one year of operation of the engines.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: Click here to enter text.	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: Click here to enter text.
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): W021AS-698877-RT-1155
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.		
H. HEALTH RISK FOR PERMIT UNIT		

7. ADDITIONAL SCAQMD REFERENCE DATA

H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

DRAFT



Section II - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: Approval Order 20AQ-E005
 Equipment Category: **Diesel Internal Combustion Engine**
 Equipment Subcategory: **Stationary, Emergency ICE ≥ 1,000 BHP**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Caterpillar		B. MODEL: C18	
C. DESCRIPTION: Diesel powered electric emergency generator			
D. FUNCTION: The emergency engine generators approved for operation by this order were installed at Microsoft Data Center in Quincy, Washington to provide backup/standby electrical power in case of emergency and loss of grid power.			
E. SIZE/DIMENSIONS/CAPACITY: 1.0 MWe (1,391 BHP)			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 9.66 MMBtu/hr			
G. BURNER INFORMATION			
TYPE	INDIVIDUAL HEAT INPUT		NUMBER
N/A	N/A		N/A
H. PRIMARY FUEL: DIESEL		I. OTHER FUEL: Supplementary or standby fuels	
J. OPERATING SCHEDULE: Hours HRS/DAY DAYS/WEEK WKS/YR			
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines			
L. EQUIPMENT INFORMATION COMMENTS: Under the State of Washington permit, each engine shall not exceed 86 hours per year of operation averaged across all generators in service over a 12-month rolling average.			

2. COMPANY INFORMATION

A. COMPANY: Microsoft Corporation (MWH Data Center)		B. FAC ID:	
C. ADDRESS: 1515 Port Industrial Pkwy CITY: Quincy STATE: WA ZIP: 98848		D. NAICS CODE: 511210	
E. CONTACT PERSON: Jaymes Kirkham		F. TITLE: Data Center Operations Manager	
G. PHONE NO.: (509) 237-3633		H. EMAIL: jayki@microsoft.com	

3. PERMIT INFORMATION

A. AGENCY: State of Washington -Department of Ecology	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Jenny Filipy	
D. PERMIT INFORMATION: P/O NO.: 20AQ-E005 Approval Order No. 20AQ-E005: Microsoft MWH Data Center (wa.gov)	PC ISSUANCE DATE: 2/27/20 PO ISSUANCE DATE: 2/27/2020
E. START-UP DATE: 9/29/2020	
F. OPERATIONAL TIME: 1+ year	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O₂, %CO₂, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM ₁₀	INORGANIC
BACT Limit	0.19 gr/kW-hr*	0.67 gr/kW-hr		3.5 gr/kW-hr	0.03 gr/kW-hr	
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: Concise description of the BACT requirements for each regulated contaminant from the equipment, other than the requirements list in Section 4(A).

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS:
According to the permit, for the five load tests, testing shall be performed at each of the five engine torque load levels described in Table 2 of Appendix B to Subpart E of 40 CFR Part 89, and data shall be reduced to a single-weighted average value using the weighting factors specified in Table 2.

*NMHC/VOC

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Caterpillar	B. MODEL: Model name and number		
C. DESCRIPTION: All engines are Tier 2 certified, and each engine is equipped with urea-based selective catalytic reduction (SCR) and catalyzed diesel particulate filter (DPF) controls to meet the emission requirements of EPA Tier 4 engines.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. _____ PC ISSUANCE DATE: 2/27/20 PO NO.: 20AQ-E005 PO ISSUANCE DATE: 2/27/2020			
F. REQUIRED CONTROL EFFICIENCIES: N/A			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS :			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test												
B. DATE(S) OF SOURCE TEST: September 30, 2020												
C. COLLECTION EFFICIENCY METHOD:												
D. COLLECTION EFFICIENCY PARAMETERS: The quantitative parameters used to verify the method or procedures in Section 6(C). Examples include static pressure measurements, anemometer measurements, and mass balance results.												
E. SOURCE TEST/PERFORMANCE DATA:												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Parameter</th> <th style="width: 50%;">Test Methods</th> </tr> </thead> <tbody> <tr> <td>Filterable PM: 0.0007 g/kWm-hr</td> <td>40 CFR 1065</td> </tr> <tr> <td>CO: 0.014 g/kWm-hr</td> <td>ASTM D-6348</td> </tr> <tr> <td>NO_x: 0.40 g/kWm-hr</td> <td>ASTM D-6348</td> </tr> <tr> <td>NMHC: 0.065 g/kWm-hr</td> <td>EPA 25A</td> </tr> <tr> <td>NH₃: 0.19* lb/hr</td> <td>ASTM D-6348</td> </tr> </tbody> </table>	Parameter	Test Methods	Filterable PM: 0.0007 g/kWm-hr	40 CFR 1065	CO: 0.014 g/kWm-hr	ASTM D-6348	NO _x : 0.40 g/kWm-hr	ASTM D-6348	NMHC: 0.065 g/kWm-hr	EPA 25A	NH ₃ : 0.19* lb/hr	ASTM D-6348
Parameter	Test Methods											
Filterable PM: 0.0007 g/kWm-hr	40 CFR 1065											
CO: 0.014 g/kWm-hr	ASTM D-6348											
NO _x : 0.40 g/kWm-hr	ASTM D-6348											
NMHC: 0.065 g/kWm-hr	EPA 25A											
NH ₃ : 0.19* lb/hr	ASTM D-6348											
Engine brake mechanical output (kWm)												
* Arithmetic average of three runs reported for ammonia emissions, not weighted average												

F. TEST OPERATING PARAMETERS AND CONDITIONS:

Emission tests were performed while the source/units and air pollution control devices were operating at the conditions required by the permit. The units were tested when operating within 2% of the following target load values: 100%, 75%, 50%, 25%, and 10% load. The load was based on mechanical load. For the five load tests, testing was performed at each of the five engine torque load levels. Three test runs were conducted for each engine, except as allowed by the sampling protocol from 40 CFR 1065.

Each engine shall be equipped with a properly installed and maintained non-resettable meter that records total operating hours.

Each engine shall be connected to a properly installed and maintained fuel flow monitoring system (either certified physical or generator manufacturer provided software) that records the amount of fuel consumed by the engine.

G. TEST METHODS (SPECIFY AGENCY):

Pollutant	Load Test	Test Method ^(a)	Emission Limits	Compliance Test Frequency
PM	Five-load weighted avg.	EPA Method 5 or alternative method from 40 CFR 1065	0.03 g/kW-hr	See Approval Conditions 4.d.iv, 4.d.v, 4.d.vi.
NO _x	Five-load weighted avg.	EPA Method 7E, or alternative method from 40 CFR 1065	0.67 g/kW-hr	
CO	Five-load weighted avg.	EPA Method 10, or alternative method from 40 CFR 1065	3.5 g/kW-hr	
NMHC/ VOC	Five-load weighted avg.	EPA Method 25A and EPA Method 18; or alternative method from 40 CFR 1065	0.19 g/kW-hr	
Ammonia	100%-load (± 2%)	BAAQMD Method ST-1B or EPA Method 320 or EPA CTM-027; or alternative method suitable for use with 40 CFR 1065	0.19 lb/hr (0.75 MWe)	
			0.50 lb/hr (1.5 MWe)	
			0.48 lb/hr (2.0 MWe)	
			0.61 lb/hr (2.5 MWe)	
			0.95 lb/hr (3.0 MWe)	
(a) In lieu of these requirements, Microsoft may propose an alternative test protocol to Ecology in writing for approval.				

H. MONITORING AND TESTING REQUIREMENTS: Include any monitoring or testing requirements and their frequency that will be enforced to maintain emission levels reported for the BACT Determination.

I. DEMONSTRATION OF COMPLIANCE COMMENTS: AIP established through source test and over one year of operation of the engines.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: Click here to enter text.	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: Click here to enter text.
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): W021AS-698877-RT-1155
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.		
H. HEALTH RISK FOR PERMIT UNIT		

7. ADDITIONAL SCAQMD REFERENCE DATA

H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

DRAFT



Section I - SCAQMD BACT Determination

Source Type: **Major/LAER**
 Application No.: **625401(ICE) and 613081 (SCR)**
 Equipment Category: **I.C. Engine**
 Equipment Subcategory: **Stationary, Non-Emergency,
 Electrical Generator with SCR**
 Date: **February 23, 2022**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Miratech		B. MODEL: SP-EM35-120-18	
C. DESCRIPTION: Selective Catalytic Reduction (SCR) emission control system with urea injection for prime natural gas fired electrical generation lean-burn engine			
D. FUNCTION: SCR system controls exhaust emissions from a prime operation engine used by the City of Palm Springs to generate electricity for one of their municipal facilities. Waste heat from the engine is used to heat water and provide heat to absorption chiller.			
E. SIZE/DIMENSIONS/CAPACITY: 1573 BHP, GE Jenbacher, model JMS416B86, natural gas, lean burn, turbocharged and aftercooled, 16 cylinders, four-cycle driving a 1MW electrical generator.			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: N/A			
G. BURNER INFORMATION: N/A			
TYPE		INDIVIDUAL HEAT INPUT	
N/A		N/A	
H. PRIMARY FUEL: Natural Gas		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: Hours 24 Days 7 Weeks 52			
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS: N/A			

2. COMPANY INFORMATION

A. COMPANY: City of Palm Springs		B. FAC ID: 42218	
C. ADDRESS: 425 N. Civic Drive CITY: Palm Springs STATE: CA ZIP: 92262		D. NAICS CODE: 921190	
E. CONTACT PERSON: Staci A. Schafer		F. TITLE: Director Maintenance and Facilities	
G. PHONE NO.: (760) 323-8170		H. EMAIL: staci.schafer@palm Springs ca.gov	

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: MODIFICATION
C. SCAQMD ENGINEER: Arnold Peneda	
D. PERMIT INFORMATION: P/O NO.: G63569	PC ISSUANCE DATE: 8/26/19 PO ISSUANCE DATE: 11/21/2020
E. START-UP DATE: 8/26/2019	
F. OPERATIONAL TIME: 2+ years. Originally started in 11/18/15 with subsequent troubleshooting.	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:						
	VOC (lbs/MW-hr)	NOx (lbs/MW-hr)	SOx (lbs/MW-hr)	CO (lbs/MW-hr)	PM OR PM₁₀ (lbs/MW-hr)	INORGANIC
BACT Limit	0.17*	0.12*		0.34*		10 ppm NH ₃
Averaging Time	15 min	15 min		15 min		60 min
Correction	**	15% O ₂		15% O ₂		15% O ₂
B. OTHER BACT REQUIREMENTS: Ammonia slip tested at least once per year and once every 3 months for the first year of operation.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: * The limits are in compliance with the Rule 1110.2 electrical energy factor. ** Time Required for VOC sampling.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Miratech		B. MODEL: SP-EM35-120-18	
C. DESCRIPTION: Selective Catalytic Reduction module with a honeycomb type catalyst bed with a urea/air injector, automatic urea injection control and a 1,000 gallon capacity urea storage tank.			
D. SIZE/DIMENSIONS/CAPACITY: Minimum 3 layers of catalyst, with a minimum total of 105 blocks and with a minimum volume of 26.25 cubic feet.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 613081 PC ISSUANCE DATE:8/26/19 PO NO.: G58644 PO ISSUANCE DATE: 8/26/2019			
F. REQUIRED CONTROL EFFICIENCIES: Shall not exceed 10 ppm ammonia slip limit measured by volume on a dry basis at 15% oxygen over a 60 minute average.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
Sox	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: Maximum inlet temperature of SCR bed shall not exceed 887°F and outlet temperature shall be maintained at 572°F or greater once startup is achieved, not to exceed one hour.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test
B. DATE(S) OF SOURCE TEST: 12/18/19
C. COLLECTION EFFICIENCY METHOD: N/A
D. COLLECTION EFFICIENCY PARAMETERS: N/A
E. SOURCE TEST/PERFORMANCE DATA: Maximum ammonia slip 0.10 ppm @ 15% O ₂ .
F. TEST OPERATING PARAMETERS AND CONDITIONS:
G. TEST METHODS (SPECIFY AGENCY): South Coast AQMD Method 207.1 (Determination of Ammonia Emissions from Stationary Sources)
H. MONITORING AND TESTING REQUIREMENTS: Ammonia slip tested at least once per year and once every 3 months for the first year of operation.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: N/A

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 040002	B. CCAT: 81	C. APPLICATION TYPE CODE: 60	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	F. SOURCE TEST ID(S): R20059	
G. SCAQMD SOURCE SPECIFIC RULES: Rule 1110.2			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

DRAFT