SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

# FINDINGS AND ORDERS

HEARING BOARD
SacMetro AQMD
777 12th Street, 3rd Floor
Sacramento, California 95814

**Thursday** **March 28, 2024** **4:00 PM**

## DISCUSSION AND ACTION ITEMS

1. Selection of Hearing Board Chairperson

   Selection of new chair and vice chair, and delegation of authority to hear emergency variance petitions.

   Darrel H Woo was selected as Hearing Board Chair. Tim Olson was selected as Hearing Board Vice-chair, Also, the hearing board delegated authority to hear emergency variance petitions to the Chair and Vice-chair.

   ***ACTION:***
   ***Earl Withycombe Moved /Tim Olson Seconded***

   **Ayes: Olson, Withycombe, Woo**

## HEARING ITEMS

2. **Petitioner**

   Mitsubishi Chemical Carbon Fiber and Composites, Inc.

   **Petition Number**

   2024-002

   **Petitioner's Address**

   5900 88th Street
   Sacramento, California 95828

   **Equipment Location**

   5900 88th Street
   Sacramento, California 95828

   **Petition for**

   Petitioner is requesting that the Hearing Board modify the Final Compliance Date for Regular Variance 2023-001 granted by the Hearing Board meeting on October 17, 2023. The original Findings and Orders covered the period from September 8, 2023, through March 31, 2024. Petitioner seeks to extend the end date through September 7, 2024.

**HEARING ATTENDEES**

| Hearing Board Members | |
|---|---|
| Darrel Woo, Public Member: CHAIR | Present |
| Tim Olsen, Public Member: Vice-CHAIR | Present |
| Earl Withycombe, Engineering Professional | Present |
| Member of the Medical Profession | Vacant |
| Attorney Member | Vacant |

| Petitioner | |
|---|---|
| Callum Shearer, Plant Manager | Sworn |
| Carley Bramhill, Environmental Compliance | Sworn |
| Debra Sovay, Senior EHS Manager | Sworn |

| Sac Metro Air District | |
|---|---|
| Angela Thompson, Compliance Program Manager | Sworn |
| Steven Bolton, Air Quality Specialist | Sworn |
| Kathrine Pittard, District Counsel | |

Others
Sean G. Herman, Attorney at Law, Hearing Board Counsel
Virginia Muller, Clerk of the Hearing Board

**EXHIBITS**

1. MCCFC's PowerPoint Presentation; "Petition to Modify Final Compliance Date March 28, 2024."
2. Sac Metro Air District's PowerPoint Presentation; "Modification of Final Compliance Date for Variance 2023-001" dated March 28, 2024.

**HEARING**

Evidence and information in the Petition, Staff Report, and variance hearing established the facts summarized below.

Background

MCCFC manufactures carbon fibers. It converts raw material, a high purity acrylic fiber, to carbon fiber through two basic heating processes. Beginning with an oxidation step in atmospheric ovens, the material then goes through a tar removal and carbonization process in high-temperature furnaces. After that, post-secondary processes apply surface treatment to promote resin bonding and then coat the fiber with a sizing (resin coating) to improve its handleability and cosmetic properties.

The facility has three carbon fiber production lines that manufacture continuous fiber, Lines 31, 32 and 33. Lines 31 and 32 are the original lines from the 1980s and share a main stack permit. Line 33 was commissioned in 2017 and has two regenerative thermal oxidizer (RTO) ovens that run on gas only and have a separate main stack. Line 33 NOx emissions are generated through the combustion of natural gas in its oxidation ovens and thermal oxidizers, as well as through the destruction of the process waste that is treated by the thermal oxidizers.

Line 33's Permit to Operate 25918, Condition 10 limits NOx Emissions to 3.30 pounds

per hour. On August 21, 2023, MCCFC reported that Line 33 failed a source test, which showed it was emitting 3.33 lb/hr of NOx. As a result, Line 33 exceeded its permit limits by just under 1% of the NOx limit. On October 17, 2023, MCCFC was granted Regular Variance 2023-001 for relief from September 8, 2023, until March 31, 2024, that allowed for continued standard operation of Line 33 while the root cause of the NOx exceedance was investigated, identified, and corrective actions implemented.

Due to delays in beginning investigation and repair activities, newly discovered issues with equipment on Line 33, and unfavorable results during attempted testing, MCCFC will not be able to achieve compliance by March 31, 2024. On February 12, 2024, MCCFC submitted their petition to modify the final compliance date to September 7, 2024.

Investigation, Repair and Testing Delays

From September 2023 to December 2023, MCCFC conducted safety upgrades to their facility, including Line 33, that caused an extended shutdown of the processing lines. Due to the inability to operate the lines and the utilization of resources towards the safety upgrades, MCCFC was not able to perform the planned remediation and investigation through the first four months of the variance period. The remaining variance period, January 2024 – March 2024, did not allow sufficient time to address all known concerns and conduct testing.

On November 13 and 14, 2023, MCCFC source tested Line 33's oxidation ovens. Results of the source test were received on December 19, 2023, and demonstrated that Oven #2's Burner 2 was out of compliance with NOx emission limits. MCCFC investigated and discovered that a damaged fuel-blocking valve was leaking oil that was then being combusted by the burner. MCCFC cannot repair and retest the burner without replacement parts and has been informed that the parts will not arrive until after the March 31, 2024, variance expiration date.

On February 6, 2024, MCCFC's RTO #2000 suffered an overheat malfunction and was forced out of service for repair. MCCFC estimated that repair would not be finished before April 2024 or later. Since Line 33 must be tested with both RTO #1000 and RTO #2000, MCCFC will not be able to demonstrate full compliance until after the repairs are completed.

Repair Efforts

Throughout the variance period, MCCFC completed repairs of various units in their efforts to address the causes of the NOx exceedance and in the process identified additional issues that are now slated for repair. As to completed repairs, MCCFC sealed cracks in the inlet line for the direct fire thermal oxidizer (DFTO) and replaced all the gaskets for both RTOs, both issues allowed for excess air infiltration and therefore inefficient combustion. For identified issues yet to be fixed, both RTOs were found to have degraded insulation that negatively affects thermal efficiency; Line 33's baghouses were prematurely clogging and potentially affecting thermal efficiency, RTO #2000 suffered an overheat malfunction, and Oven #2 was found to have a leaky valve. The required repair efforts would extend beyond March 31, 2024.

Reduction in Emissions

To both return to compliance and prevent future exceedances, MCCFC committed to taking steps beyond basic repair to improve Line 33 and reduce emissions. MCCFC conducted a chemical mass balance on Line 33 to identify the areas of highest NOx production and determined that the RTOs contributed 82% of the total Line 33 NOx

emissions. MCCFC recognized that the measured NOx levels from the RTOs were much higher than historical levels and plans to work with the original equipment manufacturer (OEM) to return the RTOs to factory-level emissions standards. To further reduce potential emissions, MCCFC plans to add air pollution control equipment, specifically selective catalytic reduction, to Line 33. MCCFC agreed to submit the necessary permit modification forms by July 1, 2024. Additionally, MCCFC outlined plans to electrify their Line 33 oxidation ovens, tentatively set for 2027.

**FINDINGS**

Findings of Good Cause: Under Health and Safety Code 42356, the Board may "modify or revoke, by written order, any order permitting a variance." Although not specifically stated in section 42356, the Hearing Board has historically found that an extension may be granted for good cause, similar to the 42357 standards for modification of increments of progress or final compliance dates in approved increments of progress.

**Determination**: The Petitioner has demonstrated good faith efforts to return to compliance. The petitioner addressed and fixed potential causes of excess emissions and continues to identify and address other defects in Line 33. Further efforts are being made to reduce Line 33 emissions by electrifying the Line 33 ovens and adding additional emissions control equipment, specifically SCR. The Petitioner has presented a reasonable plan to repair and test Line 33 during the extended variance period and anticipates all items will be fixed and source tests completed by September 2024.

**Excess duration fees**: The Petitioner is requesting to extend the variance to 12 months. Therefore, the Petitioner is required to pay 5 additional months of excess emission fees:

**5 Months of Excess Emissions X $275/Month = $1375.**

Excess Emission Fees are due before the Findings & Order may be issued but a pro rata amount will be refunded if the Petitioner comes into compliance sooner than assumed in the fee calculation.

**Motion**

Motion to: (i) grant petitioner's request to modify the final compliance date from March 31, 2024, to September 7, 2024, subject to the conditions (listed below in the Order); and (ii) authorize the Chairperson to execute these Findings and Orders on behalf of the Board.

**ACTION**

*Tim Olson Moved /Earl Withycombe Seconded*

Ayes: Olson, Withycombe, Woo

**Order**

Based on the above findings, the Board approves the Petition (No. 2024-002) to Modify the Final Compliance Date of the Regular Variance, Granted October 17, 2023, from March 31, 2024, to September 7, 2024; the term of the variance is September 8, 2023, through September 7, 2024. The Chairperson is authorized to sign the Findings and Orders on behalf of the full board. Therefore, IT IS HEREBY ORDERED that Mitsubishi Carbon Fiber and Composites adhere to the following conditions:

1. Continue to comply with the following conditions set in the variance granted October 17, 2023:
    - Operate Line 31 ovens using electricity after the initial heat-up to reduce

the NOx emissions.

o Notify the District within 48 hours when Line 33 is shut down or restarted.

o Notify the District at least 30 days of planned source testing for both regenerative thermal oxidizers (RTOs) and submit a source test plan.

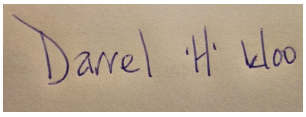
o Source test both RTOs (P/O 24520; 24521) to confirm they are back in compliance with emission limits.

2. New Condition – Source test Oven #2, burner #2 (P/O 25925).

3. New Condition – Submit permit modification applications for the Thermal Oxidizer as soon as practicable and no later than July 1, 2024.

4. New Condition – Pay additional excess emission fees of $1375 before issuance of Findings and Orders.

Report Approved
May 6, 2024



Darrel Woo, Chairman of the
Hearing Board

Approved as to Form
May 2, 2024

*Sean G. Herman*

Sean G. Herman, Hearing Board
Counsel

3. **Petitioner**

Verizon Wireless-Chicken Ranch

**Petition Number**

2024-003

**Petitioner's Address**

Verizon Wireless Environmental Compliance
295 Parkshore Drive
Folsom, CA 95763

**Equipment Location**

Verizon Wireless-Chicken Ranch
4718 Engle Road
Carmichael, CA 95608

**Petition for**

Petitioner has filed a Short-Term Variance Petition with this Board for a standby internal combustion engine requesting relief from Sacramento Metropolitan Air Quality Management District (District) Rule 201, General Permit Requirements. Specifically,

Petitioner is requesting relief from Permit to Operate (PTO) 23961 condition 9, for operating the engine for more than the maximum allowable hours of operation.

**HEARING ATTENDEES**

| | |
|---|---|
| Hearing Board Members | |
| Darrel Woo, Public Member: CHAIR | Present |
| Tim Olsen, Public Member: Vice-CHAIR | Present |
| Earl Withycombe, Engineering Professional | Present |
| Member of the Medical Profession | Vacant |
| Attorney Member | Vacant |
| | |
| Petitioner | |
| Armand A Delgado | Sworn |
| | |
| Sac Metro Air District | |
| Staff Angela Thompson, Compliance Program Manager | Sworn |
| Daniel Noakes, Air Quality Specialist | Sworn |
| Ali Othman, Engineering Program Supervisor | Sworn |
| Kathrine Pittard, District Counsel | |
| | |
| Others | |
| Sean G. Herman, Attorney at Law, Hearing Board Counsel | |
| Virginia Muller, Clerk of the Hearing Board | |

**EXHIBITS**

1. Sac Metro Air District's PowerPoint Presentation dated March 28, 2024

**HEARING**

The District opened the meeting by presenting a PowerPoint presentation providing an overview of Verizon Wireless' reasons for requesting a variance. (See Exhibit 1)

Verizon Wireless has a contract to operate a wireless telecommunication tower at a property located at 4718 Engle Road, Carmichael, CA. On January 18, 2024, power to the building went out, which automatically triggered Verizon's emergency standby generator. Verizon did not become aware of the loss of electrical service from the serving utility until January 21, 2024. Between, January 21st and 28th, Verizon determined that the electrical service from the service provider, SMUD, was interrupted due to damage to the main breaker. That main breaker is owned by the property landlord. Between January 31st and February 6th, Verizon made multiple attempts to contact the landlord, who was slow to respond to the situation. In an effort to speed the repair process, Verizon offered to make the electrical repairs on the landlord's behalf, but ultimately the landlord made the repairs. Those repairs have been completed but SMUD must inspect the repairs before power can be restored.

Staff has suggested the use of a Tier 4 portable engine to lessen emissions while power is restored rather than using the generator. Verizon indicated that there may be engineering and other barriers to use of a new engine in the short term.

**FINDINGS**

No variance may be granted unless the Hearing Board makes the six findings set forth in Health and Safety Code section 42352(a). It is the Petitioner's burden to prove, by a

preponderance of the evidence, facts sufficient to support these findings to enable the Hearing Board to grant the requested variance.

**Finding 1 - Violation**
*"That the Petitioner for a Variance is, or will be, in violation of Health and Safety Code section 41701 [opacity] or of any rule, regulation, or order of district."* (Health and Safety Code § 42352, subs. (a)(1).)

Determination: Petitioner is in violation of condition 9 of PTO 23961 for operating the equipment in excess of the maximum allowable permitted usage of 200 hours per quarter and per year. The petitioner continues to accrue hours in excess of the permitted 200 hour limit until electrical service from the serving utility has been restored.

**Finding 2 - Reasonable Control**
*"That, due to conditions beyond the reasonable control of Petitioner, requiring compliance would result in either: (A) an arbitrary or unreasonable taking of property, or (B) the practical closing and elimination of a lawful business. In making those findings where the Petitioner is a public agency, the hearing board shall consider whether or not immediate compliance would impose an unreasonable burden on an essential public service."* (Health and Safety Code § 42352, subs. (a)(2).)

Determination: Petitioner has attempted to work with the Landlord to resolve the power outage but the Landlord has been slow to respond, even when Verizon offered to make the repairs on behalf of the landlord. Nonoperation of the tower pending repairs would interrupt emergency and other cellphone service within the area and adversely impact Verizon's ability to operate in the cell tower zone.

**Finding 3 - Relative Benefit to Air Quality**
*"That the closing or taking would be without a corresponding benefit in reducing air contaminants."* (Health and Safety Code § 42352, subs. (a)(3).)

Determination The cell tower provides essential emergency phone service to the area that counterbalances the air impacts associated with operation of the generator, if conditioned on installation of a tier 4 (or better) emergency generator.

**Finding 4 – Curtailment of Operations**
*"That the applicant for the Variance has given consideration to curtailing operations of the source in lieu of obtaining a Variance."* (Health and Safety Code § 42352, subs. (a) (4).

Determination: The petitioner has considered curtailing operations, but without operation of the emergency standby engine the cellular tower will cease operating and lead to service interruptions. Service interruptions, according to the petitioner, would impact the ability for the public to communicate via cell phone, including the inability to communicate with emergency services.

**Finding 5 - Reduction of Excess Emissions**
*"During the period the variance is in effect, that the applicant will reduce excess emissions to the maximum extent feasible."* (Health and Safety Code § 42352, subs. (a).)

Determination: There are two issues pertaining to excess emissions: first, whether Petitioner has committed to reducing its emissions as required by the statute; and, second, whether Petitioner is obligated to pay excess emission fees in the event the Variance is granted.

1. **Control of excess emissions**: There is no feasible method of controlling excess emissions produced by the engine if the engine remains in operation. The engine is not capable of modulation. The only methods of reducing excess emissions are curtailing operation of the equipment or temporarily replacing the equipment with a portable engine that discharges lower emissions.
2. **Excess duration fees**: District Rule 302 requires the payment of excess duration fees for any variance approved for more than 90 days. The Petitioner is requesting a short-term variance. Compliance will be achieved within 90 days of granting variance relief, so the excess emission fee is not triggered.

**Finding 6 - Monitoring**
*"During the period the variance is in effect, that the applicant will monitor or otherwise quantify emission levels from the source, if requested to do so by the district, and report these emission levels to the district pursuant to a schedule established by the district."* (Health and Safety Code § 42352, subs. (a)(6).)

Determination: The Petitioner has agreed to provide to the District a report once per week every Monday until electrical service has been restored, which includes:

1. The total hours of engine operation during the previous week.
2. An update on the anticipated repair timeline for serving utility power to be restored.

**NUISANCE FINDING**
*"No variance shall be granted if the operation will result in a violation of Section 41700."*

Determination: Staff has not identified any violation of 41700 that might result from the granting of this variance. However, if complaint(s) regarding the operation of PTO 23961 are received which substantiate a violation of CH&S Code Section 41700 and/or District Rule 402 – Nuisance, then the Hearing Board shall reconvene for reconsideration, modification, and/or termination of the Variance.

**OTHER REQUIREMENTS**
The Hearing Board may prescribe other requirements as set forth under Health and Safety Code 42353.

Determination: None required.

**Motion**
Motion to: (i) grant a Short-term Variance from March 8, 2024, up to and including June 6, 2024, RESOLVE OR REPLACE subject to the conditions (listed below in the Order); and, (ii) authorize the acting Chairperson to execute these Findings and Orders on behalf of the Board.

**ACTION**
*Earl Withycombe Moved /Tim Olson Seconded*

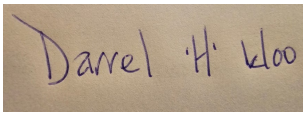
Ayes: Olson, Withycombe, Woo

**Order**
Based on the above findings, IT IS HEREBY ORDERED that the Petition for Verizon Wireless (Petition No. 2024-003) for a Short-Term Variance from PTO 23961 condition 9, is granted from March 8, 2024, through April 27, 2024, and that the Chairperson is authorized to sign the Findings and Order on behalf of the full Board. The Short-term

Variance is subject to the following conditions:

- Within 30 days of the Hearing (by April 27, 2024), the Petitioner must either return to electrical service from the serving utility, temporarily replace the engine PTO 23961 with a cleaner emitting (Tier 4 or better) engine, or request and receive an amendment to this Order.
- If complaint(s) regarding the operation of PTO 23961 are received which substantiate a violation of CH&S Code Section 41700 and/or District Rule 402 – Nuisance, then the Hearing Board bard shall reconvene for reconsideration, modification, and/or termination of the Variance.
- The Petitioner shall provide to the District a report every Monday until electrical service has been restored. The report must include:
  - The total hours of engine operation during the previous week.
  - An update on the anticipated repair timeline for serving utility power to be restored.

Report Approved
May 6, 2024



Darrel Woo, Chairman of the Hearing Board

Approved as to Form
May 2, 2024

*Sean G. Herman*

Sean G. Herman, Hearing Board Counsel

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**BOARD IDEAS AND COMMENTS**

Attest by Virginia Muller

MITSUBISHI CHEMICAL GROUP

Science. Value. Life.

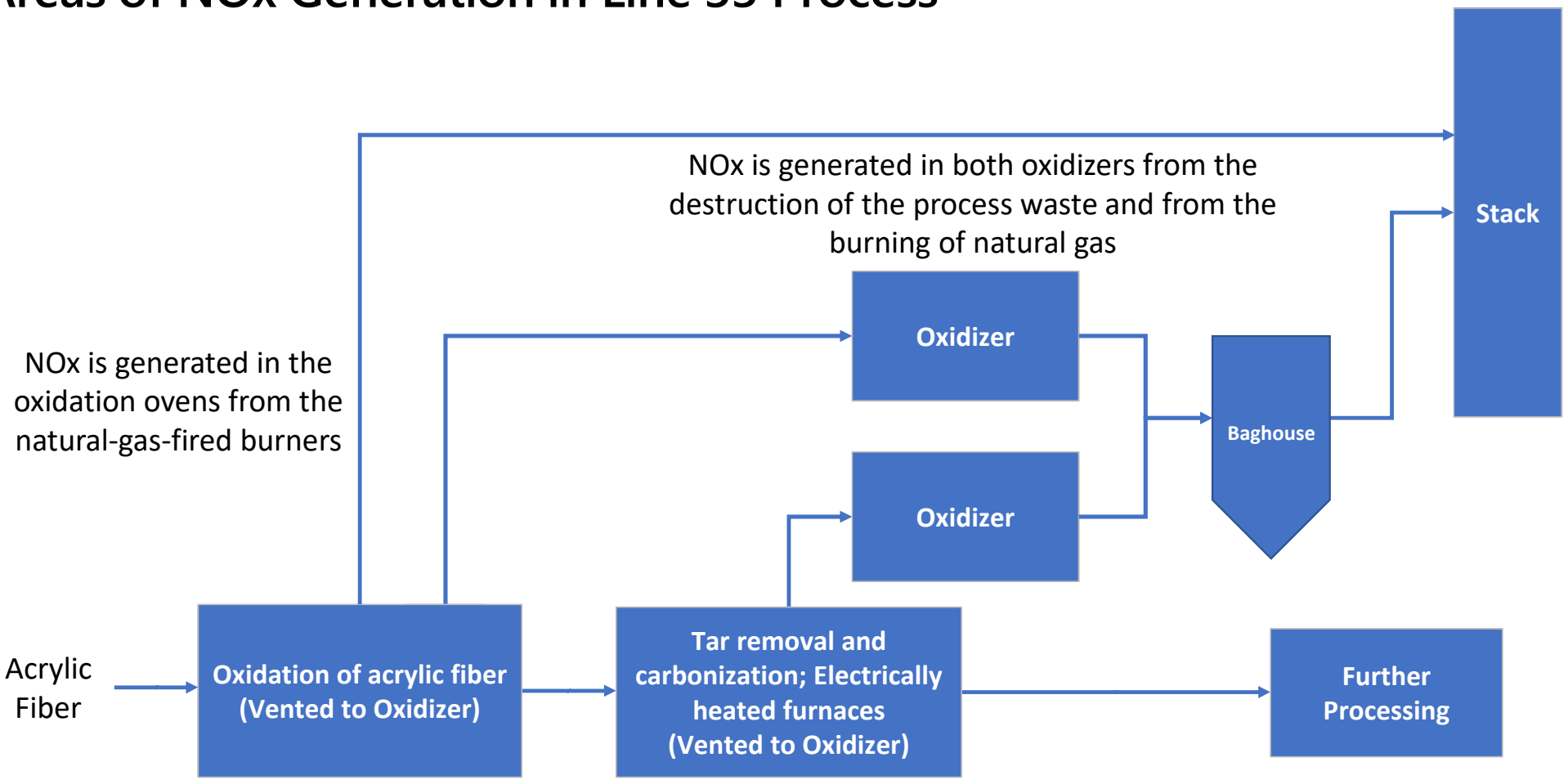
# Petition to Modify Final Compliance Date 28 March 2024

Prepared by MCCFC

# Mitsubishi Chemical Carbon Fiber & Composites

- Mitsubishi Chemical Carbon  Fiber & Composites (MCCFC) is a carbon fiber manufacturer. The facility converts acrylic fiber (raw material) to carbon fiber through a sequence of process steps, including: oxidation in atmospheric ovens, tar removal and carbonization in furnaces, surface treatment to promote resin bonding, and sizing (resin coating) of the fiber to improve handleability.
- The carbon fiber is used in many applications such as sporting goods (e.g. golf clubs, fishing poles), aviation (e.g. brakes, interiors), and transportation (pressure vessels).
- The facility has three carbon fiber lines to manufacture continuous fiber (Lines 31, 32, 33) and one line to manufacture cut fibers. Two of these carbon fiber lines (Lines 31, 32) vent to a common stack. The third line (Line 33) vents to separate stack and is currently out of compliance for NOx (which is primarily generated as a byproduct of our emissions controls).

# Areas of NOx Generation in Line 33 Process



# NOx Exceedance Status

- Production Line 33 failed routine annual source test (06/22/2023) for NOx, per SMAQMD Permit to Operate No. 25918, Condition 10:

| NOx Emissions in lb/hour | |
|---|---|
| Permit Condition | Source Test Result |
| **3.30** | **3.33** |

- MCCFC has been granted a regular variance (effective 8 September 2023) to allow continued operation while the root cause is investigated, identified, and corrective action implemented. The term of the variance will expire 31 March 2024.
- A return to compliance will be demonstrated by 3 successful source tests:
  - Line 33 main stack while operating RTO 1000
  - Line 33 main stack while operating RTO 2000
  - Line 33 Oven 2, Chamber 2
- In late September, a routine risk assessment conducted jointly with a 3rd party identified a previously unidentified safety risk. As a result, between September-December 2023, an extended shutdown for safety improvements took precedence over all other activities, utilizing available resources and consuming the time granted by the original variance. Given the unavoidable safety delays and time needed to troubleshoot equipment after extended downtime, there is no longer sufficient time remaining to complete the planned NOx remediation actions before the term of the variance expires.
- Therefore, we are requesting an extension to the final compliance date to allow for completion of the planned maintenance, repairs, and subsequent NOx source testing.

# Operations Under Variance

- Since late September 2023, Line 33 was primarily shut down while completing engineering upgrades.
  - Line 33 has operated for **1** production run in October-November of 2023, and **9** from December of 2023 through March 2024 to date. Overall, the line has been ***shut down 66.0% of the time***.
  - Since completion of major engineering improvements in December, the downtime ratio has been **35.1%**.
- During the variance, the NOx emissions at the main stack have been periodically recorded and the estimated excess emissions calculated.
  - Through 3/9/24, estimated excess emissions are **958 lbs NOx**, equivalent to **12.1 days of operation** at the full capacity permitted limit.
  - However, even accounting for those short-term exceedances, overall NOx emissions from Line 33 were, on average, **~30%** of the permitted daily and quarterly totals due to the significant downtime.
- During this period, Lines 31 and 32 were also shut down for safety until engineering upgrades to resolve risk have been implemented.
  - Line 32 returned to operation in January 2024. Line 31 remains shut down pending restart in May 2024. Overall, this has resulted in reduced NOx emissions for the site since the lines have been down instead of operating.

# Operation, Troubleshooting, and Repair – Timeline to Date

**August 2023**

- Received source test report – Initial identification of a problem
- Identified and repaired cracked piping at the process inlet of the DFTO. This was bringing in air and could affect burner efficiency and NOx.

**September 2023**

- First attempted re-test of main stack (w/ RTO 1000) cancelled due to inability to reach permit-level conditions
- Primary manufacturing operations paused for process safety upgrades

**October 2023**

- Identified and replaced broken gaskets on RTO 1000 and 2000 hatches and doors.
- Obtained variance approval 17 October (retroactive to 8 September 2023)

**November 2023**

- *1 production run*
- Source test of L33 Oven Burners

**December 2023**

- *1 production run*

**January 2024**

- *3 production runs*
- Received source test report of L33 oven burners – discovered Oven 2, Chamber 2 NOx exceedance
- During limited operation, tested various process conditions to reduce NOx emissions. Determined RTO is main source with NOx mass balance. Unable to reduce RTO temperature further due to limits of heat recovery system and minimum operating temperature of dust collector.

**February 2024**

- *2.5 production runs*
- **2/6/2024:** RTO 2000 suffered an overheat malfunction and was removed from service.
- **2/8/2024:** Began discussion to apply for extended variance with SMAQMD due to inability to operate and source test RTO 2000.
- **2/9/2024:** RTO 1000 was brought into service. Additional media was added to increase thermal efficiency and residence time for NOx reduction.
- **2/12/2024:** Submitted petition to extend final compliance date of variance.
- **2/16/2024:** OEM technician completed inspection of RTO 2000 damage and prepared replacement part order.
- **2/20/2024:** Commissioned process programming change to heat recovery system to allow lower temperature operation of RTO system.
- **2/21/2024:** Using RTO 1000, measured 14-16 ppm NOx average at main stack (under ~17 ppm threshold to pass).
- **2/27/2024:** 3rd Party Burner Technician is unable to tune Oven 2, Chamber 2. Identified damaged fuel gas blocking valve that is leaking oil. Repair scheduled pending lead time of replacement parts.
- **2/28/2024:** Attempted source testing for Line 33 main stack (w/ RTO 1000). Did not proceed after 3 hours troubleshooting when preliminary testing indicated continuing concerns.

**March 2024**

- *2.5 production runs* (to date)
- **3/8/2024:** Identified damaged refractory insulation inside RTO 2000.
- **3/12/2024:** Began removal of all ceramic media in RTO 2000 to prepare for re-insulation of interior and repair by OEM.
- **3/27/2024:** RTO 2000 repair activities underway.

# NOx Contribution by Equipment (February 2024)

| Equipment Name | Percent of Total NOx Contribution |
|---|---|
| Oven 1 Chamber 1 Burner | 2.0% |
| Oven 1 Chamber 2 Burner | 1.3% |
| Oven 2 Chamber 1 Burner | 0.9% |
| Oven 2 Chamber 2 Burner | 2.4% |
| Oven 3 Chamber 1 Burner | 0.6% |
| Oven 3 Chamber 2 Burner | 0.9% |
| Oven 4 Chamber 1 Burner | 0.9% |
| Oven 4 Chamber 2 Burner | 0.9% |
| **RTO** | **82.0%** |
| DFTO | 8.1% |
| Total | 100% |

Our primary target is to reduce the emissions from the RTO unit(s). Both units are performing much worse than historical levels. These are about 40-50% higher. The other sources are also higher than normal, and tuning/maintenance of the oven burners is planned.

We have scheduled OEM to repair RTO 2000 and to explore tuning and engineering solutions to reduce emissions at the RTO unit(s).

Permit Limit is 3.30 lbs/hr

June 2023 source test was 3.33 lb/hr ; November 2022 source test was 2.73 lbs/hr

# Maintenance and Repair Planned Timelines

| | Planned Tasks | Mar-24 | Apr-24 | May-24 | Jun-24 | Jul-24 | Aug-24 |
|---|---|---|---|---|---|---|---|
| 1 | RTO 2000 scheduled for repair of damaged poppet valves. During this time, the internal chambers will be re-insulated with new refractory insulation. | | | | | | |
| 2 | RTO 2000 refilled with new ceramic media | | | | | | |
| 3 | Operation will swap over to RTO 2000 in service | | | | | | |
| 4 | RTO 1000 will be emptied of media | | | | | | |
| 5 | RTO 1000 is scheduled for inspection by the OEM and a refractory insulation contractor | | | | | | |
| 6 | Engineering and emissions tuning services with the OEM are planned for RTO 2000 | | | | | | |
| 7 | Repair and tuning of the Oven 2, Ch 2 gas burner (pending arrival of a new fuel blocking valve) | | | | | | |
| 8 | Source testing of Oven 2, Ch 2 burner emissions (dependent on successful repair and tuning) | | | | | | |
| 9 | Replacement of RTO 1000 poppet valve assemblies and insulation, then refill of ceramic media | | | | | | |
| 10 | Engineering and emissions tuning services with the OEM are planned for RTO 1000 | | | | | | |
| 11 | Source testing with RTO 2000 in operation | | | | | | |
| 12 | RTO operation will be switched to RTO 1000 (pending a successful source test) | | | | | | |
| 13 | Source test with RTO 1000 in operation | | | | | | |
| 14 | Submission of final source test report(s) demonstrating a full return to compliance (dependent on actual test dates) | | | | | | |

# Further Efforts to Reduce NOx Emissions

- MCCFC expects to return the RTO 1000 and 2000 units to like-new condition in coordination with the OEM, resulting in compliant main stack emissions.
- To further reduce emissions and increase the buffer between permitted emissions limits and actual operational performance, the OEM will propose SCR (Selective Catalytic Reduction) systems to be installed in the Line 33 emissions control system. MCCFC, pending an agreeable design, will pursue an Authority to Construct and modified Permit to Operate for new emissions control equipment in CY2024.
- Additional reduction is expected by electrification of the Line 33 oven gas burners. MCCFC is in discussion with the Oven system OEM to replace ~8 MMBTU of gas burners with ~3000 KVA of electric heating and heat recovery implementation. The expected timeline for implementation is CY2027.

# Modification of Final Compliance Date for Variance 2023-001

## Mitsubishi Chemical Carbon Fiber and Composites, Inc.

March 28, 2024

Steven Bolton, Air Quality Specialist

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

# Presentation Outline

- Permits and Equipment
- Request
- Previous Findings
- Timeline of Events
- Findings for Good Cause
- District Recommendations

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

# Permits & Equipment

Carbon Fiber Manufacturing Line 33 (PO 25918) consisting of:

- 4 Natural Gas-Fired Oxidation Ovens: PO# 24611, 25925, 24613, 24614
- 1 Baghouse / Dust Collector: PO24522
- 1 Natural Gas Direct Fired Thermal Oxidizer (DFTO): PO24519
- **2 Natural Gas Fired Regenerative Thermal Oxidizers (RTOs): PO24520 (RTO#1000), PO24521 (RTO #2000)**

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# Manufacturing Process Line 33 Permit Requirements

- Line 33 emissions limits are based on total combined emissions from all associated production units and control devices
- Maximum precursor processing rate (production rate) utilized during source tests to establish new annual limits
- Passing Source Test using both RTOs demonstrates a return to compliance

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## Petitioner's Request

- Extend the final compliance date from March 31, 2024, to September 7, 2024.
- Allow for Process Line 33 to continue operating at standard conditions for:
  - Troubleshooting
  - Prevention of significant financial losses
  - Testing

# Variance Findings Recap

- **Reasonable Control/Unreasonable Taking**: *Significant financial losses and possible breach of customer contracts*
- **Relative Benefit to Air Quality:** *No net increase in contaminates*
- **Curtailment of Operations:** *Must operate to troubleshoot and will only operate when essential*
- **Reduction of Excess Emissions:** *Operate Line 31 ovens using electricity to reduce net emissions*
- **Monitoring:** *Use a portable analyzer to measure and record NOx during production runs*
- **Nuisance Finding:** *No nuisance identified*

**Violation**

Exceeding NOx limit during 6/22/23 source test

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# Timeline of Recent Actions

**Sept. 8, 2023**
Variance 2023-001 starts

**Nov 13-14, 2023**
Source testing of Line 33's Ovens & Title V inspection conducted

**Dec 15, 2023**
In-house source testing of Line 33's Thermal Oxidizers

**Dec 19, 2023**
Oven #2 failed its source test for exceeding NOx limits

**Jan 19, 2024**
Portable Analyzer testing showed Thermal Oxidizers in compliance with emissions limits

**Feb 28, 2024**
Source test of Line 33 showed elevated NOx levels and test not completed

**Mar 31, 2024**
Original final compliance date

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# Justification for Good Cause

- Delay in repairs and troubleshooting due to safety work improvements
- Completed initial repairs of cracked DFTO inlet line, RTO insulation, and RTO gaskets
- Continuing to identify potential causes:
  - Clogging baghouses, faulty Oven Burner, RTO thermal inefficiency
- Exploring potential improvements and retrofits of RTOs with the OEM to reduce NOx
- Attempted source test of Line 33
- Equipment failure on RTO 2000

# Recommendation

## Approve the modification with the following conditions:

- Continue to follow conditions set in the Regular variance:
  - Operate Line 31 ovens using electricity after the initial heat-up to reduce the NOx emissions.
  - Notify the District within 48 hours when Line 33 is shut or restarted.
  - Notify the District at least 30 days of source testing for both RTOs and submit a source test plan.
  - Source test both RTOs (P/O 24520; 24521) to confirm back in compliance with emission limits.
- *Revised* – Set the term of the variance as Sept. 8, 2023, to Sept. 7, 2024
- *New* – Source test oven #2, burner #2 (P/O 25925)
- *New* – Submit permit modification application(s) for Selective Catalytic Reduction (SCR) systems for Line 33 as soon as practical and no later than July 1, 2024.

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# Verizon Wireless
## Short Term Variance Petition 2024-003

March 28, 2024

Presenter: Daniel Noakes, Air Quality Specialist

# Overview

- Petitioner's Request
- Background
- Findings
- Recommendation
- Discussion



SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

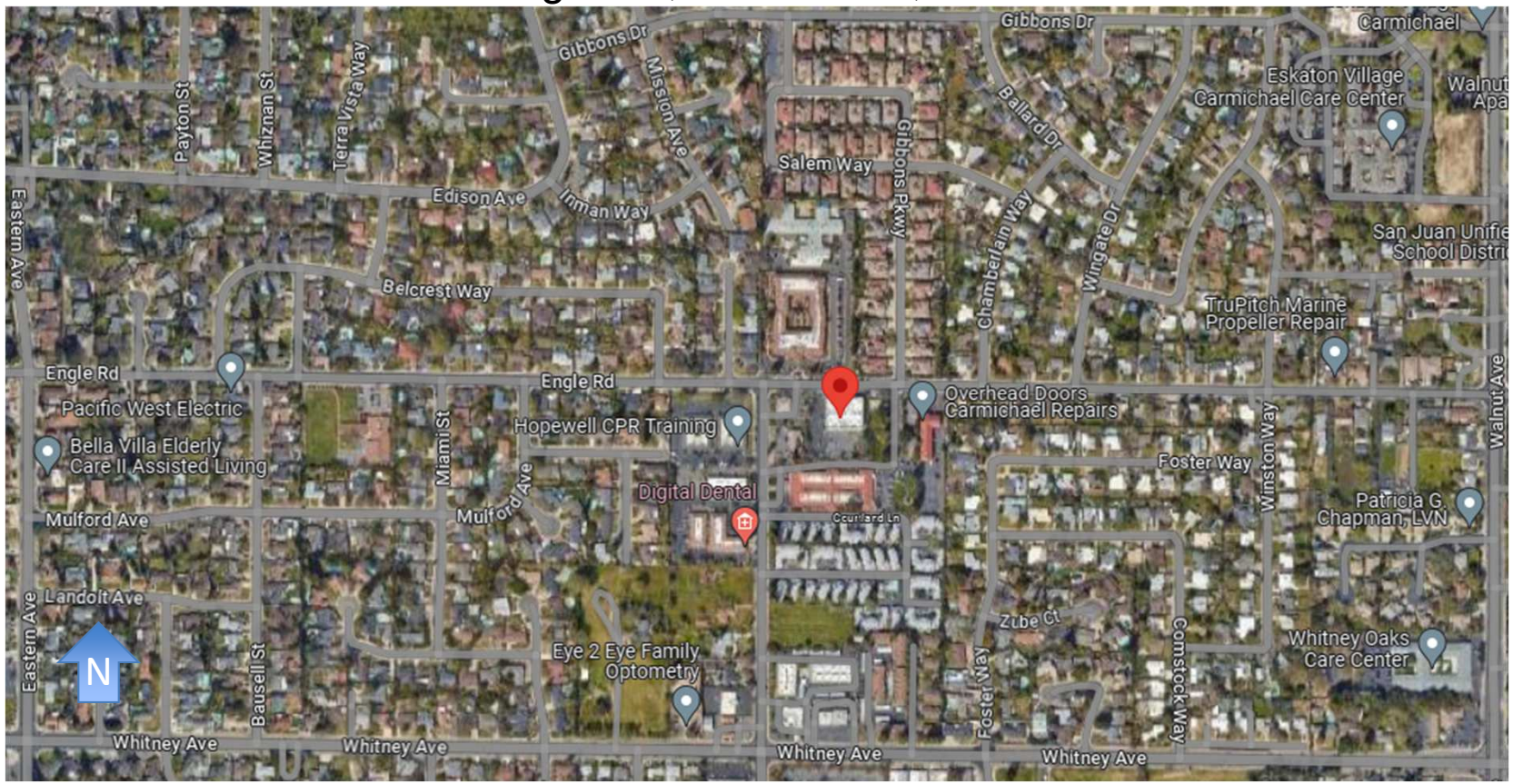
# Petitioner's Request

- Verizon Wireless (Petitioner) is requesting relief from Permit to Operate (PTO) 23961 condition 9, for operating the engine for more than the maximum allowable hours of operation.
- The PTO established the maximum allowable operational hours for the engine of 200 total hours per quarter and per year.

# Background

- Petitioner is a telecommunications business.
- PTO 23961 is for a Kukje/Generac D3400T-Gen1 85BHP diesel-fired standby engine driving an emergency standby generator at 4718 Engle Rd, Carmichael, CA 95608.
- The equipment is located on property that is leased by the Petitioner.
- The generator provides emergency power to a wireless telecommunications tower when electrical service from the serving utility has been interrupted.

# 4718 Engle Rd, Carmichael, CA 95608



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# 4718 Engle Rd, Carmichael, CA 95608


PTO 23961



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# Background (continued)

- On January 18, 2024, at about 10:00 am, the electrical service from the serving provider (SMUD) was interrupted due to damage to the main breaker.
- The engine exceeded its permitted 200 hours of total usage on or about January 26, 2024
- The engine continues to accrue usage hours above its permitted limits until repairs are made to restore electrical service from the serving utility.
- The Petitioner has stated that repairs necessary to restore electrical service from the serving utility are under the control of the property landlord.

# Findings

- Under Health and Safety Code section 42352(a), no variance may be granted unless the Hearing Board makes all the six findings set forth in this section.
- It is Petitioner's burden to prove, by a preponderance of the evidence, facts sufficient to support the mandatory findings.

# Finding 1 - Violation

*"That the petitioner for a variance is, or will be, in violation of 41701 [opacity] or of any rule, regulation, or order of district." (Health and Safety Code, § 42353, subs. (a) (1).)*

- Petitioner is in violation of condition 9 of PTO 23961 for operating the equipment in excess of the maximum allowable permitted usage of 200 hours per quarter and per year.
- Petitioner continues to accrue hours in excess of the permitted limit until electrical service from the serving utility is restored.

# Finding 2 - Reasonable Control

*"That, due to conditions beyond the reasonable control of petitioner, requiring compliance would result in either:(A) an arbitrary or unreasonable taking of property, or (B) the practical closing and elimination of a lawful business. In making those findings where the petitioner is a public agency, the hearing board shall consider whether or not immediate compliance would impose an unreasonable burden on an essential public service." (Health Safety Code § 42352, subs. (a)(2).)*

- The repairs necessary to restore electrical service from the serving utility are, according to the Petitioner, under the control of the property landlord.
  - The Petitioner should provide the contract or details of the contract between the Petitioner and the property landlord to the Hearing Board and explain the specific steps taken by Petitioner to force the landowner to make repairs.
- The telecommunications tower must have electrical power to operate. The emergency standby generator is used in cases where serving utility power is not available.
  - The Petitioner should provide full details to the Hearing Board about the financial and business impact of shutting down the cellular tower.

# Finding 3 – Relative Benefit to Air Quality

*"That the closing or taking would be without a corresponding benefit in reducing air contaminants." (Health Safety Code § 42352, subs. (a)(3).)*

The generator powering the cellular tower is a Tier 3 engine rated at 85 BHP. Below is a table showing the permitted emission factors along with the estimated emissions:

| Pollutant | VOC | NOx | SOx | PM10 | PM2.5 | CO |
|---|---|---|---|---|---|---|
| Emissions Factor (g/hp-hr) | 1.14 | 3.5 | 0.005 | 0.17 | 0.17 | 3.7 |
| Emissions Per Day (lbs) (A) | 5.1 | 15.7 | 0.0 | 0.8 | 0.8 | 16.6 |
| Estimated Emissions (lbs) (B) | 360.2 | 1,105.8 | 1.6 | 53.7 | 53.7 | 1,169.0 |

(A) Emissions are based on 85 BHP, 24 hours/day
(B) Emissions are based on engine operating 24hrs/day from 1/18/24 at 10:00am – 3/28/24 at 4:00pm.



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# Finding 4 – Curtailment of Operations

*"That the applicant for the variance has given consideration to curtailing operations of the source in lieu of obtaining a variance." (Health Safety Code § 42352, subs. (a)(4).)*

- Without operation of the emergency standby engine the cellular tower will cease operating and lead to service interruptions.
- Service interruptions, according to the petitioner, would impact the ability for the public to communicate via cell phone, including the inability to communicate with emergency services.
  - The Petitioner should provide full details to the Hearing Board about the financial and business impact of shutting down the cellular tower.

# Finding 5 – Reduction of Excess Emissions

*"During the period the variance is in effect, that the applicant will reduce excess emissions to the maximum extent feasible." (Health Safety Code § 42352, subs. (a)(5).)*

- There is no feasible method of controlling excess emissions if the engine remains in operation. The engine is not capable of modulation.
- The Board may consider requiring the Petitioner to reduce air contaminates by using a portable generator of similar rating but cleaner emitting (Tier 4 or better) to reduce the overall emission of air contaminates.

# Finding 5 – Reduction of Excess Emissions (continued)

The difference in emissions between the currently permitted Tier 3 engine and a Tier 4 engine are shown below:

| Pollutant | VOC | NOx | SOx | PM10 | PM2.5 | CO |
|---|---|---|---|---|---|---|
| Emissions Factor Tier 4 (g/hp-hr) | 0.14 | 0.29 | 0.005 | 0.038 | 0.038 | 3.7 |
| Emissions Factor Tier 3 (g/hp-hr) | 1.14 | 3.5 | 0.005 | 0.17 | 0.17 | 3.7 |
| | | | | | | |
| Tier 4 Emissions Per Day (lbs) (A) | 0.6 | 1.3 | 0.0 | 0.2 | 0.2 | 16.6 |
| Tier 3 Emissions Per Day (lbs) (A) | 5.1 | 15.7 | 0.0 | 0.8 | 0.8 | 16.6 |
| | | | | | | |
| Difference in Emissions Per Day (lbs) (A) | **4.5** | **14.4** | **0.0** | **0.6** | **0.6** | **0.0** |

(A) Emissions are based on 85 BHP, 24 hours/day



SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

# Finding 6 – Monitoring

*"During the period the variance is in effect, that the applicant will monitor or otherwise quantify emission levels from the source, if requested to do so by the district, and report these emission levels to the district pursuant to a schedule established by the district." (Health Safety Code § 42352, subs. (a)(6).)*

- The Petitioner has agreed to provide to the District a report once per week every Monday until electrical service has been restored, which includes:
  - The total hours of engine operation during the previous week.
  - An update on the anticipated repair timeline for serving utility power to be restored.

# Other Requirements

*"The Hearing Board may prescribe other requirements as set forth under Health and Safety Code 42353."*

- The Board may consider requiring the use of a cleaner generator.
- No other requirements have been identified.

# Nuisance Finding

*"No variance shall be granted if the operation will result in a violation of Section 41700."*

- Staff has not identified any violation of 41700 that may result from the granting of this variance.
  - The Petitioner is subject to *CH&S Code Section 41700* and *District Rule 402 – Nuisance*. However, no complaints have been received by District staff regarding this engine's operation.

# Recommendation

- Staff supports the requested variance if the Board determines that it can make the above findings.
- The Board may consider requiring the Petitioner to use a Tier 4 engine if the electrical service is not restored by a specified date and if the board can determine that a replacement engine is practical and feasible. District Staff may approve a longer period if Petitioner establishes that it could not reasonably meet the deadline.

# Questions and Discussion

# Thank You