

Application Review

Issue Date: Date needed

Region: Ashville Regional Office
County: Mitchell
NC Facility ID: 6100016
Inspector's Name: Patrick Ballard
Date of Last Inspection: 03/29/2023
Compliance Code: 3 / Compliance – inspection

<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): The Quartz Corp USA – KT Mica</p> <p>Facility Address: The Quartz Corp USA - KT Mica 722 Altapass Highway Spruce Pine, NC 28777</p> <p>SIC: 3295 / Minerals, Grounds or Treated NAICS: 327992 / Ground or Treated Mineral and Earth Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02D .0509, .0516, .0521, .0524, .0540, .0614, .1806 and 02Q .0317 of 02D .0530 NSPS: OOO NESHAP: NA PSD: NA PSD Avoidance: VOC NC Toxics: NA 112(r): NA Other: Compliance Assurance Monitoring (CAM)</p>
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Contact Data			Application Data
<p style="text-align: center;">Facility Contact</p> <p>John Silver Environmental Manager (828) 765-8979 PO Box 309 Spruce Pine, NC 28777 John.silver@thequartzcorp.com</p>	<p style="text-align: center;">Authorized Contact</p> <p>Michael Yarborough General Manager (828) 765-8977 PO Box 309 Spruce Pine, NC 28777 Michael.yarborough@thequartzcorp.com</p>	<p style="text-align: center;">Technical Contact</p> <p>Chris Robertson KT-Mica Manufacturing Supervisor (828) 765-2110 PO Box 309 Spruce Pine, NC 28777 Chris.robertson@thequartzcorp.com</p>	<p>Application Number: 6100016.22A Date Received: 11/22/2022 Application Type: Renewal Application Schedule: TV- Renewal Existing Permit Data Existing Permit Number: 04314T12 Existing Permit Issue Date: 02/17/2020 Existing Permit Expiration Date: 05/31/2023</p>

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2022	---	0.5300	21.55	0.4000	2.38	0.3838	0.1722 [Xylene (mixed isomers)]
2021	---	0.6300	22.25	0.4100	2.37	0.3958	0.1778 [Xylene (mixed isomers)]
2020	---	0.6500	21.59	0.5600	3.62	0.3771	0.1734 [Xylene (mixed isomers)]
2019	---	0.5500	19.04	0.4800	3.15	0.3304	0.1518 [Xylene (mixed isomers)]
2018	---	0.6800	20.77	0.5400	3.15	0.3604	0.1655 [Xylene (mixed isomers)]

<p>Review Engineer: Jacob Larson</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue: 04314T13 Permit Issue Date: Date needed Permit Expiration Date: Date needed</p>
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1. Purpose of Application

Quartz Corp USA currently holds Title V Permit No.04314T12 with an expiration date of May 31, 2023, for a mica processing facility in Spruce Pine, Mitchell County, North Carolina. This application is for a permit renewal without modification. The renewal application was received on November 22, 2022, or at least six months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

The potential uncontrolled particulate matter (PM) and volatile organic compound (VOC) emissions from **ES-15**, **ES-16**, and **ES-21** are each less than 5 tons per year (tpy) and potential uncontrolled emissions of each hazardous air pollutant (hap) are each less than 1000 pounds per year. Therefore, these sources meet the definition of insignificant activities under 15A NCAC 02Q .0503.

2. Facility Description

The facility dries and grinds mica and was reclassified as Title V for VOC emissions on June 25, 2012. Diesel fuel is a residual flotation chemical in the mica before it is dried and emitted as a VOC from various sources in the plant site. After the mica is dried and ground, it is shipped off by rail or in bags for end use in joint treatment compound (sheet rock mud) or other uses. The facility is currently in production approximately 3 to 5 days per week, 12 hours per day. Currently about 10 people work at the facility.

This facility was purchased from Diamond Mica Company in 1981 and all new equipment was installed in 1982. Mica is purchased from the neighboring feldspar facility, and other suppliers, at an initial moisture content of approximately 25%. After the dryer, the moisture content is reduced to 8%. The jet mills further reduce the moisture to close to 0%. The mica stockpile is at 25% moisture and there is little chance for fugitive [particulate] emissions. If the stockpile does get too dry, the facility has a sprinkler system to wet the stockpile. The haul roads are watered by a water truck.

3. History/Background/Application Chronology

History/Background

June 27, 2018	TV Air permit renewal issued with expiration date of May 31, 2023.
August 21, 2019	Notice of Violation (NOV) was issued for late reporting of 2019 semi-annual report.
February 17, 2020	Air Permit 04314T12 issued as a name change from USG to The Quartz Corp USA – KT Mica.

Application Chronology

November 22, 2022	DEQ received permit application 6100016.22A for Title V renewal.
August 30, 2023	Draft permit and review forwarded for comments to Permitting Supervisor.

September 08, 2023 Comments received from Booker Pullen, Permitting Supervisor.

September 12, 2023 Draft permit and review forwarded to the Asheville Regional Office for comments. Minor comments were received September 22, 2023.

September 18, 2023 Draft permit and review forwarded to the Stationary Compliance Branch for comments. Minor comments were received September 22, 2023.

September 25, 2023 Draft permit forwarded to the applicant for comments. Minor comments were received October 13, 2023.

XXXX xx, 2023 Draft permit and permit review forwarded to public notice.

XXXX xx, 2023 Public comment period ends. ___ comments received.

XXXX xx, 2023 EPA comment period ends. ___ comments received.

XXXX xx, 2023 Permit issued.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page No.	Section	Description of Changes
Cover and throughout	Throughout	<ul style="list-style-type: none"> Updated all tables, dates, and permit revision numbers.
3	Cover Page	<ul style="list-style-type: none"> Added “Notice Regarding the Right to Contact a Division of Air Quality Permit Decision”
2	Table of Contents	<ul style="list-style-type: none"> Added section 3.0 as “Insignificant Activities List” Added section 4.0 as “General Permit Conditions”
3	List of Acronyms	<ul style="list-style-type: none"> Added “List of Acronyms”
4	Section 1 Table	<ul style="list-style-type: none"> Corrected typographical error, changing “No. 2 fuel oil-fired” to “natural gas-fired” for the description of ES-1
4	Section 1 Table	<ul style="list-style-type: none"> Removed ES-15, ES-16 and ES-21 from emission source table
5-12	Section 2.1 and 2.2	<ul style="list-style-type: none"> Removed ES-15, ES-16 and ES-21 from emission source list and all applicable regulations
8	Section 2.1(A)(4)(b)	<ul style="list-style-type: none"> Updated Emission Limitations for clarity
8	Section 2.1(A)(4)(d)	<ul style="list-style-type: none"> Updated Monitoring requirement for clarity
8	Section 2.1(A)(4)(e)	<ul style="list-style-type: none"> Updated Recordkeeping requirement for clarity
11	Section 2.2(B)(2)(c)	<ul style="list-style-type: none"> Updated Testing requirement for clarity Removed requirement for permittee to submit application to amend permit post emission test
13	Section 3	<ul style="list-style-type: none"> Added Insignificant Activities as Section 3 of the Title V Permit
13	Section 3	<ul style="list-style-type: none"> Added ES-15, ES-16, and ES-21 to insignificant activities list
13	Section 3 Table	<ul style="list-style-type: none"> Removed “additional information link” in footnote of the Insignificant Activities Table” because referenced site no longer exist on the website. Insignificant Activities table added as Section 3 of the permit.
14-26	General Conditions	<ul style="list-style-type: none"> Added General Conditions version 7.0, 08/21/2023 as Section 4 of the Title V Permit

Changes to the Title V Equipment Editor include:

- Corrected typographical error, changing “No. 2 fuel oil-fired” to “natural gas-fired” for the description of ES-1
- Removed ES-15, ES-16 and ES-21 from the permitted emission source list
- Added sources to the Insignificant Activities list as IES-15, IES-16, and IES-21

5. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 02D .0509, Particulates from Mica or Feldspar Processing Operations
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 02D .0521, Control of Visible Emissions
15A NCAC 02D .0524, New Source Performance Standards (40 CFR 60, Subpart 000)
15A NCAC 02D .0614, Compliance Assurance Monitoring
15A NCAC 02D .0540, Particulates from Fugitive Non-Process Dust Emissions Sources
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 02D .0530 Prevention of Significant Deterioration (PSD))

A.

15A NCAC 02D .0509, Particulates from Mica or Feldspar Processing Operations- This rule applies to equipment that processes mica as listed in condition 2.1.A.1 of the permit. Fugitive non-process dust emissions are subject to the requirements of 15A NCAC 02D .0540. Process units are each subject to the emission standard for process rates less than equal to 30 tons per hour. Compliance is demonstrated for emission sources (**ID Nos. ES-1 through ES-4, ES-6, ES-7, ES-10, ES-11, ES-ES-13, ES-14, and ES-17 and ES-19 through ES-20**) by performing control device (CD-1 through CD-5) inspections monthly and annually and reporting these results on a semi-annual basis. The last semi-annual report (due Jan. 30) was received on 01/26/2022. Continued Compliance is expected.

15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources- The rotary dryer (**ES-1**) most comply with the sulfur dioxide (SO₂) emission standard of this regulation, which is based on the process heat input rate of the unit. The natural gas combusted in the rotary dryer has a sulfur emission rate of 0.0006 lb/MMBtu based on the previous semi-annual report which is well within the emission standard of 2.3 (lb/MMBtu). Continued compliance is expected.

15A NCAC 02D .0521, Control of Visible Emissions- Visible emission limits of this standard are dependent on the manufacturing date of the equipment. The rotary mica dryer (**ES-1**), jet grinding mills (**ES-2 through ES-4**), bulk loading storage bins (**ES-6 and ES-7**), oversize screw conveyer (**ES-10**), finished product elevator (**ES-11**), St. Regis Bagger and feed bin (**ES-13**), No. 2 Bagger (**ES-14**), the railcar loading station (**ES-17**), super-sack loading system (**ES-19**), and the oversized elevator (**ES-20**) were all manufactured after July 1, 1971. Therefore, Quartz operates the aforementioned equipment in compliance with the 20% opacity standard. The facility complies with this standard by using pulse jet bagfilters (**CD-1 through CD-5**) when necessary to reduce emissions to the atmosphere. Emission points are observed for any visible emissions above normal on a weekly basis, and a summary of the monitoring results are reported semi-annually. Continued compliance is expected.

B. Facility-Wide Emission Source

15A NCAC 02D .0540, Particulates from Fugitive Non-Process Dust Emissions Sources- Mica is purchased from the neighboring feldspar facility, and other suppliers, with an initial moisture content of approximately 25%. After the dryer, the moisture content is reduced to 8%. The jet mills further reduce the moisture to close to 0%. Because the stockpile is at 25% moisture there is little chance for fugitive particulate emissions. If the stockpile becomes dry enough to produce particulate, the facility has a sprinkler system to wet the stockpile. The haul roads are watered by a water truck. Continued compliance is expected.

15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions- This regulation is State-enforceable Only. The owner or operator of a facility subject to this Rule shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

Mica that is brought into the facility is delivered with a residual amount of diesel fuel, which is used as an extracting fluid for the mica at another facility. The diesel fuel is evaporated during the mica storage, handling, and processing, which produces an objectionable odor. During the last facility inspection conducted by Patrick Ballard on January 26, 2022, there were no diesel fuel odors noted on the facility site. Note that previous inspection reports have noted some diesel odors, but not listed as “objectionable”. Continued compliance is expected.

6. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS

The Permittee is subject to 15A NCAC 02D .0524: New Source Performance Standards and 40 CFR Part 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants.” This regulation applies to owners and operators of crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck or railcar loading stations. Quartz emission sources subject to NSPS Subpart OOO are the bagger No. 2, the feed bin (**ID No. ES-14**) and the oversize elevator (**ID No. ES-20**). Continued compliance is expected.

NSPS Subpart UUU contains standards for calciners and dryers at mineral processing plants that have been constructed, modified, or reconstructed after April 23, 1986. The Mineral Processing Plant is defined as any facility that processes or produces any of the following minerals, their concentrates, or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller’s earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculate. Quartz does not process or produce any of the listed materials. Therefore, the facility is not subject to the requirements of NSPS Subpart UUU. This permit renewal does not affect this status. Continued compliance is expected.

NESHAP/MACT

The Permittee is not currently required to comply with any National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR 63). Quartz is considered an area source of Hazardous Air Pollutants (HAP) since potential emissions of individual HAP are less than 10 ton per year (tpy) and potential emissions of total aggregate HAP are less than 25 tpy.

The operations at Quartz are not covered under any Part 63 area source NESHAPs, and therefore there are no requirements under this part. This permit renewal does not affect this status.

PSD

The PSD program limits emissions from major stationary sources of regulated air pollutants. For the purposes of the PSD program, a major stationary source is defined as any one of the following:

- (1) Any stationary source that is listed as one of the 28 named source categories in Title 40 of the Code of Federal Regulations (40 CFR), Part 52.21(b)(1)(i) which emits, or has the potential to emit, 100 tons per year (tpy) or more of any pollutant subject to regulation under the ACT;
- (2) Any stationary source that is not listed as one of the 28 named source categories in 40 CFR Part 52.21(b)(1)(i) which emits, or has the potential to emit, 250 tons per year (tpy) or more of any pollutant subject to regulation under the ACT; or
- (3) For any stationary source that does not meet the definition of 1) or 2), any physical change that would constitute a major stationary source by itself.

The facility has a PSD avoidance limit for mica production. This limits VOC emissions to 250 tons per year based on an emission factor of 0.002324 tons of VOC emissions per ton of dry mica produced. Potential Facility-wide VOC Emissions are calculated with the following equation:

$$\text{VOC (ton/yr)} = \text{Potential Dry Throughput (ton/yr)} \times \text{Emissions Factor (ton VOC/ton dry throughput)}$$

Dry mica production for 2021 was 8,910 tons. An annual mica sampling, testing, and reporting requirement, due by January 30 of each year, was included in the previous permit to verify the above-mentioned emission factor. Multiple years of data have been collected and with the latest permit renewal this sampling requirement was reduced to every five years. A sample was due by November 2023.

Sample results (including from previous years) are as follows:

2012	0.003396 ton VOC/ton Mica		
2013	0.006646 ton VOC/ton Mica		
2014	0.006716 ton VOC/ton Mica	Three-year average	0.005586 ton VOC/ton Mica
2015	0.005329 ton VOC/ton Mica	Three-year average	0.006230 ton VOC/ton Mica
2016	0.002375 ton VOC/ton Mica	Three-year average	0.004807 ton VOC/ton Mica
2017	0.003570 ton VOC/ton Mica	Three-year average	0.003758 ton VOC/ton Mica
2018-2023	XXXXXX ton VOC/ton Mica		

Three-year averages are no longer applicable after the issuance of Permit No. 04314T11. The next testing results are due November 20, 2023. Facility submitted incorrect emission factor test on May 18 2023 and have not sent correct information as of this renewal. The following testing results will be due November 20, 2028.

112(r)

The facility is not currently subject to the 112(r) "Prevention of Accidental Releases" requirements because no chemicals are stored in amounts greater than the applicability threshold of the regulation. This permit renewal does not affect this status.

CAM

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit’s pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants) or 10/25 tpy (for HAP’s).

40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard.

One natural gas-fired rotary mica dryer (**ID No. ES-1**) controlled by a pulse jet bagfilter (**ID No. CD-1**) is the only emission source subject to 40 CFR 64 and 15A NCAC 02D .0614 Compliance Assurance Monitoring. Emissions of particulate matter from this source shall not exceed the allowable emission rate per 15A NCAC 02D .0509. The monitoring requirements are presented in the following table.

Indicator [64.6(c)(1)(i)]	Pressure drop
Measurement Approach [64.6(c)(1)(ii)]	Pressure drop (ΔP) across the bagfilter is measured with a differential pressure gauge
Indicator Range [64.6(c)(2)]	An excursion is defined as a pressure drop greater than 5.0” H ₂ O or less than 0.5” H ₂ O.
Bypass [64.3(a)(2)]	Excursions trigger an inspection, corrective action, and a reporting requirement.
QIP threshold [64.8]	If the pressure drop falls below 0.5” H ₂ O, the possibility of bypass is investigated. Instantaneous ΔP readings outside range 3 times within a six-month period.
Performance Criteria, Data Representativeness [64.6(c)(1)(iii)]	Pressure taps are located at the bagfilter inlet and outlet. The gauge has an indicator range from 0.5 to 5.0 inches of water and has an accuracy of plus or minus 2 percent of full scale, and 70°F. The actual temperature of the monitored exhaust will vary depending on seasonal changes.
Verification of Operational Status [64.3(b)(1)]	N/A
QA/QC Practices and Criteria [64.3(b)(3)]	The pressure gauge is calibrated semi-annually. Pressure taps are checked for plugging daily.
Monitoring frequency [64.3(b)(4)]	ΔP is monitored continuously while the bagfilter is in operation.

Indicator [64.6(c)(1)(i)]	Pressure drop
Data collection procedure [64.3(b)(4)]	ΔP is manually recorded daily.
Averaging period	N/A

Permittee shall submit a summary report of all motoring and record keeping activities semiannually due on or before January 30 and July 30 of each year. The last semi-annual report (due Jan. 30) was received on 01/26/2022.

7. Facility Wide Air Toxics

The Permittee is not currently subject to any NC Air Toxics provisions. This permit renewal does not affect this status.

8. Facility Emissions Review

The facility-wide potential emissions do not change under this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the years 2018 through 2022 are provided in the header of this permit review.

Mitchell County has not been triggered for PSD purposes; therefore, no increment tracking for PM is necessary as part of this permit renewal.

9. Compliance Status

DAQ has reviewed the compliance status of Quartz. During the most recent inspection, conducted on January 26, 2022 by Patrick Ballard of ARO, the facility appeared to be in compliance with all applicable requirements. The facility has one Notice of Violation (NOV) on August 21, 2019 in the last five years. The facility's Annual Compliance Certification was received on January 25, 2021 and indicated compliance with all applicable requirements in 2018.

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

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No affected states or local agencies are within 50 miles of this facility.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A permit fee is NOT required for this renewal application.

- EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are

inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions¹. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses² and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

12. Recommendations

The permit renewal application for The Quartz Corporation, USA. Located in Spruce Pine, Mitchell County, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 04314T13.

¹ NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

² In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).