

**BEFORE THE  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

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In the matter of the proposed air pollution control permits for	)	
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	)	Petition No.
Wisconsin Proppants, LLC	)	Facility I.D. No. 627026620
	)	Permit Nos. 627026620-P01
	)	
Proposed by the Wisconsin Department of Natural Resources on October 12, 2016	)	
	)	
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**PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO THE  
ISSUANCE OF THE PROPOSED TITLE V PERMIT FOR WISCONSIN  
PROPPANTS, LLC**

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Petitioners, the Ho-Chunk Nation and Sierra Club—John Muir Chapter, hereby petition the Administrator of the United States Environmental Protection Agency (“EPA”) to object to a proposed Title V Operating Permit proposed by the Wisconsin Department of Natural Resources (“DNR”) for Wisconsin Proppants, LLC, Permit No. 627026620-P01. The DNR proposed issuance of Title V Permit No. 627026620-P01 to EPA on October 12, 2016. The proposed Title V Permit is attached as Exhibit 1. Pursuant to Clean Air Act § 505(b)(2) and 40 C.F.R. § 70.8(d), EPA must object to the proposed Title V Permit because it does not comply with the Clean Air Act (“CAA”).

## I. INTERESTS OF THE PETITIONERS

Petitioner the Ho-Chunk Nation has a direct interest in protecting air quality and public health for its lands and people in Western Wisconsin. The Ho-Chunk Nation is one of the strongest indigenous Nations in the United States. The Nation's land extends throughout the Midwest, including significant tribal and trust lands in Western Wisconsin. Ho-Chunk members live throughout the state, and their history and culture is tied to Wisconsin's lands. The Nation's government is dedicated to protecting its people and lands for this and future generations.

Petitioner Sierra Club—John Muir Chapter represents over 15,000 members and supporters living throughout Wisconsin. Its members hike, canoe, kayak, bird and in many other ways enjoy the natural resources in Wisconsin including the area affected by the Wisconsin Proppants LLC mine and processing facility.

## II. BACKGROUND

Wisconsin Proppants LLC ("Wisconsin Proppants") operates an industrial sand mining and processing facility in Jackson County, Wisconsin. Wisconsin Proppants initially constructed and operated its sand mine, wet plant and dry plant pursuant to air pollution control construction permit No. 14-MHR-116, issued on May 20, 2015.<sup>1</sup> (Exh. 2.) As part of the issuance of permit No. 14-MHR-116, WDNR imposed emission limits for particulate matter less than 2.5 microns in diameter ("PM2.5") on various industrial sand mining and processing operations at the site. DNR included the PM2.5 emission limits in

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<sup>1</sup> DNR issued a revision to permit No. 14-MHR-116 on October 9, 2015, to include the correct address for the rail loading facility. No other changes were made to the permit. The revised permit, permit No. 14-MHR-116-R1 is attached as Exhibit 3. For purposes of clarity and because all relevant portions of the permit are identical, this petition refers to both permits as permit No. 14-MHR-116.

the permit in order to ensure that emissions from the facility would not cause or contribute to a violation of the National Ambient Air Quality Standards (“NAAQS”). (Exh. 14.).

On November 4, 2015, Wisconsin Proppants applied for a new construction permit in order to accommodate a planned expansion of the existing facility. The expansion consisted of the installation of second industrial sand plant, wet sand processing plant, and a dry sand processing plant, as well as an increase in the production rate of the existing wet plant. (Exh. 5 at 3.)

The DNR issued a Preliminary Determination on June 28, 2016, proposing to issue the new construction permit and a Title V operating permit to Wisconsin Proppants. (Exh. 6.) The DNR proposed eliminating the PM<sub>2.5</sub> emissions limits for all of the “mechanical or low temperature” emission sources at the facility. (Exh. 6 at 4.) DNR based this change on the Technical Support Document (“TSD”) attached to the Preliminary Determination and the related Air Dispersion Modeling guidance documents, (hereinafter “PM<sub>2.5</sub> Guidance”) (Exh. 7.). The DNR explained:

based on an examination of the current scientific literature concerning particle pollution, as well as an analysis of the available ambient air monitoring data for PM<sub>2.5</sub> in the State of Wisconsin, the Department has determined that mechanical or low temperature industrials [sources] do not directly emit PM<sub>2.5</sub> in quantities that have a potential to cause or contribute to the violation of the [NAAQS].

(Exh. 6 at 4.)

U.S. EPA Region 5 submitted written comments on the DNR’s draft permits and Preliminary Determination. (Exh. 8.) The deficiencies identified in this Petition were raised with reasonable specificity in those comments to the DNR. Namely, EPA commented that, as proposed, the Title V permit violated Clean Air Act requirements because the permit record did not include emissions estimates for PM<sub>2.5</sub> from mechanical sources and the

DNR eliminated PM2.5 emission limits for several of the existing sources without sufficiently explaining why the removal of the PM2.5 limits would not cause or contribute to a violation of the NAAQS. (Exh. 8 at 1-2.)

On September 28, 2016, DNR responded to comments by the public and EPA Region 5, and the DNR modified the Preliminary Determination for the Wisconsin Proppants draft air permits. (Exh. 9.) DNR did not make any changes to the permit in response to EPA's comments concerning the lack of PM2.5 emissions estimates for mechanical sources or the removal of PM2.5 emission limits. The DNR sent the proposed Title V permit for Wisconsin Proppants to the EPA on October 12, 2016.<sup>2</sup> The EPA did not object to the permit within 45 days following receipt of the proposed permits. Petitioners timely submit this Petition to Object to Proposed Title V Permit for Wisconsin Proppants ("Petition") on January 25, 2017, within 60 days after the EPA's deadline for objecting.

### **III. ARGUMENT**

The EPA Administrator must object to a proposed Title V permit if it does not comply with CAA requirements or any "applicable requirement," including the Wisconsin State Implementation Plan or any standard or requirement under CAA sections 111, 112, 114(a)(3) or 504. This Petition, based in part on EPA Region 5's comments, establishes that the Wisconsin Proppants proposed Title V permit fails to comply with minimum CAA requirements. In contravention of the CAA, the proposed Title V permit does not include PM2.5 emission estimates and does not demonstrate that the proposed Title V permit will

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<sup>2</sup> See DNR Air Permit Tracking, Permit Milestones for Permit No. 627026620-P01, *available at* [http://dnr.wi.gov/cias/am/amexternal/AM\\_PermitTracking2.aspx?id=21541](http://dnr.wi.gov/cias/am/amexternal/AM_PermitTracking2.aspx?id=21541) (confirming that Wisconsin Proppants Title V permit proposed to EPA on October 12, 2016).

assure compliance with NAAQS. Thus, the Administrator must object to and revise the permit pursuant to 42 U.S.C. § 7661d(e) and 40 C.F.R. §§ 70.7(g) and 70.8.

**A. The Clean Air Act requires air permit applications to include emission estimates, but the Wisconsin Proppants permit record does not estimate PM2.5 emissions.**

All applications for Clean Air Act permits must include an estimate of “all emissions of pollutants for which the source is major, and all emissions of regulated air pollutants.” 40 CFR 70.5(c)(3)(i). Federal law defines regulated air pollutants as “any pollutant for which a national ambient air quality standard has been promulgated,” thereby including PM2.5. 40 CFR § 70.2(2)(13)(2)(3)(iv)(2)(2). Additionally, all Part 70 major source permits must include emissions estimates from both stack and fugitive sources.

- 1. The Wisconsin Proppants proposed air permit records do not include PM2.5 emission estimates from mechanical sources at the facility.*

The DNR did not require Wisconsin Proppants to estimate PM2.5 emissions in its application and such estimates are not included in the Wisconsin Proppants air permit record for the proposed Title V permit, contrary to the CAA. U.S. EPA identified this deficiency during the public comment period, noting, “WDNR’s failure to consider PM2.5 emissions from mechanical sources, including fugitive emissions, is not allowable under Title V of the CAA and the permit record is currently deficient.” (Exh. 8 at 1.) DNR has not corrected this deficiency in the proposed permit.

On June 28, 2016, following the public comment period, DNR issued an addendum to the Apr. 28, 2016, Preliminary Determination, but did not correct this error. (Exh. 9.) DNR responded to EPA’s concern about the lack of PM2.5 emission estimates, but did not include any such estimates. The DNR explained:

The department has provided emission estimates of PM-2.5 for this permit review where credible emission factors and calculation methods are available. Where no credible emission factors or methods for estimating emissions were available, the WDNR has used engineering judgment and the Technical Support Document, “Air Quality Review of Industrial PM2.5 Emissions from Stationary Sources In Wisconsin,” to estimate PM-2.5 emissions from mechanical and low temperature operations concluding that these emissions are negligible.

(Exh. 9 at 11.)

DNR’s unsupported statement and its reliance on the TSD do not qualify as PM2.5 emission estimates as required by the Clean Air Act. As EPA Region 5 explained in its comments on the draft Wisconsin proppants Title V Operating Permit,

WDNR’s statement that [PM2.5 emissions from] mechanical units are unlikely to negligible does not address the explicit Part 70 requirements to quantify emission rates. As WDNR’s TSD relies upon an analysis of regional ambient air monitoring and provides little analysis of PM2.5 emissions at the source level, EPA does not believe that the TSD provides sufficient evidence to substantiate the claim that there are zero or negligible emissions of PM2.5 from mechanical sources. Similarly, while the study cited by WDNR<sup>3</sup> may indicate that activities associated with sand mining are unlikely to have significant effects on the ambient concentration of particulate matter of less than 4 micrometers, the study does not provide direct evidence that there are zero or negligible emissions of PM2.5.

(Exh. 8 at 1-2.)

In the Wisconsin Proppants Title V permit record, and other recently proposed air permits, the DNR relies on its new PM2.5 Guidance and TSD that advises permit applicants that “mechanical processes such as crushing, grinding, sanding, sizing, evaporation of sprays, suspension of dusts, etc. are not sources of PM2.5” and consequently

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<sup>3</sup> Richards, J and Todd Brozell, (2015) “*Assessment of Community Exposure to Ambient Respirable Crystalline Silica near Frac Sand Processing Facilities.*” *Atmosphere* 6:960-982.

that “PM2.5 emissions will not be estimated in an air permit review for fugitive dust sources, mechanical handling, grain handling, and other low temperature particulate sources.” (Exh. 7.) As explained above, and in EPA’s comments on the Wisconsin Proppants air permits, the DNR’s assertions are not sufficient to demonstrate compliance with the Part 70 CAA requirement that all facilities estimate emissions based on the best available information.

The DNR’s abovementioned policy directly conflicts with the EPA’s May 20, 2014, “Guidance for PM2.5 Permit Modeling,” which specifies that “each permitting action will be considered on a case-by-case basis.” Consequently, the DNR’s reliance on its PM2.5 Guidance and TSD is not appropriate because it offers a broad exemption for mechanical sources from estimating PM2.5 emissions. Furthermore, EPA Region 5 made the DNR aware that issuing a Title V Operating Permit without including PM2.5 emission estimates would violate the Clear Air Act. (Exh. 8.) Therefore, we respectfully request that EPA object to the proposed Title V permit on the grounds that Wisconsin Proppants permit record fails to evaluate the source’s emissions of PM2.5 for major source applicability.

2. *Mechanical processes, such as those at the Wisconsin Proppants facility, can emit significant amounts of PM2.5.*

The EPA’s comments to the DNR on the draft Title V permit for Wisconsin Proppants cites scientific data to refute the DNR’s allegation that mechanical processes are not sources of PM2.5. EPA Region 5 asserted, “[e]ven if the studies used to develop AP-42 are excluded, several scientific studies give EPA reason to believe that mechanical sources such as haul roads do emit some level [of] PM2.5. EPA has provided several of these studies in Attachment A.” (Exh. 8 at n.2.)

In its response to EPA's comments, DNR disputes EPA's interpretation of the referenced studies and maintains its position that mechanical and low temperature sources do not emit PM<sub>2.5</sub>. (Exh. 9 at 11-12.) DNR stated that a "brief review" of the studies referenced by EPA "appears to demonstrate that PM-2.5 measured near roadways comes from vehicle exhaust and not from fugitive dust...which supports the department position that PM-2.5 is generated from combustion and high temperature sources." (Exh. 9 at 11.)

Contrary to DNR's characterization, the studies referenced by EPA evidence that mechanical sources do emit PM<sub>2.5</sub> in more than negligible amounts. For example, one of the studies found that at PM<sub>2.5</sub> comprised between 15% and 28% of the particulate matter emitted at a limestone quarry during certain steps in the process—such as explosion, digging, coarse cracking, loading, unloading, screening, hoisting, fine cracking, conveying processes, soil preparation, and transportation. (Exh. 11.) Many of these processes are mechanical and low temperature sources of emissions. Another one of the studies evaluated the composition and source of PM<sub>2.5</sub> across several urban and rural sites in Iowa and found that dust from mechanical sources—analyzed to establish it was not generated from combustion or high temperature processes—comprised between 6-11% of the overall PM<sub>2.5</sub> measured. (Exh. 15.) Two additional studies found evidence that PM<sub>2.5</sub> can come from tire wear, break wear, and vehicle-induced resuspension of road dust. (Exh. 13 and 14.) Furthermore, several of the studies found the amount of PM<sub>2.5</sub> emitted from use of paved and unpaved roads depends on several independent factors such as tire type, vehicle-induced turbulence, vehicle weight, and road and weather conditions. (Exh. 12, 13 and 14.) This provides strong evidence that mechanical sources are emitting PM<sub>2.5</sub>. While PM<sub>2.5</sub> emissions from mechanical sources may constitute a less significant source of PM<sub>2.5</sub>



emissions relative to combustion sources, the scientific literature does not support DNR's contention that mechanical sources emit zero to negligible amounts of the pollutant.

Furthermore, a request by Midwest Environmental Advocates to the DNR for all stack test reports and/or results from testing for PM<sub>2.5</sub> from mechanical sources revealed that the DNR has sampling data confirming that mechanical processes emit PM<sub>2.5</sub>. (Exh. 19.) These results were included in MEA's comments to DNR on a previously issued draft air pollution control permit for Superior Silica Sands—Arland Plant. (*See* Exh. 20.) Results from EOG Resources show that 70 percent of total particulate matter sampled was comprised of PM<sub>2.5</sub>. (Exh. 19.) Additionally, the Chippewa Sand Company test results demonstrated that PM<sub>2.5</sub> made up 100 percent of the particulate matter in one sample and 75 percent of the particulate matter in another sample. (Exh. 19.) Further, Chieftain Sand and Proppant, LLC reported that PM<sub>2.5</sub> made up 36 percent of one sample and 17 percent of another sample. (Exh. 19.)

The evidence gleaned from the open records request, coupled with the EPA's cited scientific data, do not support the DNR's conclusion that mechanical sources do not emit quantifiable amounts of PM<sub>2.5</sub>. Rather, the aforementioned data supports the conclusion that mechanical processes do emit PM<sub>2.5</sub> and thus Wisconsin Proppants is required to estimate its PM<sub>2.5</sub> from those sources.

**B. Wisconsin's State Implementation Plan prohibits issuance of the proposed permit because DNR has not made a defensible finding that the proposed permit will not cause or contribute to an exceedance of any ambient air quality standard.**

Wisconsin Statute § 285.63 sets forth criteria for air permit approvals and is part of Wisconsin's approved State Implementation Plan ("SIP"). Subsection (1)(b) allows the DNR to approve the application of a permit if it finds that the "source will not cause or

exacerbate a violation of any ambient air quality standards.” Included among these ambient air quality standards are an annual and 24-hour standard for PM<sub>2.5</sub>.

Wisconsin Proppants prior permit included PM<sub>2.5</sub> emission limits for certain emission sources—the fluidized bed dryer, dry plant building, storage tanks 1-4 and truck loadout, truck unloading, and railcar loading station (S60)—that DNR now proposes to remove from the permit. These limits were included in the prior permit presumably because DNR’s air quality analysis indicated that—without the limits—these sources had the potential to violate PM<sub>2.5</sub> air standards. This initial air quality analysis considered site-specific information such as stack heights, topography, meteorological data and emission rates. DNR’s decision to remove the limits from this permit is not based on similar site-specific information. Instead, DNR removed these PM<sub>2.5</sub> limits based on its new position that “PM-2.5 emissions from mechanical and low temperature industrial operations are negligible.” (Exh. 6.)

DNR cannot rely solely on its general program-wide policy to remove PM<sub>2.5</sub> limits included in a previous permit to prevent an air standard exceedance. This is especially true where, as here, the current permit allows the facility to expand and construct new mechanical processes that emit more particulate matter than the previous permit. DNR does not estimate PM<sub>2.5</sub> emissions in the Preliminary Determination for the current permit, but DNR did estimate PM and PM<sub>10</sub> emissions in the Preliminary Determinations for both the previous and current permits. (Exh. 4 and 6.) Comparing PM and PM<sub>10</sub> total facility emission estimates in each Preliminary Determination, DNR estimates that Wisconsin Proppants’ potential to emit PM and PM<sub>10</sub> will increase by 299% and 245%, respectively:

<b>Pollutant</b>	<b>Potential to Emit from 2015 PD<sup>4</sup></b> (tons/year)	<b>Potential to Emit from 2016 PD<sup>5</sup></b> (tons/year)	<b>Percent Increase In Potential to Emit</b>
<b>PM</b>	161.7 (stack) 134.0 (fugitive) 295.7 (total)	360.2 (stack) 525.1 (fugitive) 885.3 (total)	224% (stack) 393% (fugitive) 299% (total)
<b>PM10</b>	59.1 (stack) 35.7 (fugitive) 94.8 (total)	104.1 (stack) 135.6 (fugitive) 239.7 (total)	176% (stack) 380% (fugitive) 253% (total)

Coupled with DNR’s previous conclusion that even lower estimated particulate matter emissions warranted PM2.5 emission limits, this increase in potential particulate matter emissions undermines DNR’s finding that this current permit—without PM2.5 limits—will not cause or contribute to an exceedance of the air standard.

In EPA’s comments to the DNR, EPA raised concerns about DNR’s justification for removing the PM2.5 limits. Specifically, EPA stated “that it is not appropriate to invalidate the conclusions reached by the initial site-specific ambient air quality analysis by relying on WDNR’s TSD or unsubstantiated statements that the units do not emit PM2.5.” (Exh. 8 at 2.) More fully, EPA explains that:

These limits were adopted because when emissions were limited to those emission rates modeling showed that the NAAQS were not violated. This seems to imply that modeling using the maximum theoretical emission rate

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<sup>4</sup> Exh. 4 at 32 (Preliminary Determination for construction permit No. 14-MHR-116 for Wisconsin Proppants, dated April 9, 2015).

<sup>5</sup> Exh. 6 at 38 (Preliminary Determination for construction permit No. 15-MHR-161 & operation permit No. 627026620-P01 for Wisconsin Proppants, dated June 24, 2016).

for each emissions unit would result in modeled a violation of the NAAQS. WDNR justifies the decision to remove the PM<sub>2.5</sub> limits by stating that the TSD leads it to the conclusion that mechanical sources . . . do not have the potential to cause or contribute to a violation of the NAAQS. In the case of Wisconsin Proppants, site specific data lead WDNR to conclude that if limits were not imposed on these emission units then the facility could cause or contribute to a violation of the NAAQS . . . EPA believes that prior to removing the emission limits, WDNR must provide additional, site-specific justification explaining why the removal of the PM<sub>2.5</sub> limits would not cause or contribute to a violation of the NAAQS.

(Exh. 8 at 2.) At its core, EPA's comment captures the well-established principle of administrative law that an agency's change in position must be reasonable and supported by the record. *See, e.g., Nat'l Cable & Telecommc'ns Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005).

Here, DNR has not adequately supported its decision to remove the limits. DNR's decision is entirely premised on the conclusion that mechanical processes do not emit PM<sub>2.5</sub>, but as discussed above, that determination does not withstand scrutiny. DNR also has not supported its decision to remove these limits with any site-specific monitoring or analysis, and DNR's previous analysis of this facility concluded that PM<sub>2.5</sub> limits are necessary. (Exh. 4.) DNR inappropriately relies on regional ambient air monitoring to make otherwise broad and unsupported conclusions about an individual sources' potential to emit PM<sub>2.5</sub>. Additionally, DNR cannot adequately rebut the wide body of evidence that shows mechanical sources do emit PM<sub>2.5</sub>.

The problem is not that DNR decided to remove the limits, but that DNR has not properly supported its decision to do so. In other words, DNR has not met its statutory obligation to demonstrate that the "source will not cause or exacerbate a violation of any ambient air quality standards" under the DNR-issued air permit. Wis. Stat. § 285.63(1)(b).

For the reasons explained above and supported by the attached documents, the proposed Title V permit violates the CAA and Wisconsin's SIP because the air permit record does not establish that the permit will not cause or contribute to a violation of ambient air standards.

#### IV. CONCLUSION

For the foregoing reasons, the proposed Wisconsin Proppants Title V permit fails to comply with the federal Clean Air Act. Each of the issues identified in this Petition were raised in comments to the DNR and demonstrate that the Wisconsin Proppants air permit record is deficient. Pursuant to the Clean Air Act, the Administrator must object to issuance of the permit. 40 C.F.R. § 70.8(c)(1). Therefore, Petitioners respectfully request that the EPA object to the DNR's proposal to issue Wisconsin Proppants proposed Title V permit.

Dated this 25th day of January, 2017.

Attorneys for the Ho-Chunk Nation and  
Sierra Club—John Muir Chapter

**MIDWEST ENVIRONMENTAL  
ADVOCATES**

/s/

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