Minnesota Center for Environmental Advocacy
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February 6, 2013

Jason Gilman, AICP
Planning and Environmental Services Director
177 Main Street
Winona, MN 55987

Dear Mr. Gilman,

We write to provide the comments of Minnesota Center for Environmental Advocacy and Minnesota Trout Unlimited on the Draft Environmental Assessment Worksheets for the proposed Yoder and Dabelstein quarries. MCEA is a Minnesota-based non-profit environmental organization, the legal and scientific voice protecting and preserving Minnesota's wildlife, natural resources, and the health of its people. We have members across the state of Minnesota, some of whom live and recreate near the proposed mines.

Minnesota Trout Unlimited is a non-profit conservation organization with seven chapters and several thousand members around the state. Many members live or fish in the affected watersheds. Our members have volunteered thousands of hours on habitat projects on the trout streams that surround the proposed projects (Trout Run Creek, Pine Creek and the Whitewater River) and we have invested many hundreds of thousands of dollars improving these public resources. The groundwater that lies under the proposed project sites is the vital "life blood" which sustains all these coldwater fisheries and the robust tourism they generate.

Silica sand is a critical ingredient in the process known as "hydro-fracturing," or simply "fracking," a method of extracting natural gas. In Wisconsin, the rush has already started, with silica sand mines dotting the landscape and, at times, overwhelming the regulators.[1] The Yoder and Dabelstein mines are among the first in Minnesota to undergo environmental review. Minnesota's Environmental Policy Act is intended to encourage strong environmental review and to "encourage productive and enjoyable harmony between human beings and their environment."[2] It is critical that these mines set a good example of environmental stewardship as demand for silica sand grows.

MCEA and Minnesota Trout Unlimited request that Winona County order an EIS for these projects.

An EIS is required in this case for at least two reasons. First, an EIS is mandatory for these mines because they are part of a single phased action, along with the proposed Campbell mine and three other mines in Fillmore County, all of which lie within 5 miles of each other and are also proposed for development by Minnesota Sand. A single scoping EAW should be completed for all of these mines. Together, these mines easily exceed the 160 acre minimum to trigger a mandatory EIS.

[1] Kennedy, Tony, "Sand mine rules melt under pressure," Minneapolis Star Tribune, February 4, 2013.
[2] Minn. Stat. 116D.01.

Second, an EIS is required because of the significant cumulative potential effects of this and other projects. The EAWs must properly evaluate cumulative potential effects of all proposed neighboring mines, both by this project proposer and others, as well as the proposed processing facility for these mines. Existing statutory and case law on the cumulative potential effects analysis lead inescapably to the conclusion that an EIS is needed.

I. Factual Background

The Yoder and Dabelstein quarries are proposed silica sand mines in Saratoga Township, Winona County, Minnesota. Minnesota Sand will operate both mines. The proposed Yoder quarry (so-named because it is on property owned by William and Ida Yoder) will cover 84.3 total acres at two sites that are near each other, but not contiguous. Blasting may be necessary on the site, though only once per year. The EAW states that approximately 25 percent of the sands hauled from the site will be brought back and stockpiled because it will not meet the specifications of the end user. However, the EAW does not state how or where the sand will be processed. It also states that the reject material that came into contact with chemical additives will be tested prior to stockpiling, but it does not specify what those chemical additives might be, what dangers they pose or what the testing process will be.

The EAWs note that one risk is respirable silica particles in the ambient air that may affect the public. The Dabelstein EAW states that "MN DNR recommends air monitoring both upwind and downwind of the site for both PM 4 and PM 10 silica particles, along the project perimeter."[3] However, the EAW does not specify whether, or by whom, such monitors will be required.

Reclamation is expected to be ongoing, with areas being reclaimed as new ones are opened. The EAWs state that reclaimed areas will be inspected once a year, but does not state who is responsible for that inspection. [4]

The proposed Dabelstein quarry (so named because it is on property owned by Roger Dabelstein) will cover 36.5 acres. It will also be operated by Minnesota Sand. The description of the Dabelstein mine in the EAW is substantially the same as the Yoder mine. In particular, blasting for both mines will be required approximately once a year. A single traffic study for both mines was commissioned and includes the collective impact of traffic from both mines in its conclusion.[5] Both mines will use the same new access road from County Road 6, pending final approval from Winona County. Traffic from both mines will travel to County Road 6 to County Road 29 to Interstate 90.

The two mines were referenced together in the EQB Monitor on January 7, 2013, and the publishing and comment dates are the same. In addition, the EAWs do not attempt to determine the volume of sand originating from each individual mine; instead the EAWs simply refer to total processing by Minnesota Sand from "Winona County sand reserves." The EAWs state that Minnesota Sand has committed to processing 2 million tons of sand per year, but does not specify from what part of Winona County this sand will be mined. The EAWs do not specify whether that will include additional mines besides the Yoder and Dabelstein mines.

[3] Dabelstein EAW, p. 30.
[4] Dabelstein EAW, p. 7.
[5] Yoder EAW p. 5; Dabelstein EAW p. 4-5.

Finally, Minnesota Proppant submitted, and then withdrew, an EAW for silica sand excavation, transportation, processing and export, which includes a controversial processing facility, and the proposed Campbell mine, adjacent to the proposed Yoder mine.[6] Minnesota Proppant and Minnesota Sand are the same business. The Minnesota Proppant website states that a group called Minnesota Sand, LLC formed Minnesota Proppant, LLC in July of 2012.[7] The owners, and the registered agent,[8] are the same.

The Campbell mine is expected to be 54.9 acres.[9] As with the Yoder and Dabelstein mines, access to the Campbell mine is from County Road 6. The description of the mine operations is substantially similar to that of the Yoder and Dabelstein mines. Excavation will include potential blasting. Unsuitable sand, approximately 25 percent of the materials hauled offsite, will be returned and stockpiled on the site. Reclamation will occur in phases with approximately 10 acres being mined at a time. Although the EAW references a traffic summary on page 10, there is no detailed information. However, since the location is immediately adjacent to the other two mines, it seems likely that trucks would follow the same routes as the traffic from the other two mines along County Road 6 to County Road 29 to Interstate 90. This EAW draft does note that if the processing facility, which is also proposed in the same document, is approved, then a pipeline would be available to move the sand offsite rather than using trucks.

This EAW draft also notes that the processing facility location was chosen because of its proximity to "other potential sand sources" and to allow for "phased development of other sand mines."[10] Several other mines are proposed in the area. The proposed Nisbit mine is located approximately two miles south of the Campbell mine, and is expected to disturb 19.1 acres.[11] The EAW also mentions three other "pre-applicants" in Fillmore County, listed as the Alice Dabelstein quarry, the Randy Boyum quarry, and the Kessler Quarry. These three quarries total approximately 130 acres, and all are located within five miles of the Dabelstein and Yoder mines. Minnesota Sand, LLC is listed as the project proposer for all three proposed Fillmore County mines.[12]

II. Legal Background

An EAW for both the Yoder and Dabelstein mines is mandatory (as opposed to voluntary) under Minnesota Rule 4410.4300, subpart 12B. An EAW is a "brief document which is designed to set out the basic facts necessary to determine whether an environmental impact statement is required" for the project.[13] An EIS is required where any governmental action creates the "potential for significant environmental effects."[14] The Responsible Governmental Unit's

[6] *See* EAW for Minnesota Proppant, LLC silica sand excavation, transportation, processing and export, attached as Exhibit 1.
[7] *See* "About Us," available at www.mnproppant.com/aboutus.aspx, attached as Exhibit 2.
[8] According to the Minesota Secretary of State's website, the registered agent for both LLCs is Richard Frick.
[9] Minnesota Proppant EAW, Exhibit 1, p. 19.
[10] *Id.*, p. 11.
[11] EAW, p. 36.
[12] EAW, p. 37; *see also* the Fillmore County website at www.co.fillmore.mn.us/zoning.html.
[13] Minn. Stat. § 116D.04, subd. 1a.
[14] *Id.*, subd. 2a; Minn. R. 4410.1700, subp. 1.

("RGU's") analysis must take into account both the EAW and any comments received from the public.[15]

According to the Environmental Quality Board rules, the RGU must consider four criteria when determining whether a proposed project has the potential for significant environmental effects.[16] First, the RGU must consider the "type, extent, and reversibility of environmental effects."

Second, it must consider the cumulative potential effects. "Cumulative potential effects" means

> the effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects.[17]

When determining whether the "basis of expectation has been laid," the RGU must determine "whether a project is reasonably likely to occur and, if so, whether sufficiently detailed information is available about the project to contribute to the understanding of cumulative potential effects."[18] Factors to consider include, but are not limited to, whether applications for permits have been filed; whether detailed plans or specifications for the project are available; and whether future development is indicated by historic or forecasted trends.[19]

In considering cumulative potential effects, the RGU must consider "whether the cumulative potential effect is significant; whether the contribution from the project is significant when viewed in connection with other contributions to the cumulative potential effect; the degree to which the project complies with approved mitigation measures specifically designed to address the cumulative potential effect; and the efforts of the proposer to minimize the contributions from the project."[20]

Third, the RGU must consider "the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority."[21] When considering ongoing regulatory authority, the RGU may rely "only on mitigation measures that are specific and that can be reasonably expected to effectively mitigate the identified environmental impacts of the project…."[22] The RGU may not rely on future monitoring or permit conditions to address issues should they arise. Rather, the "very purpose of an EIS…is to determine the potential for significant environmental effects *before* they occur."[23]

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[15] Minn. Stat. § 116D.04, subd. 2a(b).
[16] Minn. R. 4410.1700, subp. 7.
[17] Minn. R. 4410.0200, subp. 11a.
[18] *Id.*
[19] *Id.*
[20] Minn. R. 4410.1700, subp. 7.
[21] *Id.*
[22] *Id.*
[23] *Trout Unlimited, Inc. v. Minnesota Dept. of Agriculture*, 528 N.W.2d 903, 909 (Minn. Ct. App. 1995).

Fourth, the RGU must consider "the extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer, including other EISs."[24]

Additionally, any "[c]onnected actions and phased actions shall be considered a single project for purposes of the determination of need for an EIS."[25] Two projects are "connected" if (1) one project would directly induce the other; (2) one project is a prerequisite for the other and the prerequisite project is not justified by itself; or (3) neither project is justified by itself.[26] Two projects are part of a single "phased action" if they are undertaken by the same project proposer, and the RGU determines that they both will have environmental effects on the same geographic area, and they are substantially certain to be undertaken sequentially over a limited period of time.[27]

III. The Yoder, Dabelstein and Campbell mines are a "phased action" and should be evaluated together in a single EAW, and for purposes of determining the need for an EIS. When evaluated together, they exceed the threshold for a mandatory EIS.

The environmental impacts of the Yoder, Dabelstein and Campbell mines must be evaluated together in a single EAW because they are a single phased action. Projects are part of a single "phased action" if they undertaken by the same project proposer; they will have environmental effects on the same geographic area; and they are substantially certain to be undertaken sequentially over a limited period of time.[28] Minnesota law requires that connected and phased actions "must be considered in total when determining the need for an EAW, preparing the EAW, and determining the need for an EIS."[29] An operation that mines sand and will excavate 160 acres of land or more to a mean depth of ten feet or more must undergo an EIS.[30]

The three mines satisfy all elements of a phased action and must be considered together under MEPA. First, the mines are undertaken by the same project proposer. They will be operated by the same company.[31] They will be within one mile of each other. Indeed, the county has not even attempted to separate the projects in some respects – for instance, a single traffic study was conducted for both the Yoder and Dabelstein mines, and traffic from the Campbell mine will apparently use the same route. Also, the county refers to total sand production, without specifying the production of the individual mines. The three mine sites should be evaluated together.

Second, they will have environmental effects within the same geographic area. The Yoder and Dabelstein mines are less than a mile apart, separated only by a road; the Campbell Mine is directly adjacent to the Yoder mine. Environmental effects include loss of all habitat at the mine

[24] Minn. R. 4410.1700, subp. 7.
[25] Minn. R. 4410.1700, subp. 9.
[26] Minn. R. 4410.0200, subp. 9c.
[27] Minn. R. 4410.0200, subp. 60.
[28] *Id.*
[29] Minn. R. 4410.1000, subp. 4; *see also* Minnesota Rule 4410.1700, subp. 9 ("Connected actions and phased actions shall be considered a single project for purposes of the determination of need for an EIS.").
[30] Minn. R. 4410.4400, subp. 9B.
[31] The Campbell mine has a different operator only nominally, as Minnesota Proppant's website acknowledges that it is the same as Minnesota Sand, LLC. *See* Ex. 1.

site, loss of topsoil and vegetation, impacts from blasting, public health, safety and air quality impacts from increased truck traffic, air quality and public health impacts from silica sand, impacts on water quality and quantity due to loss infiltration, increased runoff, and impacts on ground and surface water, among others.

Third, the three mines are substantially certain to be undertaken sequentially within a short period of time. The Yoder and Dabelstein mines were noticed in the EQB Monitor on the same day, and have the same public comment periods. It is reasonable to assume that they will both proceed with similar timing. The Campbell mine was proposed as part of an EAW that the project proposer later withdrew. It was proposed as part of the processing facility, which is being developed in expectation that it will process silica sand from all of these mines. The Campbell mine will similarly be developed in the near future.[32]

These three mines together exceed the threshold for a mandatory EIS. A facility that mines sand must undergo an EIS if it excavates more than 160 acres of land to a mean depth of ten feet or more.[33] The Yoder mine will total 84.3 acres. The Dabelstein mine is proposed to excavate 36.5 acres. And the Campbell mine is planned at 54.9 acres. Together, they will excavate 175.7 acres to a mean depth of 100 feet.

The same analysis may be made on the Fillmore County mines, also proposed by Minnesota Sand. They are each five miles or less from the Dabelstein and Yoder mines. They will be undertaken shortly as well and planning is already underway, as indicated by the fact that the location and acreage is known, and that they have submitted Pre-Applications to mine in Fillmore County, a required first step in that county. These three mines together total an additional 130 acres of excavation.

Finally, both the Yoder and Dabelstein sites appear to have significant potential for additional mining. The Yoder property is 287 acres, but only 84.3 acres will be mined.[34] Similarly, the Dabelstein property is 213.1 acres but only 36.5 acres will be mined.[35] The EAW must specify whether the remaining property will be mined, and if so, when. It may well be that additional plans for this site must be included as phased actions as well.

IV. The cumulative potential effects of these mines and other related projects in the area require an EIS.

The cumulative potential effects of these two mines, in the context of other proposed mines and the processing facility in the area require an EIS. MEPA and case law under MEPA require that the analysis of the cumulative potential effects of the Dabelstein and Yoder mines must include an analysis of the effects on the environment from other proposed projects in the same geographic area. In particular, the RGU must look at whether a "basis of expectation has been laid" for other future projects – for instance, "whether a project is reasonably likely to occur and, if so, whether sufficiently detailed information is available about the project to contribute to the

[32] *See* EAW for Minnesota Proppant, Ex. 1.
[33] Minn. R. 4410.4400, subp. 9B.
[34] Yoder EAW, p. 3.
[35] Dabelstein EAW, p. 3.

understanding of cumulative potential effects."[36] Factors to consider include, but are not limited to, whether applications for permits have been filed; whether detailed plans or specifications for the project are available; and whether future development is indicated by historic or forecasted trends.[37]

In this case, six mines and a processing facility are reasonably likely to occur. All have reached a sufficient point of development where a basis of expectation has been laid; county officials and company officials have described them publicly, along with detailed information about location, capacity, and size. Two already have EAWs; the Campbell mine and processing facility have an EAW completed but not open for public comment; and the three Fillmore County mines have already been sited, acreage determined and a "pre-application" process has taken place.

When looking at all these mines and the processing facility together, there can be no doubt that an EIS is required to evaluate cumulative potential effects. In a remarkably similar case, the Minnesota Supreme Court determined that a county was arbitrary and capricious when it determined that two gravel pits did not present the possibility of significant environmental effects.[38] The two mines were 92 acres, far less than the mines at issue here, all of which lie within a few square miles in Winona and Fillmore Counties. In *Citizens Advocating Responsible Development v. Kandiyohi County Board of Commissioners* ("*CARD*"), Kandiyohi County, the RGU, completed EAWs for two gravel mines.[39] The County decided that the two gravel pits did not have the potential for significant effects based only on an analysis of whether each individual project has the potential for causing significant environmental effects.[40] The Court held that this conclusion was arbitrary and capricious, and therefore should be reversed.[41] The Court stated that a "key underlying premise" of a proper cumulative potential effects analysis is that "an individually insignificant project may have a significant environmental effect when considered in conjunction with other projects."[42] Acknowledging that there are no toxic chemicals involved in gravel mining, the Court nevertheless considered it "problematic to say that removing 92 acres of trees, brush, and other vegetation and digging a hole approximately 35 feet deep across those 92 acres results in absolutely *no* negative environmental impact (or, more pertinently, no potential for significant environmental effects)."[43]

Thus, the Minnesota Supreme Court has already concluded that similar mines that cover even less acreage than these constitutes sufficient cumulative potential effects to require an EIS. While the Yoder and Dabelstein EAWs attempt to avoid the problem in *CARD* – namely, the unsubstantiated conclusion that there is no potential for cumulative potential effects – the analysis in these EAWs is no better than the analysis the Court rejected in *CARD*. The five other mines proposed in the area of the Yoder and Dabelstein mines – the Nisbit mine, the Campbell mine, and the three Fillmore County mines – as well as the proposed processing facility are all within the realm of cumulative potential effects. The EAWs refers to all of these projects, but

[36] Minn. R. 4410.0200, supb. 11a.
[37] *Id.*
[38] *Citizens Advocating Responsible Development v. Kandiyohi Cty Bd. Of Com'rs*, 713 N.W.2d 817, 823 (Minn. 2006).
[39] *Id.*
[40] *Id.* at 836.
[41] *Id.*
[42] *Id.*
[43] *Id.*

fails to actually analyze any of their impacts. Instead, the EAWs includes a laundry list of potential impacts, and suggests that further study is necessary.[44]

The complete lack of analysis in the EAWs is troubling. At a minimum, there is "simply not enough evidence in the record" to determine whether the county "actually took a 'hard look' at the question of cumulative potential effects" as required by Minnesota Rule 4410.1700, subp. 1.[45] A full analysis of all the projects in within a few miles of these two proposed mines makes it obvious that the cumulative potential effects will be quite substantial. Each of these mines will produce silica dust. Each will diminish water quality due to loss of filtering. Each has the potential to disrupt groundwater and surface water flow patterns, impact groundwater recharge and diminish the quantity of cold groundwater which discharges into neighboring trout streams. Each will require trucks and traffic and burden local infrastructure. Each mine individually may or may not have the potential for significant environmental effects (although the processing facility, standing alone, certainly does). Unlike these EAWs, which barely scratch the surface, a detailed analysis of cumulative potential effects must be effectively undertaken as part of an EIS.[46]

V. The EAWs contain insufficient detail on many enforcement and mitigation issues.

At many points, the EAWs simply suggest that steps may be taken to mitigate environmental impacts while failing to identify an actor that will take the steps, or whether any enforcement will take place. When determining whether there is a potential for environmental effects, the RGU may consider the extent to which environmental effects are subject to mitigation by ongoing public regulatory authority.[47] If the RGU can point to a permit or other regulatory requirement that the project proposer must meet and that will mitigate an environmental impact that is an appropriate factor to consider when determining whether an EIS is necessary.

But the vague assertions about potential mitigation measures contained in these EAWs cannot be relied upon. "The RGU may rely only on mitigation measures that are specific and that can be reasonably expected to effectively mitigate the identified environmental impacts of the project."[48] It is not enough to simply suggest that the project proposer may "rely on monitoring or restrictive permitting procedures to reduce or eliminate those deleterious effects" should they occur.[49] The purpose of the EIS is to analyze the impacts *before* they occur as part of the EIS process.[50] If these EAWs do not describe a particular enforcement or regulatory mechanism for mitigation with sufficient particularity, then an EIS will be required to determine how the projects can be designed to minimize environmental effects. An EIS is an appropriate vehicle to

[44] "The nature of potential cumulative effects can be determined by considering the breadth of issues contained herein, including the data submittal by the proposer, supplemental agency comments and information identifying areas for further study." Dabelstein EAW, p. 37.
[45] *CARD*, 713 N.W.2d at 838.
[46] *See* Minn. R. 4410.1700, subp. 7 ("In deciding whether a project has the potential for significant environmental effects, the following factors shall be considered…B. cumulative potential effects…").
[47] Minn. R. 4410.1700, subp. 7C.
[48] *Id.*
[49] *Trout Unlimited, Inc. v. Minnesota Dept. of Ag.*, 528 N.W.2d 903. 909 (Minn. Ct. App. 1995).
[50] *Id.*

elaborate on how environmental issues will be handled, as well as potential enforcement mechanisms.

a. The EAWs provide insufficient information on blasting and its potential impacts.

The Yoder EAW, for instance, states that "blasting may be necessary…" and that blasting will occur approximately once per year. The EAWs should state whether blasting *is* necessary, and when and where it will take place.

b. The project magnitude is ill-defined.

Both EAWs state that the project proposer has committed to processing 2 million tons of sand per year from the "Winona County sand reserves." However, the Yoder EAW also states that each mine will produce on average 2.4 million tons of sand per year.[51] This is based on having 10 acres available in each year. It seems to suggest that the two mines together will produce at least 4 million tons. But then both EAWs also say that the "total operation will be limited to 2 million tons per year."[52] The terms "Winona County sand reserves" and "total operation" as used in the EAWs are not defined. The EAWs/EISs should state how much material will be removed from each mine in each year, and whether the predictions of Minnesota Sand are based on additional proposed mines, or only on these two mines.

This is also a factor in the question of blasting. If Minnesota Sand has committed to processing a certain volume, this will determine how quickly it must mine the material, and how often it must use blasting to uncover sections of the proposed mines.

c. Proper handling of reject materials must be specified.

Both EAWs state that approximately 25 percent of material will be unsuitable to the end user and brought back to the site for stockpiling or use in reclamation.[53] They state that the reject material may come into contact with chemical additives, and need to be tested. However, they do not specify what those additives may be, or how the reject material will be tested. Nor do they specify whether testing is a legal requirement.[54] Although the project proposer emphasizes that chemicals will not be used at the site, the reject material may potentially introduce chemicals that have an impact on ground or surface water.

[51] Yoder EAW, p. 30.
[52] Yoder EAW p. 37; Dabelstein EAW p. 36.
[53] Yoder EAW p. 7; Dabelstein EAW p. 6.
[54] Mitigation measures must be the result of ongoing public regulatory authority, not merely voluntary measures. 4410.1700, subp. 7C.

d. Air quality measurements must be taken, and proper steps for dust suppression must take place at the site and during transport of the silica sand.

The EAWs note that various activities at the sites may induce airborne particulates at and around the site.[55] While the EAWs note that OSHA requirements apply for exposure to mine workers, the impacts of silica dust drifting off of the site are not known. The EAWs state that the DNR recommends monitors for silica particulates at the property boundary. The EAWs mention use of water for dust suppression and covering the trucks, but does not include a comprehensive plan for controlling dust from all activities at the site, including blasting, stockpiling, loading and unloading materials from trucks. It also fails to mention how the company intends to ensure that the trucks are properly covered at all times, and how dust suppression will be conducted and enforced at the site.

Crystalline silica is classified as a human lung carcinogen.[56] The US Department of Health states that "[r]esidents near quarries and sand and gravel operations potentially are exposed to respirable crystalline silica."[57] Very little data is available at this time about the safe level of silica particulates in the air for residents neighboring silica sand mines. Tiller Corporation and the MPCA are current monitoring particular matter inside the fence line of a sand-drying plant in North Branch.[58] Data will be collected for two years.[59]

Given the lack of information currently available about safe silica levels in ambient air, it would be safest to do a complete EIS and take the data from the Tiller Corporation study into account as part of the process. While this may slow down the process, it may also protect local residents from lung cancer and silicosis. The delay will provide valuable information necessary to properly evaluate the project from an environmental and public health standpoint.

In addition, the EAWs should specify what, if any, monitoring of silica particulates will actually take place on the property; whether it is required by law or voluntary; and how monitoring data will be collected, recorded and reported.

e. The EAWs should specify how reclamation requirements will be enforced and inspected.

The EAWs state that reclamation will be ongoing, with approximately 10 acres of mine area open at any given time. They describe seeding and stabilizing the areas, and removing ditches and temporary basins as part of reclamation. The EAWs also state that "areas that have been reclaimed shall be inspected yearly…" but do not specify by whom. The EAWs should describe which agency is responsible for ensuring proper reclamation, and whether and how enforcement will take place.

[55] Yoder EAW, p. 30.
[56] *See, e.g.*, OSHA Fact Sheet, available at www.osha.gov/OshDoc/data_General_Facts/crystalline-factsheet.pdf.
[57] US Department of Health and Human Services, Public Health Services, National Toxicology Program (2011) at ntp.niehs.nih.gov/ntp/roc/twelfth/roc12.pdf.
[58] Kennedy, Tony, "Sand Plant in North Branch to Monitor Air Quality," *Minneapolis Star Tribune*, January 29, 2013.
[59] *Id.*

f. The EAWs do not adequately address impacts on groundwater and surface water.

While it is claimed that the mining activity will stay above the water table, the EAWs do not address how the mines will nonetheless impact the hydrology of the area. It is possible, even likely, that the mines will alter groundwater and surface water flow patterns, disrupt the recharge of the aquifers, diminish the quantity and timing of groundwater discharges into springs and trout streams, and diminish the quality of neighboring surface waters. A hydrologic model of groundwater flow should be developed and run to determine how all of these mines will impact groundwater quantity and quality.

Each quarry has the potential to have profound impacts on the local groundwater flow system, water temperatures in nearby springs and streams, and trout populations in those streams. A study of the Big Spring quarry near Harmony, Minnesota in Fillmore County provides a good illustration of how the quarries can disrupt groundwater conduit flow paths and cause great environmental harm. Although the Big Spring quarry (35 acres actively mined) is located above the water table, quarrying operations penetrated the conduit system, causing ground water that formerly discharged at the Big Spring on Camp Creek to discharge in the quarry. This water either sinks back into the limestone to re-emerge (warmer) at the Big Spring or flows overland to Camp Creek. Dye tracing at the site demonstrated that approximately 90 percent of the ground-water basin is now being routed through the quarry. Without any dewatering occurring, this quarry has altered groundwater flow paths. This water is exposed to thermal impacts and is more vulnerable to pollution from quarrying activities. Temperature measurements indicate that the Big Spring was 8 degrees Fahrenheit warmer in July than the water that first discharges in the quarry, and the stream flowing out of the quarry to Camp Creek was 17 degrees warmer. Temperature changes of this magnitude can have significant negative effects on the coldwater aquatic ecosystems and trout populations in nearby trout streams. [60]

The above description comes from a DNR study on hydraulic impacts of quarries and gravel pits. The DNR report made several specific recommendations on information that local governments should gather when evaluating mining proposals:

- Topographic maps of the mining site that can be used to address runoff, flooding, and equipment storage;
- Geologic maps that will provide information about the deposit, clay or shale layers protecting lower aquifers, and the amount and location of unusable material to be stockpiled at the site;
- Hydrologic information to assess the potential impact on groundwater flow, wells, and surface water;
- Karst information to assess potential impacts on water resources that are not immediately adjacent to the site;
- A mining plan, including stages of the mine, dimensions, and other features on the site;

[60] *Hydraulic Impacts of Quarries and Gravel Pits*, J.A. Green, J.A. Pavlish, R.G. Merritt, and J.L. Leete, Minnesota Department of Natural Resources, Legislative Commission on Minnesota Resources Report, 2005, pp. 53 – 56, attached as Exhibit 3.

- A reclamation plan including reclamation methods, vegetation types, open water areas, and future use.[61]

To the extent that Winona County has not already gathered this information, it should be gathered and made public as part of the required EIS process.

VI. Conclusion

Despite the numerous information deficiencies in the EAWs, it is evident from an analysis of the cumulative potential effects that the projects have the potential for significant environmental effects. On this basis alone the RGU must determine that an EIS is required. Additionally, since the Yoder, Dabelstein, Campbell and Fillmore County mines constitute phased actions, the projects trigger a mandatory EIS. An EIS is the appropriate vehicle to explore the environmental and public health impacts of these projects, and how the impacts can be avoided or mitigated. If Winona County fails to make these proper determinations, its decision will be subject to judicial review.[62]

Sincerely,

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[61] *Id.* at p. 10-11.
[62] Minn. Stat. 116D.04, Subd. 10.