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CONCERNS OVER THE PROPOSED MINE BY DRAKE CEMENT LLC NEAR PARKS AZ, AREA CODE 86018

1 message

Ron and Mary Smith <mr3js5@gmail.com>

Mon, Oct 16, 2023 at 10:28 AM

To: Regan.Michael@epa.gov

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FROM: RON SMITH
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DATE: OCTOBER 16, 2023

SUBJECT: CONCERNS OVER THE PROPOSED MINE BY DRAKE CEMENT LLC NEAR PARKS AZ, AREA CODE 86018

As a resident of the Parks community, I have very serious concerns regarding the proposed mine by Drake Cement LLC in the Spring Valley of Parks, Az. So, with that in mind, I am using the SDS to evaluate substances contained in pozzolan. When citing a particular characteristic of the chemical, it will be noted by using "(A #, S #) where A # is Attachment and S # is Section". When reading over the SDS for the various compounds that make up pozzolan, I became very concerned for the safety of the residents, children, and environment.

I fully realize that as a company, Drake Cement LLC would want a source for pozzolan that is somewhat close to the processing plant. But utmost consideration needs to be given for the thousands of people this will directly adversely affect, as well as environmental effects caused by such an operation. This includes but not necessarily limited to The Spring Valley Wash and Watershed that feeds local residential wells, wildlife tanks, the Havasupai Indian Reservation, its wells and Havasupai Falls, and The Colorado River. Additionally, the US Fish and Wildlife Service has an Officially Protected Species designated area at the mine site (A8) and further consideration must be given to exponential increases in noise and air pollution this mining operation will bring. The effects will be severe and long lasting.

Pozzolan Data

Pozzolan is composed of silicon dioxide (65-75%), aluminum oxide (13-15%), potassium oxide (4%), sodium oxide (3%), and calcium oxide (2%). Each of these chemicals have their own properties. Each of these will be addressed separately with their SDS as back up for the comments made.

According to information provided to our community, Drake is going to mine between 300,000 to 500,000 tons of material each year for 20 years. Assuming a truck can haul 25 tons of material at a time, per year there will be between 12,000 and 20,000 truckloads being hauled through the Parks community. With that in mind, the tons of the above listed chemicals being mined out in the proposed open pit mine, would be as follows for each substance for one year (A 1, S 3)–

COMPOUND	PERCENT MAKE UP	300,000 TONS/YR	500,000 TONS/YR
Silicon dioxide	75	195,000	375,000

	65	225,000	325,000
Aluminum oxide	15	39,000	75,000
	13	45,000	65,000
Potassium oxide	4	12,000	20,000
Sodium oxide	3	9,000	15,000
Calcium oxide	2	6,000	10,000

Pozzolan has the following hazards – skin irritant, eye irritant, respiratory (especially if repeated), and carcinogenicity. (A1, S 2.1) An additional problem arises with the dust. (A1, S6.1) Even walking on this substance, a person can break the rocks down. So, with heavy machinery driving over the substance, it can be crushed even finer and more easily. Pozzolan is classified as insoluble, but NOT all the substances that make up pozzolan are insoluble. (A1, S9) Pozzolan is incompatible with strong acids, strong bases and hydrogen fluoride. (A1, S10) When handling this substance, one should wear goggles, gloves, and respirator. (A1, S10)

Silicon Dioxide Data

Silicon dioxide is categorized as a CAT 1 H372 substance. (A2, S2) This means that with repeated exposure damage can occur to organs. It is advised not to breathe the dust or vapor or to ingest this substance. (A2, S2.) In the analysis of this substance, it is strongly recommended not to form dust. (A2, S6) When storing this substance, the container must be tightly closed. (A2, S7) Again, when dealing with this substance, an individual needs to use goggles, gloves, and respirator. (A2, S8) The substance is insoluble. (A2, S9) With repeated exposure, a person is susceptible to carcinogenicity of the lungs, thorax, and respiratory system with tumors. (A2, S11)

Considering the above listed problems with silicon dioxide, the dust being generated by the handling of pozzolan can create a hazard for people in the area. With the main route that Drake proposes to use, this brings nearby neighborhoods, homes near the route being used, and a local school along the route into close proximity to the dust. This presents health problems for humans, especially the elderly that have lung issues already. Children next to the road being used by the heavy trucks will be exposed to the dust of silicon dioxide. What are long term effects for people being exposed to silicon dioxide dust? Children may develop lung issues because of the dust being blown off the trucks as they drive by the schoolyard.

Aluminum Oxide

Aluminum oxide should not be released into the environment. Avoid dust formation. (A3, S6) With this substance one should avoid contact with the following – eyes, skin, clothing, ingestion, and inhalation. (A3, S7) This substance is insoluble in water. (A3, A9) Avoid exposure to moist air and water. It is incompatible with strong acids, strong bases, peroxide, and halocarbons (i.e., CCl₄). (A3, S10) Due to the type of substance, this is not to be put in a drain because of ecotoxicity. (A3, S12)

When assessing the warnings for this chemical, one begins to think of what reactions could occur. For example, if there is muriatic acid nearby, the liquid or vapor from muriatic will react with aluminum oxide and will then form aluminum chloride. This brings into play another substance that creates a whole new set of problems. Releasing aluminum oxide into the environment is to be avoided. Again, there are people living near the proposed truck route – including a school with children.

Potassium Oxide

Potassium oxide is a strong oxidizer and may cause fire or explosion. This substance can cause severe skin and eye damage. (A4, S2) It reacts violently with water. It causes respiratory damage. Do not breathe the dust or fumes. (A4, S2) It is a reactive hazard and needs to be protected from water. (A4, S10) It is incompatible with strong reducing and oxidizing agents and any combustible substances. (A4, S10) If this substance is ingested, it is possible to cause perforation of the stomach and esophagus. (A4, S11) Potassium oxide dissolves in water and is therefore mobile with water. (A4, S12)

Potassium oxide creates a severe environmental hazard, especially since this proposed open pit mine lies in the watershed that drains to the Colorado River. What will be the long term effects over the 20 some years this substance drains into the water of the Colorado River. In addition, the SDS for this substance is quite clear: it causes severe skin

and eye damage, not to mention the respiratory damage from the dust. Again, people live along the route that these trucks will take. With children at the school, what will be the long-term effects for these children?

Sodium Oxide

Sodium oxide is a strong oxidizing solid. It can cause skin corrosion and cause serious eye damage. (A5, S2) Avoid inhalation of the dust and do not let this substance enter a drain. (A5, S6) This substance can cause the burning rate to increase. (A5, S7) Sodium oxide is incompatible with water, acids, oxidizing agents, powdered metals, organic materials, alcohols, and strong reducing agents. (A5, S10) This substance can cause severe burns. If ingested, it will cause perforation of the esophagus and stomach. Contact with the eyes could cause blindness. (A5, S11)

Sodium oxide is another substance in pozzolan that if released in a dust form can cause severe problems for people nearby. Again, this means that the children at the local school can be exposed to a substance that is harmful.

Calcium Oxide

Calcium oxide is a skin irritant, can cause serious eye damage, cause respiratory damage, and target specific organs. It will cause short term aquatic damage. It reacts with water to form calcium hydroxide. (A6, S2) Avoid inhalation of dust. (A6, S6) This substance needs to be stored tightly and under inert gas. It is moisture sensitive. (A6, S7) There is a risk of explosion with the following - H"X", water, alcohol, hydrogen sulfide, glycerin, acids, and sugars. (A6, S10)

Calcium oxide creates problems especially in the form of dust. When it is in contact with water and forms calcium hydroxide, it is caustic and quite harmful to humans and the environment.

Summary

Based on the above cited information from the SDS, I have identified some very serious situations that pozzolan presents to the Parks and surrounding communities. Of consideration, the types of dust produced in the mining and transporting of this substance will produce some serious conditions. The dust can produce severe skin irritation, serious eye damage, respiratory irritation, perforation of the esophagus and stomach, and tumors. In all 6 attachments, PPE (Personal Protection Equipment) should be used. (A1, S2.2; A2, S8; A3, S7 & 8; A4, S7; A5, S8.2; A6, S8.2)

The site of this proposed open pit mine is located just west of a residential area. The prevailing winds come from the southwest, which blows dust to this residential area. (A7) Then considering that the trucks hauling this substance are driving past a grade school with children on the playground, this creates the potential for a real health hazard for these children as they are exposed over time. Many children will undoubtedly have medical issues.

There are at least three compounds in pozzolan that create caustic substances. Potassium oxide, sodium oxide, and calcium oxide form hydroxides. This proposed open pit mine is in the watershed for the Colorado River, and there is an expanse of land and water shed that will be directly affected by this mine. The quantities referred to at the top of this letter are for one year; now multiply those figures by 20 years. According to the information provided to our community, the company plans operating for 20 years.

Within the content of this letter, I have **not** addressed other issues. Some of those issues are as follows: destruction of trails, deterioration of the local roadways, habitat for the spotted owl (A8), actual long term medical effects for all ages, obliteration in the beauty of the forest, and the lowering of our property values, just to list a few.

As a resident of the community, I am requesting that Drake Cement LLC secure other sites that are not as injurious to the community, children, and the environment as this proposed mine site. Please give our community serious consideration in halting the permitting of this proposed mine site.

Respectfully submitted,

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9 attachments



ATTACHMENT 8 - SPOTTED OWL MAP.jpg
350K

-  **ATTACHMENT 4 - potassium-oxide K2O.pdf**
56K
-  **ATTACHMENT 2 - silicon-dioxide-7631-86-9_sds.pdf**
24K
-  **ATTACHMENT 3 - ALUMINUM-OXIDE--99-99--25GR.pdf**
41K
-  **EPA Michael S. Regan OCTOBER 16.2023.docx**
35K
-  **ATTACHMENT 6 - Calcium oxide CaO.pdf**
157K
-  **ATTACHMENT 5 - Sodium oxide Na2O.pdf**
157K
-  **ATTACHMENT 1 - SDS-Pozzolan_AZ_22-March-EMT-FINAL.pdf**
380K
-  **ATTACHMENT 7 - MAP OF SITE WITH WIND DIRECTION.docx**
1533K