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UPHE's Mission is dedicated to protecting the health and well-being of the residents of Utah by promoting science-based health education and interventions that result in progressive, measurable improvements to the environment and our health.

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To the Division of Oil, Gas and Mining:

Utah Physicians for a Healthy Environment (UPHE) write to you regarding public health and other concerns related to Geneva's request for an expansion of their mining operations at the Point of the Mountain (POM). First, allow us to explain who we are.

UPHE is the largest civic organization of health care professionals in the state of Utah, and one of the largest in the Western United States. Over 450 physicians are part of our 4,000 members and supporters. Included in our membership are practicing clinicians in virtually every medical specialty, members of medical school faculties, researchers, administrators, former members of the Utah Air Quality Board, a former chairman of that board, a former president of the Utah Medical Association, and officers of the medical associations of some of the state's most prominent, well-respected hospitals, insurers, and health organizations. During the last 15 years we have helped communities address air pollution and environmental contamination issues in multiple states throughout the country and in British Columbia, Australia, and the UK.

UPHE "specializes" in knowing the full extent of available medical research on the health consequences of air pollution, and we update our data base of worldwide publications monthly. In short, UPHE is well qualified, likely more so than any other entity in the state of Utah, to offer expert assessments and opinions of air pollution issues and related public policy. Our major concern is the effect of sources of air pollution on public health. We realize that business is important but that it must take a backseat to public health protection. The costs of air pollution far exceed any profits obtained by industry.

Air pollution, including dust particulate matter, is significantly associated with a list of adverse health outcomes almost as long as the list from smoking cigarettes. Air pollution affects the functioning of all major organs, increasing the risk of heart attacks, heart failure, strokes, neurologic diseases like dementia and impaired cognition, every type of lung disease, impaired fetal development and poor pregnancy outcomes, cancer, and metabolic diseases like type II diabetes. Air pollution accelerates the aging process, shortens the average person's life span, and causes increased rates of disease related premature death. It even alters genetic function and damages chromosomes and can impair the health of future generations.

Studies specific to people exposed to dust show some startling results. For example, residential populations chronically exposed to dust from such things as the desiccated Aral Sea, Owens Lake, and the Sahara Desert reveal a wide range of poor health outcomes, including shortened life

expectancy, high rates of cancer, infectious diseases, respiratory and heart disease, reproductive pathologies, adverse pregnancy outcomes, anemia, birth defects, and infant mortality. [1] The primary reason why there is so much recent, wide-spread anxiety, and national and even international publicity about the rapidly shrinking Great Salt Lake is the public health consequences of the dry lake bed becoming a frequent source of toxic dust blown all over the Wasatch Front. Yet with the multiple gravel pits at the Point of the Mountain (POM), especially Geneva's with its elevation, residents on both sides of the POM are already exposed to a constant source of similarly toxic dust. If Geneva is allowed to expand that exposure will continue for decades into the future.

Even short-term inhalation of the type of particles specifically found in gravel pit dust are associated with increased hospitalizations for heart disease. [2]

Thousands of medical studies from throughout the world have established several tenets relevant to the dust pollution at the POM.

1. Despite the existence of federal clean air standards, there is no safe level of air pollution. Even at very low levels air pollution, including levels that are "allowed," or "compliant with EPA standards," are still causing significant harm to public health. Nonetheless, the Wasatch Front overall is still violating the EPA's 24 hr PM2.5 standard. Any dust pollution from gravel mining will only add to existing background Wasatch Front levels and further increase the pollution and public health burden to Draper residents.

2. While dust pollution from mining and gravel pit operations certainly contains particles large enough to be captured by the upper respiratory tract and don't represent as much of a health threat as smaller ones, it also contains significant amounts of smaller, more dangerous particles. Furthermore, those smaller particles stay suspended in the atmosphere longer, they disperse more widely, and penetrate homes more easily.

3. Toxicity and public health consequences are also related to whatever is attached to those particles, such as chemicals and metals. The soil at POM has been analyzed, and like the Great Salt Lake bed, found to have higher than normal levels of heavy metals like arsenic, and about four times the typical amount of the radioactive metal, uranium. Particles in the diesel emissions from the heavy equipment used at the gravel and grading operations are significant sources of toxic chemicals like PAHs (polycyclic aromatic hydrocarbons).

4. Virtually everyone is harmed by air pollution whether or not they have symptoms, but there are substantial genetic and gender differences among individuals affecting their vulnerability to the health consequences. What may be "clean enough" air for one person is not "clean enough" for all people.

5. Because of critical developmental windows, small children and babies-in-utero have much greater risk from pollution than adults. This is just one segment of the population for whom even brief exposure to pollution can have life-long consequences. Because of greater physical activity, higher metabolic rates, and hand to mouth actions, young children will be more exposed than adults via both inhalation and ingestion. Exposure of pregnant women who live nearby will extend the public health consequences to more than one generation because of the damage that diesel exhaust and industrial pollution can do to chromosomes and fetal development. [3,4,5,6,7,8,9,10] If pollution levels are not safe for pregnant mothers, they cannot be considered safe for the

community at large. The toxic dust generated will continue for years, but the health consequences will last much longer.

6. Residents of communities near gravel pits may have even greater exposure to the dust than gravel pit employees. The mining activity exceeds a 40-hour work week, disturbed raw land surfaces are a perpetual source of dust, and the dust that lands on their yards, driveways, and inside their homes can be resuspended during a family's daily activity, extending their exposure and magnifying the health risks.

7. Diesel emissions from the heavy equipment involved with the grading project will add significantly to the health hazard to nearby residents. Diesel exhaust is a proven carcinogen, revealed by recent research to be even more toxic than previously thought. A recent landmark study indicates that long term exposure to even low levels of diesel exhaust raises the risk of dying from lung cancer about 50% for residents who live near industrial operations, and about 300% for the workers.[11,12]

8. Crystalline silica (CS) is an additional health threat unique to dust pollution. It causes a disease of the lungs known as silicosis. The amount of CS dust from Geneva's POM mining has not been assessed, if only because inadequate state law does not require it. But other studies in many other locations show wide variability in the percentage of respirable dust particles that are CS, anywhere from 1% to as much as 95%,[13] depending on the type of mining operation and geographic location.

The EPA has not set a National Ambient Air Quality Standard (NAAQS) for CS, however they do offer a "benchmark" of 3 ug/m3 (3 micrograms per cubic meter of air), but the EPA admitted they did not factor in people with existing lung disease, children, or pregnant mothers, and assumed that the public's exposure would be less than in the workplace, something that is not likely true for Draper residents who live near the mining and grading operations. Only a few states have established a "benchmark" level for ambient levels of CS and Utah is not one of them. Those state levels range from New York, the most strict at 0.06 ug/m3, to 3 ug/m3 in California, the same as the EPA. Studies from California recorded air samples from monitors downwind of gravel pit operations with concentrations of crystalline silica ranging from 9.4 to 62.4 ug/m3, many times greater than everyone one of those benchmarks, and orders of magnitude greater than New York's.[14]

Without any data specific to Utah or the POM, the best that can be said is that no one knows how much additional health risk there is from CS in the dust pollution of the gravel operation. However, if conditions are similar to those in California, the CS in the atmosphere could indeed be much greater than what any government agency considers acceptable.

The age of silica particles matters. Crystalline silica is particularly high in industrial settings, like mining operations that expose freshly fractured solid rock (e.g., crushing, grinding, blasting, cutting),[15] which is precisely the nature of the gravel pit operations at the POM. By virtue of their close proximity, nearby residents are subjected to the same higher risk, industrial type of silica as gravel pit employees.[16] While chronic silicosis is usually thought of as an occupational disease, significant rates of non-occupational silicosis have been documented in residents exposed to frequent dust storms.[16]

As you are well aware, the state has moved the prison from Draper to the Northwest Quadrant of Salt Lake City specifically to develop the old prison site into a "show piece" of smart, new resident and high-end commercial development. If the area is subjected to a constant mist of dust, it will tarnish, literally, the quality, value, and success of the entire re-development project.

The sources of Wasatch Front air pollution have changed in the last 20 years, and in many respects have become worse. Related primarily to the climate crisis, we are now routinely subjected to regional wildfire smoke for much of the summer, higher levels of ozone, and dust from the afore mentioned shrinking of the GSL. These are all sources of pollution that are increasing and will continue to do so, largely beyond the control of local decision making, and only minimally affected by state government policy. However, allowing gravel pits to continue expanding in populated areas is one part of the broader pollution problem that can be directly managed by more responsible state policy.

Finally, Geneva's source of water for fugitive dust control is undoubtedly connected to the Jordan River. The massive water consumption of their operation almost certainly decreases the flow of the Jordan River and contributes to the shrinking of the GSL. To that extent, Geneva's operation is a contributor to yet another source of dust exposure for Wasatch Front residents.

As a state agency DOGM's first priority must be to serve the best interests of the state and its residents, not the interests of any particular business or industry. It is obvious that those interests are best served by not allowing Geneva to continue expanding in perpetuity at the Point of the Mountain.

Sincerely,

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