

Dictionary of Frac-Sand Miner's Words, Terms, & Euphemistic Concepts

Accelerants-Flucculation: An accelerant is an additional chemical or ion (possibly many chemicals and/or ions) which will help a silica flocculent collect suspended particle in the solution more efficiently insuring of a more rapid process. There is some indication that frac-sand companies might be using additional chemicals to accomplish flocculation in less time than the use of polyacrylamide alone can accomplish. Organic peroxides and/or heavy metal salts may be involved and these are likely to increase the toxicity of the effluent (waste water) from the wet plant, as well as the sludge deposited back in the mine pit.

Acrylamide: Acrylamide (a potent neurotoxin) is an organic chemical compound with the chemical formula C_3H_5NO . It is this individual molecule that is chained together to form polyacrylamide via an endothermic reaction. (Endothermic reaction means for the reaction to take place there is a need for the input of energy. In this case it is usually heat or electrolysis.) . According to Medical Doctor Gabe Mirkin, the World Health Organization (WHO), and the U.N. Food & Agriculture Organization (FAO) “acrylamide can cause nerve damage in humans, such as loss of feeling, and loss of muscle control.” It can help bring on “diabetes, blindness, deafness, heart attack, strokes, and kidney damage.” Also it can cause cancer, cataracts, Parkinson's, Alzheimer's, and birth defects. California's Safe Drinking Water & Toxic Enforcement act of 1986 (Proposition 65) lists acrylamide among 800 chemicals that pose a risk of causing cancer or reproductive harm.

Act 21: “This bill (passed in May, 2011) makes the following changes with respect to statements of scope:

1. **Requires a statement of scope to be approved by the governor** as well as by the policy-making individual or body before the statement of scope may be sent to the LRB for publication in the register and prohibits a state employee or official from performing any activity in connection with the drafting of a proposed rule, except for an activity necessary to prepare the statement of scope, until the governor as well as the policy-making individual or body approves the statement of scope.”

Air Pollution Permit: The DNR requires each mining operation to obtain an “Air Pollution Permit” based on a “Major” or “Minor” source designation. If the mining operation is separated from the dry plant processing operation, they qualify for a separate measurement of total output of air pollution. The DNR has stated that fugitive-sand dust is not measured as part of the total air pollution; and they appear to have arbitrarily qualified a 150-ton-per-hour operation as being a “Minor Source” of air pollution (there does not seem to be any scientific basis for this determination). There are several loopholes in the context of the “Air Pollution Permit” as it stands now in its rewritten (2011) form.

ACOE, Army Corp of Engineers: This stands for the U.S. Army Corp of Engineers which is in charge of all navigatable water ways, wetlands, and roads in the State of Wisconsin. There are many areas of jurisdiction that the ACOE has chosen to ignore, however, there are signs that things are improving a little (as of July 2012).

Bench Mark: If one wants to test for the effects of a frac-sand mine and/or processing plant, samples of the material which may be affected must be taken and analyzed in whatever manner required prior to the beginning of any operations. In this manner, later sample analyzes should show the effects or changes on the material in question.

Berms: This word can be used interchangeably with dam or dike. Generally a berm is put in place to create a pond. These ponds are used for drying, waste water storage and infiltration into the water table or aquifer; ponds are also used to take advantage of sun light and/or bacterial removal of polyacrylamide and/or removal of silica silt. Per the sand miners, these berms are highly engineered costly structures; however at least 6 major blowouts have occurred in the past year along with several other significant run outs. It leaves the statement that they are “highly engineered” in considerable doubt.

Blasting: *See Bumping* : The use of explosives to break up sandstone into a size that can be removed, transported, and crushed. The miners like to use the euphemistic term “Bumping” because it sounds more benign.

Blowout: This occurs when a berm begins to overflow or becomes water-logged to the point where the berm becomes fluidized. Either the berm is breached by erosion or it is pushed out of the way by the force of the water behind it. When this occurs very little water and sludge are left behind. In the 6 cases in the past year (Aug., 2011 to Aug., 2012) private property and streams and rivers have been damaged.

BMP-Best Management Practice: This is a term now being used by the miners and the WDNR to sell the idea that the miners are using practices that best protect the health and welfare of the residents and the environment. The reality is that most of the time they seem to be “**Best Management Practices**” for the miner’s financial bottom line.

Bribery--Frac-Sand Company Style: See Seed Money.

Bumping: A euphemism frac-sand companies use to mean blasting; it is usually done to break up sandstone for removal.

Clean Product Sand: In the frac-sand business this refers to the sand that has been washed and dried that will be sent to the fracking drilling fields to be used as a proppant. Some DNR “Experts” have stated that once this sand is washed it is perfectly clean with no silt (fine silica & clay) remaining. This has been proven to be false and the rejection of sand (proppant) at the fracking fields due to too many fines has occurred several times. Additionally, NIOSH has found a health hazard at the drilling sites due to -3PM (very fine silica) being present.

“Clean Water Act”: This is a federal law, expanded in 1972, controlled through the USEPA and administered by the Wisconsin DNR. This Act limits the pollutant chemical concentrations that industrial water discharge may contain. Unfortunately, the WDNR has been demoted to the

status of an “Agency” and is in breach of contract with the USEPA on the subject of the “Clean Water Act”. See also: *Halliburton Loophole*.

Closed loop: In engineering terms it means that nothing is put into the system nor is anything taken out of the system. This term is incorrectly used by miners to imply that nothing bad leaves the wet plant’s property, which is not true. In reality you cannot process anything in a “closed loop”. Sand companies must continually discharge about 10-15% of their recycle water as waste water. See: *Waste Water*.

Comprehensive Plan: A comprehensive plan is a local government’s guide to the social, physical, & economic development of their jurisdiction. It is not a regulation, but is meant to be a basis for the rational of determining how the land can be used. Generally it has 9 parts to it: 1. Issues & Opportunities, 2. Housing, 3. Transportation, 4. Utilities & Community Facilities, 5. Agriculture, natural & Cultural Resources, 6. Economic Development, 7. Intergovernmental Cooperation, 8. Land Use, 9. Implementation

Conditional Use Permit (CUP): Most counties have zoned the land contained in the county as commercial, industrial, residential, etc., but when an entity (company or individual) wants to use land or the zoning area for something other than the presently stipulated zoning, that entity must apply for a CUP with the county. A committee of 3 or 5 county board members is appointed to conduct public hearings and educate themselves on the pros & cons to the issuing of such a permit. After they have done due diligence and carefully reviewed the commentaries, then the board should vote on, and render a decision on the application. Unfortunately, many of these board members should be recusing themselves as a result of vested interests as well as bias. In the cases of frac-sand applications, the issuing of these permits have often not been done after due diligence, but were determined before any hearings or self-education were conducted.

Conflict of Interest: See vested interest.

Contaminants: This word refers to any unwanted solids, chemicals and/or bacteria. These contaminants lead to pollution of the air, soil, surface water, ground water, and aquifer. These contaminants come not only from the mining processes, but from other sources as well, such as farming.

Crushing & Grinding: After blasting the sandstone apart, it usually needs to be crushed and/or ground before the wet processing begins. Many miners say they don’t crush and/or grind the sandstone, but they often have both crushers and grinders on their equipment list.

Dam: See: *Berm*

Decibel: This is a measurement term used to quantify how much sound or noise is being generated. This measurement is based on a logarithmic base of ten. 60 decibels is at speaking level, 90 decibels is at the pain level and 120 decibels is at the ear drum injury level.

Dereliction of Duty: *Though dereliction of duty refers to a specific military offense, the same term is used to describe an occurrence of an elected official failing to perform his or her elected duty. The result of such dereliction on the part of an elected official isn't the same as the military consequence. Under military law, a person convicted of dereliction of duty can be given a dishonorable or bad behavior discharge from his or her branch of service, and may forfeit pay or be sentenced to six months confinement. Conversely, an elected official accused of it may not be reelected or may be impeached.* **Source: WiseGeek**

Dike: See *Berm*.

Direct Legislation: Wisconsin's Direct Legislation Statute, section 9.20 provides an avenue for a voice in local matters. It states that at least 15 percent of the voters, from the city, village, or town, casting votes in the last governor election, must sign and file a petition with the city, village, or town clerk requesting that an attached proposed ordinance or resolution (without alteration) be adopted by the ruling local governing body or be referred to a vote by the electors. There are time schedules and conditions that must be followed by the local governing body.

Developer's Agreements: Local governing bodies generally make agreements with the frac-sand mining companies on road maintenance, waste water disposal, silica dust control, noise, etc. Sometimes the governing body makes separate ordinances for some of these items, but most of the time a Town Ordinance (License) covers them all. Most towns abrogate the responsibility of air & water pollution to the WDNR, but the WDNR has recently become so compromised that it cannot fulfill this function. In most cases the town boards are well aware that they should be covering the air & water in the mining agreements that they make with each company. The cost of monitoring the behavior of these frac-sand companies should be borne by the miners.

Divide & Conquer: Frac-sand companies use this technique to separate communities, Towns, Counties, and the people of the State. The process usually involves being gracious and generous to the public officials and those citizens that are going to benefit from the company's presence. A picture of utopia is painted in such a manner that these people cannot comprehend how there will be many suffering from the things that the company is going to do. Also, they often separate their processing plants from each other and the mine; this is so they can obtain permits more readily.

DNR, Wisconsin Department of Natural Resources: The Wisconsin Department of Natural Resources is generally referred to as the "DNR" and sometimes "WDNR". Whichever one of these titles or names is chosen, it is now a misnomer. As of 2011 the WDNR was demoted to an agency and should now be called the *Wisconsin Natural Resources Agency*. The "DNR" is now under the direction of the Wisconsin Department of Administration. Additionally, the WDNR is in violation of their contracts with the U.S. EPA, ACOE, and U.S. Fish & Wild life Agency in charge of the "Clean Water Act".

Double Speak: *In his bestselling book Doublespeak, William Lutz notes that doublespeak is not an accident or a "slip of the tongue." Instead, it is a deliberate, calculated misuse of language.*

Specific Attributes of Doublespeak: Lutz provides several defining attributes of doublespeak: *Misleads,.. distorts reality,.. pretends to communicate,..makes the bad seem good,..avoids or shifts responsibility,..makes the negative appear positive,..creates a false verbal map of the world,..limits, conceals, corrupts, and prevents thought,..makes the unpleasant appear attractive or tolerable,..creates incongruity between reality and what is said or not said.* See: *Hegelian Dialectic.*

Dry Plant: After the sand has been washed and the preliminary sand-grain size sorting has been completed the portion of the sand that contains the product is delivered to the dry plant where it is dried in a rotating furnace, screened to separate the product sand from the gangue or tailings sand. In many cases the product sand is divided into sand used for proppant, glass, etc.

Drying Pond (Tank): See Tailings Pond.

Due Diligence: The care that a reasonable person exercises to avoid harm to other persons or their property. This reasonable person must research and analyze the company or organization in preparation for conducting any transaction with said company or organization.

Economic Prosperity: The presence of frac-sand miners in your area will no doubt initially bring a boom in the economy. The problems lie with "The devil being in the details": 1) long range bust to the boom, 2) environmental degradation related to water, air, natural resources, housing, farming, tourism, etc., 3) loss of recreational activities, weather patterns, and infrastructure, 4) lack of population growth and/or decline, tax base is static or declining; 5) the citizen majority will pay for the few who benefit including the miners.

Expert: An expert, in an area or field, is a person well versed and knowledgeable by virtue of experience and education (The expert does not necessarily need a Masters or Phd.). Any "expert" working for a frac-sand miner is generally saying what it is that the company is paying him/her to say. The WDNR "experts" are suspect from the position of their background (lack of experience), and they are now "Customer Service"-oriented (serving the miners), as per WDNR Secretary Cathy Stepp. The EPA, ACOE, and U.S Fish & Wildlife (Clean Water Act) are funneled through the WDNR.

Fines: See *Sludge:* Fine particles of gangue-siliceous material not usable as a product because of the small size and/or being of a contaminant makeup.

Flocculent: A chemical that attracts very fine particles in an aqueous solution and agglomerates these fines and allows the fines to be filtered or settle out of the solution. Miners rarely say which flocculent or flocculents they use, because of the controversy over acrylamide and the ramifications of it joining with farm chemicals.

Frac-sand Mining is like Sand & Gravel Pits: Most frac-sand miners try to compare themselves to the "Mom & Pop" gravel pits, because it lends itself to the warm and fuzzy notion that they will affect the area around them very little. The truth is that most of the 2500

(Wisconsin) Mom & Pop gravel pits are small and their day's production generally equals from 1/50th to 1/10th of what most frac-sand miners begin producing at startup (150 tons/hour).

Fugitive Dust: The WDNR definition is: Any “solid airborne particles emitted from any source other than a flue or stack.” Of primary concern for frac-sand mining is silica dust. Silica sand & dust is transported off the mining and processing sites by not only the wind, but also by trucks, railcars, water, etc. Sand leaks out of trucks onto the roads; closed railcars lose the sand left on top of the car by wind and gravity; open rail cars lose silica dust via the wind at all times; water deposits the sand & dust to locations where it will dry out and then the wind can pick it up and the dust becomes airborne. The sand and dust on the road is continually ground to dust and smaller dust, unless the frac-sand company keeps the sand cleaned up. On the mining haul routes, the road shoulders become covered in silica dust and it becomes airborne every time a larger vehicle drives by. This “off site” source of silica dust was excluded from the “Minor & Major air pollution source ratings” for frac-sand miners (another loophole type interpretation).

Fusion of the Sandstone: The grains of sand in sandstone are held together by a glass-like substance thought to be crystalline quartz by many; however, the miners insisted that this was *not* silica, but carbonate (Na₂CO₃) or common name soda ash. This argument persisted until it was shown that carbonate was really just as detrimental as silica as far as the lungs are concerned.

Gangue or Tailings: This is the portion of the mineral that has no commercial value and has been mined and separated out from the product portion. See: *Sludge-Fines*.

Good Neighbors: Frac-sand companies use this term every chance they get. The companies make sure they get media attention every time they give a few dollars to schools, charities, or any other philanthropic causes. But this is minuscule compared to the damage they are doing to those who were there before the miners and that have to live near them and their operations.

Google Educated: This term is used by miners when their arguments are rebutted by opposing points of view from persons they feel have only a background compiled from the internet.

Grinding: See: *Crushing*.

Halliburton Loophole: In 2005 the federal government passed a law exempting gas & oil fracking from the “Clean Water Act”. This is why there is so much destruction in the fracking fields, thanks to vested interests and not the need for the National Security.

Hauling Route: This is any public road used by the mining company to convey their sand for whatever reason.

Heavy Metal Ions: The metal ions in question in the Wisconsin and Minnesota area are: iron,

aluminum, mercury, arsenic, lead, and perhaps other unknown elements. These generally come from sulfides, sulfates, and oxides. Little testing has been done on the frac-sand sites for these ions.

Hegelian dialectic: An interpretive method (generally used to put a false premise forward) , originally used to relate specific entities or events to the absolute idea, in which an assertable proposition (*thesis*) is necessarily opposed by its apparent contradiction (*antithesis*), and both reconciled on a higher level of truth by a third proposition (*synthesis*). Also called **Hegelian triad**.

*The Hegelian Dialectic is, in short, the critical process by which the ruling elite create a problem, anticipating in advance the reaction that the population will have to the given crisis, and thus conditioning the people that a change is needed. When the population is properly conditioned, the desired agenda of the ruling elite is presented as the solution. The solution isn't intended to solve the problem, but rather to serve as the basis for a new problem or exacerbate the existing one. When the newly inflamed difficulty reaches the boiling point of a crisis, it becomes the foundation upon which arguments may again be made for change. Hence, the process is repeated, over and over, moving society toward whatever end the planners have in mind. See: **Double Speak**. <http://www.amerikanexpose.com/hegel/>*

Industrial Sand: According to some miners their sand is not frac sand, but “Industrial Sand”. They think that if they use that term that we’ll think that it is more like the little old “Mom & Pop sand & gravel pits”. It replaces “frac-sand and proppant”. A skunk by any other name is still a skunk.

Infiltration Pond: The miners discharge the process-waste (wash) water into this unlined pond in order that it will infiltrate back into the ground water and resupply their water pump. This procedure leaves the ground water exposed to pollution from several sources including toxic chemicals, silt, etc. Infiltration ponds were not allowed before 2011 (NR 815 now makes this legal). See: *storm water pond*

Insurgent: This is the term used by the “Fracking Industry”, including the frac-sand miners; it applies to anyone that is opposed to their operations. In other words you are a rebel to be silenced. Apparently, buying, scaring, enticing with job offer, bribing, etc. are some of the methods used to silence an “insurgent”.

License: See Ordinance.

Lined Pit: See: *Mine Pit*. This is a mine pit that has a proper clay or rubber liner to prevent toxic chemicals in the water from leaching into the groundwater or the aquifer.

Lined Pond: See: *Tailings Pond*. This is a tailings pond which has a proper clay or rubber liner to prevent toxic chemicals from leaching into the ground.

LNG: this means “Liquefied Natural Gas”.

Load Out: Dry frac-sand is generally stored in silos and these silos are generally situated at a railhead/spur/siding for the purpose of filling rail cars. These sidings accommodate from 20 to over 100 railcars depending on how they are situated. Load out refers to the process of filling the cars. When a car is full and moved to a position to form the train it is called a **“pull”**. An empty car that is now positioned to be filled is called a **“put”**.

Loophole: This is any re-interpretation or changes of the WDNR regulations, or additions to the regulations, intended to aid and abet the frac-sand miners. Refer to Act 21.

Makeup Water: This is fresh water pumped by the company from the “high capacity” well to replace the discharged waste water that will be polluting your ground water, surface water, and aquifer (unless it is evaporated in a properly-lined drying pond).

Mine Pit: Frac-sand miners removing a hill usually remove the sandstone or sand to within 5 to 10 feet of the water table. This usually leaves a sandstone floor in the mined area somewhat below grade called the mine pit. For those miners who mine underground and have terminated mining in an area, this area becomes referred to as the mine floor or mine pit. Sludge containing toxic chemicals is usually transported and dumped back into these mine pits which are usually unlined, where the toxins leach into the ground water and aquifer.

Mitigation: Used in this context, it is the act of softening of the damage done to wetlands or the landscape after mining has been completed. The term is used rather loosely in the case of frac-sand mining. Mitigation and reclamation are often used together. See Reclamation.

Mom & Pop Sand & Gravel Pits: This is a term used to describe small sand and gravel pits generally supplying construction and producing 20 to 200 tons per day. Frac-sand miners are saying over and over that they are the same as Mom & Pop sand and gravel pits. They also state that there over 2,000 Mom & Pop operations in Wisconsin and most of the time there is no fuss over them; why should we be treated any differently? Answer concerning the frac-sand mine: 1) The scope of operation is in general 20 to 40 times as large. 2) The number and the level of toxicity of the chemicals used is much higher. 3) The quantity of fresh water used and polluted is enormous compared to the small Mom & Pop operation. 4) The environmental impact on water and ag-land will not be repaired for centuries. 5) The freshly-fractured sand is far more dangerous than the silica that blows off a farmer’s field. 6) With the leveling of so many hills the farmers that are left will notice a weather pattern change, and it will not be for the better.

National Security & Self-Sufficiency: The concept that we need to continue to drill for gas and oil via the fracking process in order to be self-sufficient and for national security, is used to justify the argument for wholesale destruction of the Nation’s environment. In particular, the process is destroying our surface, ground and aquifer waters, as well as our air, weather, and land surface. The reality is that we are selling about 70 % of the oil overseas and the natural gas companies have just been allowed to sell 30 % of the liquefied gas overseas. The gas companies’ goal is to raise liquefied gas sales to 70 % sold overseas. Does this translate to *National Security & Self-Sufficiency*? See: *Hegelian Dialectic*.

NR 135: This is the statute number for the WDNR's reclamation procedure, the performance of which is required of the mining companies when they have finished mining an area. The statute is not comprehensive enough to do anything but maybe prevent erosion. Nature will perhaps reclaim the land in a couple of centuries if the weather patterns have not been altered too drastically. See Reclamation

Off Site Processing: Some sand mining companies are now siting the process plants and mine site on different parcels of land. This is done for two reasons: 1) Mines are usually not near railheads. 2) It is easier to get the operations permitted when they work with just part of the whole operation. This is one type of "Divide & Conquer".

Open Meeting Law: Wis. Stat. & 19.81(1). 2 The open law requires that "all meetings of all state and local governmental bodies shall be publicly held in places reasonably accessible to members of the public and shall be open to all citizens at all times unless otherwise expressly provided by law." There is thus a presumption that meetings of government bodies must be held in open session. There are some exemptions allowing closed sessions in specified circumstances for the purpose of protection of the public interest. Closed sessions are not to be used to conceal from the public that which may reflect poorly on the governing body or raise the ire of the public. Example: Hammering out a specific deal with a private company.

Off-Site: This means whatever is *not* on the property of the mining company's excavation. Process.

Ordinance--License: The term ordinance is used here in the context of frac-sand mining (non-metallic) licensing. A town under its police power can adopt this type of ordinance based on the Wisconsin Supreme Court ruling in the case of Zwiefelhofer VS. Town of Cooks Valley. These town ordinances may be patterned after the Town of Cooks Valley non-zoning ordinance which licenses and regulates non-metallic frac-sand mining.

Note: To adopt this type of ordinance is not sufficient, unless provisions are made to monitor and enforce such an ordinance.

Overburden: The entire thickness of soil over rock or over a specific bearing stratum. An undesirable top layer covering rock, gravel, or other useful material wanted for a salable product. [McGraw-Hill Dictionary of Architecture & Construction:](#)

People of Stature: The governing bodies of the State of Wisconsin, counties, and some towns use this terminology to describe individuals that are working for the state, the heads of state-wide organizations, those with Masters and/or Phd.s (whether or not these degrees are related to the issues involved with frac-sand mining). The only requirement is that they be in favor of mining.

Ph (Acid to Basic): Ph is a measurement of the ratio of hydrogen ions (H+) to hydroxide ions (HO-). A Ph of 7 means they are equal (neutral); any number below 7 is *acidic* and any number above 7 is *basic*.

PM-Particulate Matter: “Particulate matter,” also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller (-10PM) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. In the sand mining industry the primary concern is sand “particulate matter”, especially the -3PM. www.epa.gov/pm/

Priming the Pump: See: *Seed Money*.

Polyacrylamide (Is Not Stable): The miner’s repeated statement that “polyacrylamide is stable” does not stand up to the facts. Polyacrylamide is created by combining many molecules of the monomer acrylamide. To hook single molecules of acrylamide into the molecule polyacrylamide, it requires the input of energy, either by heat or electrolysis. No compound that requires input of energy is totally stable because its tendency is to disassociate. See acrylamide ...(potent neurotoxin).

Produced Water: This is the term (euphemism) that well fracking people use for the polluted water pumped out of the well after completion of the fracking operation. About 70 % of this water remains underground and migrates upward toward and in the water aquifer, polluting the drinking water.

Product Sand: See: *Proppant*

Proppant: This means frac-sand. Proppant is a word derived from prop. The fracking industry uses it, because the sand suspended in the hydraulic fluid injected into the ground props the cracks and fissures open after the pressure of 7,000 to 9,000 lbs./in. sq. has created them. This allows the gas or oil to flow through these cracks to the well-pump and from there it is pumped to the surface.

Proprietary Information: This usually means information that is patented or copyrighted. The miners are using this term to cover up what kind of chemicals they are using, how much water they are using, how the waste water is disposed, etc. Some of this is reported to the WDNR, but their hope is that the general public does not find it or cannot determine these things from observation. Most of our public officials do not want to know and do not press the issue.

Public Hearing: This is a formal gathering of officials of a governing body and public at large, where the views and concerns of the members of the public are verbally expressed regarding the governing officials actions to be taken. These officials are required to consider the comments expressed in its evaluation of the action to be taken. However, in Wisconsin hearings

have become a ritual formality and little consideration is given to the comments, unless they come from frac-sand companies & WDNR so called “experts” (people of stature).

Pull: See “Load Out”

Put: See “Load Out”

Rai

lhead & Spur: These two words are often used interchangeably; it is a side track to the main track where cars may be stored, loaded or unloaded or switched to another rail track, as the case may be.

Reclamation (of the Mine & Processing Area Land): Reclamation of land means, to restore the land to its original condition. In mining any area of land, it is impossible to restore the land to its original condition. Even if the top soil (the top 4 to 12 inches of the land) is carefully removed without mixing any substrate material, it will take from 150 to 500 years before it will grow crops without artificial help. If it can grow the cover plants that the DNR tells the miners to use, then the cover plants might hold the erosion and air pollution down.

Recuse: To disqualify or seek to disqualify from participation in a decision on grounds such as prejudice or personal involvement. Example: A person should recuse themselves (or be recused by others) in a situation in which they as a public official or fiduciary, (contrary to the obligation and absolute duty to act for the benefit of the public or a designated individual), could exploit the relationship for personal benefit, typically pecuniary (property and/or money).
by the Free Online Dictionary www.thefreedictionary.com/recused

Recycle Wash Water System: Presently most mining companies recycle 85% to 90% of the water used in their wet plants A wet plant is used to wash the fine particles from the product sand. Each ton of sand mined will require from 3,000 to 3,700 gallons of water to wash the sand, depending on what percentage of fines are present in the sand. Frac sand mines start out processing 150 tons of extracted sand per hour, because the description of “Minor Source” for the “Air Pollution Permit” has been arbitrarily set up to allow them to do this. In order to process the sand at this rate the water system will need to contain from 250,000 to 300,000 gallons. The water system requires that about 10 % of this ‘wash water’ be discharged as ‘waste water’ (and fresh water pumped in at the same rate) on a continual basis. In round numbers, this means that ½ million gallons per day is flushed from the system into the surface waters (creeks, rivers, lakes) or the ground water (infiltration ponds) as sewer conduits. Adjunct: Mining companies are now saying in public that they use only 10 to 35 % of this ½ million gallons of this discharged water; however, if they are running at 150 tons/hr., their product sand would not be clean enough to sell. This 10 to 35 % would not be realistic.

Run Out: This term refers to a small blowout. See: *Blowout*.

Seed Money-Priming the Pump: This describes the method of influencing public officials and the general public giving money to schools, charity, and other worthwhile causes. If we look at the amount of money invested in these activities, it is a mere drop in the bucket compared to the

cost inflicted on the people affected by the sand companies' operations. This is nothing other than a semi-legal bribe given to the general public and the public officials.

Settling Pond (Tank): See Tailings Pond.

Silicosis: Disease of the lungs caused by prolonged inhalation of silica dust or several heavy exposures in a short period of time. The -3PM remains in the lungs scarring the inner tissue of the lungs and sometimes causing cancer. Most of the time these diseases do not show up for 10 to 30 years, but can show up much sooner in children that have been exposed. (The younger the age at the time of exposure, the earlier the diseases will set in.)

Silt: See: *Gangue*

Silt Pond (Tank): See Tailings Pond.

Sludge-fines: Sludge is the term used to describe the fine silica and clay that is suspended in the waste water solution, to which the miners then add flocculants (and accelerants) for the purpose of collecting and settling this material at the bottom of tanks or ponds. The miners can use a drying process to form sludge cakes, and/or a filtering process to form sludge cakes. Some miners pump this slurry on a continual basis to large ponds for the purpose of continual dewatering and the sludge is left there for its final resting place. Remember, this material has residual chemicals that are harmful to the environment and humans and is usually dumped back in the mine pit that is usually not lined (but should be to prevent contamination of groundwater).

Spot Zoning: Amending a zoning ordinance to zone a relatively small area for uses significantly different from those allowed in the surrounding area to favor the owner of a particular piece of property is termed "spot zoning." The Wisconsin Supreme Court has defined spot zoning as a rezoning "*whereby a single lot or area is granted privileges which are not granted or extended to other land in the vicinity, in the same use district.*"

Guide to Community Planning in Wisconsin by Brian W. Ohm

Storm Water Pond: As the name indicates, this is a pond that was intended to capture rain water that may be contaminated by silica silt, fuels, and chemicals of all sorts that may be carried by rain water into surface or ground waters. Unfortunately, many companies are now using the storm water pond as a waste water discharge site or worse yet, as an infiltration pond. See: *Infiltration Pond*.

Surface Waters: This means any creek, river, lake, etc. As per a new WDNR ruling in 2011, any waste (wash) water from a frac-sand mining operation can now be discharged directly into any one of these bodies of water, as well as any dry run en route to surface waters. This is an expansion of the Halliburton Loophole. See: *Halliburton Loophole*.

Switch Out: Switch out is used to indicate the removal of a full car (a pull) from the loading zone and the insertion of an empty car (a put) in its place. This operation is rather noisy and is

repeated almost continually in most frac-sand loading operations. Many ordinances now require noise abatement measures to limit the noise level to 60 decibels during the day and down to 50 decibels at night.

Tailings: See: *Gangue*.

Tailings, Silt, Settling, & Drying Ponds: In the case of frac-sand mining, most of these terms are interchangeable. The gangue, waste, refuse, silt-fines, tailings, slimes, leach residue, or slickens^[1] are usually transported in water to the ponds. These ponds should always be properly lined, but since 2011 they often are not. Tanks are sometimes used in place of ponds. After the water is evaporated out, the dried residue (or sludge) is then removed and transported back to the mine pit to be used as fill for reclamation. This mine pit should be properly lined to avoid ground water contamination, but usually is not lined. See Gangue or Tailings ^[1]<http://nevadacountygold.com/about/41-about/167-pressure-builds-to-end-hydraulic-gold-mining> (This would be related to a “blow out” of a berm.)

USEPA: United States Environmental Protection Agency.

Vested or Conflict of Interest: *A clash between professional obligations and personal interests arises if the individual tries to perform a duty while at the same time trying to achieve personal gain. The appearance of a conflict of interest is present if there is a potential for the personal interests of an individual to clash with fiduciary duties, such as when a client has his or her attorney commence an action against a company in which the attorney is the majority stockholder.* Free Online Dictionary. (It also describes a situation in which an attorney or law firm represents parties on both sides of an issue.)

Waste & Wash Water: This is the discharged water produced after the washing and cleaning of the sand takes place in the “wet plant”. Most sand companies say they use very little water because they recycle the water. However, because they require between 3,000 to 3,700 gallons of water to wash each ton of sand they must have about 250,000 gallons of water in their recycle system. Because it is necessary to add chemicals to the water to flocculate the silica silt, there is a need to discharge about 10 % of this water on a continual basis. For a plant running at 150 tons/hour, it would mean that about 500,000 gallons/day would be discharged to a infiltration pond, tailings pond, storm pond, ground, or surface water, etc. This means they must pump an equivalent amount of fresh water to keep the recycle system sufficiently stocked. (This is called “makeup water”.) Some of these companies are now saying that they have cut their use of water in half; that could happen only if they are using additional chemicals to accelerate the flocculation process. These additional chemicals potentially pose a far greater chance of more toxic pollution than what could be expected from the chemicals used initially, even though less water is used.

WDNR: Wisconsin Department of Natural Resources. See: *DNR*.

Wet Plant: See Recycle Wash Water System.