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ADEQ CAFO,  
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While the current public meeting covers statewide permits, the comments about C&H should be considered as part of the process, since they are the only facility currently permitted and thus an example of what others will likely be.

The recent fracking for natural gas, the wells themselves, and seismic testing combine to stress what were relatively stable geological formations. In Oklahoma and Pennsylvania, which were previously pumped for oil, cumulative impacts have been more obvious and immediate, but the same process has begun here. All of these impacts, as well as compaction from ever-increasing traffic on area roads and construction sites, combine to crack previously solid rock layers. New cracks trap water and ice expansion widens and deepens cracks, all with resulting groundwater loss from perched aquifers.

Another impact of destabilizing geologic formations is the increasing landslides radiating from fracking sites. For example, recent landslides on Falling Water Creek, Mt. Judea, highway 7 south of Jasper, Low Gap, and Compton all line up pointing to Greenbrier. Another landslide on Spirits Creek (Mulberry River) likely links to fracking in the Arkansas River valley.

While karst topography is confined to the Ozark region, the highest elevation caprock in both Boston mountains (Atoka) and western Ouachitas (Jacks Fork) is sandstone, which is a brittle rock incapable of supporting its own weight, so that pumping voids below causes settling and collapse.

Subsidence is a predictable result, which in turn creates more impacts.

A point raised at the April 11 meeting by our local doctor applies statewide. Confinement operations by their nature force unnatural concentrations of animals in ongoing close proximity, which creates ideal conditions for diseases to mutate and spread. Some hog diseases can already spread to humans and more can result. The use of antibiotics as growth hormones, as well as to control or prevent diseases, weakens their effectiveness, not only for hogs but for humans as well, and will gradually work into food. Medicine without antibiotics will be set back a century, especially for invasive procedures and emergency care.

Overkill use of chemicals, combined with the implicit lack of exercise from close confinement, will drastically reduce the quality of meat produced. Genetic engineering of the hogs will improve some things while sacrificing others, and makes the overall population more vulnerable to new problems. Expanding operations with ongoing permit modifications is project fragmentation with only partial disclosure at any point. Expanding impact areas as previous sites present unanticipated problems just compounds the error and risks. Tiering off previously approved mistakes as excuse to make more appears to be a deliberate attempt to undermine existing regulations and create precedent for bad management practices.

County soil surveys give information on permeability, available water capacity, organic matter content, natural fertility soil reaction, surface runoff, erosion hazard, and root zones shrink-swell potential and depth to bedrock, all of which matter on spread fields. However, the mapping scale overlooks pockets of other soil types, so on-site testing should be made by competent soil scientists.

Either surface runoff or leaching will result in sediment deposition wherever slack water occurs. This deposition will again erode or leach with increasing volume or flow rate; meaning slow release of contaminants into water over longer time and with recurring appearance of them at varying levels at any test site. With built-up deposits slowly releasing contaminants, monitoring current levels becomes difficult or impossible; so that the only effective control is to shut down the entire operation and hope for eventual recovery. Retroactive accountability isn't likely; but proceeding on ignorance and wishful thinking shows a lack of responsibility to the public. The implicit function of ADEQ seems to be damage control and countering scientific logic.

Methane flares are a threat to wildlife wherever they occur. C&H in a direct line north of Holla Bend National Wildlife Refuge is a particular threat to migrating birds and bats as well as resident wildlife, but migration impacts would occur almost anywhere. On foggy nights, bright lights reflect and refract light into diffuse ambient glow which blurs images and causes night-blindness in diurnal birds. Drivers in fog realize that bright beams blur more than low beams. As an ornithology instructor at the University of Missouri-Columbia, I've had to spin and inject with formaldehyde pickup loads of dead birds from one night's radio-tower kill. (with cold light; flare damage would be even more.) Some species have narrow timing on migration waves; so a single kill could greatly reduce or eliminate one or more species in that flyway. Species confined to the Mississippi flyway (largest in N. America) could face extinction. Birds blinded by glare start circling in to where they can still see until too close to the light source.

Anyone driving through southern Illinois in the mid-sixties noticed the ongoing smell from hog feedlots; many of which were effectively open-air CAFOs. Flaring off methane creates more heat than the atmospheric heat resulting from methane release and concentrates impacts that time would reduce.

CAFOs demand water equivalent to a large city; putting a strain on regional water supplies. The community of Lead Hill objected ~~to~~ paying for water they weren't using and have faced lawsuits and criminal charges for their elected officials. A major user of this regional water is the CAFO. Bleeding remote communities to reduce costs to CAFOs is a social injustice as well as an eventual threat to everyone's water when an overloaded regional water system fails. Agency apologies (if forthcoming) and excuses won't repair the short-term damage or long-range problems. Corporate shuffling, bankruptcy or mergers avoid responsibility, and put the burden of cleanup and restoration on the public.

The obvious solution is prevention. Humanity survived until the last few decades on traditional farming. A return to small-scale, labor intense farming is ~~what~~ <sup>Jefferson was right</sup> is needed. Industrial-scale agriculture presents more risks than benefits. Regional water systems should be eliminated and future money and other resources should be used to develop local water sources. (Springs, shallow wells, small impoundments) with compensation to owners for water supplied to neighbors without adequate water. (Rainwater collection and storage can expand beyond groundwater.) We don't need to be drinking below Branson or the hog factory.

CAFOs have been in operation outside Arkansas for awhile. The operational expectancy and later problems of abandonment including cleanup costs, mitigation, and damage claims should be considered as well as immediate problems.

To contain overflow discharges, an additional pond should be constructed and maintained empty to anticipate events you admit are inevitable. Overflow could then be slowly pumped back into the processing system.

Methane could be bottled and sold to public buildings schools, courthouse, private individuals or chemically treated to produce fertilizer, but in any case it should be used instead of wasted and creating problems in the process.

Full disclosure of input to feed should be made. Trade secrets should be at least given to the state for public protection. If CAFOs claim they aren't using hormones or antibiotics, they should have no problem disclosing what they are using.

In summary, ADEQ should not reauthorize the C & H permit or allow additional CAFOs. The public input process is badly flawed in that relevant information and answers to questions raised in the public meeting do not have ~~a~~ adequate time to make a considered response; either verbally or written. Error should be on the side of caution.

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