

Comments to ADEQ Re: ARG590001, AFIN 51-00164
C&H Hog Farm permit modification request to install pond liners, cover and flare

Pond Liners:

A properly installed synthetic (multi – layer) liner system that included engineered leak detection specifications , leachate collection and removal system would have been more appropriate in the initial design of the Waste Lagoons. These should have followed the guidance of RCRA Subtitle D requirements for liners although it is not a RCRA facility. These waste lagoons are situated on karst and are allowed to leak via the general permit. Obviously, a permit allowing leakage of several thousands gallons of hog waste a day is acceptable by the Arkansas Department of Environmental Quality (ADEQ) . This permit modification request is another example of the "cart before the donkey" scenario just as the recent court ruling requiring a complete Environmental Impact Statement to be completed because one wasn't done prior to the permitting of this large scale swine concentrated animal feeding operation (CAFO) in a fragile ecosystem. This permit modification or "retrofit" appears to lack many engineering requirements. Adding a liner at this point could cause more damage (i.e. please review ADEQ inspector's notes and photos) if not properly installed. These waste lagoons are integrated with large and small consolidated rocks in the regolith (i.e. soils) that need to be removed prior to the installation of the liners. That combined with the lack of a proper ground water detection monitoring well network surrounding the waste lagoons is one of the main reasons **I am against this permit modification.** I realize that a groundwater monitoring network is not part of this public comment, but I believe it to be an important component to this facility. Additionally, I didn't notice a construction quality assurance (CQA) plan for the installation of these liners. This makes this task (i.e. liners) substandard to write the least.

I would like to reference one of the first **ADEQ Compliance Assistance Inspections** for the C&H Hog Farms to help support my thoughts and concerns on the pond liner permit modification.

“September 10, 2013 Jason Henson C & H Hog Farms HC 72 Box 10 Mt. Judea, AR 72655 Re: Compliance Assistance Inspection (Newton Co) AFIN: 51-00164, Permit No.: ARG590001”

Link to ADEQ Inspections online:

<http://www.adeq.state.ar.us/downloads/webdatabases/inspectionsonline/073447-insp.pdf>

Please review the first page of the letter to C&H Hog Farms comment 3.

"The wastewater pond liners were observed to have erosion rills, desiccation cracks and gravel to cobble-sized coarse content within the liner clay. If the liner is to be exposed for extended periods of time, it should be protected from deterioration by erosion and desiccation." This was in reference to the existing clay liner.

Please look at the following pages for inspection photos showing the clay liner with **“cobble-sized coarse content within the liner clay”** on pages 8, 9 and 10. This is what C&H has for a clay lagoon liner presently which is unfit from an engineering standpoint.

I assume the erosion rills have been addressed. I mention the **“Compliance Inspection Report”** because **the ADEQ inspector must have felt it important enough to highlight (i.e. erosion rills, cobble sized rocks, etc.) in their report.** Please note white “cobbles” that appear to be chert and/or limestone in those photos. Even if these **“cobble-size” consolidated** materials met the specifications of the original construction design (i.e. which they should not have), it would be extremely difficult , if not impossible to remove these rocks since they are incorporated into the clay matrix before the synthetic liners are applied. Additionally, the vertical and horizontal components of hydraulic pressure from millions of gallons of hog waste have further imbedded these rocks into the sidewalls and bottom of the waste lagoons. Obviously, the consolidated rocks could be a threat to the proposed synthetic liner(s) with respect to damage (i.e. ripping) and potentially encapsulating underlying gases which could result in damage to the liners. Please review the photos of the chert and limestone and see if you feel this would meet engineering specifications for installation of a

synthetic liner. Are these liners going to require an engineering stamp from an Arkansas Professional Engineer (i.e. P.E.) after installation? Did an Arkansas P.E. design this proposed liner installation?

I was especially disturbed to discover after reading some of the BCRET Quarterly Reports that they appear to have a very **limited groundwater detection monitor** well network that should require quarterly monitoring. Again, I understand this is not a RCRA facility, but there are those that would argue that point. Two “interceptor trenches” on one side of the waste lagoons and one “house well” on the other side to monitor the waste lagoons leakage and possible water quality impacts to the groundwater is insufficient. **Until there is a proper ground water monitoring network, the liners should not be permitted. Many still have to rely on groundwater for their primary drinking water source in the surrounding area. ADEQ is putting citizens of the State of Arkansas at risk because of the flawed design at this CAFO.**

From several of the BCRET Quarterly Reports (2014-2015):

“Continued collection weekly base flow and periodic storm flow water samples from Big Creek above and below the C&H Farm, along with water from the spring, culvert, surface runoff sites on Fields 1,5a, and 12, **interceptor trench** below the slurry holding ponds, and **house well** for chemical analysis.” This is insufficient for monitoring groundwater surrounding the waste lagoons.

I feel impact (i.e. past and future) of the waste lagoons’ degradation to the groundwater (i.e. synthetic liners or not) will not be detected without a strategically sited groundwater detection monitoring well network . It is apparent that better coverage to delineate groundwater contamination that could and/or is emanating from the waste lagoons could be done with a groundwater monitoring network surrounding the waste lagoons. If the lagoons have been leaking the allowable permitted limit, (i.e. estimated at several thousand gallons a day [pre-liner]), the swine waste must be going somewhere. Plant nutrient uptake is nonexistent in this scenario because the swine waste is below the soil and in the bedrock. Will the permitted leakage remain in the permit once the liners are in place? If so, this confirms that leakage of toxic swine waste from the waste lagoons continues to be acceptable by ADEQ. This is pathetic to write the least. One hopes everything at this state of the art facility is going to work as the engineers who designed it dreamed. If not, who will be at loss here?

Gas Flare and Cover System:

This appears to be another request to modify this "state-of-the-art" facility. This system might provide a reduction in some gas emissions, but it does not address the emission of exhaust gasses and particulate mater from the large exhaust fans of the two industrial swine buildings , nor does it address the issues of the fate of those bi-products concerning the health of the residents and nearby school through the risk pathway of inhalation. I feel there are already serious airborne health issues that are not being monitored. The design appears to lack any air quality monitoring. Potential health risk to the people of all ages that are impacted by this hog factory, is ongoing. So adding additional “unknown” emission(s) is only another weak link in this "state-of-the-art-make-it-up-as-you-go facility".

Additionally, adding a flare system that may be unmonitored for exhaust emissions is unacceptable. There is no mention of any type of explosive detection and/or warning system(s) to alert if something went critical. This is a Occupational Health and Safety (OSHA) protocol that is being neglected. I appreciate this opportunity to comment.

August 07, 2015

John Murdoch, Wesley, AR 72773

From: [J. Murdoch](#)
To: [Water Draft Permit Comments](#)
Cc: artzbarn@gmail.com
Subject: Fwd: Public Comment: C&H Hog Farm Permit Modification (Liners/Flare) (Please post my comments on your website, I spent a quite some time trying to put my concerns and comments down) ~ Thank you!!!
Date: Monday, August 10, 2015 10:07:53 AM
Attachments: [CH_Hog_Permit_Mod_Liners_Flare.doc](#)

----- Forwarded message -----

From: "J. Murdoch" <jfmurdoch3@gmail.com>
Date: Fri, 7 Aug 2015 12:04:40 -0500
Subject: Public Comment: C&H Hog Farm Permit Modification (Liners/Flare)
To: Water-Draft-Permit-Comment@adeq.state.ar.us, John Murdoch
<artzbarn@gmail.com>

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Please place my public comments on permanent record please, see attachment.
If there is any problem reviewing my Word Document, please let me know
before the deadline and I will send it in a form that you request.

Sincerely,
John Murdoch