

Nov. 20, 2015

W. Va. Dept. of Environmental Protection
Division of Air Quality
601 57th St., SE
Charleston, WV 25308



Re: Sandston Waste Water Treatment Plant, Doddridge County
Air Quality Permit

ID # 017-00157
Reg R13-3260
Company Antero
Facility SANDSTON Initials JW

To Whom it may Concern;

I urge you to deny the "permit to pollute" that has been applied for by Antero Resource et al, in connection with the proposed Sandston Waste Water treatment Facility.

Here in Doddridge County we've ^{seen} permit after permit approved. Permits that allow pollution of the air we breath with hazardous, carcinogenic poisons. This proposed facility would add significantly to the burden of air pollution which we have to process through our lungs.

This permit should take into account the high volume of diesel truck traffic and it's attendant exhaust, a documented source of ultrafine particles known to cause a wide range of health problems.

Clean air is a precious natural resource. I urge you to protect it by denying this permit.

Thank you for considering my comments,
Eric Bernhardt
151 Chipps Run
West Union, WV 26456

NON-CONFIDENTIAL

Williams, Jerry

From: David M. Scott <oldgator@zoominternet.net>
Sent: Monday, November 23, 2015 6:20 PM
To: Williams, Jerry
Subject: Sandstrom Waste Water Air Quality Permit # R13-3260

Jerry.Williams@wv.gov
WV DEP Division of Air Quality
601 57th St., SE
Charleston, WV 26503

Sandstrom Waste Water Air Quality Permit # R13-3260

Dear WV DEP,

I am writing to express my concerns regarding the Air Quality Permit for the Sandstrom Waste Water Facility.

I have read the permit, and I see that many of the emissions listed are listed as estimates. Other emission numbers are manufacturer estimates, and not operator estimates. Manufacturer estimates can vary greatly from operator's actual emissions, due to the manner in which the equipment is operated and maintained. There is also no mention of emissions that would raise limits concerning starting up equipment, shutting down equipment, and malfunctions (SSM), which would and could contribute to higher emissions, putting them closer or over the major source threshold.

All VOC emissions will be routed to a thermal oxidizer. Again, the 98 % control of VOCs is dependent on correct operating temperature and constant monitoring to make sure it is at optimal efficiency. The permit allows Antero six (6) months to establish a minimum combustion chamber temperature of 1500 degrees Fahrenheit. For the six (6) months the facility will be operating, at unknown thermal efficiency of the thermal oxidizer, higher emissions than that listed on the permit could be the result. The risk of possible higher emissions, should be included in the Air Quality Permit. For a period of 6 months, Antero will be allowed to emit unknown emissions before a required compliance test. What happens if the compliance test fails? Will they be allowed to continue to operate at a higher emission level than they were permitted for?

I see no backup plan in the case of failure, which would allow large quantities of VOCs to be released into the air. Claiming there would be 98% efficiency on the Air Quality Permit does not appear to include any operational problems of the one emission control device on the facility.

Estimated emissions on every operation of the Sandstrom Facility is cause for great concern. The facility is close to major source thresholds, using only estimates as a basis for an Air Quality Permit. There is also the addition of the Alvadore Wellpad, which is also operating under an Air Quality Permit. The distance between the two facilities depends on points of measurement. Measured edge to edge, the distance is much closer than measuring from center to center. With the combination of the two emissions sources, the Sandstrom facility would exceed major source thresholds by a significant amount. The Division of Air Quality has the authority to decide on a case by case basis if the Alvadore wellpad and Sandstrom Facility can be combined in determining major source contamination, and I would ask that you do so. Relying on estimates is not good enough when a proposed facility is so close to major source contamination levels.

Thank you for your consideration in this matter.

David M. Scott
45 Skyline Drive

NON-CONFIDENTIAL

ID # 017-00157
Reg R13-3260
Company Antero
Facility SA-05/24/11 Initials lw

Williams, Jerry

From: Jody Mohr <jodynamic7@hughes.net>
Sent: Friday, November 20, 2015 6:54 PM
To: Williams, Jerry
Subject: Sandstrom Air Quality Permit # R13-3260
Attachments: Sandstrom Public Comments.docx

ID # 017-00157
Reg R13-3260
Company ANTER
Facility SANDSTROM Initials JM

NON-CONFIDENTIAL

11/20/15

To: Jerry Williams

Division of Air Quality

WV DEP

601 57th Street East

Charleston, WV 25304

RE: Public Comments Sandstrom Air Quality Permit # R13-3260

- The Sandstrom Waste Water Treatment Plant is projecting emissions of NOX and Carbon Monoxide emissions that come very close to the maximum threshold level that would designate this facility as a major source of air bourn pollutants. The ability of the WV DEP to identify and consider the aggregation of adjacent facilities such as the Alvadore well pad; can be made on a case by case basis. Due to variants such as projected efficiency factors as well as the close proximity of the plant to achieving major source criteria; it would seem prudent for the WV DEP to provide some type of analysis as to how the determination is being made nearby well pads are not contiguous or adjacent.
- Publically, the Sandstrom facility has been presented as new technology. Relying solely upon projected manufacturer estimates without considering improper equipment operation, failures, malfunctions as well as startups and shutdowns while allowing 6 months to achieve minimum combustion chamber temperature in the thermal oxidizer should all realistically be factored into the permit. Relying upon a projection of 98% efficiency and in light of these variable; 6 months is a prolonged period of time in which less than 98% efficiency can be expected. If the facility is permitted to function for 6 months without ensuring it can meet the necessary temperature of the VOC control device, these emissions should be required to be included in the permit. Consideration should be given to requiring a shorter period of time to reach compliance; 3 months is more protective than 6.
- Condition 7.5.1 requires the operator to report any deviations from the thermal oxidizer's design or performance to the DEP quarterly. Since this is such an essential element of the proper functioning of the plant to reduce hazardous emissions, monthly reporting should be required.
- Leaks in the closed vent system are to be monitored by 'visual, olfactory, and auditory inspection.' For such an advanced technology with the potential to emit vast amounts of VOCs to rely upon the subjective senses of individuals appears not only not protective but an insult to the technology itself. Actual equipment should be required to monitor for leaks with any detection reported either immediately or at a minimum monthly. Optical imaging via FLIR cameras and EPA method 21 should be required.
- Condition 10.2.1 (d) and (e) allows the operator to deem certain equipment as 'unsafe' and/or 'difficult' to inspect. Allowing the operator to make such a designation of 'difficult' allows

inspection to take place only once in 5 years. An 'unsafe' designation carries with it the expectation of inspection 'as frequently as possible.' This appears very lax and certainly not protective. If the operator cannot access an area or piece of equipment easily or safely; this would seem to present a very strong argument for the requirement of visual/and emission detection equipment as a condition of this permit.

- Monthly inspections would also ensure that fugitive emissions from leaks or equipment malfunctions are not permitted to continue from month to month or year to year.
- The requirement of fence line monitoring should be a condition of this permit to ensure the quick detection of fugitive emissions and is a reasonable one in order to ensure the health and safety of the public.

Jody Mohr

2328 Miletus Road

Salem, WV 26426

Doddridge County Resident

Williams, Jerry

From: Linda Ireland <irelandlinda@yahoo.com>
Sent: Friday, November 20, 2015 12:59 PM
To: Williams, Jerry
Subject: Re: 017-00157 (13-3260) Antero Sandstrom frack WATER TREATMENT Facility Greenwood Doddridge County WV

Jerry Williams, P.E.
Engineer
WVDEP – Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0499 ext. 1223

Dear Mr. Williams:

As a resident of Doddridge County, I appeal to you to decline the above-referenced application.

I know it's your job to consider technical matters of compliance, but I also ask you to consider the people who live near the proposed facility. They have created and enjoy a rural lifestyle that will be utterly destroyed by the proposed facility. They are citizens of West Virginia and the United States and own property which they have every right to enjoy, without the threats to their health and well-being that this facility presents. Please decline the permit.

Our county is already besieged by the gas industry—well pads, diesel truck traffic, compressor stations, pipelines, and major processing facilities such as Central Station and Mark West Sherwood Plant already emit toxic substances into our air. We who chose the fresh air, clean water, and quiet of country life find these destroyed.

Who is monitoring the air quality in Doddridge County? Who is tracking the aggregate emissions of all the gas industry activities? What are we to do when we live near a facility such as the proposed water treatment plant, and have to breathe known carcinogens and other harmful substances? Please decline the permit.

On technical matters, the facility is very close to being a major source of NOx and carbon monoxide. Is it not possible that calculations were manipulated to bring these numbers under the threshold? How will compliance be monitored and enforced? Given your agency's responsibility to protect the air quality, monitoring must be frequent and continuous. It may make more sense to consider this a major source of NOx and carbon monoxide, and require the facility to comply with major source requirements.

I know others have submitted lists of technical matters and I hope you will consider them. But most of all I hope you consider the lives of the local residents. Thank you for your consideration.

Sincerely,

Linda Ireland
993 Black Lick Road
Salem, WV 26426
304-641-3689
irelandlinda@yahoo.com

ID # 017-00157
Reg 13-3260
Company Antero
Facility Sandstrom Initials LI

Williams, Jerry

From: Julie Archer <julie@wvsoro.org>
Sent: Friday, November 20, 2015 11:25 AM
To: Williams, Jerry
Cc: garyZ@wvcag.org; Cdellis; cindy rank; Robin Blakeman
Subject: Comments Regarding Draft Permit R13-3260 for Antero Resources' Sandstrom Water Treatment Facility
Attachments: 2015.11.16 Antero Well Pad Distance.png;
SORO_EtAI_Comments_SandstromDraftPermit.doc;
SORO_EtAI_Comments_SandstromDraftPermit.pdf

Dear Mr. Williams,

Please find attached (in two formats) comments regarding Draft Permit R13-3260 for Antero Resources' Sandstrom Water Treatment Facility on behalf of the West Virginia Surface Owner's Rights Organization, WV Citizen Action Group, the West Virginia Highlands Conservancy, and the Ohio Valley Environmental Coalition.

Thank you for the opportunity to comment. If you have any questions or require any additional information, please feel free to contact us.

Sincerely,

Julie Archer, Project Manager
WV Surface Owners' Rights Organization
1500 Dixie Street
Charleston, WV 25311
(304) 346-5891
www.wvsoro.org

ID # 017-00157
Reg R13-3260
Company Antero
Facility SANDSTROM Initials JA

NON CONFIDENTIAL

November 20, 2015

Via Email

Jerry Williams, P.E.

West Virginia Department of Environmental Protection

Division of Air Quality

601 57th Street, SE

Charleston, WV 25304

jerry.williams@wv.gov

Re: Comments Regarding Draft Permit R13-3260 for Antero Resources' Sandstrom Water Treatment Facility

Dear Mr. Williams,

Please accept the following comments regarding Draft Permit R13-3260 for Antero Resources' Sandstrom Water Treatment Facility on behalf of the West Virginia Surface Owner's Rights Organization, WV Citizen Action Group, the West Virginia Highlands Conservancy, and the Ohio Valley Environmental Coalition.

1. Aggregation with nearby sources should not be rejected based on the dictionary definition of "adjacent."

While the Division was right to reject Antero's argument regarding the SIC codes for nearby facilities, DAQ has noted that the nearest Antero facility is a well that's 0.65 miles northeast of the facility and has concluded that "[t]hese properties are not contiguous or adjacent." We believe this latter determination is wrong. First, it's a case-by-case determination, and DAQ did not attempt any sort of analysis in making this determination. It simply noted the dictionary definition of "adjacent" and stated that 0.65 miles away does not meet the definition. However, it is almost certain that the well will use the wastewater treatment facility, and there's a possibility that it will send its water by pipeline (instead of truck, as Antero states in the application). Second, DAQ is misstating the distance between the well(s) and the wastewater treatment facility. The Leason Run Unit 2H and Hudkins Unit 2H, which are on the same pad are much closer. Instead of 0.65 miles away, these wells appear to be 0.42 miles away if measured cleared property edge to pad edge, rather than from center to center. (See attached a map demonstrating this.) These wells may be even closer if one were to measure from the Antero Sandstrom property line, as opposed to the cleared edge.

2. The facility is very close to being a major source of Nitrogen Oxides (NOx) and Carbon Monoxide (CO), without taking into account emissions during shutdown, startup or malfunctions (MSS).

According to the application and fact sheet, the facility has the total potential to emit 94.86 tons per year of Nitrogen Oxides (NOx) and 95.41 tons per year of Carbon Monoxide (CO). These amounts are very close to the 100 ton per year threshold for a major source.

The vast majority of these NOx and CO emissions comes from the facility's two natural gas boilers. Each boiler has the potential to emit (and is permitted to emit) 43.60 tons per year of NOx and 44.81 tons per year of CO. According to Antero, this emissions data comes from the manufacturer's data and EPA's emissions factors. The manufacturer has estimated that each boiler's emissions will be 43.48 tons of NOx and 44.69 tons of CO, based on 8,736 hours of operation per year. It appears Antero has attempted to account for the additional 24 hours (to bring the boilers' operation to the full 8,760 hours for the year) in bringing each boiler's emission slightly higher. However, it does not appear that Antero has taken into account the periods when the boilers are starting up, shutting down, or malfunctioning (SSM), which can release large volumes of emissions in a short time. This leaves out a significant amount of potential emissions and could put the facility over the major source threshold. SSM should also be taken into account for the emergency diesel generator.

3. The facility will emit a large amount of volatile organic compounds (VOCs), the total amount of which is subject to variation and highly dependent on proper operation of the "thermal oxidizer."

In addition to the NOx and CO emissions, the facility will emit a large amount of volatile organic compounds (VOCs), primarily from the wastewater that the facility will be handling and processing. Antero and DEP estimate that the facility has the potential to emit 66.54 tons per year of VOCs. While this amount is below the major source threshold of 100 tons per year, it is also based on assumptions and potential uncertainties.

First, the majority of VOC emissions come from less-tangible emissions, such as truck unloading of the wastewater (16.86 tons per year), evaporation from process tanks (7.90 tons per year), and "sludge and wetcake disposal" (21.60 tons per year). Any time the wastewater isn't covered and controlled, it will be releasing VOC emissions. There's a lot of variation in this, and if the process doesn't go as planned the result will be more emissions. And the permit appears to contain some discrepancies with regard to these emissions relative to the application. The permit states that truck unloading will emit 16.86 tons per year of VOCs, but Attachment K of the application states that the fugitive emissions from loading/unloading will be 28.58 tons per year. We assume the 28.58 tons per year is an engineering estimate, but we don't understand how or why this was reduced to 16.86 tons per year in the permit. Perhaps the 28.58 estimate is meant to capture truck unloading, process tanks, storage tanks, and the thermal oxidizer, as adding all those numbers up in the fact sheet (page 9) gets to 28.50 tons per year. However, the point is that these are flexible estimates, subject to variations that aren't taken into account.

Second, the main control for VOCs is that all the tanks will be routing their emissions to a "thermal oxidizer." For this reason, it's vitally important that the thermal oxidizer continue to operate properly and achieve the expected 98-percent control efficiency (i.e., destroying 98 percent of VOCs routed to the oxidizer). This depends on temperature of the oxidizer's temperature and frequent monitoring to ensure it's working properly. The permit requires a minimum combustion chamber temperature of 1,500 degrees Fahrenheit, which Antero will establish within six months of the facility's startup (condition 7.1.3) and continue to monitor every 15 minutes or so (condition 7.4.2). We request that the facility be required to come into compliance three months, rather than six. If the facility is allowed to

function for half a year without ensuring it can meet the minimum temperature of the main VOC control device, those emissions should be incorporated into the permit and very likely could push the facility into the major source threshold. Additionally, we request that Antero be required to report and deviations from the thermal oxidizer's design or performance reporting to DAQ on a monthly rather than quarterly basis.

4. Inspection and monitoring requirements for leaks are insufficient and infrequent.

In combination with routing emissions to the thermal oxidizer, the tanks must use a "closed vent system" to ensure that VOCs don't escape as leaks. However, the only means by which Antero must ensure that the closed vent system is working properly is through "visual, olfactory, and auditory inspection" (condition 10.2). For a facility with a vast amount of potential VOC emissions and over a dozen tanks, this is extremely unsophisticated. Instead, we recommend that Antero use actual equipment for inspections, such as EPA Method 21. Alternatively, optical imaging (such as FLIR cameras) has proven to be effective, particularly for equipment like tanks with large surface areas and large potential for leaks.

Additionally, under conditions 10.2.1(d) and (e), Antero can designate certain equipment as "unsafe" or "difficult" to inspect. If a piece of equipment is difficult to inspect, Antero need only inspect it once every five years. That is extremely lax. If equipment is noted as unsafe to inspect, Antero must inspect it "as frequently as practicable." Again, this is lax and "practicable" is an open-ended term. If the operator can't access an area easily or safely, optical imaging offers a practical and effective way to check for and identify leaks.

Furthermore, the requirement for annual inspections is too infrequent. We recommend and request that monthly inspections be required.

Finally, because leaks and fugitive emissions seem to be such a potential issue for this facility, we recommend and request that fenceline monitoring be required.

Thank you for the opportunity to comment. If you have any questions or require any additional information, please feel free to contact us.

Sincerely,

Julie Archer, Project Manager
WV Surface Owners' Rights Organization
1500 Dixie Street
Charleston, WV 25311
(304) 346-5891
julie@wvsoro.org

Robin Blakeman, Organizer
Ohio Valley Environmental Coalition
PO Box 6753
Huntington, WV 25773
(304) 522-0246
robin@ohvec.org

Gary Zuckett, Executive Director
West Virginia Citizen Action Group
1500 Dixie Street
Charleston, WV 25311

Cynthia Ellis, President
WV Highlands Conservancy
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(304) 346-5891
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face/39°14'29.6"N + 80°51'09.3"W/@39.2708983,-80.8893636,1061m/data=!3m1!1e3!4m2!3m1!1s0x0:0x0

- US Hydraulic Fracturing...
- Marcellus Shale Safe...
- It's a Fracking Sham...
- SRBC Project Review...
- OGAP Fracking Libr...
- Energy In Depth

Greenwood Cemetery



Measure distance

Total distance: 2,299.60 ft (700.92 m)

Click on the map to add to your team

Williams, Jerry

From: Bill Clark <bgclark46@gmail.com>
Sent: Friday, November 20, 2015 8:18 AM
To: Williams, Jerry
Cc: Gayle Clark; m b
Subject: comments re. the proposed Sandstrom frack water treatment and post treatment facility

Thanks for giving the public an opportunity for input. I just learned about this comment period last night and so have been spending time studying the DEP application for this facility. Having lived here for more than 25 years and as very "local" residents (our residence on Cabin Run Rd. borders part of the additional 500 acres Antero has purchased) My wife and I have several concerns related to air quality.

First, we are concerned with the aggregate accumulation of air pollution from not only this facility but also the rock quarry they have purchased in addition to the landfill for which they have applied. Secondly, the "post treatment" of the both gases and solids seems a little vague in what they don't say as well as what they do say. Why do they need to have a flare burning 24/7? How does this affect our air quality? We live (as do most of the area residents) down in the valleys where air pollutants not only settle but can concentrate. Thirdly, little is said about the air pollution from 600 trucks a day servicing the facility. Antero has widened Cabin Run Rd. and is planning on paving it for one access to this facility. Finally, we are surrounded by wells that also produce their own air pollutants. How will this total accumulation affect our health as local residents? This is an especially pertinent question for me as I have CLL (cancer in my immune system) and am very much affected by any toxins in air, water, food, or the environment. Please reply to

Bill and Gayle Clark
1876 Cabin Run Rd
Pennsboro, WV
26415

bgclark46@gmail.com

(304) 659-3976 home

(304) 266-7794

017-00157
Reg R13-3260
Company ANTERO
Facility SANDSTROM Initials JW

NON-CONFIDENTIAL

Williams, Jerry

From: Eva Shreves <evashreves@yahoo.com>
Sent: Thursday, November 19, 2015 6:30 PM
To: Williams, Jerry
Subject: Sandstrom Air Quality Permit R13-3260

Eva Shreves
3770 Oxford Road
Pullman, WV 26421
304 659-2466

ID # 017-00157
Reg R13-3260
Company Antero
Facility SANDSTROM Initials JW

Jerry.Williams@wv.gov
WV DEP Division of Air Quality
601 57th St. SE
Charleston, WV 25304
Sandstrom Air Quality Permit R13-3260

The Sandstrom facility permit shows Antero emissions estimates of Nitrogen Oxides and Carbon Monoxide, that are very close to the threshold level that would determine the facility as a major source. Relying on estimates to make the important decision of minor or major source should tilt the scales towards major. Once it is determined the facility is indeed actually a major source contributor, it would be too late to enforce many of the regulations that a major source permit requires. Improper equipment operation, malfunctions (SSM), start ups, shut downs, and allowing a 6 month period to establish a minimum combustion chamber temperature in the thermal oxidizer, should all be added emission factors on this permit. These factors could very well place the facility over threshold limits. This is in addition to the close proximity of the Alvadore well pad. The emissions from the Alvadore pad would also place the Sandstrom Facility well over the threshold limit NOx and CO. WV DEP has the authority to decide on a case by case basis, whether to group these emissions, and it is requested that the Division of Air Quality do so.

The permit also has many reporting and inspection conditions which should be reconsidered.

Condition 7.5.1 requires Antero to report any deviation from the thermal oxidizer's design or performance on a quarterly basis. This device's optimal operation is an integral part of emission control at the facility, and should be reported monthly.

Condition 10.2 The closed vent system inspection, insuring it is working properly, is not sufficient. "Visual, olfactory, and auditory inspection", leaves too much room for error. EPA Method 21 would be a more accurate procedure for inspection. Optical imaging (FLIR cameras) has also been proven to be effective in detecting possible VOC leaks.

Condition 10.2.1(d) allows Antero to designate certain equipment as "unsafe" or "difficult" to inspect. This condition allows for this type of equipment to be inspected once every 5 years. If the equipment is noted as unsafe to inspect, this would reinforce the need for optical gas imaging.

All inspections should be required on a monthly basis. The release of hazardous emissions from the facility from leaks and fugitive emissions should not have the potential to continue on a year by year basis, month by month inspections are reasonable when protecting the quality of the air for West Virginia citizens.

NON-CONFIDENTIAL

It would also be requested that a fence line monitoring system be required. There will always be a potential issue concerning leaks and fugitive emissions, and this request would insure quicker detection.

Re

Williams, Jerry

From: James Shreves <whiteoakjim@yahoo.com>
Sent: Thursday, November 19, 2015 4:14 PM
To: Williams, Jerry
Cc: FriendsOfTheHughes Watershed
Subject: Sandstrom comment

ID # 017-00157
Reg R13-3260
Company Antero
Facility Sandstrom Initials JW

Jim Shreves
3770 Oxford Road
Pullman, WV 26421
304-629+2466
Jerry.Williams@wv.gov

WV DEP Division of Air Quality
601 57th St., SE
Charleston, WV 26503
Sandstrom Waste Water Air Quality Permit # R13-3260

I am writing to express my concerns regarding the Air Quality Permit for the Sandstrom Waste Water Facility.

I have read the permit, and I see that many of the emissions listed are listed as estimates. Other emission numbers are manufacturer estimates, and not operator estimates. Manufacturer estimates can vary greatly from operator's actual emissions, due to the manner in which the equipment is operated and maintained. There is also no mention of emissions that would raise limits concerning starting up equipment, shutting down equipment, and malfunctions (SSM), which would and could contribute to higher emissions, putting them closer or over the major source threshold.

All VOC emissions will be routed to a thermal oxidizer. Again, the 98 % control of VOCs is dependent on correct operating temperature and constant monitoring to make sure it is at optimal efficiency. The permit allows Antero 6 months to establish a minimum combustion chamber temperature of 1500 degrees Fahrenheit. For the six months the facility will be operating at unknown thermal efficiency of the thermal oxidizer, higher emissions than that listed on the permit could be the result. The risk of possible higher emissions, should be included in the Air Quality Permit. For a period of 6 months, Antero will be allowed to emit unknown emissions before a required compliance test. What happens if the compliance test fails? Will they be allowed to continue to operate at a higher emission level than they were permitted for?

I see no backup plan in the case of failure, which would allow large quantities of VOCs to be released into the air. Claiming there would be 98% efficiency on the Air Quality Permit does not appear to include any operational problems of the one emission control device on the facility.

Estimated emissions on every operation of the Sandstrom Facility is cause for great concern. The facility is close to major source thresholds, using only estimates as a basis for an Air Quality Permit. There is also the addition of the Alvadore Wellpad, which is also operating under an Air Quality Permit. The distance between the two facilities depends on points of measurement. Measured edge to edge, the distance is much closer than measuring from center to center. With the combination of the two emissions sources, the Sandstrom facility would exceed major source thresholds by a significant amount. The Division of Air Quality has the authority to decide on a case by case basis if the Alvadore wellpad and Sandstrom Facility can be combined in

determining major source contamination, and I would ask that you do so. Relying on estimates is not good enough when a proposed facility is so close to major source contamination levels.

Jim Shreves

Reply, Reply All or Forward | More

Williams, Jerry

From: Don Jackson <centaurarts@hotmail.com>
Sent: Thursday, November 19, 2015 3:05 PM
To: Williams, Jerry
Cc: FriendsOfTheHughes Watershed
Subject: Comments: Sandstrom project - Doddridge Co

Jerry.Williams@wv.gov
WV DEP Division of Air Quality
601 57th St. SE
Charleston, WV 25304

ID # 017-00157
Reg K13-3260
Company ANTERO
Facility SANDSTROM Initials JW

In regards to the Sandstrom project near Greenwood, WV, the following comments are submitted:

Emission estimates appear to be too low, in an effort to avoid the 'major' source of pollution label. Since much of the processed fluid is of a proprietary nature, predicting the quantity of pollutants to be treated is guesswork at best.

The heavy truck traffic must be included as an air quality issue, whether or not it falls within your jurisdiction. Idling diesel vehicles will become a concern to the residents down-wind of the staging area.

When evaluating the predicted emissions from the manufacturers specs, there is always a lag in what efficiency is achieved and the reality of such under ideal conditions. The gas fired boilers will, in turn, be subject to any large equipment variation due to operational experience.

Keeping in mind the experimental nature of this process, and the wide variation of the substrate to be handled, frequent inspections and a system of responders that complaintants can access 24/7. Considering the past violations which the designers and operators have already on the books with WVDEP, extra vigilance is required.

The main control for VOCs is that all the tanks will be routing their emissions to a "thermal oxidizer" (effectively a flare or combustion unit). If you look at the fact sheet, you can see how many tanks' emissions are meant to be handled by the thermal oxidizer. A vast amount of their VOC emissions is dependent on the proper operation of the thermal oxidizer.

For this reason, it's vitally important that the thermal oxidizer continue to operate properly and achieve the expected 98-percent control efficiency (i.e., destroying 98 percent of VOCs routed to the oxidizer). This depends on temperature of the oxidizer and frequent monitoring to ensure it is working properly.

First, the only means by which Antero must ensure that the closed vent system is working properly is through "visual, olfactory, and auditory inspection." . In other words, Antero just has to use sight, smell, and sound. For a facility with a vast amount of potential VOC emissions and over a dozen tanks, this is pretty unsophisticated. Instead, I would recommend that Antero use actual equipment for inspections, such as EPA Method 21, which uses a "sniffer" device operated by a staff member. Alternatively, optical imaging has been proven to be effective (such as FLIR cameras), particularly for equipment like tanks with large surface areas and large potential for leaks.

Second, Antero can designate certain equipment as "unsafe" or "difficult" to inspect. If a piece of equipment is difficult to inspect, Antero need only inspect it once every five years. If equipment is noted as unsafe to inspect, Antero must inspect it "as frequently as practicable." If they can't access an area easily or safely, then all the more argument for optical gas imaging.

Third, inspection requirements are only annual. This is way too infrequent. Monthly would certainly be better.

Finally, since leaks and fugitive emissions seem to be such a potential issue for this facility, I don't think it would be out of bounds to ask for a fence line monitoring system.

thank you for your consideration,

Don Jackson, Friends of the Hughes Watershed/ PO Box 151 Harrisville, WV 26362
851 Goose Run, Pullman 26421
304-659-3227

Williams, Jerry

From: james friend <jfriend1955@yahoo.com>
Sent: Thursday, November 19, 2015 9:04 AM
To: Williams, Jerry
Subject: Sandstrom waste water plant

ID # 017-00157
Reg R13-3260
Company ANTERO
Facility SANDSTROM Initials JF

WV DEP Division of Air Quality
601 57th St. SE
Charleston, WV 25304
Sandstrom Air Quality Permit R13-3260

The Sandstrom facility permit shows Antero emissions estimates of Nitrogen Oxides and Carbon Monoxide, that are very close to the threshold level that would determine the facility as a major source. Relying on estimates to make the important decision of minor or major source should tilt the scales towards major. Once it is determined the facility is indeed actually a major source contributor, it would be too late to enforce many of the regulations that a major source permit requires. Improper equipment operation, malfunctions (SSM), start ups, shut downs, and allowing a 6 month period to establish a minimum combustion chamber temperature in the thermal oxidizer, should all be added emission factors on this permit. These factors could very well place the facility over threshold limits. This is in addition to the close proximity of the Alvadore well pad. The emissions from the Alvadore pad would also place the Sandstrom Facility well over the threshold limit NOx and CO. WV DEP has the authority to decide on a case by case basis, whether to group these emissions, and it is requested that the Division of Air Quality do so.

The permit also has many reporting and inspection conditions which should be reconsidered.

Condition 7.5.1 requires Antero to report any deviation from the thermal oxidizer's design or performance on a quarterly basis. This device's optimal operation is an integral part of emission control at the facility, and should be reported monthly.

Condition 10.2 The closed vent system inspection, insuring it is working properly, is not sufficient. "Visual, olfactory, and auditory inspection", leaves too much room for error. EPA Method 21 would be a more accurate procedure for inspection. Optical imaging (FLIR cameras) has also been proven to be effective in detecting possible VOC leaks.

Condition 10.2.1(d) allows Antero to designate certain equipment as "unsafe" or "difficult" to inspect. This condition allows for this type of equipment to be inspected once every 5 years. If the equipment is noted as unsafe to inspect, this would reinforce the need for optical gas imaging. All inspections should be required on a monthly basis. The release of hazardous emissions from the facility from leaks and fugitive emissions should not have the potential to continue on a year by year basis, month by month inspections are reasonable when protecting the quality of the air for West Virginia citizens. It would also be requested that a fence line monitoring system be required. There will always be a potential issue concerning leaks and fugitive emissions, and this request would insure quicker detection.

Friend
St.
Union, WV 26456

James D.
127 Howell
West

Williams, Jerry

From: Jane Hearne <janehearnewv@gmail.com>
Sent: Wednesday, November 18, 2015 2:36 PM
To: Williams, Jerry
Subject: Public comments on Air Quality Permit, Sandstrom (Antero) Wastewater Facility
Attachments: Sandstrom DAQ comments.docx

Please consider the following comments and our serious and unresolved concerns about this facility's need for much tighter oversight. Thank you!

Copied here and also attached:

ID # 017-00157
Reg R13-3260
Company ANTERO
Facility SANDSTROM Initials JH

Re: Comments on the air quality permit for the Sandstrom (Antero) Wastewater Facility

From Charles & Jane Hearne, Ritchie County, WV 17 November, 2015:

To: WV DAQ

- Since figures for the facility's potential for emitting Nitrous Oxides and Carbon Monoxides are very close to the 100 tons/year threshold for a 'major source' and close to needing a Title V operating permit, this should be taken into consideration. These emissions are mostly from the natural gas boilers. Also, Antero may not be taking into account times of start-up, shut-down and malfunction, perhaps worsening total emissions by a lot, and even closer to the 'major source threshold'. (Application and Fact Sheet 8)

The same concerns apply to the emergency generator.

- There will be less obvious VOC emissions, especially whenever the waste water is not covered, with evaporation varying; and even more VOC's emitted with any problems in the process. Since combustion units/flaring is used to control VOCs, they must be at the right temperature, working properly and monitored frequently. The document says the minimum unit temperature have 6 months to be established, but **3 months** would be much better. If the facility has 6 months for this, then these emissions should be incorporated into permit itself. And **monthly reporting** to the DEP is far more acceptable than quarterly reporting.

(See condition 10.2 of permit) Antero says it will be checking the thermal oxidizer tanks' closed vent systems by sight, smell and sound and it can designate certain equipment as 'unsafe' or 'difficult' to inspect, this is very unacceptable for such a large system. We want it to use actual equipment for inspections such as EPA Method 21, sniffer device or optical imaging such as FLIR cameras, for equipment tanks with large surface areas and with a large potential for leaks.

Under conditions 10.2.1(d) & (e) Antero can say certain equipment is 'unsafe' or 'difficult' to inspect, therefore it can inspect it every 5 years; or 'as frequently as practicable'. This is way too vague, needs to be more often and more certain with methods such as optical gas imaging.

- Inspections need to be **monthly**, not annually which is way too infrequent.

Thank you, Charles & Jane Hearne

Williams, Jerry

From: safestitch@zoominternet.net
Sent: Friday, November 06, 2015 9:37 AM
To: Williams, Jerry
Subject: Sandstrom Wastewater Facility

Good Morning Jerry,

Again, I will plead with Air Quality to declare the Sandstrom Facility a major source of pollutants. Air Quality does have the power to do so on a case by case basis.

One comment made last night was of the piecing together of the Mark West Plant, which at one time was a fairly small facility, and is now still growing. With the option to continue to add modifications to their facility permits, it appears that now is the time to declare the need for a PSD Modeling permit, since standing alone, the facility is near the limits required to do so. A play on one word should not exempt them from a PSD.

Also, with 3 completed wells on the Alvadore Pad, it is quite obvious they will be expanding on that facility also. It seems the norm for this type of well pad is 5 to 9 wells, which will require more engines also.

The determination of 950 yards is a Google Earth determination. In all reality, the 2 facilities are closer, properties being separated only by a row of houses on lots.

It is in the best interest of the citizens of this state to require the utmost caution in issuing an Air Quality permit. The PSD modeling permit is a tool designed for the protection of our citizens. Our rural based population has the right to the best protection the WVDEP Air Quality office can require. The people in the area chose a rural life with the expectation of fairly clean air, dark skies, and peace of mind. As you seen at the meeting conducted last night, there is no peace of mind.

At the least, there should be baseline Air Quality tests at and around the facility locations, before any type of construction begins, which will allow determinations in the future of the actual impacts of the operation of this facility. Regretfully, in the beginning stages of the Marcellus Shale industry, no baselines were obtained. The lack of baseline testing has left the populations impacted by this industry with no defenses when there is an indication of impact, be it Air Quality or Water.

Sincerely,
Vickie Nutter
304-896-3748
3185 Pike Road
Ellenboro, WV 26346

ID # 017-00157
Reg K13-3260
Company ANGERO
Facility SANDSTROM Initials JW

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November 5, 2015

Vickie Nutter
3185 Pike Road
Ellenboro WV 26346
304-869-3748

WV DEP
Division of Air Quality
601 57th St. SE
Charleston WV 25304
Attn: Jerry Williams

I wish to make a comment concerning the Sandstrom Air Quality Permit Number R13-3260.

The Sandstrom Facility will be located on a property approximately 950 yards from the Alvadore Pad, Antero Air Quality permit G-A086, that is also a property of Antero Resources. The finding of contiguous or adjacent is made on a case by case basis. With that determination being left up to Air Quality permitting, I would hope that the emissions emitted from the Alvadore Pad be included in the emissions of the Sandstrom Facility.

With the addition of the Alvadore Pad, which is approximately 950 yards away, the total Carbon Monoxide emissions would total 123.74 TPY and the Nitrogen Oxides would total 100.54 TPY, which would make this facility a major source of pollution. This Alvadore pad cannot be ignored in the equation of Antero total pollutants. There are other well pads and 2 compressor stations belonging to Antero close by, but not within yards of the Sandstrom facility.

It should be Air Quality's discretion on deciding these sources of pollutants, not the definition of a word, and I would ask that you consider the health of the residents in close proximity to both the Alvadore pad and the Sandstrom Facility, in determining the combination of these 2 facilities.

Due to the fact the emissions listed on the Sandstrom Air Quality permit are in many cases, estimated, and subject to increase when the actual production activities begin, I would request that a PSD Model be required before issuing an Air Quality Permit and construction is allowed to begin.

Low estimates cannot be ruled out. The height and diameter of the "stack" is TBD. Is this not necessary information when determining emissions? Low estimates of truck traffic, and times of idle waiting to unload, and the emissions of the Dewatered Sludge and Wet Cake that is stored in dumpsters until moved to a landfill, are all sources of emission that need further evaluation. The emissions have to vary depending on the area the produced water is originating, since no 2 samples are the same on the water they are planning on recycling. I have several different Antero Injection Water analysis, and no 2 are the same.

Considering the close proximity of several families downwind and in low lying areas, should there be a study on ultra fine particulate matter? Should there not be a study by a qualified non biased researcher? The health of the residents of the surrounding area depend on Air Quality to have their health and best interest in mind concerning the issuance of this Air Quality Permit.

Sincerely,

Vickie Nutter

Williams, Jerry

From: Williams, Jerry
Sent: Friday, August 28, 2015 7:57 AM
To: 'Duane Nichols'
Cc: Tom Bond
Subject: RE: 017-00157, Antero Resources, Sanderson Wastewater Treatment Facility

Mr. Nichols and Mr. Bond,

The application has been submitted by Antero and they are required to publish a legal ad notifying the public of their application. Once the DAQ has completed the application review – assuming we find the source should meet all applicable rules and regulations – the DAQ will then publish a legal ad notifying the public of an intent to issue. This would be a 30 day public comment period. Therefore, there is no need to extend the public comment period at this time, as the application review is still ongoing. Once we have completed our technical review of the permit application, a public meeting will be held concerning this permitting action. We will advertise this notice in both the *Herald Record* and *Ritchie Gazette*, which are the two newspapers serving this area.

Thanks,
Jerry

Jerry Williams, P.E.
Engineer
WVDEP – Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0499 ext. 1223
jerry.williams@wv.gov



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017-00157
Reg R13-3260
Company ANTERO
Facility SANDSTRUM Initials JW

From: Duane Nichols [<mailto:frackcheckwv@gmail.com>]
Sent: Thursday, August 27, 2015 4:45 PM
To: Williams, Jerry
Cc: Tom Bond
Subject: Re: 017-00157, Antero Resources, Sanderson Wastewater Treatment Facility

To: Jerry Williams, Air Quality Division, WV Department of Environmental Protection

RE: NSR Permit Application 017-00157; Date: August 27, 2015

"Wastewater treatment" does not mean a plant will take everything out of the water sent through it. A plan must be carefully designed to remove harmful substances from the water sent through such a facility. The Sandstrom facility proposed for Doddridge county uses a relatively new technology called moving bed biofilm reactor (MBBR) to treat fracking waste water. It has been used primarily for municipal waste, effecting oxidation of some of the water contents and by the effect of microorganisms.

Early in the fracking boom it was common to send flowback and produced water through municipal wastewater plants, designed to treat sewage water. Such treatment removes biological waste also by use of oxidation and microorganisms. However, industries like Pratt and Whitney in Bridgeport, for example, and many others in West Virginia and nationwide which have waste water flows containing heavy metals, inorganic compounds or organic compounds resistant to biological decomposition must employ other specialized treatment depending on the kind and quantity of pollutants. Such waters can be cleaned up effectively, but careful consideration of the chemistry must be involved. In fact, it is customary to keep sewage containing wastewater to itself and use separate onsite treatment for these industrial wastes, because it is expensive.

It is well known that fracking waste water contains biocides, and biological materials are at a minimum in it. Moving bed biofilm reactors are quite effective for sewage-type waste streams. They have been used for paper mill waste water treatment, poultry, cheese factories, slaughterhouses, phenolic wastewater, and the dairy industry, all involving bioorganic materials. Their principal advantage is occupying less space and less initial cost. They are also good at removing ammonia and carbon dioxide, which are not a problem in chemical waste streams. They leave a sludge which must be further processed and in some way sent to disposal.

Fracking waste includes formaldehyde, which is known to interfere with MBBR. Also, fracking wastewaters contain bromide ions, which result in trihalomethanes when they react with the chlorine used to purify drinking water down stream, which in turn causes cancer. Other chemicals unlikely to be removed are BTEX, lead and other heavy metals including arsenic, boric acid, diesel fuel, hydrofluoric acid, NORM and proprietary chemicals which include unknown components. There is no indication of what happens to these. Will this residue be buried?

A full and complete component and element material balance will help to show the extent of air quality concerns and information on trial operations with Doddridge county wastewaters with material balances are essential.

The air emissions from dissolved gases must also be given careful consideration. Time has been short, realizing the extensive nature of this application.

For these and other reasons, an extension of the comment period is herewith requested.

For these and other reasons, a public hearing on an air permit for this facility is herewith requested.

Submitted by: S. Tom Bond, Ph.D. Chemistry, Jane Lew, Lewis County, WV
Email: stombond@lhfwv.com. August 27, 2015

Williams, Jerry

From: Williams, Jerry
Sent: Friday, August 28, 2015 7:56 AM
To: 'Duane330@aol.com'
Cc: Radcliff, Wendy E
Subject: RE: Permit Application 017-00157: Antero Resources: Sandstrom Water Treatment Plant

Mr. Nichols,

The application has been submitted by Antero and they are required to publish a legal ad notifying the public of their application. Once the DAQ has completed the application review – assuming we find the source should meet all applicable rules and regulations – the DAQ will then publish a legal ad notifying the public of an intent to issue. This would be a 30 day public comment period. Therefore, there is no need to extend the public comment period at this time, as the application review is still ongoing. Once we have completed our technical review of the permit application, a public meeting will be held concerning this permitting action. We will advertise this notice in both the *Herald Record* and *Ritchie Gazette*, which are the two newspapers serving this area.

Thanks,
Jerry

Jerry Williams, P.E.
Engineer
WVDEP – Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0499 ext. 1223
jerry.williams@wv.gov



Please consider the environment before printing this email.

ID # 017-00157
Reg R13-3260
Company ANTERO
Facility SANDSTROM Initials JW

From: Duane330@aol.com [mailto:Duane330@aol.com]
Sent: Thursday, August 27, 2015 4:18 PM
To: Williams, Jerry
Cc: Radcliff, Wendy E
Subject: Permit Application 017-00157: Antero Resources: Sandstrom Water Treatment Plant

Dear Sir:

I have just today received an electronic copy of the NSR Permit Application for the Antero Resources, Sandstrom Water Treatment Facility, to be located in Doddridge County, WV.

This document is 490 pages and inadequate time is provided for a comprehensive review and comment(s). Because this is a very significant addition to our State, because the technology is new, because it will be working with toxic and hazardous materials, because there will be emissions in the form of solid waste, water and air

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pollution, for all these reasons and others, we herewith strongly request that:

1. a thirty or sixty day extension be provided for a deadline on this permit comment period,

and

2. a public hearing be schedule thereafter so as to inform the general public and collect additional comments.

Note: Because this is new and unproven technology, because it is new in WV, because it involves a new approach to the treatment of wastewaters, waste streams and liquids containing toxic chemicals; and, because proven quantities and compositions of waste streams are unknown, the above two requests are fully justified. The advertising of this permit was of a limited nature, inadequate to its importance and impacts.

Thank you for your attention to this matter.

Duane G. Nichols, Ph.D. Chemical Engineer
Board Member, Mon-Valley Clean Air Coalition
330 Dream Catcher Circle, Morgantown, WV 26508

Phone: 304-216-5535, Email: duane330@aol.com

Williams, Jerry

From: Williams, Jerry
Sent: Friday, August 28, 2015 7:13 AM
To: 'Tina Del Prete'
Subject: RE: Sandstrom Water Treatment Facility....017-00157

Ms. Del Prete,

Thank you for your comments. This application is under technical review at this time. Once we determine the date for the public meeting, I will let you know. If you have further questions or comments, please let me know.

Thanks,
Jerry

Jerry Williams, P.E.
Engineer
WVDEP – Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0499 ext. 1223
jerry.williams@wv.gov



Please consider the environment before printing this email.

017-00157
Reg 212-3260
Company AMECO
Facility Sandstrom Initials JW

From: Tina Del Prete [<mailto:tina4mail@yahoo.com>]
Sent: Thursday, August 27, 2015 3:42 PM
To: Williams, Jerry
Subject: Sandstrom Water Treatment Facility....017-00157

Dear Mr. Williams,

I am writing in reference to the air quality permit for the Sandstrom Water Treatment Facility that is proposed for Doddridge County. Permit number 017-00157.

I am totally against having this facility in our county. We already have tons of pollutants in our air, our water and our land because of the drilling industry without adding one more. When will enough be enough for the people of my county?

Now I realize that a few folks will make some money from this and that the industry will make a lot of money and a few folks will have a job. But what about the rest of us? Doesn't anyone care about us that have to live with the consequences of all this industrialization of our county? All of this pollution? Doesn't anyone in your agency have an ounce of humanity in them to understand what all this means to the folks that are going to be stuck here?

I do realize you are only doing your job and have to follow the rules as written. But have any of you said that the rules need to be changed to take into consideration everyone involved? If so, thank you. If not, why not? Folks are being sold a bill of goods that does not live up to expectations. And once the damage is done, it's too late.

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I am hoping you will hold a public meeting in Doddridge County for this proposed site. As a matter of fact, I feel that public meetings should be mandatory instead of us having to ask for them. Just so you know, there are folks in this county that ARE paying attention.

Please let me know you got this e-mail. Thank you for your time..

Respectfully, Tina Del Prete and T. Stumpf
4805 Riggins Run Road
West Union, WV, 26456

Williams, Jerry

From: Williams, Jerry
Sent: Thursday, August 27, 2015 8:01 AM
To: 'suz cleaver'
Subject: RE: permit 017-00157

Ms. Cleaver,

There has been no application made for a landfill at this site. According to Antero, they are exploring this option, but no decision has been made yet. If Antero decides to permit a landfill at this site, the Division of Air Quality will perform a source aggregation analysis and if it is determined these sites meet the criteria, all air emissions will be aggregated.

This application is under technical review at this time. Once we determine the date for the public meeting, I will let you know. If you have further questions or comments, please let me know.

Thanks,
Jerry

Jerry Williams, P.E.
Engineer
WVDEP – Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0499 ext. 1223
jerry.williams@wv.gov



Please consider the environment before printing this email.

From: suz cleaver [<mailto:suzcleaver26339@hotmail.com>]
Sent: Wednesday, August 26, 2015 7:35 PM
To: Williams, Jerry
Subject: permit 017-00157

ID # 017-00157
Reg RII-3260
Company ANTERO
Facility SANDSTONE Initials lw

Dear Mr. Williams,

We are quite concerned here in Doddridge County to hear about the siting of a fracking water treatment plant and a Class F industrial storage facility for fracking sludge/solids/radioactive materials(?)

Since they seem to be on the same or adjacent sites, will the air pollution parameters be combined, as we feel they should be?

We would like to request a public meeting to discuss this and other concerns about the air quality permitting process for this venture.

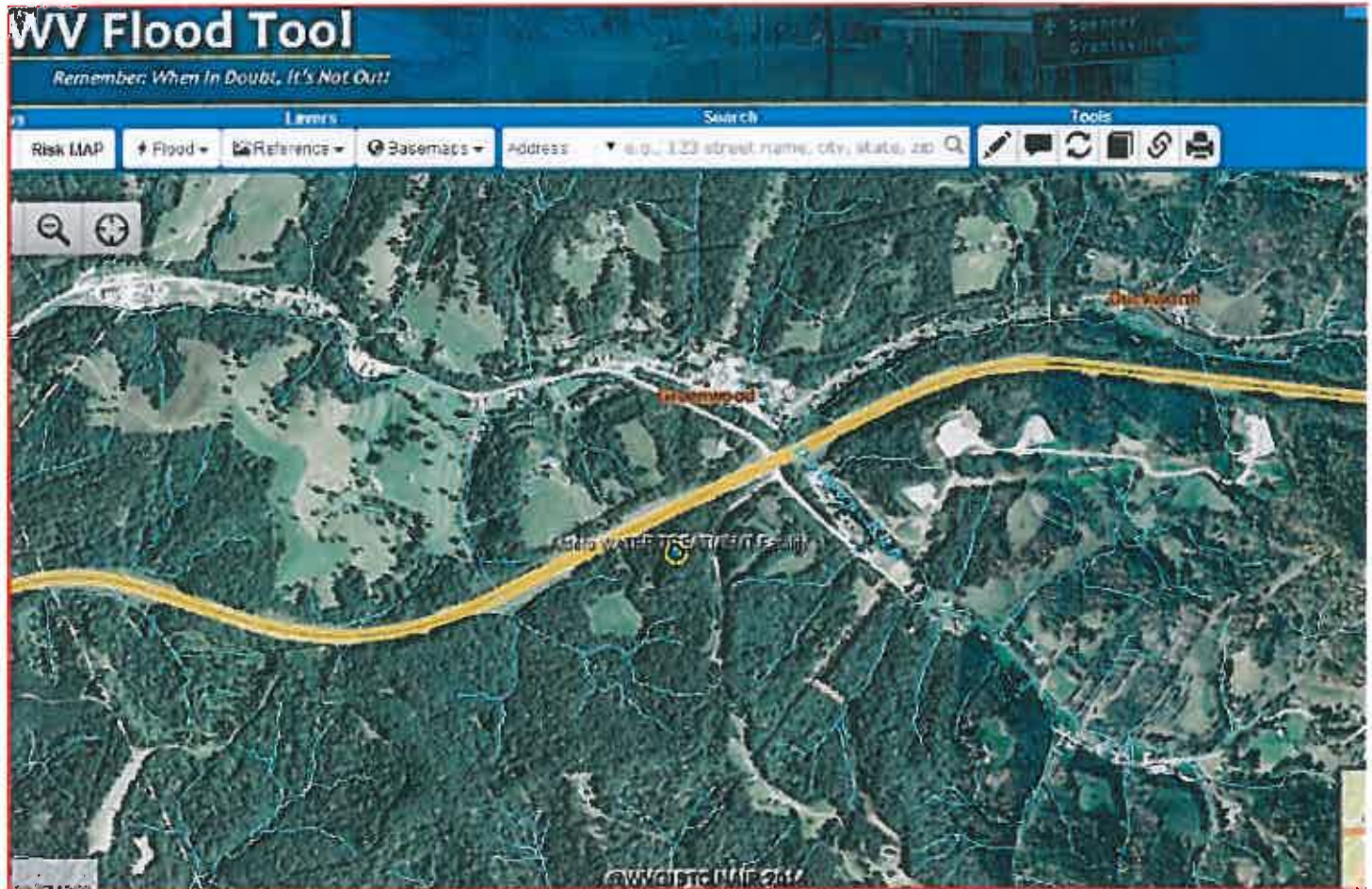
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Please send back a verification of receipt of this email, and thank you.

Susan Cleaver and Howard Sitler
Center Point, Doddridge County, WV

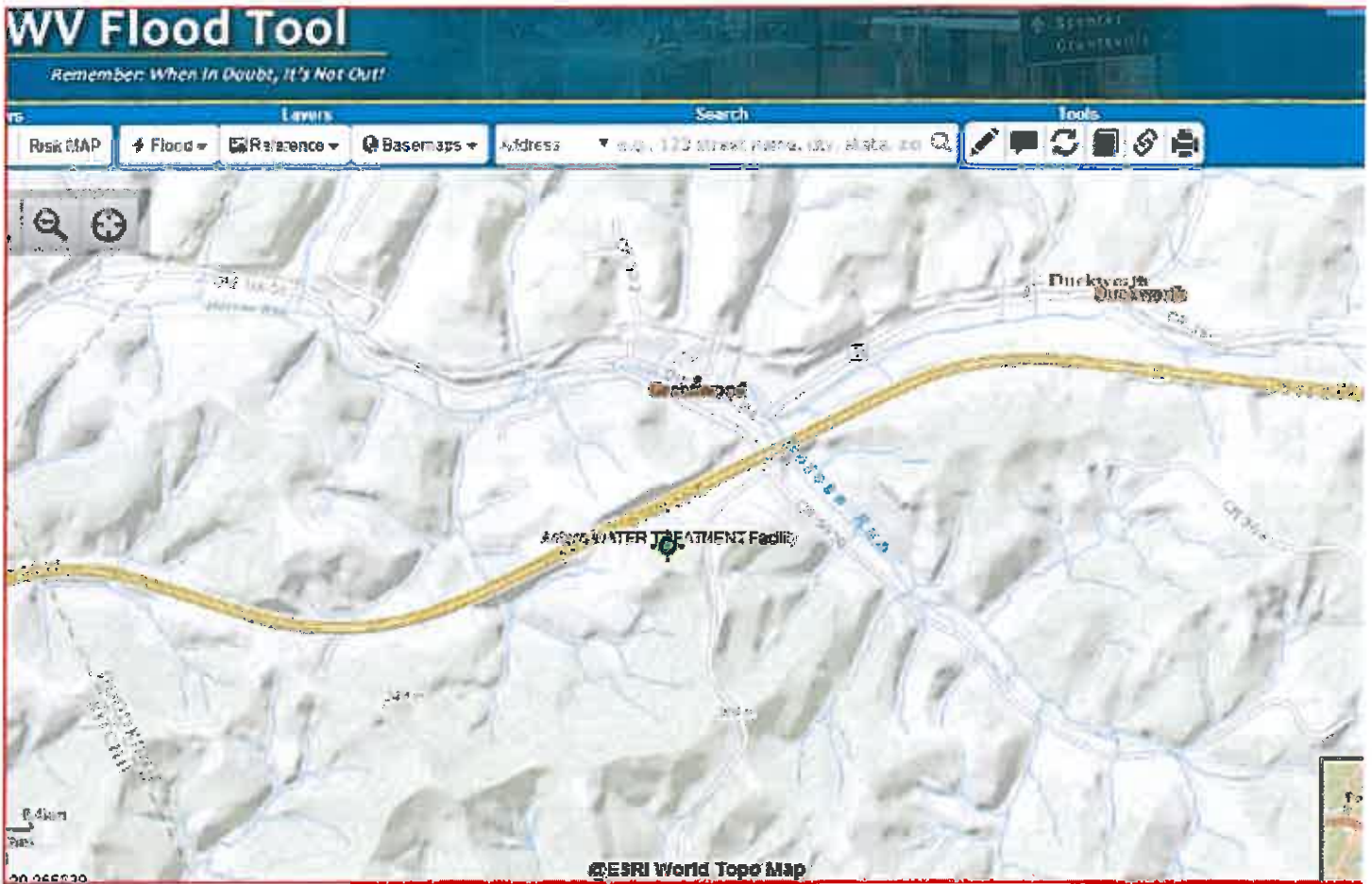
Williams, Jerry

From: m b <miri_beram@yahoo.com>
Sent: Sunday, August 09, 2015 2:48 PM
To: Williams, Jerry
Cc: Radcliff, Wendy E; King, John M.S; McKeone, Beverly D; Keatley, Robert L
Subject: Antero Sandstrom water treatment facility



ID # 07-00157
Reg R13-3260
Company ANTERO
Facility SANDSTROM Initials JW

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Mr. Williams,

I wanted to send this location info showing streams & houses..I could not get them to go thru in the previous email that I sent you.

Mirijana Beram

Williams, Jerry

From: m b <miri_beram@yahoo.com>
Sent: Monday, August 10, 2015 9:03 AM
To: Williams, Jerry
Cc: McKeone, Beverly D; Radcliff, Wendy E; King, John M.S
Subject: Re: 017-00157 Antero Sandstrom frack WATER TREATMENT Facility Greenwood Doddridge County WV

Mr. Williams,

Thank you for the prompt response.

Have a great day,
Mirijana Beram

From: "Williams, Jerry" <Jerry.Williams@wv.gov>
To: m b <miri_beram@yahoo.com>
Cc: "McKeone, Beverly D" <Beverly.D.Mckeone@wv.gov>; "Radcliff, Wendy E" <Wendy.E.Radcliff@wv.gov>
Sent: Monday, August 10, 2015 8:53 AM
Subject: RE: 017-00157 Antero Sandstrom frack WATER TREATMENT Facility Greenwood Doddridge County WV

Ms. Beram,

Thank you for your comments on the proposed permitting action. This is confirmation that I received your email. The permit application was recently received, so an in depth review has not occurred yet. I will discuss your questions and request for a public meeting with management during my review. Please let me know if you have further questions.

Thanks,
Jerry

Jerry Williams, P.E.
Engineer
WVDEP – Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0499 ext. 1223
jerry.williams@wv.gov

ID # 017-00157
Reg R13-3260
Company ANTERO
Facility SANDSTROM Initials d

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From: m b [mailto:miri_beram@yahoo.com]
Sent: Sunday, August 09, 2015 1:27 PM
To: Williams, Jerry

Cc: McKeone, Beverly D; Keatley, Robert L; Radcliff, Wendy E; King, John M.S; Christ, Martin J
Subject: 017-00157 Antero Sandstrom frack WATER TREATMENT Facility Greenwood Doddridge County WV

Mr. Williams,

It is my understanding that you are the engineer reviewing the air quality permit for the proposed Antero Sandstrom "FRACK" Water Treatment Facility. if you are NOT, please forward to the appropriate person.

I want to respectfully request that a public meeting be held to discuss this permit application.

My concerns related to this are many. Among them are the following:

- a. The nature of the public notice is deceptive in that no mention is made of the nature of the "water" being treated.
One of my local officials, Commissioner Greg Robinson, stated that he was told this once the water is "treated" it will be drinkable.
- b. I am concerned the the permit may not be taking into consideration the air pollution that will may result from the increased truck traffic that will be entering the proposed treatment facility.
- c. the proximity to a low lying community that is in close proximity to the site
- d. the possibility of the radioactive nature of the "water" being processed
- e. adding this pollution to an area that already has numerous air pollution sources related to the drilling boom will only increase the health risks to the people living in this region.
- f. #15 of the permit application states that this facility will be operational 24 hours per day, 7 days per week, 52 weeks per year.

My concern here is that additional factors will include light, noise, traffic, smell & dust pollution 24 hours per day, 7 days per week, 52 weeks per year...

All of these can have detrimental effects on the population living in the region.

- g. #29 of the application states that there will be a "flare" present.
I am unclear as to what this means exactly...What gases are going to be burned off by the flare? Will the flare be running 24 hours per day, 7 days per week, 52 weeks per year?

Aren't flares typically present when gases are being burned off? If this is a "water" treatment facility, what is the flammable gas source? Is there "flammable gas" in the "water" being treated?

- h. I also find it distressing that only *"ONE Class I Legal Advertisement is required in a newspaper of general circulation in the area where the source is or will be located"*.

The location of this site is very close to the County line...The circulation of the Herald Record is small and does not reflect the population that will be affected by this facility.

i. It is also my understanding that a permit has been applied for a Class F Landfill on this same property. Will the air quality permit, if one is required for the landfill, be aggregated with the one under current consideration (017-00157)?

Am I correct in thinking that this would be considered contiguous as far as the air quality permits are concerned?

j. the location is close to headwaters of a couple of streams.

Any air pollution in these streams will be concentrated due to small volume of waters that are present.

k. I also find it disturbing that Antero has held no PUBLIC meetings to notify my community of what is being planned.

Once again, I respectfully request that a public meeting be held to discuss this.

I would also request that this meeting be held in close proximity of the proposed site. The old Greenwood Grade School may be a possibility. I think that it is currently being used by the Greenwood Volunteer Fire Department.

I thank you in advance for considering holding a public meeting.

Please acknowledge receipt of this email.

Respectfully,
Mirijana Beram
Doddridge County
Air Breathing resident
615 Riggins Run Rd
West Union, WV 26456

