

December 19, 2014

James A Martin, Chief
Office of Oil and Gas
West Virginia Department
of Environmental Protection
601 57th Street, SE
Charleston, WV 25304-2345

**Re: Permit Application(s)
Well numbers MIP 3H and 5H
Public Comments**

Dear Mr. Martin:

I write to provide formal comments regarding the subject proposed wells. This communication supplements our preliminary comments of December 12. Please consider both the comments of December 12 and those of today together.

You will recall that two previous wells were drilled and completed at the subject site in 2011, and that the Permits for that previous work contained special safeguards negotiated between Morgantown Utility Board (MUB) and Northeast Natural Energy (NNE). Recall that the well pad is located immediately adjacent to our Zone of Critical Concern and runoff from the well pad arrives at the Monongahela River only 1500 feet upstream of our drinking water intake.

Special safeguards are needed at the subject site due to its extremely close proximity to the primary water intake for the MUB water treatment plant.

Our comments today are attached. That attachment reproduces (in black text) the full list of safeguards that were negotiated and included in the 2011 Permits. Our current comments regarding the proposed Permit(s) are shown in red italics. This format was used for ease of comparison between the 2011 safeguards and those proposed in the current Permit application, with our comments addressing differences between the two.

Please recall that our letter of December 12 described our disadvantage in making timely response to the subject Permit application and its related public notice. That disadvantage resulted from a lack of response by DEP and NNE to our earlier requests for certain information, and from a flaw in the public notice. In light of these problems, we requested that DEP restart / extend the public comment period.

We gratefully acknowledge that DEP promptly responded to our FOIA request of December 12, and provided the requested information on that same date. We also gratefully acknowledge that Deputy Chief Jason Harmon called to assure us that our comments would be received and considered regardless of the original December 19 expiration date for public comments. We also observe that the related public notice has been corrected and republished on December 17.

We submit comments today for the sake of conservative compliance with the originally scheduled due date of December 19. We do so despite the fact that our review of the recently provided permit application is incomplete.

We will continue our review and will submit final comments as soon as possible, taking advantage of the informal time extension offered by Dr Harmon and/or the extension (if any) caused by republication of the public notice.

We submit this correspondence to ensure that the safety of our raw water supply is protected, and that the permits adequately address this critically important need.

Thank you for your immediate attention to this urgent matter. We look forward to working with you to resolve our concerns.

Respectfully,

MORGANTOWN UTILITY BOARD

A handwritten signature in blue ink, appearing to read 'T. Ball', is written over the printed name.

Timothy L. Ball
General Manager

cc: Randy Huffman – Secretary WV DEP
Scott Mandirola – Chief, Water and Waste Section, WV DEP
WV DEP Public Information Office
Barbara Taylor – Director, Envir. Health Services, WV Bureau of Public Health
Morgantown City Council
Morgantown Utility Board
Brett Loflin – Northeast Natural Energy

Comparison of May 18, 2011 Safe Guards to 2014 Application

Black text = 2011 negotiated safeguards

Red Italicized Text = Current MUB comment Dec 2014

Spill Containment – Drilling Operations

1. NNE will utilize a closed loop system during fluid drilling operations for maximum control of drilling fluid / mud. *Application shows Closed Loop system will be used again.*
2. An interior containment structure will surround the drilling equipment to provide primary containment during the drilling operation. The structure will be a silt sock or similar item. A liner will be provided to cover the area defined by the sock, and will wrap from the floor of the confined area over the sock to create an impermeable barrier. The liner will divert any captured liquid to the lined waste pit. All liner will be fused to create a single continuous barrier. *Interior containment system (silt sock) and Liner are not described in the Application. MUB requests that the Permit require these or more stringent details as were provided in 2011.*
3. The permanent earthen berm around the well pad will provide a third level of containment. *The earthen berm from 2011 is shown on the Application drawings; however, the current drawings indicate that the berm is not continuous. Repair of any breach(es) is not indicated on the drawings. MUB requests that the Permit require that the entire current work site be surrounded by a continuous berm as was provided in 2011, and with contained volume within said berm to be at least 110% of the total volume of liquids onsite at anytime.*
4. The area where the access road meets the containment structures will be designed in a manner that will prevent the flow of any spilled materials from leaving the containment area. *The application drawings show that the access road is actually depressed, and presents a breach in the continuity of the berm. This would not provide containment on the pad. MUB requests that the intersection of the access road and berm be reconstructed so that the road passes above/across the berm without reducing the effectiveness, continuity, or surface elevation of the berm.*
5. The volume of the lined waste pit will exceed the entire combined maximum volume of drilling fluids and tailings/mud present on site at any time. *Current application shows there will be no waste pit. MUB accepts this change.*

Comparison of May 18, 2011 Safe Guards to 2014 Application

Spill Containment – Fracking Operations

1. The well pad liner will be expanded to cover the entire area encompassed by the earthen berm at the perimeter of the well pad, including the sumps located at each corner. The liner will divert any captured liquid to the lined waste pit. All liner will be fused to create a single continuous barrier. *Liner was not addressed in the Application. We are concerned that NNE might intend to provide a liner for only some portion of the area within the existing berm. If that is the case, we take strong exception to that plan. We believe that it is imperative to provide liner for the full area within the berm, and to extend the liner above and over to the exterior face of the berm. MUB requests that the Permit require that the entirety of the proposed work area is both contained by a berm and lined, to the same standard as was provided for the larger work area in 2011.*
2. The area where the access road meets the containment structures will be designed in a manner that will prevent the flow of any spilled materials from leaving the containment area. *The application drawings show that the access road is actually depressed, and presents a breach in the continuity of the berm. This would not provide containment on the pad. MUB requests that the intersection of the access road and berm be reconstructed so that the road passes above/across the berm without reducing the effectiveness, continuity, or surface elevation of the berm.*
3. The perimeter of the well pad will be protected by a 2.5 ft. berm completely surrounding the 300 ft. X 600 ft. well pad. If the combined volume of all fluids on site at any time exceeds 2.5 million gallons, the containment area defined by the berm will be enlarged proportionally. *The earthen berm from 2011 is shown on the Application drawings; however, the current drawings indicate that the berm is not continuous. Repair of any breach(es) is not indicated on the drawings. MUB requests that the Permit require that the entire current work site be surrounded by a continuous berm as was provided in 2011, and with contained volume within said berm to be at least 110% of the total volume of liquids onsite at anytime.*

Spill Prevention – Fracking Operations

1. NNE will utilize a closed loop system for maximum control of fracking fluid. *Application shows Closed Loop system will be used again.*

Comparison of May 18, 2011 Safe Guards to 2014 Application

2. A second automatically activated Blow Out Preventer (BOP) will be provided to maximize control of fracking fluids. *Application shows that a single Blow Out Preventer will be used. MUB accepts this change.*
3. One manually operated isolation valve will be installed to provide additional redundancy for control of fluids from the main stem of the wellhead. *Application shows that such a valve will be provided.*

Well Integrity

1. NNE corrected MUB regarding the maximum allowable pressure of the three non-production casings, which are not designed to withstand fracking pressure. *No comment*
2. NNE will encase (with cement/grout) the full length of the production casing. *In the short time available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. However, based upon correspondence to MUB from NNE dated Nov 12, 2014, it is our understanding that NNE plans to cement the production casing only as far back as the intermediate string. NNE persuasively described the conservative risk management benefits of cementing the production casing to the surface in 2011, and we believe those benefits continue to remain true today. Absent any subsequent comments, we request that the Permit require that NNE cement the proposed casing(s) to the same standard as was provided in 2011.*
3. NNE will confirm the integrity of the production casing by an attenuation test which will verify proper adherence of the casing cement/grout to the steel casing pipe. The surface casing and intermediate casing strings will be tested utilizing a hydrostatic pressure test to a pressure that is 10% greater than hydrostatic pressure or 10% greater than the anticipated pressure on that casing. The full vertical length of each casing will be so tested. All such testing will be conducted prior to the fracking process, and results thereof recorded. Fracking will not begin unless/until acceptable test results are achieved. *In the short time available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. Absent any subsequent comments, MUB's current default request is that the Permit require this issue be held to the same standard as was provided in 2011.*
4. Each batch of casing cement/grout will be sampled and tested for appropriate strength. Fracking will not begin until acceptable strength test results are obtained. *In the short time*

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available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. Absent any subsequent comments, MUB's current default request is that the Permit require this issue be held to the same standard as was provided in 2011.

5. NNE will ensure that non-production casings are not subjected to fracking pressures by observing pressure in the annular spaces and aborting fracking if pressure increases in the annular spaces are observed. In such cases, the breach of the production casing will be located and repaired before fracking resumes. *In the short time available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. Absent any subsequent comments, MUB's current default request is that the Permit require this issue be held to the same standard as was provided in 2011.*
6. NNE will hydrostatically test the production casing to a pressure of 10,000 psi which far exceeds the hydraulic fracturing pressure that will be employed. The full vertical length of the casing will be so tested. All such hydrostatic testing will be conducted prior to the fracking process, and results thereof recorded. Fracking will not begin unless/until acceptable test results are achieved. *In the short time available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. Absent any subsequent comments, MUB's current default request is that the Permit require this issue be held to the same standard as was provided in 2011. Our incomplete review indicates that the application appears to state that the casing will be tested to only 5,000 psi but that, during subsequent phases, surface pressure within the casing may reach 9,500psi. If our partial review is correct, testing at a level of approximately 53% of maximum predicted pressure violates the 2011 standard and is clearly inadequate. Test pressures should be at least 110% of maximum predicted pressure.*
7. Similarly, NNE will hydrostatically test the production casing after fracking has been completed (prior to placing the well into production). Testing pressure will be at least as high as the expected operating pressure. The full vertical length of the casing will be so tested, and results thereof recorded. Any breach of the production casing will be located and repaired as quickly as possible, and before production begins. Production will not begin unless/until acceptable test results are achieved. *In the short time available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. Absent any subsequent comments, MUB's current default request is that the Permit require this issue be held to the same standard as was provided in 2011.*

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8. Casing pipe which extends through a void area (such as a mined "room"), will be specially grouted at the points where they enter and exit the voided strata in a manner that meets the requirements of WV Code 22-6-20. *In the short time available since receipt of the application, MUB has not completed its review of this issue, and to the extent allowable MUB reserves the right to submit additional comments upon completion of its review. Absent any subsequent comments, MUB's current default request is that the Permit require this issue be held to the same standard as was provided in 2011.*

Waste Disposal

1. NNE will dispose of all drilling residuals and fracking fluids off site at appropriate land fill and/or injection well. *The application shows that a list of possible disposal sites is provided, and that NNE will confirm DEP approval prior to disposal.*
2. NNE will utilize manifest procedures to document such off- site disposal. The manifests will record the complete chain of custody from the retrieval at the well site to the ultimate disposal location, for all volumes/units of waste generated and removed from the site. *MUB does not find this issue to be addressed in the application. MUB requests that the Permit require this issue be held to the same chain of custody standard as was provided in 2011.*

Miscellaneous:

1. Drill cuttings / fluid will NOT be mixed with fracking fluids. *MUB does not find this issue to be addressed in the application. MUB requests that the Permit require this issue be held to the same standard as was provided in 2011.*
2. Drilling fluids will be water based. *The application shows that Synthetic Oil based drilling fluids will be used. MUB is concerned that increasing the number / nature of synthetic and/or oil based fluids in use on site may increase risk to the water environment. NNE offered water based mud as the more environmentally safe alternative in 2011, and we believe those benefits continue to remain true today. We request that the Permit require water based drilling mud to the same standard as was provided in 2011. MUB is willing to reconsider this position if NNE will provide to MUB clear and compelling documented evidence of superior environmental advantages and protections from using the proposed synthetic oil based mud versus water based mud.*

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Additional Safeguards Requested – As of December 2014

MUB requests that the Permit require these additional safeguards:

- 1. That MUB personnel shall be provided ready and reasonable access to the work site in order to observe the work for the purpose of confirming compliance with environmental / water protection safeguards.*
- 2. That NNE shall reimburse MUB's cost of water quality monitoring related to the subject work.*
- 3. That NNE shall provide a bond, drawn to MUB in the amount of \$1 million, to be executed in the event of a source water contamination resulting from the subject work.*
- 4. That NNE shall cause MUB to be listed as an additional insured on NNE's pollution and general liability insurance policies.*