Duane Marshall
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RE: Petition to Review (Appeal) Permit for Windfall Oil & Gas, Inc.
PERMIT #: PAS2D020BCLE
PERMITTED FACILITY: Class II-D injection well, Zelman #1

November 23, 2014

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1201 Constitution Avenue, NW
WJC East, Room 3334
Washington, DC 20004
PHONE NUMBER - 202-233-0122

Dear Environmental Appeals Board:

The issue being presented for review by this appeal is the proposed disposal injection well site to be located in Brady Township. The appeal is in compliance with the EAB word limits. As a participant in public hearings of this case I would like to present the following concerns for the review of this appeals board. The main concern revolves around inaccuracies in the EPA Response Summary, inaccuracies in the Windfall permit application and the lack of consideration given to fault lines in the injection area. The current EPA finding has determined that the proposed injection site contains no faults or previously fractured wells within a ¼ mile radius. The EPA has also determined that this injection site poses no harm to current drinking water wells. It should be submitted for record that this is a misstatement and not clearly supported based on the following records.

As a concerned citizen who has taken part in the public comment process regarding this matter I would like to raise the following objections and cite conflicting evidence with the current EPA decision and the associated misstatements in their EPA Response Summery. Please consider the following points for review.

No large map exists for residents to review that meets the EPA criteria for permit approval. It was stated that topographical maps for the one mile radius are on file as per the permit approval requirement. No such large maps have been found on file at the library although they do have the two large maps cited by the EPA on file that may cover a ½ mile radius instead of over one mile.

The EPA admits that there are deep coal mines within the area of review in their Response Summary #15, p.17, so these deep mines should be shown on a map and they are not shown. Another misstatement by the EPA Response Statement #5, p. 4 was that the water wells and springs were shown on the Alexander & Associates map, but they were not. They were shown on the Resource Management Services map. There are "no" one mile from boundary line large maps included with the Windfall UIC permit application showing the deep coal mines that are

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within the Area of Review. The UIC permit application is incorrect and deficient and should be denied.

Fractured wells exist on the edge of the ¼ mile area of review for the permit area The EPA Response Summary #12, p. 13, stated that nearby fractured wells reside ½ mile from the proposed site, which is not accurate as the majority of deep gas wells reside on the boundary of the ¼ mile radius.

Water wells exist within the ¼ mile radius. The EPA Response Summary in February 2014 stated, "that no water wells reside within the ¼ mile radius," which was not true as 17 wells reside within this radius and only 14 have been documented on a map submitted to EPA.

Concern over the existence of faults is a reality. The EPA states that wells have not been producing outside of the fault blocks, which is not true as the Atkinson well has produced and is on the other side of the fault. This brings into concern the adequacy of these supposed fault blocks.

Inaccuracies from the initial permit also exist, since it showed a confining zone of 50 feet; the existence of fault blocks are not conclusive; coal mines exist in the area and the potential for a major catastrophe is present if injection fluids are not confined properly; due to the existence of fractured wells on the boundary of the ¼ mile radius; water wells existing within the same area and abandoned coal mines also occupying the same space it seems very clear that this permit needs to be denied. There is an overall lack of geological information regarding this site and it would be shameful to see a disaster transpire due to poor oversight and monitoring. Such an occurrence would be ruinous to our community and also the future of the gas industry as safe and responsible practices should be the standard. Considering the grave nature of a failure in planning we would certainly hope that all issues and concerns would be thoroughly addressed.

For the record, residents have worked hard to follow all the proper procedures. I've actively been working with my wife to learn, understand, and educate residents on the EPA process. I've realized from the beginning that the EPA must permit this disposal injection well if the operator provides enough evidence to meet the EPA guidelines. We understand that the EAB is setup to protect the residents' concerns that still haven't been fully addressed. We understand that the EPA is only allowed to oversee Underground Sources of Drinking Water (USDWs) & we have worked to submit evidence that we fully believe shows our local geology has been compromised by all the drilling. This is not only our belief, it is the belief of drillers that did the work & have many concerns.

Residents have additional concerns since their water wells were tested before the EPA permit was submitted. These concerns started when the water tests were taken & residents were assured

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if anything happened to our water supplies it could be fixed another way. Obviously those taking the water samples are unfamiliar with our area & the reasons why water has never been brought to us. We still have concerns if water sources are contaminated because Brady Water supplies have a waiting list & they seem to be having problems with their current supply as stated in various township meetings. To bring water from other sources is cost prohibitive. Plus residents would be responsible to prove water was contaminated & also take the disposal well operator to court. It is not right to put this burden on residents when they have already went on record with concerns that are known to affect USDWs.

We want on record these additional concerns residents have found in the EPA Response Summary for the Windfall Oil & Gas, Inc. Permit. As residents we have tried to organize these following your suggested EAB guidelines to submit evidence that the information needs further review & the permit needs to be denied.

This EAB appeal request is to "deny this permit" based on the following two regulations since sufficient evidence is available that the confining zone potentially has faults and fractures and the confining layers & above is unable to protect residents' water supplies due to all the fractures from prior deep and shallow gas drilling. 40 C.F.R. §146.22 (a) All new Class II wells shall be sited in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review. 40 C.F.R. §146.22 (c) (2) & (d) (2) Well injection will not result in the movement of fluids into an underground source of drinking water (USDW) so as to create a significant risk to the health of persons.

Residents researched and presented valuable evidence that is easiest to cite comments found in the binder presented on behalf of the residents by Darlene Marshall. We request the testimony provided in the binder at the public hearing be entered into evidence that is reviewed by the Environmental Appeals Board. Residents showed how hard they worked and felt the EPA Response Summary was lacking in responding to comments. So many inaccuracies were found that residents will be very disappointed if the EAB doesn't deny this permit.

Residents reviewed EAB cases and specifically looked at two more recent cases of Class II disposal injection wells that have been remanded back to the EPA. One was in Michigan and one was in Pennsylvania, these cases were remanded back to the EPA for further study. What we did find is that the confining layer must not have any chance of faults or fractures. This is what our residents have been concerned about for the last three years. Many locals have worked in the drilling industry and actually have some of the biggest concerns for our area and they provide a wealth of information. These real life experiences from the actual work done on these wells speak volumes about the concerns being demonstrated. Residents have stated old deep gas wells have affected their water wells, so casings already have been faulty in the past and provide

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conduits from the injection zone to the residents' water supplies. Plus old deep gas wells improperly plugged have been mentioned repeatedly with concerns for the endangerment of USDWs.

Just to summarize as briefly as possible we have compiled a list of our concerns with the EPA Response Summary & Permit:

1 - Permit shows on page 1 that the longitude is different than what the permit applicant listed on pages in the application (-78.444895) is very different than what they have stated (78.444895). These figures being off could change the 1/4 mile radius of review by feet. Give or take 100 feet you would have the old deep gas wells inside the 1/4 mile area of review. Comments provided information on the Oriskany gas wells being just on the boundary of the ¼ mile area of review & it was requested that the area of review be extended to take these old gas wells into consideration. Residents want an accurate map because based on the permit application a small map shows it has an accuracy of 10' feet +/- that can affect each item on the map, which makes the map off by more than 40 feet for each gas well. The gas wells range from feet on the boundary line to 400 feet from the ¼ mile line based on the permit application if the map provided is found to be accurate. We would request these details be reviewed by a third party because we want another provider to verify the information, especially since we weren't given the one mile topographic map originally or even after we provided the information that it was lacking in the permit application.

2 - Permit shows on page 2 that the effect of the permit shall not allow movement of fluid to contaminant USDWs. Concerns were raised during the public comment period numerous times that this is a very real possibility and needs further research with so many unknowns like a) faults, b) fractures, c) old deep gas wells, d) confining layer thickness, e) confining layers ability to confine diposal fluid, f) zone of endangering influence needs extended further, and g) many more concerns exist like the future of seismic activity. The "effect of the permit" is also not to affect the property of others or invade others rights yet a real estate evaluation showed an appraisal addendum that was submitted in the binder by residents demonstrating concern of their property values. Now residents have become aware of surveying in this area to plan for a Marcellus well to be drilled.

3 - Permit shows on page 7 the "monitoring requirements" yet it doesn't provide a comprehensive monitoring plan even though residents provided comment on page 12 #23 of the binder specifically requested a full monitoring plan. Residents know other area wells are able to be used to monitor the fluid in the Oriskany. It is known that the increase in brine found on the monitoring gas wells would be a sign of concern. Residents want more protections put into place if the EAB doesn't deny the permit. Old gas wells are still operational that would be able to be used to monitor, so we disagree with the EPA Response Summary #14, p. 17.

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4 - Permit shows page 13 the financial responsibility and it has already been stated by residents that $30,000 is insufficient to plug & abandon this injection well. Yet the EPA didn't even seem to address residents concerns and ignored studies on the cost. Further research by residents find that it would cost between $100,000 to $120,000, which is three to four times what the EPA is requesting. Even using their own equipment this company would have more cost to plug the well than $30,000 & engineers think this is a ridiculously low figure. Residents request further study & the permit be denied.

5 - Permit page 13 on financial responsibility ignores the concerns of residents on additional financial responsibilities & requested the EPA also protect their property & water with other means through a bond or insurance.

6 - Response Summary #1, p. 2, we realize the EPA only oversees the protection of USDWs yet spills would have the potential to affect our USDWs so as residents commented we expect you to work to protect us from above ground spills in the future, too. Especially due to the proposed injection site also being the recharging area for our local water sources. Representative Gabler also provided at the public hearing comment about a state law and the proximity of homes to this site, which needs further study.

7 - Response Summary #2, p. 2, demonstrates the EPA regulations must still submit to state or local law. Plans for the area to be developed continue yet this will affect our property values & tax value by ruining the rest of the potential for land development to provide new homes & businesses. Residents raised concerns about this being a village in the planning of the township.

8 - Response Summary #3, p. 2, we realize the EPA doesn't pick the site yet the EPA permits the actual site. Residents have provided so many concerns that give doubt to the site location being feasible for this industrial operation.

9 - Response Summary #6, p. 4, discusses casing & residents appreciate the changes in the original casing plan. Residents voiced concerns & those that have knowledge of drilling and casing procedures & actual implementation are still dissatisfied based on field knowledge of construction. The Windfall permit should be denied because of serious consequences from over-pressurizing the annulus of the long string casing. The requirements for constructing the Windfall disposal injection well allow for an open annulus between the wellbore and the 4 ½" diameter long string casing. Extending from the top of the cement sheath around the long string casing at 5000 feet deep to the bottom of the cement sheath around the surface casing at 1000 feet deep. The permit also allows the fracturing of any confining zone below the one adjacent to the lowermost USDW. No provision is made in the permit for venting the annulus or capturing any fluid that may flow out of the annulus at the wellhead. Samuel S. Harrison did a study in

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March 1985 on "Contamination of Aquifers by Overpressuring the Annulus of Oil and Gas Wells," which explains the situation. The principles discussed in the above article apply to the Windfall disposal injection well. The annulus over-pressurizing problem for Windfall is even more serious, since the permit places no prohibition on drilling Marcellus gas wells in the ¼ mile area of review. The fractures already in the confining zone concern many residents and we feel old gas well casings with the gas wells penetrating the injection zone will not be sufficient protection in an area with so many fractures.

10 - EPA Response Summary #4, p. 3, states about discrepancies in information yet it only points out two very minor concerns that residents have expressed in regards to the Windfall permit. Many other discrepancies are the basis for residents' concerns.

11 - Response Summary #5, p. 3, states a one mile map was provided yet this is an incorrect statement even after reviewing the map mentioned it still doesn't provide the information sufficient to fulfill the EPA documentation request.

12 - Response Summary #23, p. 23, we appreciate the EPA holding a second public comment period on seismic activity. Residents provided many concerns & being a closely monitored county for seismic activity makes residents wonder how much more they will need to be concerned in the future with 9 faults located in the ¼ mile area of review. Residents in areas with no seismic activity have experienced seismic activity due to injection wells, so all the statements provided in the Response Summary still don't protect residents when & they believe the faults would be a path to other public water sources and our private water wells, including my own water well.

13 - Response Summary #8, p. 7, mentions pore space yet if it is limited this will move other fluids underground as disposal fluid is injected. No matter that residents have already questioned the confining layer & still believe layers above the confining zone will not be enough to be sufficient due to all the fracturing utilized for deep & shallow gas well drilling. After the gas and brine was removed in this area, more brine has already moved into the pore space from the vast reservoir of brine that fills the Oriskany. A big problem for gas storage fields is brine intrusion. For gas storage they must retain a residual volume of gas at all times to prevent brine intrusion. So much brine has migrated into the area of gas well #33-20333 that a pump jack was installed to pump it out this is also the gas well that already has a conduit to neighbors water wells. The Oriskany formation is receptive for the disposal fluid because it allows for easy movement of brine. The permeability of the formation, and not the amount of supposedly "empty" pore space is what makes the Oriskany formation a candidate for wastewater disposal. This is why residents have concerns in an area with so many gas wells already penetrating the Oriskany with old casings or no casings. Disposal is possible by forcing native brine out of the way.

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14 - Response Summary #8, p. 6 - 11, provides information on the differences in other seismic activity for other injection wells yet various sites were mentioned & even if geology is different we continue to see so many cases that demonstrate concern. The only faults being addressed seem to be at an 18,000 foot depth yet residents see faults on maps in the permit application at shallower depths that would be close to the confining layer & Oriskany. Plus a fault block is cited as confining the disposal fluid. Things aren't presented well enough to clear up all the confusion on the details provided.

15 - Response Summary #8, p. 12, proves interesting since we are unable to compare other areas with our geology for seismic activities yet we can compare our area for the permit to all the other injection wells that seem to have never contaminated water wells. Yet residents presented that Pennsylvania has a very limited number of injection wells for disposal, which the number varies depending on circumstances like the Irvin well violation & other injection wells being shut down. Yet we don't present evidence of more than 10 injection wells before 12/2012 plus fluid has come to the surface in cases residents cited and an incident is cited that contaminated water wells that is very similar to our area (#22, p.22 McKean County). Assumptions are being made with the entire permit and no details are really known for this area until drilling takes place (#4, p. 3) and yet fractures and faults are known to exist so this permit should just be denied.

16 - Response Summary #10, p. 12, even though Clearfield has two other injection wells doesn't mean this site should be permitted since all these sites are different and a mile away would be very different than this site. Residents presented data on fractures, faults and concerns with old deep gas wells in the same formation just on the boundary of the ¼ mile & we continue to request the ¼ mile area of review be enlarged to include these other deep gas wells that have fractured the review area.

17 - Response Summary #11, p. 12, shows confining layer thickness varied & applicant stated 50 feet of thickness yet nothing in the permit application shows this figure as accurate, so what else is inaccurate. It looks to residents that this confining layer varies in thickness from 11 feet to 18 feet in thickness. This is a huge concern to peace of mind & knowledge that fluids would be confined, especially with fracturing of old gas wells that actually fractured the confining layers or all surrounding layers. Review of the permit application shows the confining layer may range from 11 feet to 18 feet thick. A U. S. Department of Energy March 16, 1981 report of a study showed fractures could go 250 to 500 feet out and are reported to be 74 feet in height & a newer September 15, 2014 report shows a study with fractures going out 1,800 feet depending on the geology. Even the 1981 study information on the conservative details puts fractures in our ¼ mile review area and also through our confining layer. So fractures exist & should be considered that may have affected this confining zone, which is not as thick as originally mentioned in the EPA permit. Fracturing of seven gas wells with six gas wells into the same formation as where the fluid will be disposed takes chances when no one knows how far the fractures went.

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Fracturing of a gas well above the confining zone near the injection site along with an unknown variable of the confining zone thickness presents sufficient evidence that this is a risk that shouldn't be taken in our area. Residents identified many other gas wells in a one mile radius. This also means the application for a permit has an inaccurate definition of the confining zone. Fractures would extend well into the ¼ mile area of review. The fractures could then provide a conduit for toxic injected fluids to migrate upwards into a USDW. These fractures could also result in the actual zone of endangering influence (ZEI) being extended beyond the ¼ mile radius area of review.

18 - Response Summary #12, p. 13, is based on pressures yet no one knows what will happen or what is below our ground here. This data is insufficient to protect residents from prior fracturing due to drilling in prior years.

19 - Response Summary #13, p. 14, cites that old gas wells need to be corrected yet no further study was done of the wells we cited on the boundary of the ¼ mile area of review. This is why residents requested these be considered, since 6 Oriskany gas wells are located on the boundary lines of the ¼ mile line. Taking any chances with these already penetrating the injection zone with the ability to displace brine or even wastewaters ability to follow the path of least resistance to conduits to the surface would be irresponsible. Comments were numerous on these concerns. Residents request the permit be denied based on these details.

20 - Response Summary #13, p. 15, the zone of endangering influence even being 400 feet has potential to affect our area if anything happens or a fracture exists in the confining layer above the injection well, especially with a shallow well right near this site that had fracturing done. Also, if the confining zone is not identified properly and the Windfall Class-II D well is not properly cased at the confining zone it will jeopardize water supplies in our area.

21 - Response Summary #13, p. 14 agrees with residents' statements that abandoned wells can pose a risk to USDWs by providing a conduit for the migration of fluid out of an injection zone. Expecting and allowing the operator to decide what will pose a threat to USDWs is not acceptable to residents that already cited examples of concern with known conduits. Ignoring those facts and the EPA issuing a permit makes residents feel that their water sources will be jeopardized. The EPA admits that the Windfall injection zone did not meet the conditions required for a modified Theis equation to calculate the zone of endangering influence. There are actually faults in the vicinity of the proposed disposal injection well and these faults may confine the wastewater injected to flow away from the proposed disposal injection well along the faults. Any calculated zone of endangering influence would have to be larger than what the EPA calculated using a modified Theis equation. It is possible that a more accurately calculated zone of endangering influence would extend beyond the boundary of the ¼ mile area of review.

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22 - Response Summary #14, p. 17, is based on an assumption that no penetrations exist in the ¼ mile. Residents cited repeatedly that the other deep gas wells in the area in the same formation are right on the boundary line of the ¼ mile. This assumption is flawed & causes grave concerns.

23 - Response Summary #16, p. 18, makes an assumption that our area is a site that would be ideal for injection of fluids that even though exempt due to oil & gas have been known to prove toxic. Taking any risk near all these homes is irresponsible & has been stated by Representative Gabler. We realize this may be the best way to dispose of the waste yet the EPA has control to oversee this permit & increase the review area along with the review of the zone of endangering influence. As residents stated, the confining layer has potential to allow fluid migration & this site is almost on top of the local coal mines. This permit needs to be denied.

24 - Response Summary #15, p. 17, assumes that the coal mines will not be contaminated because of their depth yet we do have other deep gas wells penetrating the Oriskany able to endanger USDWs & our coal mines. Residents provided many comments & concerns. Residents request the permit be denied on the basis of all the doubt to confine the diposal fluid.

25 - It is known that plans have been made to drill Marcellus wells near the Windfall disposal injection well, or within the ¼ mile area of review for the Windfall Class II-D well. The hydraulic fractures could compromise the confining zones above the injection zone allowing brine and wastewater to migrate into USDWs. The original Statement of Basis claimed that the Onondaga is 50 feet thick in the area of review. The EPA conceded that there was an error in the Response Summary saying that the Onondaga is more likely to be only 14 feet thick in the area of review. This reduced thickness increases the risk of fracturing to the Onondaga if the Marcellus Shale is horizontally drilled and hydraulically fractured in order to produce gas within the area of review. Any fracturing would render the Onondaga ineffective as a confining zone. Therefore, a Class-II D well and Marcellus wells in close proximity to each other would be very risky to USDWs.

26 - Response Summary #18, p. 20, the construction of this injection well may deteriorate quickly. Residents presented facts on injection well violations, concerns & lack of oversight nationwide. In our own area, we have seen numerous issues with well casings and violations of the Irvin Class-II D well and another casing issue. No one is ever assured that everything will go perfectly and this residential area wants protected from any potential disaster due to the evidence already presented.

27 - Response Summary #20, p. 21, even if injection well technology has improved it doesn't fix the problem of fluid migration underground or through existing fractures. It doesn't fix that the old gas wells in the area into the Oriskany penetrate the injection zone and have been fractured

and provide conduits to USDWs. As the EPA states on p. 21 those gas wells were inferior. That is all that should need to be stated to deny this permit.

28 - Response Summary #22, p. 22, self-reporting is not enough in this permit since the residents have seen that another injection well in our county has violated EPA laws three times during operation along with over-pressurization. This permit site is not the same as that site & residents need to be protected if the EAB doesn't deny the permit.

29 - Response Summary #23, p. 23, residents understand the EPA extended comment periods. Residents showed up at the meeting & planned to give testimony yet the evening went late & they had to leave the meeting before their turn was called & being older they don't find it easy to write. These procedures aren't easy for regular citizens & require extensive research to understand the process. Even the EAB procedures are discouraging to the general citizens. Residents request further consideration be given to their concerns, especially since so many residents took the time to attend the public hearing.

30 - Response Summary #24, p. 24, shows the EPA is taking some steps to improve Class-II D well protections for residents yet these aren't enough. Taking away peace of mind, ability to feel comfortable utilizing or drinking water sources, burdening residents with additional costs to evaluate water and much more makes this a poor decision. Residents request further study to ensure that residents have the most protection available if the EAB doesn't deny this permit.

31 - Response Summary #25, p. 24, this permit in a residential area needs to have an environmental impact study. Residents requested this & request further study.

32 - Response Summary in February 2014 mentioned no drinking water wells in the ¼ mile area of review even though 17 wells are in the ¼ mile area of review. This was corrected for the November 2014 EPA Response Summary and this was a major oversight previously. Residents provided additional information on water sources in the area that need to be considered extensively.

33 - Monitoring of gas wells we note that the EPA doesn't state as much on this issue in the Windfall permit in Clearfield County as they do for the Senecca permit in Elk County we requested a comprehensive monitoring plan.

34 - The 6 gas wells in the Oriskany formation close to this disposal injection permit are right on the boundary line of the ¼ mile area of review yet the EPA cited they were ½ a mile away or 1 mile. This is incorrect in the EPA Response Summary & residents provided this information previously. Residents request further protections & the permit be denied.

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35 - At least two of the plugged wells in the Oriskany formation have been demonstrated by residents to cause concern and need to be checked & some of the old gas wells may need replugged. Residents cited many concerns & request further study that will deny the permit.

36 - The permit states it is for a five year period yet it can be extended, residents need protected now not after the permit is issued. Residents cited many concerns & request further study that will deny the permit.

37 - Response Summary shows information on a fault block that residents find questionable & an Oriskany formation gas well may be listed incorrectly in the permit application in relation to the faults. Residents cited many concerns & request further study that will deny the permit.

38 - The EPA act like the factual comments on the fractures into the ¼ mile area of review are insignificant. The EPA mentions other confining zones would be above the proposed confining layer yet these layers would also have fractures from all the shallow gas drilling in the area. Residents cited many concerns & request further study that will deny the permit.

39 - The two faults on the permit map would actually block the fluid towards two gas wells that are of most concern to residents plus also the coal mines. Residents cited many concerns & request further study that will deny the permit.

40 - Another inaccurate statement seems to exist based on the map information showing faults in relation to the old gas wells that mentions plugged wells not producing outside the fault block. This is an inaccurate statement. Residents cited many concerns & request further study that will deny the permit.

41 - They didn't prove a fault block exists the faults may or may not be transmissive. With no way to prove if the faults are non-transmissive or transmissive we request the permit be denied. Plus if they are using the basement fault at 18,000 feet how does that confine the fluid. Residents cited many concerns & request further study that will deny the permit.

42 - Provides no real proof that the faults are non-transmissive although the information we have may show it is transmissive. Residents cited many concerns & request further study that will deny the permit.

43 - Mentions 30,000 wells & no known contamination of water wells yet we know in McKean County water wells were contaminated by an enhanced recovery well, which is very similar to an injection well. This is why we are concerned with all our old gas wells in the area. Residents cited many concerns & request further study that will deny the permit.

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44 - Doesn't address the Irvin well violations that concern our residents due to water wells so close to this proposed disposal well. The Irvin well wasn't in a residential area near so many water wells yet it violated the EPA regulations. Residents cited many concerns & request further study that will deny the permit.

45 - Request the area of review be extended to a ½ mile radius to consider all gas wells in the area, especially since 6 gas wells exist on the boundary line of the ¼ mile. The Response Summary mentions the Oriskany wells were further away locating them at least ½ mile to one mile from the proposed disposal injection well. Residents cited many concerns & request further study that will deny the permit.

46 - Local residents found permit details to be inaccurate as presented. Residents cited many concerns & request further study that will deny the permit.

47 - Five governing bodies have demonstrated concern at the public hearing & most plan to submit comments although the 30 day period makes it hard. Clearfield County Commissioners, Brady Township, Sandy Township, City of DuBois, DuBois School Board along with local State & Federal Representatives participated. Residents request this permit be denied based on inaccuracies along with fractures & faults into the ¼ mile area of review. This means that this permit would violate the previously cited regulations: 40 C.F.R. §146.22 & 40 C.F.R. §146.22.

48 - Residents want assurances of future protection like insurance & a $1 million+ bond. In the back of our minds we feel this disposal injection well may fail due to concerns we see from those working or who have worked in the industry, so we ask the EAB to give us more protection & ensure water will be provided. Spending $1 million+ to put this disposal injection well into operation means that a $1 million+ bond is insignificant to the operator & it should stay in place until the plugging has been completed.

49 - The recharging zone for this area is located right where the disposal injection well is proposed. Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are enforceable standards. As stated in the Response Summary #16, p. 19, " ...The proper operation and maintenance of a Class II well can require use of such additives", then the permit should regulate that process, since it deviates from the exact wording of the permit. Since some organic compounds can have very low or zero MCLs, it would be useful to the residents to know what contaminants to include in testing their water. Residents cited many concerns & request further study that will deny the permit.

50 - Response Summary #13, p. 16, mentions the geothermal systems in the area. I'm aware of at least one in on Highland Street Extension. Our concern for these systems is due to the conduits in the area to known water well sources from Oriskany gas wells.

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RE: Petition to Review (Appeal) Permit for Windfall Oil & Gas, Inc.
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51 - Response Summary #6 p. 5, addresses the Windfall Class-II D well as a new injection well and the residents are stating the issues reside with the old casings in the Oriskany wells previously drilled that are on the boundary line of the ¼ mile area of review. The EPA Response Summary is totally missing the point that conduits can be the old casings or plugging of the Oriskany wells that penetrate the injection zone. Also the fractures from these Oriskany wells that fractured the confining zone that was cited in the permit application.

52 - Residents are concerned that faults exist in our area and we know one deep well hit a fault in the Oriskany, which is why it was plugged and they moved a few feet away to drill another Oriskany well. A more recent news article cited various information on seismic events that was titled "How Oil and Gas Disposal Wells Can Cause Earthquakes" (*"This article was reported and researched by StateImpact Texas reporters, Kelly Connelly of KUT News, and David Barer and Yana Skorobogatov of StateImpact Texas and Reporting Texas.)* It stated, "The science linking manmade earthquakes to the oil and gas industry isn't anything new. Decades ago, researchers even found they could turn earthquakes on and off by injecting liquid into the ground, says Dr. William Ellsworth with the Earthquake Science Center of the U.S. Geological Survey. This was seen as validation of the effective stress model. This is work that was published in Science magazine and many other publications." Dr. Cliff Frohlich, Associate Director of and Senior Research Scientist at the Institute of Geophysics at the University of Texas at Austin, says, "The last thing a frack engineer wants is to have the fluids go through a fault and go somewhere," he said. "It's like pouring water through a drain. So if you're a frack engineer's doing their job, they're avoiding faults, and they're trying to bust up area rather than having the fluids move somewhere. People injecting are less concerned about that. They're trying to get rid of it, so they want a very porous material where fluids can flow away across long distances. So they're more likely to get to a fault." He also stated, "Earthquakes directly linked to fracking have been rare. That hasn't been the case with disposal wells used to get rid of fracking wastewater, however." A report out from the National Research Council referenced a nine year-old checklist of best practices for drillers and disposal well operators. That includes investigating the site's history of earthquakes and its proximity to fault lines. But it included the observation that "government agencies and research institutions may not have sufficient resources to address unexpected (seismic) events."

In summary, numerous issues exist with Windfall Class-II D well. The deficiencies in the UIC Application that was submitted in the permit application; the Statement of Basis not being corrected and made available to the public; the EPA Response Summary contained factual and numerical errors and potentail theoretical misconceptions; so based on the previous items, the EPA issued the UIC Permit on erroneous findings of fact. At the very least, the issues raised above reflect an exercise of discretion or an important policy consideration that the

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Environmental Appeals Board should review. Residents believe that the deficiencies are numerous and serious enough to merit denial of the Windfall Class-II D UIC Permit.

Thanks for considering all these concerns,

Duane Marshall