Summarized comments and questions received regarding the Arrowhead Road Services #2 class II disposal well permit application.

- Are class II disposal wells in Washington County connected to increased moisture in my home or on my property?
    - Disposal of brine into class II disposal wells occurs thousands of feet below the surface in Washington County. No case of groundwater contamination has been confirmed in Ohio associated with injection into a class II disposal well. If any person believes their water well has been impacted by oil and gas activity, the Division's environmental assessment team will conduct an investigation, which may include water well sampling. Residents may call (614) 265-6922 to report any concerns.

- Why does Ohio accept brine from other states? Other states have outlawed brine injection wells, why doesn't Ohio?
    - Pursuant to the U.S. Constitution, Ohio's General Assembly cannot enact laws that restrict commerce between states. Therefore, the Division also cannot restrict brine from entering from other states. Registered out-of-state brine haulers may transport brine in Ohio to permitted injection wells.

      Ohio's General Assembly has enacted laws (ORC 1509.22, ORC 1509.23, ORC 1509.226) about how brine can be disposed of in the state. Every state bordering Ohio has class II disposal wells; those states have not outlawed brine injection. However, the number of wells in each state varies based on the local geology and the state's regulatory set up.

      The U.S. Environmental Protection Agency has determined that Class II disposal wells provide the safest method for disposal of oil field waste fluids. Prior to the underground injection control (UIC) program, the primary method of disposal of brine was surface infiltration pits which resulted in numerous water wells being contaminated. Since the inception of the UIC program and deep injection of brines through class II disposal wells, no water supplies have been impacted by the use of these wells.

- How many injection wells are there in Washington County? How much brine does Washington County accept? Why does Washington County accept so much more brine than other Ohio counties?
    - Washington County has 17 operating class II disposal wells, and 6.2 million barrels of brine were disposed of into those wells in 2020.

      The amount of fluid disposed in a particular county depends on various factors including number of wells, business practices of the operators, location of the wells, and the injection formations' ability to accept fluid. The only specific limit on disposal amounts set forth in law or rule is in OAC 1501:9-3-05 (B) and apply only to wells for which an application is received after January 2022.

      It's also important to note, Washington County is one of Ohio's most active counties in the number of producing wells, nearly all vertical production wells.

- The proposed well will be near private water wells and the water wells used to service public water systems.
    - The Division reviews all class II disposal well applications to ensure the well will be constructed and operated to provide protection for ground and surface water.

      Division geologists evaluate the location of a proposed site for injection for compliance with law and rule. As part of the permit review process, geologists determine the depth of the deepest underground source of drinking water (USDW) and examine the thickness and nature of confining strata on a site-specific basis. Confining strata are layers of low-permeability rock (clay-shale, salt, limestone, etc.) that overlie the injection zone to prevent vertical migration of injected fluids.

      Law and rule establish the minimum depth of surface casing necessary to extend through and protect all USDWs. A USDW is defined as an "aquifer...that contains a sufficient quantity of groundwater to supply a public water system, and … contains less than 10,000 milligrams per liter of total dissolved solids …." Most groundwater used for public drinking water today contains less than 500 milligrams per liter of Total Dissolved Solids (TDS), and most water that is treated for drinking water contains less than 3,000 milligrams per liter TDS. Therefore, the Division ensures that water resources that could potentially be treated and used as drinking water in the future are protected.

      Class II disposal wells must have multiple layers of protective steel casings. Each casing is cemented into place. Division inspectors witness the casing installation and cementing operations to ensure compliance with Ohio's well construction requirements. Geologically, the injection zone for the brine fluid is located below multiple layers of confining rock, which keep the fluids contained in the porous rock formations below the groundwater aquifers. If any person believes their water well has been impacted by oil and gas activity, the Division's environmental assessment team will conduct an investigation, which may include water well sampling. Residents may call (614) 265-6922 to report any concerns.

- What are the health costs from the disposal wells to the public?
    - Ohio's regulatory framework is designed to ensure class II disposal well operations do not pose a risk to public health, safety, and the environment. The Division reviews all class II disposal well applications to ensure the wells will be constructed and operated to provide protection for groundwater, surface water, and public health and safety. Class II disposal well rules and regulations require brine to be handled in a manner that prevents the fluid from entering the water or touching the ground.
- How much disposal revenue comes back to Washington County?
    - Ohio law (ORC 1509.22(H)(3)) establishes that fees collected from the disposal of brine or other waste substances shall be placed in the oil and gas well fund. By law (ORC 1509.02) money from this fund must be used for the expenses of the division to enforce Ohio law and rule and for

expenses that are critical and necessary for the protection of human health and safety and the environment related to oil and gas production in this state.

In addition, funds from the oil and gas well fund are used to plug orphan wells. The Division has plugged dozens of wells through multiple projects in Washington County, utilizing $1.7 million from the Oil and Gas Well Fund.

- The Redbird well impacted other producing wells. Will this proposed well impact other wells?
    - The Washington County Produced Water Study document outlines the study and actions the Division took regarding the Redbird #4 Disposal Well. The expert who prepared that study concluded that fluid injected into the Ohio Shale formation migrated into the Berea Sandstone. The expert concluded this fluid impacted certain producing oil and gas wells completed in the Berea Sandstone.

      The injection zone for the Arrowhead Road Services LLC number two well is not in the Ohio Shale and is proposed to be in deeper formations with more formations to confine brine from migrating. Additionally, the Redbird #4 well no longer injects into the Ohio Shale formation. The well now injects into a deeper formation, the Bass Islands/Salina Group injection zones.

      Additionally, the Division issued a moratorium on new Ohio Shale wells in the immediate area, completed a local water well impact investigation, and promulgated new rules restricting new Class II disposal wells proposing to utilize the Ohio Shale formation.

      Ohio's current laws and rules require brine to stay in the permitted injection zone. If brine migrates into a different formation, the Division has authority to immediately suspend operations and take regulatory action.

- What happened in the Veto Lake situation? Will this well cause another similar situation? Was a report done?
    - The Division plugged a previously unknown orphan well located in a stream that fed into Veto Lake. At the time it began leaking, the well was unknown, and no records existed, so the Division was unable to conclusively determine what caused the well to leak. Ohio law (ORC 1509.071) requires priority to be placed on plugging wells that pose an immediate risk to public health, safety, and the environment and the Division's priority was to plug the well.

      The Division is increasing efforts to identify potential orphan wells through increased use of technology and public information and education. Specifically, in response to the situation at Veto Lake, the Division utilized its aerial magnetometer technology to fly over the lake to search for any additional orphan wells. None were found.

      The Division's goal is to identify as many wells as possible and utilize as much funding as is available to plug as many orphan wells as possible as quickly as can be done. Learn more about the Division's orphan well program here.

- What's done to prevent spills from trucks and pipelines? If they happen, what happens to the operator and who cleans up?
    - Ohio agencies other than the Division are the primary regulatory authorities for trucks and most pipelines; however, Ohio's class II disposal well laws and rules prohibit any person from placing brine on the ground or in the water. The Division's regulatory framework is designed in a way to ensure that regular and proper operations do not result in spills from trucks, pipelines, or facilities. For example:
        - There are restrictions on placing pipelines near sensitive areas.
        - Pipelines are to be designed, installed, and maintained with a means to detect, and capture a leak from the pipeline.
        - A well owner is required to document their own inspections of the pipeline and other parts of the facility and report it to the Division.
        - Pipelines are to be tested, under the supervision of the Division, to applicable ANSI/ASME/ASTM standards at least once every 5 years or at the request of the Division.

      If brine is spilled, the Division may order an operator to immediately stop operations and remediate the spill. Any spill of a certain volume and type must be reported to the Division by law, and the Division will oversee remediation efforts. The Division has a scaled regulatory schema that can be taken in response to a spill from a written violation to a suspension of operations, revocation of a permit, compliance agreement, or referral to the Ohio Attorney General.

- What about the risks of induced seismicity associated with class II disposal wells? There have been dozens of earthquakes in Washington County. Will there be seismic monitoring requirements for ARS # 2?
    - Seismic events associated with Class II injection wells are rare. More than 180,000 Class II injection wells exist in the United States, with only a small percentage of these wells associated with seismic activity.

      The Division understands the concern with the potential of injection-related seismicity and has taken proactive steps in this area. The Division has its own seismic monitoring network and part of the permitting process reviews the proposed location to determine if seismic monitoring will be a requirement. Ohio's seismic monitoring network is the strongest it has ever been statewide, allowing all parties to better understand seismic activity that occurs in our state. The Division currently has a robust monitoring network in the immediate area (10 seismometers within 20 miles) and did not require a seismic monitoring plan of the Arrowhead Road Services LLC #1 well. If the Division were to impose a requirement for seismic monitoring, it would be included in an issued permit.

      Ohio's rules governing Class II Disposal Wells (OAC 1501:9-3-07) were updated in January 2022

and strengthened the Division's authority regarding induced seismicity. For any well operating in Ohio, the Division can suspend operations if seismic activity occurs within three miles of the well and require the operator to implement a plan before resuming operations.

- Will the operator monitor air emissions? Why are there no VOC monitors at the wells?
    - Air emissions are regulated by the Ohio EPA.
- What is in disposal fluid?
    - Ohio law only allows brine produced from oil and gas wells to be injected into a Class II disposal well. Generally, the majority of fluid disposed is production fluid or brine, the very salty water located in the formation from which the oil and gas is produced. This water may contain traces of other elements found in the rock formation. Brine also includes fluids resulting from hydraulic fracturing operations; this fluid is sometimes referred to as flowback and often contains water and chemicals that are used to hydraulically fracture a well. Substances used in this process are disclosed in Ohio using the FracFocus database. Fluids disposed of at a Class II well can also contain waters collected during a cleanup from a brine release or precipitation that has been collected in secondary containment at oil and gas locations.
- What should public water systems do prior to injection well construction and operation? What testing should be done?
    - Ohio EPA regulates public water systems. Public water systems must monitor their water regularly for contaminants. When a system doesn't meet a standard, consumers are notified. All public water systems should work with Ohio EPA to achieve and maintain compliance with all applicable laws and regulations.
- Who benefits from this well and where do they live? Who is the owner of the well?
    - The applicant is listed as Arrowhead Road Services, LLC with an address of P.O. Box 555, Rosedale, Virginia.

      Disposal of brine is a necessary part of oil and gas production. Generally, class II disposal wells are operated as a business that accepts brine for a fee from oil and gas producers. The owner of the class II disposal well would benefit from the well if its operation is profitable.

      Prior to the UIC program, the primary method of disposal for brine was surface infiltration pits, which resulted in numerous water wells being contaminated. Since the inception of the UIC program and deep injection of brines through class II disposal wells in Ohio, no drinking water supplies have been impacted by injection into these wells.
- What is the limit or is there a limit of the amount of fluid that can be injected?
    - Ohio's law and rules in effect at the time the Arrowhead Road Services #2 permit was filed does not establish any specific limits to the amount of fluid that can be injected. However, the Division does limit the maximum allowable injection pressure for each class II disposal well

which generally limits the amount of fluid that can be injected into a well. Any permit application received after January 2022 could include volume limitations based on the proposed injection formation or the presence of producing wells in the area of review.

Applicants are required to provide an estimate of the disposal volume as part of a permit application. Arrowhead Road Services LLC proposes to dispose of an estimated average volume of 6,000 to 10,000 barrels per day. This is only an estimate and many factors affect actual disposal amounts. Some of these factors include: site specific geology of the injection formation, depth of the well, how the well was built, fluid characteristics, and business practices of the operator.

- What is Ohio EPA's role in the permitting process?
    - The Division has sole and exclusive authority to regulate the oil and gas industry in Ohio (ORC 1509.02). Specific authority to regulate Class II and III injection wells in Ohio is delegated to the Division from U.S. EPA through a primacy agreement. Air emissions are regulated by the Ohio EPA and if emissions exceed regulatory limits, the Ohio EPA has authority to require the operator to obtain a permit.
- This brine poses a threat to our children, environment, and communities.
    - The U.S. EPA recognizes the risk brine can pose if released directly into the environment or ground or surface water and developed the UIC program in response to the disposal practices of the past. Ohio's regulatory framework is written and executed to ensure class II disposal well operations do not pose a risk to public health, safety, and the environment.
- Marietta had historic issues related to contaminants near the city's water well field. Water was pumped at a cost in the millions.
    - Based on the information stated in previous responses, the Division takes all efforts to ensure public health, safety, and the environment are not negatively impacted by class II disposal well operations.

      The U.S. Environmental Protection Agency developed the UIC program specifically to inject fluid waste into deep wells to prevent the problems that arise when you dispose of them at the surface. Past instances of industrial wastewater disposal directly into surface water have caused issues for public health, safety, and the environment; the idea behind the development of the UIC program is to move the fluid wastes out of the surface environment and into the deep subsurface.
- What are the requirements to test nearby water wells? Who would test water, and how would it be done? Why can't private water well owners get their wells tested? Why should the public pay for the test?
    - For any permit issued after January 2022, an operator must test all private water wells, at no cost to the water well's owner, located within 1,500 feet of the proposed well before drilling operations can begin. Guidelines for testing of water wells is available here.

If any person believes their water well has been impacted by oil and gas activity, the Division's environmental assessment team will conduct an investigation, which may include water well sampling. Residents may call (614) 265-6922 to report any concerns.

- What size is the pump going to be?
    - The size of the pump is a business decision by the well owner. Decisions about the pump are commonly made after evaluating the injection capabilities of the well. No matter the size of the pump, it must be connected to an automatic shut-off device to prevent exceedance of the maximum allowable injection pressure.
- How many barrels can you store on an acre in the subsurface? How many acres is this injection well on? Who owns the pore space under a well? Does ODNR authority override personal property rights?
    - The Arrowhead Road Services #2 unit is approximately 13 acres as stated in the application. The Division has no authority to determine property rights or provide advice as to who owns certain rights. The ownership of pore space is a property rights question. The Ohio General Assembly enacted laws and rules requiring the Division to process applications and issue class II disposal well permits. The Division issues permits pursuant to all applicable laws and rules.
- What happens when you pump into the faults? How long did the State test this? There is a fault in Athens County, Troy Township. If the brine goes into a fault where will it go?
    - Earthquakes associated with class II disposal wells are rare. Class II disposal operations near or into a fault can cause earthquakes depending on a variety of factors including the orientation of the fault and stresses on it. Not every fault located near class II disposal operations will result in an earthquake. Similarly, not every fault will allow for the migration of fluid or pressure.

      The Division understands the concern with the potential of injection-related seismicity and has taken proactive steps in this area. The Division has its own seismic monitoring network and part of the permitting process reviews the proposed location to determine if seismic monitoring will be a requirement. Ohio's seismic monitoring network is the strongest it has ever been statewide, allowing all parties to better understand seismic activity that occurs in our state. The Division currently has a robust monitoring network in the immediate area (10 seismometers within 20 miles) and did not require a seismic monitoring plan of the Arrowhead Road Services LLC #1 well. If the Division were to impose a requirement for seismic monitoring, it would be included in an issued permit.

- What kind of plan does the State have if the injected brine gets into the drinking water?
    - Ohio law (ORC 1509.22(F)) outlines the steps to be taken if water supply is impacted by class II disposal operations. Generally, the owner of the well is responsible for providing drinking water temporarily or reimbursing the owner of the water supply. Prior to the UIC program, the primary method of disposal for oilfield brines was surface infiltration pits which resulted in numerous water wells being contaminated. Since the inception of the UIC program and deep injection of brines through class II disposal wells in Ohio, no drinking water supplies have been

impacted by injection into these wells.

- Did DeepRock Disposal Solutions re-permit the Pioneer No. 1 well?
    - As of 6/28/2022, No - The application for the Pioneer #1 well from DeepRock Disposal Solutions was withdrawn on March 16, 2022.

- How far can injected fluid travel?
    - The ability of fluid to travel is limited by the size of the reservoir, injection pressure, the characteristics of the injected fluid, and the properties of the subsurface formations. Ohio's current laws and rules require brine to stay in the permitted injection zone.

- Will the owner install a monitoring well between injection well and public water wells?
    - The applicant has not submitted plans to install groundwater monitoring wells.

      The Division has authority (OAC 1501:9-3-07(F)) to require an operator to install groundwater monitoring wells "…when contamination of the ground water has been caused by or is reasonably anticipated to be caused by the class II disposal well."

- How many orphan wells are there? What are the risks between orphan wells and injection wells? Can you provide the statistical risk of operations being impacted?
    - Ohio has approximately 19,000 documented orphan wells with an unknown number of orphan wells still undocumented. Washington County has approximately 2,800 documented orphan wells. The Division of Oil and Gas Resources Management was created in 1965 and oil and gas drilling began in Ohio as early as the mid 1800's. This period where no regulatory body tracked wells or ownership resulted in the documented and undocumented orphan well situation that currently exists.

      A risk exists for class II disposal well operations to impact improperly plugged orphan wells, however the Division cannot calculate that risk. Ohio law (ORC 1509.071) requires priority to be placed on plugging wells that pose an immediate risk to public health, safety, and the environment.

      The rule defines an area of review requirement to ensure that applicants and the Division review all available records for wells in the immediate vicinity of the proposed injection well to determine if any corrective action is necessary. In general, corrective action is some modification to an existing well to prevent injected fluid from using the well as a pathway to escape the injection zone. One example of corrective action is re-plugging an old well.

      As previously stated, the Division is increasing efforts to identify potential orphan wells through increased use of technology and public information and education. The Division's stated goal is to identify as many wells as possible and utilize as much funding as is available to plug as many wells as possible as quickly as can be done. Learn more about the Division's orphan well

program here.

- Injection well activity should qualify Washington County as a superfund site.
    - The U.S. EPA characterizes superfund sites as "…contaminated sites (that) exist nationally due to hazardous waste being dumped, left out in the open, or otherwise improperly managed." As stated previously, the Ohio General Assembly recognizes the risk oilfield waste can pose if released directly into the environment or ground or surface water. Ohio's regulatory framework is written and executed to ensure class II disposal well operations do not negatively impact public health, safety, and the environment.

- Why are injection wells being bought and sold so much? When fees are collected, is it on each owner or if they are sold, does the fee cap prevent a new owner from paying?

    - The sale of a well is a private business transaction between two parties Entities are required to notify the Division of the transfer the well within 30 days of the sale. The new operator of a class II disposal well is required to obtain authorization to begin injection operations in the entity's name before injection operations may recommence at the well.

      Brine fee collection is governed by ORC 1509.22 (H). The maximum number of barrels upon which the fee may be levied is 500,000 barrels and the cap applies to each well, each year. The fee does not apply to the owner of the well; it applies to each well, each calendar year. Therefore, a change in the owner of a class II disposal well will not affect the fees collected for that year.

- The government is covering up what is going on, and they do not want the public to know. Why wasn't the public meeting a different format?

    - The Division works to go above and beyond what is required by law regarding access of publicly available information. The Division makes a robust amount of information available on our website through resources such as the Well Locator and the online or downloadable RBDMS database. The Division's Public Information section responds to routine and non-routine requests in a professional and appropriate manner, processing hundreds of requests each year.

      The format of the Division's meeting was modeled after meeting formats used by the Ohio Power Siting Board and the Ohio Department of Agriculture. Specifically, the Ohio Power Siting Board states "the purpose of local public hearings are to provide the Board with information about the reaction of the local community to the proposed application and becomes part of the official record that the Board considers before making its decision." The Division utilized this format and considers this to be a reasonable way to ensure all comments from local residents are heard as part of the permit application review process.

- What are the trucking rules in the county? What is the trucking route for this brine water received at the well?

  - The Division does not have the authority to regulate traffic beyond collecting the anticipated ingress and egress roads as part of the application process. The Ohio Department of Transportation has the authority to regulate traffic and ingress/egress on state routes; Washington County regulates county roads, and Belpre Township regulates Township Roads. At the public meeting held June 2, Belpre Township Trustee Asa Boring indicated the township has discussed traffic patterns with the operator, Arrowhead Road Services LLC. The Division has the regulatory authority to issue registration certificates to brine haulers that meet requirements of law and rule.

- It's not fair that the Division gets 12 months to review application and the public gets 15 days.
  - Ohio's law and rules contain defined timelines by which applications are to be reviewed by the Division and public comment periods are to last. However, the Division has the authority to extend this timeline if additional information is necessary to review the permit application. The recent rewrite of Ohio's rule governing class II disposal wells clarified the timelines for permit review. The new rules governing permit applications do not apply to this permit application.

    The Division hosted the public meeting at the request of local elected officials in order to provide an additional opportunity to ensure public comments regarding the application were heard. After receiving approximately a dozen written comments during the written comment period, more than 150 people attended the public meeting with several dozen choosing to make comments on the record. The Division considers this a reasonable and effective way to ensure public comment on a proposed application is heard.

- What is the information on geological formation/seismicity from the engineer's geotechnical report?
  - Ohio's regulations allow the Chief to require a geologic investigation of faulting in the area of the application and/or a geotechnical report of the ability of the surface and immediate subsurface to withstand the proposed surface operations.

    The Division determined these tests were not necessary after a review of information submitted with the ARS #1 well, and all other information available.

- The applicant needs to strengthen the emergency response plan.
  - OAC 1501:9-3-07(J) requires operators to maintain a list of contacts to be notified in the event of a release; this is not a requirement of the permit application. Class II disposal well operators are not required to submit an emergency response plan. Ohio's regulations allow the Chief to require the submittal of an emergency release conveyance map. The Division determined the map was not necessary.

- Is a radioactive tracer survey used to monitor radioactivity? Will the applicant be required to perform a radioactive tracer survey?
  - A radioactive tracer survey or tracer survey is not a test used to monitor the radioactivity levels of brine. A tracer survey, defined in OAC 1501:9-3-01(SS), is a test where fluid with a radioactive tracer is injected and the location of the tracer in the well bore is recorded. The Chief has the

authority to require a tracer survey; to date, the Division has not required a tracer survey to be completed.

- Were local governments consulted?
    - Ohio law (ORC 1509.02) provides the Division "sole and exclusive authority to regulate the permitting, location, and spacing of oil and gas wells and production operations…" The code goes on to state that the regulation of oil and gas is a matter of statewide interest, and the Division's regulatory framework provides a comprehensive plan that governs all aspects of the industry from spacing, location, and construction of wells to the disposal of brines associated with those wells. The definition of "production operations" is broad and encompasses all aspects of oil and gas activity in Ohio.

      The Division rewrote class II disposal well regulations in 2022 to ensure local elected officials receive public notification of new applications and could request a public meeting. These new regulations do not apply to this application. The Division, however, still held the public meeting on June 2 at the request of local township trustees. Ohio law and rule only provide the Division with authority to review a permit application, and according to law, must issue the permit if all rules and regulations are met.

      The Division works to answer all questions and provide requested information to local governments. For example, the Division had a conversation with a township trustee during the review of the permit application for the ARS #1 well.
- What is the bottom-hole injection pressure?
    - Bottom-hole injection pressure is the pressure measured at the bottom of the well bore and may be collected during the well completion process. Ohio law and rule require the well owner to continuously monitor and record injection pressure at the surface. This pressure is used by Division staff to ensure that the well has ongoing mechanical integrity.
- What is the purpose of the 1,000 gallons per day water withdrawal and where will this be from?
    - The application states this water will be from the Little Hocking Water Association municipal water supply. The applicant estimates using 15,000 gallons of water which will be used to drill and complete this class II disposal well.
- Who is notified of applications? Who is notified of meetings?
    - The rules in effect at the time the Arrowhead Road Services LLC #2 application was filed state that an operator must run public notice in a newspaper of general circulation in the county where the proposed well is to be located.

      Ohio law ORC 1509.06(B) requires the Division to make a copy of a weekly permitting report available to the county engineer of each county that contains active or proposed drilling activity. Cities and townships, by law, can request to be added to this distribution list. The Division also

makes this list available on its website.

- Information from ODNR is inaccurate and not up to date. There will never be enough information to permit a well.
    - The Division strives to obtain and keep accurate information. The Division encourages members of the public to point out inaccurate information so we can determine if a correction is necessary.

      The Division works to go above and beyond what is required by law regarding access to publicly available information. The Division makes a robust amount of information available on our website through resources such as the Well Locator and the online or downloadable RBDMS database. The Division's Public Information section responds to routine and non-routine requests, and processes hundreds of requests each year.
- Why was the Mechanical Integrity Test performed over a year ago?
    - It appears this question relates to the Arrowhead Road Services #1 well since the Arrowhead Road Services #2 well has not been drilled. A well cannot be tested until it is drilled. The Ohio Administrative Code requires operating Class II disposal wells to continuously monitor for mechanical integrity. However, Class II disposal wells are also required to perform a mechanical integrity test prior to initially commencing injection operations. Additionally, the well owner must perform a mechanical integrity test at least once every 5 years and also at the request of the chief.
- Why did it take 15 months to get authorization of injection operation at the Arrowhead Road Services #1 well?
    - An operator must properly construct a well according to all permit terms and conditions before the operator is eligible to request a chief's order authorizing injection operations to begin. Therefore, the timing is largely outside the Division's control.
- The area of review lists multiple wells, but why were no corrections needed? Please explain.
    - The purpose of the area of review is to identify any potential artificial pathways that could allow brine to migrate outside of the permitted injection formation. The wells reviewed as part of the area of review procedure were not identified as problematic. The reviewed wells did not penetrate the injection zone.
- What is to account for the large difference between the estimated disposal volume and the capacity of the tanks on site?
    - Arrowhead Road Services LLC proposes to dispose of an estimated average volume of 6,000 to 10,000 barrels per day. This is only an estimate and many factors affect actual disposal amounts. Some of these factors include: site specific geology of the injection formation, depth of the well, how the well was built, fluid characteristics, and business practices of the operator. Generally,

the owner constructs the size of the surface facility based on the anticipated performance of the injection well.

- Will ODNR accept comments on the record? Can people submit questions after the meeting?
    - The Division summarized comments received at the meeting and created these responses. No comments were received after the meeting.
- ODNR has a problem with creditability. Former Division employee Tom Tomastik said injection wells do not cause earthquakes and then an injection well caused earthquakes in Ohio. The claim of no groundwater contamination made in the video can't be true and ODNR is hiding behind the phrase proper operation.
    - Mr. Tomastik no longer works for the Division after retirement in 2014.

      Since 2011, the Division has been a leader in recognizing the risks from induced seismicity and taking action to reduce and prevent induced seismicity.

      In the history of Ohio's Class II disposal well program, there have been no cases of groundwater contamination caused by injection of brine into class II disposal wells. The Division has identified rare instances of contamination from surface spills, but downhole injection has never caused an incident of groundwater contamination in Ohio. The Division encourages anyone who believes water has been impacted to contact the Division so an investigation may be completed.
- Where are these dumping sites and how will the public know if a brine truck accident occurs? There should be a database for the public to review information, spills, etc. There's no public information or notification to the public about leaks from trucks, or accidents. Where are the reports on the release at Mile Run at Marietta?
    - All class II disposal wells can be located on the oil and gas well locator, available on the Division's website.

      Relevant public records may be requested pursuant to the Ohio Public Records Act. The Division's notification rule (one-call incident notification system) details the requirements for notification of certain releases and/or events (1501:9-8). The Division's Emergency Operations and Response section coordinates the response and cleanup of releases reported via the Ohio One-Call with internal sections and other State agencies.

      The Division welcomes the suggestion of a public database displaying records of this type and will consider the request as we work on long-term efforts for technology upgrades.

      Mile Run Road is located west of Marietta, near a class II disposal well and facility operated by DeepRock Disposal Solutions. All inspection reports may available be requested and have previously been released. A release of brine from a pipeline at the DeepRock Disposal Solutions was investigated by the Division and remediated by the operator.

- ODNR is a captive agency because fees fund the agency. Is the agency still funded by fees? ODNR does not want to regulate where they get their paychecks.
    - ORC 1509.02 establishes the oil and gas well fund and states the fund shall be used for the expenses of the Division to regulate the oil and gas industry and the plugging of idle and orphan wells. Ohio's tax law (ORC 5749.02) establishes the severance tax collected on the production of oil and gas (ten cents per barrel of oil and 2.5 cents per thousand feet of cubic gas) which is deposited into the oil and gas well fund. Civil penalties, federal grants, and other sources of funding, such as permitting fees and injection well fees, are also deposited into the fund. The Division's budget is approximately $28 million per year with annual severance tax receipts exceeding that amount.

      While class II disposal well fees are deposited into the oil and gas well fund and are used to fund Division operations, they are not the sole source of funding. No general revenue fund dollars, or money collected from Ohioans through income or other state taxes, is allocated to the Division.

- When there is a spill, who pays for the cleanup? How is remediation documented and who does the work?
    - Operators are responsible for remediation and cleanup if an incident occurs. The Division oversees cleanup and remediation efforts, which is performed by private contractors. If no responsible owner can be identified, the Division may cover the cost of remediation to eliminate immediate risks to public health, safety, and the environment. Division staff are equipped to perform emergency remediation efforts before contractors arrive on site.

- How many wells will be on site? Can the company buy out the landowners near the well?
    - One well is operating on site and another well is under consideration in this permit application.

      The Division has no regulatory authority over property ownership and the landowner and operator may enter into any agreement as the two parties deem appropriate.

- Do meetings ever result in denial?
    - The meeting is an opportunity to ensure all public comments are heard. Ohio law states the Chief must issue a permit if the application is complete and all rules and regulations are followed. The Division has denied class II disposal well permit applications.

- What are the next steps?
    - The Division will complete its review of the permit application to determine if it complies with Ohio law and rule and move forward with issuance or denial.

- How many jobs are coming with the drilling?
    - The Division does not track jobs related to the oil and gas industry. The Ohio Department of Job and Family services tracked employment and workforce trends as part of the Ohio Shale Report. Cleveland State University publishes regular updates as part of its Shale Report series.

- Why are the brine wells not near the owners' homes?
    - The Division has no authority to select the location of a Class II Disposal Well. Its authority is limited to ensuring that the location of the well meets all setback and siting requirements of Ohio law and rule at the time a permit application was filed. Additionally, whether to submit an application is up to the applicant; the Division does not solicit operators to construct new wells. Wells are selected by applicants based on various factors including the suitability of the proposed injection formation to accept fluid and the rights of the operator to utilize the formation for injection operations.

- Washington County has a unique strata that can accept water, and it requires additional study. ODNR should study the information once the well goes in and not permit additional wells.
    - The Division reviews all class II disposal well permit applications for compliance with Ohio rule and law and is required to issue permits if all regulations are met. Division staff regularly inspect wells, review submitted and requested data, and stays current on scientific developments.