

**RESPONSE TO PUBLIC COMMENTS  
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
UNDERGROUND INJECTION CONTROL (UIC) PERMIT # MI-051-2D-0031,  
JORDAN DEVELOPMENT, L.L.C.,  
GLADWIN COUNTY, MICHIGAN**

**Introduction**

This response is issued in accordance with Sections 124.17(a), (b), and (c) of Title 40 of the Code of Federal Regulations, 40 C.F.R. §124.17(a), (b), and (c), which requires that at the time any final EPA permit decision is issued, the Agency shall: (1) briefly describe and respond to all significant comments raised during the public comment period; (2) specify which provisions, if any, of the draft decision have been changed and the reasons for the change; (3) include in the administrative record any documents cited in the response to comments; and (4) make the response to comments available to the public.

**Background**

On September 28, 2017 and May 15, 2018, the U.S. Environmental Protection Agency notified the public of the opportunity to comment on draft permit number MI-051-2D-0031. The first public comment period ended on October 31, 2017 and the second comment period ended on June 22, 2018, for a total of 72 days. Under 40 C.F.R. §124.10(b), EPA shall allow at least 30 days for public comment. EPA mailed public notices of the two public comment periods and a public hearing to: (1) interested parties who had contacted EPA to be placed on the mailing list, (2) residents within a ¼ mile radius of the area proposed to be permitted, (3) parties who had commented during the first public comment period, and (4) federal, state, and local government agencies. EPA also provided copies of the draft permit to the Gladwin County District Library and posted the draft permit on EPA's website for public viewing.

A public meeting and formal public hearing were held on June 19, 2018 at the Gladwin High School. Approximately 300 persons attended, with 38 participants providing oral comments and one submitting written comments. Over the course of the two comment periods, EPA received a total of 154 comments. Subsequently, EPA reviewed the comments and developed this response to comments document.

**General and Out of Scope Comments**

EPA regulations at 40 C.F.R. Parts 144 and 146 state the requirements and standards that a permit applicant must meet to have a UIC permit application approved. Those regulations define the general scope of EPA's authority and review process. They address geologic siting, well engineering, operation and monitoring standards, and plugging and abandonment of injection wells.

EPA received numerous general comments and comments directed at matters outside the scope of the UIC program's limits of authority. EPA acknowledges the submittal of these comments and clarifies that because they raise matters that are not addressed by the UIC regulations and are outside the scope of the UIC permit process, EPA does not respond to them specifically in this

document. EPA is not responding to general statements of support and opposition to the permit individually.

The comments falling into the “out of scope” category are listed below without response. Specific comments that address topics that are relevant to this permitting decision, with responses, follow in a subsequent section.

Upset that State wasn't at hearing  
Want EPA to change Michigan law; Want EPA to petition Congress to change law  
Want EPA to change regulations  
Concern over impacts to roads, deterioration due to increased traffic from the site  
Concern over surface spills, danger to first responders  
Concern over capacity of local first responders to handle emergencies and accidents  
Concern over original purpose of this well  
Concern over pipelines, oil-production permits, and above-ground buildings and structures  
Concern over safety of other injection wells  
Concern over groundwater contamination elsewhere  
Against using brine on roads  
Concern over decreased property values  
Want to require Public Notice if there is a spill  
Want money to test private wells  
Want Jordan Development to test all surface water in area  
Gave advice on promoting the well to the public  
Concern over potential clean-up costs not being funded

## **In-Scope Comments**

**Comment #1** – In the first Public Comment Period in 2017 numerous commenters asked for a hearing and an extended comment period. During the second Public Comment Period several people asked for another hearing and public comment period.

**Response #1** – In response to requests during the first public comment period, EPA held a public meeting and a hearing on June 19, 2018. EPA staff gave a presentation regarding the permit and answered questions during the public meeting, followed by the public hearing, where EPA received oral and written comments from the audience. The hearing was very well attended, and everyone who wanted to comment was given the opportunity to do so. EPA also extended the comment period to June 22, 2018, for a total comment period of 72 days. That is significantly more than the required 30 days of public comment, and EPA does not see a need to create a third comment period or second public hearing.

**Comment #2** – Many commenters said that injection is unsafe, were concerned about the potential for the wells to contaminate their present and future sources of drinking water, that well casing won't last forever, thought that the aquifer should not be “disturbed” any more, and frequently asked how the aquifer will be protected.

**Response #2** – The purpose of the UIC program is to protect Underground Sources of Drinking Water (USDWs) from endangerment by underground injection practices. The UIC regulations are designed to protect USDWs from contamination by: (1) identifying drinking water sources for protection; (2) making sure the geological siting is suitable for injection; and (3) applying standards for well construction, operation, monitoring, and reporting. The permit application and the conditions in the Jordan Development, L.L.C. Class II permit are consistent with those regulations.

The UIC program protects current and future sources of drinking water by defining a USDW broadly. USDWs, by definition, include fresh water aquifers in current use as well as those that meet certain criteria indicating they could be used as drinking water, even if they are not currently used. USDWs are defined based on quantity, current usage, and the concentration of dissolved solids in the aquifer. The concentration of dissolved solids is an indicator as to whether an aquifer has the potential to be potable, even if it is not currently used for drinking water. Specifically, UIC regulations (40 C.F.R. §§144.3 and 146.3) define a USDW as any aquifer which is currently being used as a drinking water source or which is of sufficient volume and adequate quality to be a source for a public water system. An aquifer or portion of an aquifer that contains fewer than 10,000 milligrams per liter (mg/L) of total dissolved solids is considered a potential drinking water source and is therefore protected even if it is not in use (potable water generally contains fewer than 500 mg/L of total dissolved solids). By protecting water supplies that have more dissolved solids than normal drinking water, the UIC program also protects USDWs that could be used in the future. Based on the Michigan Hydrogeologic Atlas (1981), and drilling and formation records in the vicinity of the proposed well site, EPA has identified the lowermost USDW as the Saginaw Formation. The base of the Saginaw Formation is located approximately 729 feet below ground surface.

The geologic setting is suitable for the injection of fluids. Injection is limited by the permit to the Dundee Formation in the interval between 3854 and 3856 feet below ground surface. (The well is running mostly horizontally in this interval.) This injection zone is separated from the lowermost USDW by approximately 3125 feet of rock. The primary confining zone is the Bell Shale between 3796 and 3854 feet below ground surface. According to the publication *Hydrogeology for Underground Injection Control in Michigan, Part 1* "The shales in the Traverse Group, especially the Bell Shale, are excellent confining layers."

Pursuant to 40 C.F.R. §146.22, all Class II wells shall be cased and cemented to prevent the migration of fluids into or between USDWs. The Grove #13-11 well exists. EPA has evaluated its construction and confirmed that it meets this regulation. The permittee shall not commence construction, including drilling or conversion, of any injection well until EPA has issued a final permit. In accordance with 40 C.F.R. §§144.54 and 146.33, and permit conditions found in Permit MI-051-2D-0031, Parts I(E)(19) and III(A), Jordan Development will be responsible for observing and recording injection pressure semi-monthly and reporting this to EPA on a quarterly basis. The injected and produced volumes shall be monitored daily and shall be reported quarterly. The specific gravity of the injected fluid shall be monitored semi-monthly and shall be reported quarterly. An analysis of the injected fluid must be submitted on a quarterly basis. In addition, the applicant is required to conduct and pass mechanical integrity tests and

other well tests, in accordance with 40 C.F.R. §§146.8 and 146.33, after the well is completed and before authorization to inject is granted and every 60 months thereafter. If any question should arise about well integrity, EPA can require a mechanical integrity test to check for fluid movement pursuant to Part I(E)(18) of the permit. After the active life of the well, Jordan must plug the well according to the requirements laid out in the permit and submit a report of the plugging to the EPA.

**Comment #3** – A commenter expressed concern that EPA does not have a detailed plan for dealing with leaks.

**Response #3** – The purpose of the UIC program is to protect USDWs from endangerment by underground injection practices. The UIC regulations are designed to protect USDWs from contamination by: (1) identifying drinking water sources for protection; (2) making sure the geological siting is suitable for injection; and (3) applying standards for well construction, operation, and reporting. The permit application and the conditions in the Jordan Development, L.L.C. Class II permit are consistent with those regulations.

Should any of the monitoring methods described in Response to Comment #2 indicate a leak in an injection well, Parts I(E)(16) and II(B)(2)(d) of the permit require the permittee to stop injection immediately and notify EPA of the situation. Injection cannot recommence until the problem is fixed to EPA's satisfaction, and EPA gives permission to inject.

**Comment #4** – Commenters mentioned their concern over other wells in the Area of Review (AOR) and their potential as a conduit for liquid transmittal.

**Response #4** – EPA reviewed all wells in the AOR, which is the permitted area and a ¼ mile buffer zone around that. The well covered by this injection permit, Grove #13-11, was originally drilled to be a production well, but it was a dry hole. In the AOR around the Grove #13-11 well there were 0 producing and 0 plugged and abandoned wells that penetrated the injection zone or confining layer when the permit was first proposed. Since that time the State has issued a permit for a production well within the Grove 13-11 well's area of review, Michigan Permit #61215. This well was drilled to a total vertical depth of approximately 4300 feet and found to be a dry hole. An evaluation of the well's construction showed it to be adequate to protect USDWs, therefore there are no conduits for liquid transmittal from the injection zone of the Grove #13-11 well into USDWs.

**Comment #5** – Several commenters wanted an AOR with a radius greater than ¼ mile.

**Response #5** – 40 C.F.R. §147.1155 requires EPA to use a fixed radius AOR of no less than ¼ mile for Class II wells in Michigan. In response to this comment EPA investigated an Area of Review double what is normally used. A ¼ mile radius for an Area of Review makes an area of 0.196 square miles (mi<sup>2</sup>), so we searched within an area of 0.392 mi<sup>2</sup>, thus doubling the Area of

Review. The expanded area included the newly Michigan-permitted production well mentioned in Response to Comment #4; but no additional wells penetrating the confining zone.

EPA's technical review of the permit application included an analysis of the engineering design of the injection well and cement plugs, evaluation of the site geology to determine the depth of the USDW and the suitability of the rock formation(s) for injection, calculation of the maximum injection pressure, and a search for and evaluation of any operating or plugged wells within the AOR that penetrate the injection zone, to assure that USDWs are protected. All aspects of the technical review indicated that the proposed well was suited to be an injection well.

**Comment #6** – Several commenters were concerned over the volume of fluid being injected.

**Response #6** – The volumes presented in the Statement of Basis are given as potential maximum volumes for reference, but volume is not limited in the permit. If pore space (openings in the rock) within the injection zone begins to get overfilled, the pore pressure (pressure within the openings) would increase and more pressure would be needed to inject additional fluid. This is a more accurate indicator of filling pore spaces than estimating pore volume based on a small sample of rock. Injection pressure is limited in the permit to avoid over-pressuring the rock, to eliminate the possibility of fracturing the rock.

**Comment #7** – Several commenters were concerned that injecting fluids into the subsurface would change the pressure of the subsurface or residential well water. They did not indicate why this was of a concern to them.

**Response #7** – As stated in response to #6, if pore space (openings in the rock) within the injection zone begins to get overfilled, the pore pressure (pressure within the openings) would increase and more pressure would be needed to inject additional fluid. Injection pressure is limited in the permit to avoid over-pressuring the rock, which could cause it to fracture. Slight changes in pore pressure in the injection zone will not affect USDWs, based upon the geologic setting described in #2, above.

**Comment #8** – Several commenters were concerned that Jordan Development was being allowed to catch and report violations and that EPA should independently monitor wells and that mechanical integrity tests should be more frequent.

**Response #8** – Self-monitoring and self-reporting are consistent with the SDWA. They are fundamental elements of the UIC permit program and other Federal regulatory programs, such as those under the Clean Water Act, Resource Conservation and Recovery Act, and Clean Air Act. Jordan Development will be responsible for observing and recording injection pressure, flow rate, and specific gravity on a semi-monthly basis and reporting this to EPA on a quarterly basis as required by 40 C.F.R. §§144.54 and 146.23. Jordan Development will also be responsible for observing, recording, and reporting monthly injected and produced volumes to EPA on a quarterly basis. An analysis of the injected fluid must be submitted to EPA quarterly. Jordan

Development will be required to repeat mechanical integrity tests at least once every five years. Documents reporting the results of tests and monitoring activities must be certified under penalty of law as complete, true, and accurate by Jordan. EPA can require a mechanical integrity test at any time if it feels the need. Additionally, EPA independently inspects a subset of wells and otherwise collects information to assess whether wells are meeting permit requirements. EPA also observes mechanical integrity tests when they are performed. Monitoring and inspection reports are available to interested parties under the Freedom of Information Act. In federal fiscal year 2017, EPA Region 5 inspected 518 wells, reviewed 13,560 monitoring reports, witnessed 226 mechanical integrity tests, reviewed reports from 32 well mechanical integrity or geologic reservoir tests, and issued four information collection orders.

Self-monitoring under permit conditions has been well-established for decades. EPA environmental compliance inspections supplement regular self-monitoring data, and permit violations are subject to enforcement action. Under federal law, there are severe criminal penalties for falsification of data and reports.

**Comment #9** – One commenter stated that injection should not be permitted because this is an area with Karst geology.

**Response #9** – The commenter is incorrect about the geology of the area. According to the U.S. Geological Survey, the Karst areas of the Lower Peninsula of Michigan are in the far northern edge and the far southeast portion of the State, not in Gladwin County.

**Comment #10** – Commenters were concerned over the composition of the injected fluid, calling it “toxic waste” and wanted to know every possible constituent in the brine.

**Response #10** – Oilfield brines, or “produced water,” commonly may contain various amounts of hydrocarbons, such as benzene, ethylbenzene, toluene, xylene, naphthalene, and polycyclic aromatic hydrocarbons. Some producing formations can have low levels of naturally-occurring radioactive materials. These compounds occur naturally in fluids that are separated from oil and gas. While there is no established definition of “toxic waste,” there are well-established definitions of “hazardous waste.” Oilfield brine has been exempted from the definition of hazardous waste by the Resource Conservation and Recovery Act under 40 C.F.R. §261.4(b)(5), which specifically exempts “drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy.” This means that the fluid coming out of a production well, which is called brine but may also include drilling fluids among other things, can be injected into a Class II well, regardless of its constituents. As explained in the Response to Comment #2, above, the purpose of the permitting standards is to prevent exposure of the brine to fresh water, thus protecting people as well as terrestrial and aquatic wildlife and plants.

EPA requires all permittees to submit operating data with the permit application, including source and analysis of the physical and chemical characteristics of the injection fluid. The company submitted a representative brine sample that meets the UIC regulation requirements at

40 C.F.R. §146.24(a)(4)(iii). These regulations require a fluid analysis but do not include a list of chemicals to be analyzed for Class II injection wells. EPA Region 5's permitting tool titled "Example: Underground Injection Control Class II Permit Application" advises applicants to provide a fluid analysis that includes concentrations of, but is not limited to the following: sodium, calcium, magnesium, barium, total iron, chloride, sulfate, carbonate, bicarbonate, sulfide, and total dissolved solids; as well as pH, resistivity (ohm-meters), and specific gravity. This permitting tool list contains sufficient analytes to allow EPA to determine if the results are consistent with oil or gas production related brine. EPA has determined that the applicant has provided sufficient information, including a representative brine analysis, to allow EPA to make a permitting decision.

Furthermore, the permit requires Jordan to submit an annual chemical composition analysis of the injection fluid. According to Part III(A) of the permit, the analysis shall include but is not limited to the following: sodium, calcium, magnesium, barium, total iron, chloride, sulfate, carbonate, bicarbonate, sulfide, total dissolved solids, pH, resistivity, and specific gravity. This information is available to the public.

**Comment #11** – Commenters were concerned about radioactive materials, saying that EPA should not issue injection well permits because of the chance of injecting radioactive materials, and that well engineering does not safeguard against radioactive contamination.

**Response #11** – Some petroleum producing formations can have low levels of naturally-occurring radioactive materials. These compounds occur in fluids that co-exist with oil and gas and eventually at the surface are separated from oil and gas. The United States Geological Survey (USGS) published a Fact Sheet on "Naturally Occurring Radioactive Materials (NORM) in Produced Water and Oil-Field Equipment – An Issue for the Energy Industry." In that fact sheet they explained how NORM can come to exist in produced water (oil field brines) and that it can accumulate as scale in well materials that are in prolonged contact with produced water. A study of those well materials included Michigan and showed that typical radiation readings were "At background or marginally detectable." Furthermore, the USGS Fact Sheet compared disposal alternatives for NORM waste and showed that injection wells offered a high degree of isolation of exposure from the public. Finally, as mentioned in #10, fluid from an oil or gas production well, regardless of constituents, can be disposed of in a Class II injection well.

**Comment #12** – Several commenters were concerned about fracking and fracking waste.

**Response #12** – The maximum injection pressure regulated by this permit is set so that the injection pressure will not fracture the injection zone rock. In other words, this is not a "fracking well." Furthermore, though Jordan Development has no plans to inject flowback from hydrofracking operations, such injection would be allowable under current law. As mentioned in #10, above, drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy has been exempted from the definition of hazardous waste under the Resource Conservation and Recovery Act under 40 C.F.R. §261.4(b)(5). In addition, such fluids are expressly included within the scope of

Class II fluids under the Safe Drinking Water Act. [Please see 40 C.F.R. §144.6(b)]. This means that the fluid coming out of a production well, which is called brine but may also include drilling fluids among other things, can be injected into a Class II well, regardless of its constituents. In any case, the design, engineering, construction, operation, maintenance requirements, and geologic setting provide a high level of confidence that the well will not pose a risk to groundwater resources.

**Comment #13** – Numerous commenters gave "statistics" saying 4 in 10 wells leak, or some other high percentage, but no specific sources of information were mentioned.

**Response #13** – The “statistics” that commenters mentioned do not reflect EPA’s experience in Michigan. In a review of all active Class II injection wells in Michigan over the past five years, the failure rate has been no higher than 5% in any given year. This failure rate is almost entirely (100% to 99.72%) limited to annulus fluid leaking into the tubing and then into the injection zone, and **not** injectate fluid (brine) passing through the casing into an area other than the intended injection zone. Such casing leaks are extremely rare in Michigan; in the past five years the rate of casing needing repairs has ranged from 0 to 0.28% per year. To better understand these failures it helps to know the construction of the injection wells.

Injection wells must be constructed and operated to prevent the injection fluid from contaminating a USDW. In the case of the Grove #13-11 well, the well was drilled to approximately 3,854 feet below the ground surface, and was constructed with three casing strings (steel pipes). The outermost casing extends from the ground surface to 680 feet deep and the casing is cemented from the base to the surface. Inside this casing is an intermediate layer of casing set from the surface to a depth of 1573 feet, which is cemented in place from the base to the surface. These layers of steel casing and cement separate the interior of the well from the Saginaw Formation to protect USDWs. Inside this intermediate casing is an innermost casing that extends from the surface to a depth of 3910 feet which is cemented to the rock formations from the base up through the confining formations to prevent the movement of fluids out of the injection zone.

The proposed injection will take place through steel tubing that is set within the innermost casing. The fluids approved for injection will only be permitted to flow through the inside of this tubing. A device called a packer will be set at the bottom of the tubing to seal off the space between the innermost casing and tubing. This space, called the annulus, will be filled with a liquid mixture containing a corrosion inhibitor, and the permittee must monitor the pressure of the annulus liquid to detect any changes in pressure that could indicate a leak in either the tubing, packer, or casing. This pressure in the annulus will be tested under high pressure initially after the construction of the injection well to ensure that the well has mechanical integrity and then monitored weekly thereafter to ensure that the well maintains mechanical integrity. The permit does not allow injecting fluids through this monitored annulus space. Because injection fluids will only be injected through the tubing, they will not be in contact with the well casing.



If monitoring indicates a leak in the annulus or if the well should fail a mechanical integrity demonstration, then the permit requires the well to be shut down immediately and the failure reported to EPA within 24 hours. This is what EPA considers a well “failure.”

Any repairs or corrective actions taken to bring the well back into compliance with the permit and any work performed on the well that requires the moving and/or removal of the tubing or packer must be reported to EPA and followed by a mechanical integrity test before EPA will give authorization to resume injection.

**Comment #14** – Commenters expressed concern over the well allowing leaking into surface water.

**Response #14** – Because the purpose of UIC permit requirements is to protect USDWs, these requirements also protect surface waters that may be connected to USDWs and prevent upward movement of injected fluids. A watershed’s connection with aquifers is limited to the aquifers that have connections with surface bodies of water. While area creeks, streams, lakes, and rivers may be in hydraulic communication with shallow groundwater or depend on shallow groundwater for flow, they are not deeper than the base of the lowermost USDW and there is no hydrologic connection with the injection zone. Similarly, wetlands, lakes and potholes, or kettle lakes are also shallower than the lowermost USDW. The geologic siting, construction, operation, and monitoring of this well will be sufficient to prevent upward movement of the injected fluid into USDWs and also surface waters.

**Comment #15** – Commenters expressed concerns over earthquakes. The concerns were over the following issues: whether Jordan Development addressed earthquakes in its permit application; the possibility of injection-induced earthquakes; whether the well has been inspected since recent earthquakes; and whether earthquakes could have altered the geology of the well site.

**Response #15** – Jordan Development addressed the issue of faults in its permit application. The EPA’s technical review of the permit application also included an investigation into the chances of induced and naturally-occurring earthquakes. EPA is required to consider and did consider known or suspected faults in the area of review (40 C.F.R. §146.24).

The Underground Injection Control National Technical Workgroup decision model recommends that EPA evaluate whether there is a history of successful disposal activity in the proposed well’s area and whether there have been seismic events there. While this well has not been used previously for injection, other EPA-permitted injection wells are in the county and have a history of successful disposal activity. There is a structural lineament (a linear feature in a landscape, not a known fault) outside of the area of review but within 5 miles of the proposed injection well, but it has not been active in recent geologic time.

Recorded earthquakes serve as a general indicator of seismic activity and the potential existence of a stressed fault. A record of past earthquakes would be evidence of the presence of stressed faults in the area, a common criteria EPA considers when evaluating the potential for seismic

activity and induced seismicity. The lack of seismic activity in the proposed well area is evidence that there are no active faults in a stressed state in the area and that the geologic siting is appropriate for injection. The three earthquakes that have occurred in recorded history in Michigan have all been over 100 km from the well location, as was the April 20, 2018 quake in Amherstburg, Ontario, Canada. After examining the U.S. Geologic Survey (USGS) 50-Year Quake Probability Map and the USGS assessment of Hazard Values and the area-specific factors, we concluded that the probability of a natural seismic event is negligible, as is the probability of this well causing an induced seismic event. As for the inspection of the well since the Amherstburg earthquake, all injection wells must be tested before they are authorized to inject disposal fluids.

Finally, earthquakes do not alter geology, except for the shifts of strata immediately adjacent to a fault that has been disrupted by an earthquake. Even near major faults, such as the San Andreas of California, disruption of geologic strata is confined to a zone a few meters from the fault where offset of strata can occur. There is no fault near enough to this well to cause such disruption.

**Comment #16** – One commenter was concerned over threats to wildlife.

**Response #16** – The EPA review of a permit application includes a review pertaining to the Endangered Species Act. This includes a review of Federally-classified threatened, proposed endangered, and endangered species in the Area of Review. This review reached the conclusion that because there will be no new construction in the area, including no tree clearing and no earth-disturbing activities, this permit will have no effect on threatened or endangered species.

**Comment #17** – A number of commenters wanted there to be a public referendum to vote on whether or not the permit should be granted.

**Response #17** – No Safe Drinking Water Act provision or federal UIC regulation authorizes a public referendum to decide the fate of a federally-administered UIC permit. EPA therefore has no authority to hold a vote on the matter. If local or state authorities wish to hold such a referendum and pass restrictions on injection wells, nothing in federal law prohibits that.

**Comment #18** – One commenter claimed that the permit was already final when it was placed on Public Notice.

**Response #18** – The commenter was mistaken. The permit that was out for review was draft, and was clearly marked as such.

**Comment #19** – Commenters were concerned that financial assurance only covers the cost of plugging the well, and does not cover all potential environmental damage.

**Response #19** – UIC regulations require the permittee to provide financial assurance for properly plugging the well. Jordan Development, L.L.C. has a letter of credit for \$28,500 for this purpose. No SDWA provision or federal UIC regulation authorizes EPA to require Class II well owners/operators to be bonded for other reasons, including the cleanup costs of any potential contamination.

In the unlikely event that a well ever caused contamination of a USDW, the Class II well owner is responsible for any potential contamination that occurs on or from the site. Under SDWA Section 1431, 42 U.S.C. §300i, EPA can require owners to clean up any contamination of a USDW due to injection and/or supply alternative water to affected parties. An operator is required to do what any reasonable person would do to prevent or correct environmental damage. A reasonable action might be to prevent and contain any surface spills, remediate groundwater contamination, replace any degraded component of the well, and so forth. Jordan Development, L.L.C. will remain responsible for ensuring that the groundwater is protected from contamination due to injection.

The Michigan Department of Environmental Quality, under Act 307, can also require owners to clean up any contamination due to injection, and/or supply alternative water to affected parties. In addition, EPA has other programs that could utilize regulatory tools (e.g., the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or “CERCLA”, and the Resource Conservation and Recovery Act, or “RCRA”) to clean up sites and to compel responsible parties to perform cleanups or reimburse the government for EPA-led cleanups.

**Comment #20** – Several commenters were concerned that Jordan Development is a Limited Liability Company (L.L.C.) and therefore could not be held liable for potential damages.

**Response #20** – A Limited Liability Company is essentially a hybrid between a corporation and a partnership. An L.L.C. is taxed like a partnership and has the liability structure of a corporation. As such, members of the company cannot be held personally liable for the company’s debts or liabilities, but the company can be held liable, just as a corporation can.

Pursuant to the SDWA, EPA promulgated requirements preventing underground injection that would endanger water sources, including monitoring, recordkeeping and reporting requirements. Section 1423 of the SDWA, 42 U.S.C. § 300h-2, specifies the mechanisms to ensure compliance with and enforcement of those requirements, and authorizes EPA to, among other things, issue compliance orders and pursue civil or criminal penalties against any “person” violating the requirements. Under Section 1401(12) of the SDWA, 42 U.S.C. § 300f(12), a “person” is defined as including a “corporation, company, [or] association . . . (and includes officers, employees, and agents of any corporations, company, [or] association).” The SDWA authorizes a court to enter any such judgment as “protection of public health may require.” See Section 1423(b) of the SDWA, 42 U.S.C. § 300h-2(b). Also, under Section 1431(b) of the SDWA, 42 U.S.C. § 300i, “upon receipt of any information that a contaminant which is present in or is likely to enter . . . an underground source of drinking water . . . which may present an imminent and substantial endangerment to the health of persons . . .” EPA can enforce laws, regulations, and permit conditions regardless of the type of entity holding a permit. Furthermore, Michigan L.L.C.s have

all powers granted corporations (MI LLC Act Section 450.4210) and corporations may be sued in all courts (MI Business Corporation Act Section 450.1261).

**Comment #21** – Commenters were concerned that Environmental Justice was not considered when making decisions about Jordan Development’s application for this well.

**Response #21** – EPA Region 5 routinely uses EJSCREEN, the Agency’s screening tool for Environmental Justice, for every injection well permit. This screening tool examines 11 environmental and seven demographic indicators. It was noted that the site is in an area with potential Environmental Justice concerns based on household income and population having less than a high school education. This information was considered when choosing a location and time for the information session and hearing and when designing outreach materials. The high attendance for the information session and hearing indicates that the location and time for the meetings was adequate for the community. The presentation for the information session was designed and delivered by a former teacher in an effort to be understandable to any members of the audience who may have less than a high school education.

**Comment #22** – Commenters were concerned that EPA had not considered Jordan Development’s “track record” when making decisions about this permit application.

**Response #22** – UIC regulations at 40 C.F.R. §146.24 specify which factors EPA must consider in evaluating a UIC permit application. EPA may not consider any factors not set forth at 40 C.F.R. §146.24. Because UIC regulations do not authorize EPA to consider an applicant's compliance history, EPA cannot deny or issue Jordan Development's permit application based on issues outside of the site-specific factors allowed in regulations. However, 40 C.F.R. §144.40 provides that EPA may, after public notice and the opportunity for a hearing, terminate a permit for noncompliance with the same.

## **Determination**

After consideration of all public comments, EPA has determined that none of the comments submitted have raised issues that would alter EPA's basis for determining that it is appropriate to issue Jordan Development a permit to convert and operate the injection well. Therefore, EPA has determined that the permit decision is to issue a final permit to Jordan Development. There are no changes in the final permit from the draft permit.

## **Appeal**

In accordance with 40 C.F.R. §124.19(a), any person who filed comments on the draft permit or participated in the public hearing may petition the Environmental Appeals Board (EAB) to review any condition of the final permit decision. Additionally, any person who failed to file comments on the draft permit may petition the EAB for administrative review of any permit conditions set forth in the final permit decision, but only to the extent that those final permit

conditions reflect changes from the proposed draft permit. Any petition shall identify the contested permit condition or other specific challenge to the permit decision and clearly set forth, with legal and factual support, petitioner's contentions for why the permit decision should be reviewed, as well as a demonstration that any issue raised in the petition was raised previously during the public comment period (to the extent required), if the permit issuer has responded to an issue previously raised, and an explanation of why the permit issuer's response to comments was inadequate as required by 40 C.F.R. §124.19(a)(4). If you wish to request an administrative review, documents in EAB proceedings may be filed by mail (either through the U.S. Postal Service ("USPS") or a non-USPS carrier), hand-delivery, or electronically. The EAB does not accept notices of appeal, petitions for review, or briefs submitted by facsimile. All submissions in proceedings before the EAB may be filed electronically, subject to any appropriate conditions and limitations imposed by the EAB.

To view the Board's Standing Orders concerning electronic filing, click on the "Standing Orders" link on the Board's website at [www.epa.gov/eab](http://www.epa.gov/eab). All documents that are sent through the USPS, except by USPS Express Mail, must be addressed to the EAB's mailing address, which is: Clerk of the Board, U.S. Environmental Protection Agency, Environmental Appeals Board, 1200 Pennsylvania Avenue, NW, Mail Code 1103M, Washington, D.C. 20460-0001. Documents that are hand-carried in person, delivered via courier, mailed by Express Mail, or delivered by a non-USPS carrier such as UPS or Federal Express must be delivered to: Clerk of the Board, U.S. Environmental Protection Agency, Environmental Appeals Board, 1201 Constitution Avenue, NW, WJC East Building, Room 3332, Washington, D.C. 20004.

A petition for review of any condition of a UIC permit decision must be filed with the EAB within 30 days after EPA serves notice of the issuance of the final permit decision. 40 C.F.R. §124.19(a)(3). When EPA serves the notice by mail, service is deemed to be completed when the notice is placed in the mail, not when it is received. To compensate for the delay caused by mailing, the 30-day deadline for filing a petition is extended by three days if the final permit decision being appealed was served on the petitioner by mail. 40 C.F.R. §124.20(d). Petitions are deemed filed when they are received by the Clerk of the Board at the address specified for the appropriate method of delivery. 40 C.F.R. §124.19(a)(3) and 40 C.F.R. §124.19(i). The request will be timely if received within the time period described above.

For this request to be valid, it must conform to the requirements of 40 C.F.R. §124.19. This request for review must be made prior to seeking judicial review of any permit decision. Additional information regarding petitions for review may be found in the Environmental Appeals Board Practice Manual (August 2013) and A Citizen's Guide to EPA's Environmental Appeals Board, both of which are available at: [http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/General+Information/Environmental+Appeals+Board+Guidance+Documents?OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/General+Information/Environmental+Appeals+Board+Guidance+Documents?OpenDocument).

The EAB may also decide on its own initiative to review any condition of any UIC permit. The EAB must act within 30 days of the service date of notice of the Regional Administrator's action. Within a reasonable time following the filing of the petition for review, the EAB shall issue an order either granting or denying the petition for review. To the extent review is denied,

the conditions of the final permit decision become final agency action when a final permit decision is issued by the EPA pursuant to 40 C.F.R. §124.19(l).

Please contact Janette E. Hansen of my staff by U.S. Postal Service at 77 West Jackson Blvd., Mail Code WU16J, Chicago, IL 60604, or via email at [hansen.janette@epa.gov](mailto:hansen.janette@epa.gov) if you have any questions about the Jordan Development, L.L.C. injection well permit.

Linda Holst Date 10/23/18

Linda Holst  
Acting Director,  
Water Division  
U.S. Environmental Protection Agency Region 5