

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY  
NOTICE - APPLICATION FILED**

**Application filed.** A Tier II application for a Limited-scale Aquifer Storage and Recovery (LSASR) pilot project has been filed with the Department of Environmental Quality (DEQ).

**Applicant:** The applicant is: City of Ada, 231 S. Townsend Street, Ada, Oklahoma 74820.

**Type of final permit or permit action being sought:** The applicant seeks a new permit.

**Facility location:** The Limited-scale Aquifer Storage and Recovery Pilot Project is located approximately 3.2 miles southwest of Fittstown in Pontotoc County on land owned by the City of Ada. See legal description below.\*

**Activities to be regulated if the application is approved:** A permit will allow the City of Ada to inject a tracer into the Arbuckle Simpson Aquifer (ASA) at the City's LSASR pilot project site to acquire geohydrologic characterization information required for eventual future full-scale Aquifer Storage and Recovery applications; the information includes determinations of attenuation rates for chemical and biological stressors and evaluation of particulate transport in fractured rock aquifers. The basic design involves adding a tracer into an existing sinkhole (a natural recharge feature at the site) and tracking its short-term and long-term movement in groundwater and assessing the effects on the Arbuckle Simpson Aquifer by recording and sampling changes in groundwater conditions at nearby monitoring wells; and utilizing real-time electrical resistivity imaging technology. The four tracer tests (LSASR sub-test 1-4) will be conducted by adding 5,000 gallons of raw municipal supply water from Byrd's Mill Spring (BMS) to two-2,500 gallon storage tanks next to the sinkhole. The BMS raw water is considered to be the same as groundwater at the site. The tanks will have various tracers, described below, added for each test allowing the movement of groundwater to be evaluated. The mixture of water and tracer material will then be pumped from the tanks into the sinkhole. Sub-test 1 which evaluated the system's operational components has been completed and determined that the conveyance rate of the slug delivery system (250 gallons per minute) could be accommodated by the sinkhole for the duration of the tracer release. Sub-test 2 will be a slug deployment into the sinkhole of a non-reactive saline tracer (250 mg/L NaCl which meets drinking water quality standards) and thermally distinct BMS water. Sub-test 3 will be implemented only after all traces of Sub-test 2 have dissipated and will be of the same composition as Sub-test 2, but will contain an addition of no more than 22 pounds of groundwater tracing particles (GTPs). The GTPs are an edible artificial sand consisting of degradable low toxicity risk mixture of: sodium alginate reacted with calcium chloride dihydrate (to produce a food grade gel carrier for the particles); a common fluorescent groundwater tracer (uranine dye); borosilicate glass bubbles (to provide neutral buoyancy); and powdered magnetite (to allow magnetic capture of particles). Sub-test 4 is the same makeup as Sub-test 3. Tracking of the GTPs will be used to evaluate risks associated with particulate contaminants such as bacteria and viruses that may travel through preferential flow paths in fractures.

**Statutes and Rules:** DEQ will review the application for compliance with the Environmental Quality Code, Title 27A of Oklahoma Statutes, Section 2-06-110, *et seq.*, and the rules of the DEQ, Oklahoma Administrative Code, Title 252, Chapters 4, 652 and 653. This project is also subject to the federal requirements for its underground injection control program incorporated by reference at OAC 252:652-1-3.

**Permitting procedures explained:** Opportunities for public comment on this application will begin when notice is given that DEQ has completed its review of the application and has prepared either a draft permit or a draft denial. At that time, written comments may be sent and a public meeting for oral comments may be requested. The application may be reviewed at the locations listed below and may be revised by the applicant as DEQ's review progresses.

**Locations where application may be reviewed:**

1. Locally at: City Hall, 231 S. Townsend Street, Ada, Oklahoma 74820.
2. DEQ's Central Records Section, located on the 2nd floor of the DEQ building at 707 N. Robinson, Oklahoma City, Oklahoma.
3. DEQ's website at <https://www.deq.ok.gov/land-protection-division/permit-public-participation-process/>.

**For more information, contact:**

1. For applicant: Theresa Lewis, Executive Assistant; City of Ada; 231 S. Townsend Street, Ada, OK 74820; ph: (580) 436-6300 x201.
2. For DEQ: Hillary Young, P.E., Chief Engineer, DEQ, Land Protection Division, P. O. Box 1677, Oklahoma City, OK 73101-1677; ph: (405) 702-5100; Fax No. (405) 702-5101.

**\*Legal description of site:** SE1/4 NW1/4 S4-T1N-R6E, Pontotoc County, Oklahoma.