

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY  
NOTICE – DRAFT PERMIT**

The Oklahoma Department of Environmental Quality (DEQ) received a Tier II application for a Limited-Scale Aquifer Storage and Recovery (LSASR) Pilot Project at the Ada LSASR pilot project site, located in the SE1/4 NW1/4 of Section 4-T1N-R6E in Pontotoc County, Oklahoma. The application was filed by the City of Ada on May 16, 2022.

The DEQ has tentatively found that the application meets the requirements of the Environmental Quality Code, Title 27A of the Oklahoma Statutes, Sections 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. Consequently, DEQ has prepared a draft permit for public review.

The draft permit and its conditions propose to 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 hydrogeologic 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 ASA by sampling and recording changes in groundwater conditions at nearby monitoring wells; and by utilizing real-time electrical resistivity imaging (ERI) technology. 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 the same as groundwater at the site. The tanks will have various tracers, described below, added for each test; then the mixture of water and tracer material will be pumped from the tanks into the sinkhole. Sub-test 1 was previously approved by DEQ and has been completed. It evaluated the system's operational components 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 artificial edible sand-sized particles consisting of degradable low toxicity risk mixture of: sodium alginate reacted with calcium chloride dihydrate (to produce a food grade gel); 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.

The application, draft permit, and a fact sheet may be reviewed during normal business hours at the following locations:

Ada City Hall, 231 S. Townsend Street, Ada, Oklahoma, 74820

Central Records Office, Oklahoma Department of Environmental Quality, located on the 2<sup>nd</sup> floor of the DEQ building at 707 North Robinson, P. O. Box 1677, Oklahoma City, OK 73101-1677.

Copies are also on file on DEQ's website at <https://www.deq.ok.gov/permits-for-public-review/>; or the Land Protection Division public review webpage at: <https://www.deq.ok.gov/land-protection-division/permit-public-participation-process/>;

Persons wishing to comment on the draft permit should submit their comments in writing to DEQ at the address given below or electronically to the DEQ at the website address above. Also, any person may request, in writing, a formal public meeting to present written or oral statements and data concerning the draft permit. A request for a public meeting must identify the nature of the issues to be raised in the meeting. If DEQ determines, based on the requests it receives, that there is a significant degree of public interest in the draft permit, a public meeting will be scheduled, and notice provided of the date, time and place.

Written comments and requests for a public meeting must be received by DEQ within 30 days after the date of this publication. The DEQ contact is: 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.

More specific information may be obtained by contacting the applicant representative: Theresa Lewis, Executive Assistant; City of Ada at 231 S. Townsend Street, Ada, OK 74820; ph: (580) 436-6300 x201, or the DEQ contact listed above.