

Kansas Department of Health and Environment

Bureau of Environmental Remediation, Remedial Section

State Water Plan Contamination Remediation Program



Protection of Lyons Public Water Supply

Northern Containment System

Background:

An investigation conducted by the State Water Plan Contamination Remediation Program (SWPCRP) in 1996 indicated a chloride plume potentially threatened three Lyons public water supply wells. The investigation determined the source area for the elevated chloride levels in the Lyons area was the historical mining activities at a former salt mine in Lyons known as the Old Lyons Salt Mine. In 1997 the Kansas Department of Health and Environment (KDHE) installed two ground water recovery wells to intercept the chloride plume upgradient of the Lyons PWS wells system. In the fall of 2002, KDHE initiated planning activities to evaluate the possibility of installing a second containment system. The proposed second containment system would allow the capture of higher levels of chloride contamination and make the overall containment system more effective and efficient. Well installation and aquifer testing were completed in early February 2003 to evaluate the second containment system. Based on the results of these efforts, it was determined a "northern containment system" of two recovery wells was needed to capture the highly concentrated chloride plume. Preliminary results indicated that the northern containment system could control the chloride plume within the city limits of Lyons, and that the portion of the chloride plume beyond the capture of the northern system would migrate to the existing southern containment system where it would be captured.

Solution:

Engineering design activities were completed in 2004. KDHE also initiated contact with the City of Lyons and the North American Salt Company (NAMSCO) to negotiate a three-way



Ribbon cutting ceremony



agreement to share in implementation and operation of the northern containment system. An agreement was executed February 16, 2005, between KDHE, the City of Lyons, and NAMSCO. In general, agreements were that KDHE would provide for the design and installation of the system, NAMSCO would accept the pumped water for disposal, and the City of Lyons would pay for the costs of operating and maintaining the system in the future.

Installation activities were initiated August 29, 2005, and completed by November 23, 2005. A ribbon-cutting ceremony was held at the site on December 6, 2005. Representatives from KDHE, NAMSCO, and the Mayor of Lyons made presentations to the public. The project is a unique, joint partnership involving all parties.

Benefits:

- The Lyons public water supply well field is protected.
- Ground water contamination in the Cow Creek alluvial aquifer is remediated.
- Long term migration of contaminated water is controlled.