

Kansas Department of Health and Environment

Bureau of Environmental Remediation, Remedial Section

Voluntary Cleanup and Property Redevelopment Program



Grower Solutions, LLC

Background:

The Grower Solutions, LLC, property occupies 2.5 acres and is located at 1525 W. 10th in the recently developed Stevens County Industrial Park in Hugoton, Kansas. The property was used for agricultural purposes prior to constructing the building in October 2003. Since 2004 Grower Solutions has operated as a wholesale distributor of agricultural herbicides. A Phase II Environmental Site Assessment (ESA) was conducted in October 2007. Soil sampling results identified nitrogen fertilizer and herbicide contamination above Tier 2 residential Risk-based Standards for Kansas (RSK) for the soil-to-ground water pathway. Grower Solutions applied to and was accepted into the Voluntary Cleanup and Property Redevelopment Program (VCPRP) on March 24, 2008.

Following review of the results from the limited Phase II data submitted with the application, VCPRP staff requested additional investigation work to determine the magnitude and extent of soil contamination on the property.



Excavation of nitrogen fertilizer spill area.

Investigation:

During a site reconnaissance, the owner indicated the nitrogen contamination on the west side of the building was from a one-time spill caused by a valve being inadvertently left open on a mobile ammonia tank. Ammonia spilled from the mobile tank killed vegetation, leaving a visible trail that extended from the spill location south to the property boundary. Herbicide contamination was found in an herbicide shuttle staging area. In June 2008 Grower Solutions' consultant used direct-push technology to collect soil samples from 35 locations at multiple depths to characterize the nature and extent of contamination. Sampling results indicated that the nitrogen



Excavation of herbicide shuttle storage area.

contamination extended over the area of the killed vegetation and at least four feet deep. Herbicides including 2,4-D; Metolachlor; and Prowl were detected in the shuttle staging area above RSK levels.

Solution:

On August 27 and 28, 2008, Grower Solutions excavated nitrogen and herbicide impacted soils identified during the previous investigation. The excavation sidewalls and bottom were field screened to ensure all contaminated soil was removed. Approximately 634 cubic yards (721 tons) of nitrogen contaminated soil were excavated from the mobile applicator spill area, to an underlying caliche layer six feet below ground surface. Approximately 34 cubic yards (40 tons) were excavated from the herbicide impacted shuttle storage area. Impacted soil was disposed of in the Stevens County Landfill. Clean fill material was obtained from a farm owned by the excavation contractor, Passmore Brothers, located five miles north of Hugoton. Laboratory results from 20 confirmation samples collected by Grower Solutions and seven verification samples collected by KDHE indicated nitrogen and herbicide levels were below RSKs for the soil-to-ground water pathway. Ground water samples were not required because all soil contamination above RSKs was excavated and removed. KDHE issued a "No Further Action" letter to Grower Solutions.

Benefits:

- **Approximately 670 cubic yards of contaminated soil was removed.**
- **The underlying ground water was protected from nitrogen and herbicide contamination.**