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**Our Mission: To protect and improve the health and environment of all Kansans.**

**NuStar Pipeline Release  
Homeowners Association Meeting  
August 29, 2013, 7:00 PM**



Department of Health  
and Environment

**Peace Lutheran Church  
405 W. 21st Street  
Andover, Kansas**

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# Introductions

## KDHE

- Pamela Green, Project Manager
- Chris Carey, Unit Chief, Site Restoration Unit
- Rick Bean, Chief, Remedial Section
- Kyle Parker, South Central District Office
- Grant Harse, Environmental Attorney

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# Introductions

## NuStar

- Renee Robinson, Environmental
- Joe Aldridge, Environmental
- Bill Fogarty, Regional General Manager
- Dan Tibbits, Regional HSE Director
- Mike Dillinger, In-House Counsel

## Apex Environmental

- Samuel Jackson, Apex Consultants

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# Roles & Responsibilities

- NuStar
  - Responsible Party
- Apex
  - Contracted by NuStar to assist in providing environmental services
- KDHE
  - Provide oversight of investigation and cleanup
  - Ensure protection of human health and the environment

# Purpose

- Update the community on preliminary results
- Address and understand community concerns
- Share information regarding anticipated future activities

# Agenda

- Background and Response Actions
- KDHE Process
- Preliminary Site Investigation Results
- Future Actions
- Examples of Remedial Actions for Petroleum Sites
- Community Involvement
- Overview and Path Forward
- Questions

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# Agenda

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# Background

- June 9, 2012 – NuStar received a report of a gasoline odor in the irrigation well at 2006 N. Colt Court.
- June 12, 2012 – KDHE District Office notified.
- June 12, 2012, NuStar representatives collected groundwater samples from the affected irrigation well at 2006 Colt Court which confirmed the petroleum impacts.
  - Six nearby irrigation wells were also inspected and field tested for potential gasoline impact. No indications of petroleum impacts were observed in these wells.
- June 15, 2012, the affected irrigation well-fed sprinkler system was connected to the public water supply.

# Background

- From June 13<sup>th</sup> through July 3<sup>rd</sup>, 2012, NuStar conducted various excavation activities along with hydrostatic and tracer testing in order to locate the leak point. In late June and early July, a 250 foot section of the pipeline was identified and isolated as a result hydrostatic testing and subsequently excavated.
- July 3, 2012 - after several weeks of testing and excavation, the leak point was located in a section of piping located beneath W. Mountain Street.
- July 5 and 6, 2012 - approximately 16 cubic yards of impacted soil was excavated from beneath and adjacent to the pipeline, and the pipeline was replaced.

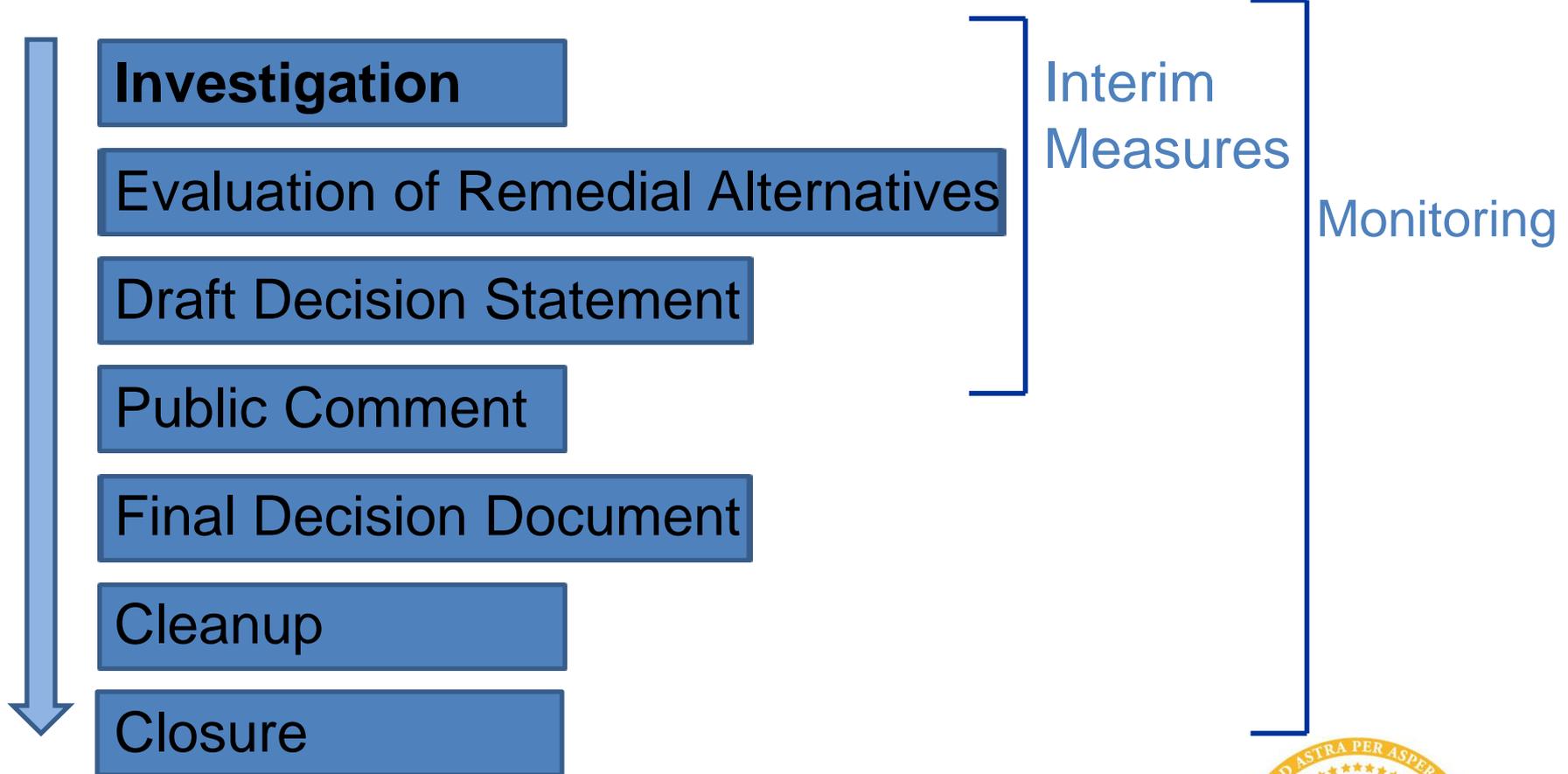
# Product Recovery

- Product recovery from the 2006 Colt Ct. well since June 14, 2012.
- Over 225 gallons of product have been recovered from the irrigation well.

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# Generalized Process to Address Contaminated Sites



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# Site Investigation Activities

- Soil Sampling (2012-2013)
- Irrigation Wells (2012-2013) (ongoing)
- Monitoring Wells (2013) (ongoing)

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# Preliminary Results

## Screening Levels:

- EPA's Maximum Contaminant Levels (MCLs)
- KDHE Risk-Based Standards for Kansas (RSK) Manual – Tier 2 Levels

# Soil Sample Results

- Samples of excavation floor and sidewalls
  - Petroleum contamination still present above Tier 2 Levels
- Soil sample from 2006 N. Colt Court
  - No petroleum contamination above Tier 2 Levels



# Irrigation Well Findings

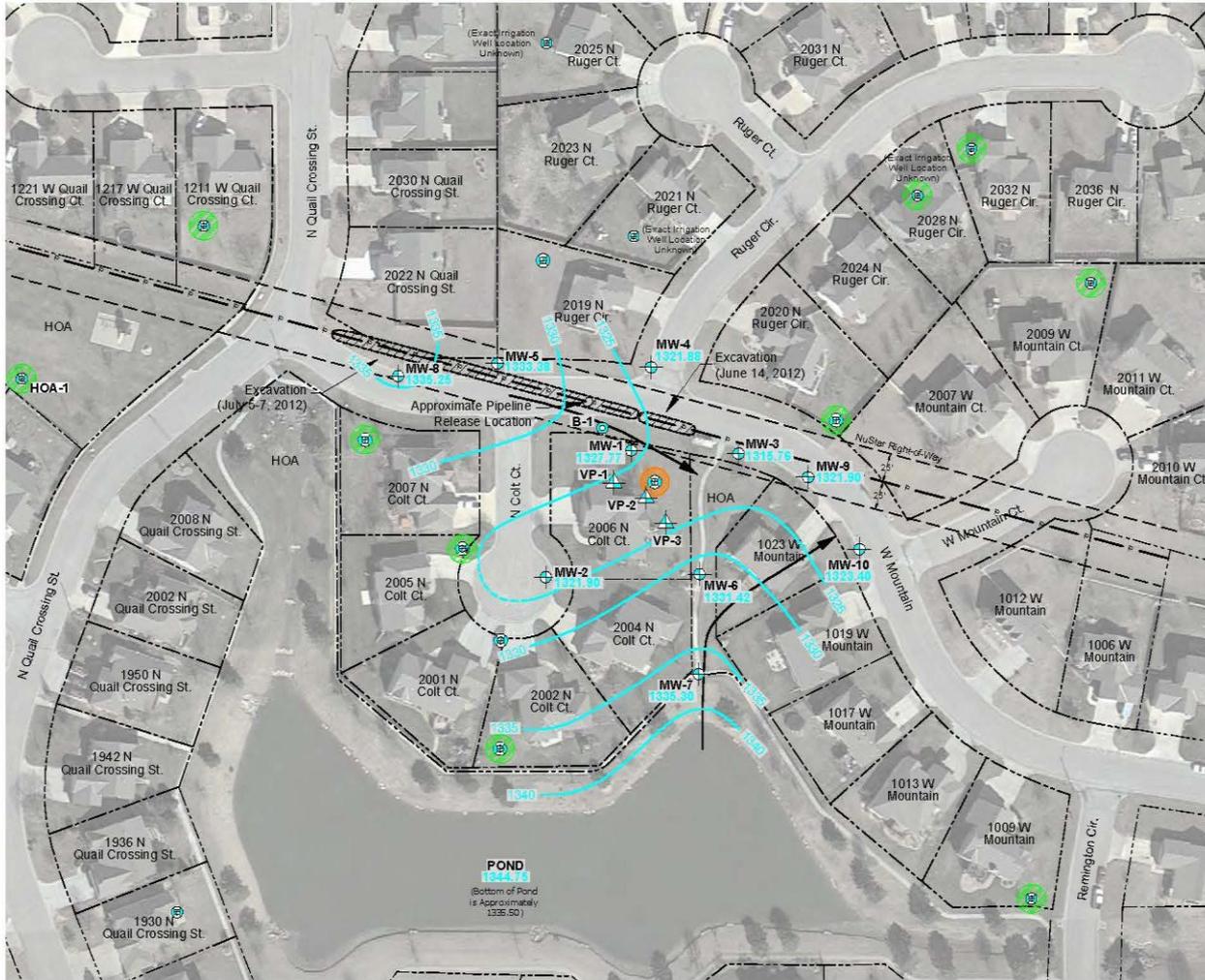
- Grab samples were collected near the water table.
- Results used to help delineate area of contamination.
- Due to large screened interval, these results may be different from what is pumped from the well.
- Results of 10 irrigation wells sampled in July and August 2013:
  - Three wells impacted above MCLs
  - Two wells with low-level detections below the MCLs
  - Five wells with no detections

# Groundwater Flow

- Groundwater elevation measurements show groundwater flowing away from pond to northeast and east



# Groundwater Flow Map

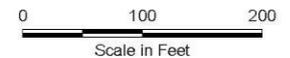


**Legend:**

- MW-1** 1327.77 Monitoring Well Location  
Groundwater Elevation in Feet MSL
- 1330 Groundwater Elevation Contour (Dashed Where Inferred)
- Inferred Groundwater Flow Direction
- B-1** Boring Location
- Irrigation Well Impacted by Separate-Phase Hydrocarbons
- Irrigation Well Location Sampled for Dissolved-Phase Hydrocarbons
- Irrigation Well
- VP-1** Soil Vapor Monitoring Point
- Property Line
- Pipeline
- HOA Lot Owned by Quail Crossing Homeowner's Association

NOTE: A well survey has been performed to identify irrigation wells shown on this map; however, additional irrigation wells may be present.

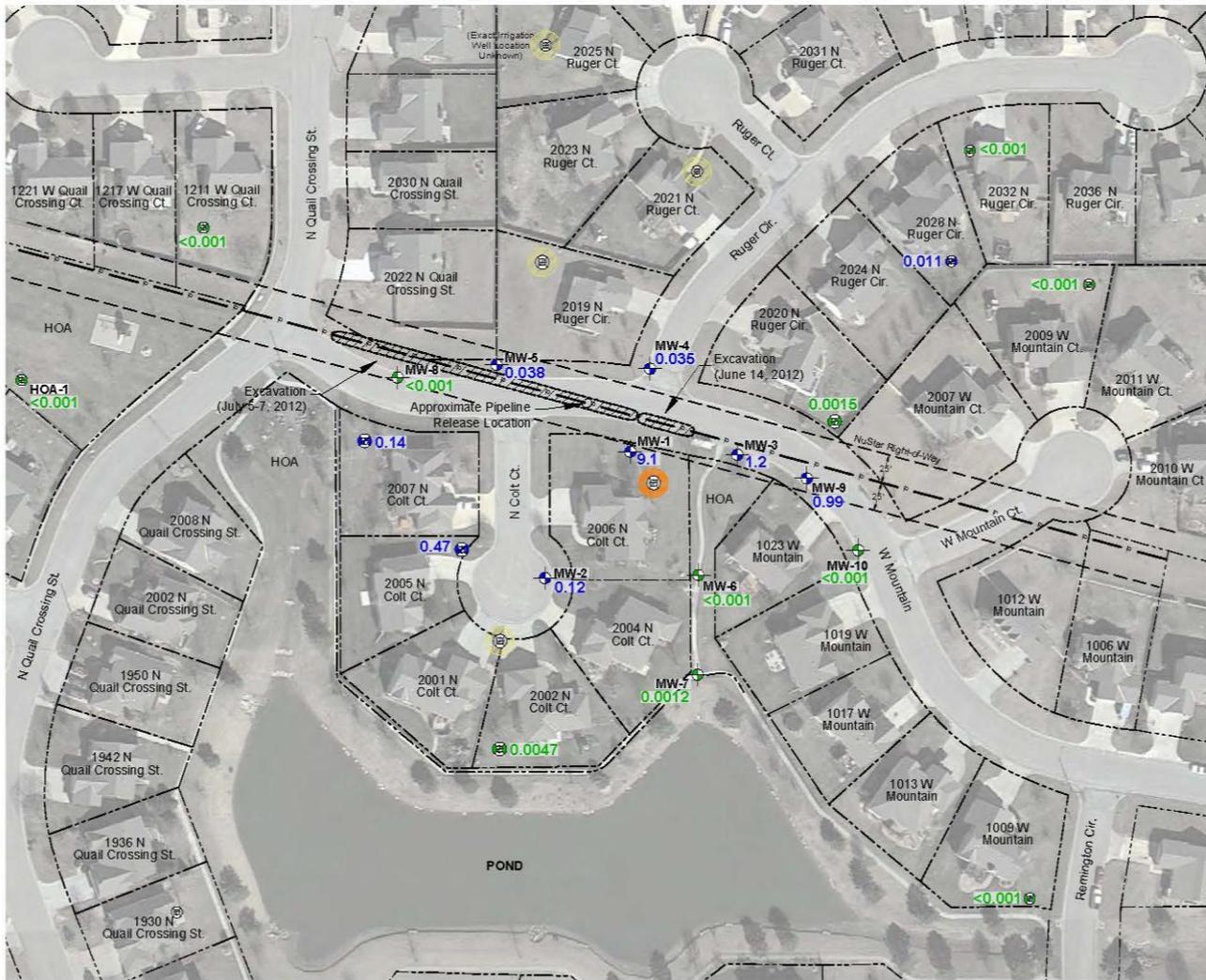
**DRAFT**



**Groundwater Elevation Results  
August 13, 2013**

NuStar Pipeline Operating Partnership LP.  
Andover, Kansas

# Benzene Concentrations in Groundwater



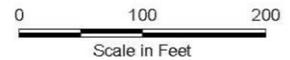
**Legend:**

- MW-1 Monitoring Well Location
- Irrigation Well
- Property Line
- Pipeline
- HOA Lot Owned by Quail Crossing Homeowner's Association
- Benzene Concentration Greater than KDHE Screening Level (>0.005 mg/L)
- Benzene Not Detected or Less than KDHE Screening Level (<0.005 - ND mg/L)
- Water Sample Recently Collected or Water Sample to be Collected.
- Irrigation Well Impacted by Separate-Phase Hydrocarbons

**NOTES:**

- 1) Data are preliminary and subject to revision.
- 2) A well survey has been performed to identify irrigation wells shown on this map; however, additional irrigation wells may be present.

**DRAFT**



<b>Benzene Concentrations in Groundwater</b> <b>(July and August 2013)</b> NuStar Pipeline Operating Partnership LP. Andover, Kansas			
Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1641-04 August 2013	Figure X	

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# Future Actions

- Complete groundwater investigation and continue groundwater monitoring
- Perform vapor intrusion investigation
- Continue product recovery
- Implement additional interim measures and select final remedy

# Future Actions

- Complete groundwater investigation
  - September 2013
    - Sample additional Irrigation wells
    - New monitoring wells
- Periodic groundwater sampling



# Future Actions - Vapor Intrusion

- Migration of volatile chemicals from the sub-surface into overlying structures
- Existing data indicate the need for vapor intrusion testing at the Site
- Winter 2013-2014 (cold weather season)

# Future Actions – Interim Measures

- Interim Measures
  - Continued Product Recovery
  - Other remedial actions to be determined based on technical and logistical constraints.

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# Potential Remedial Actions at Petroleum Sites

- *In situ* Treatment
- Product Recovery
- Pump and Treat Contaminated Groundwater
- Soil Vapor Extraction
- Phytoremediation
- Monitoring

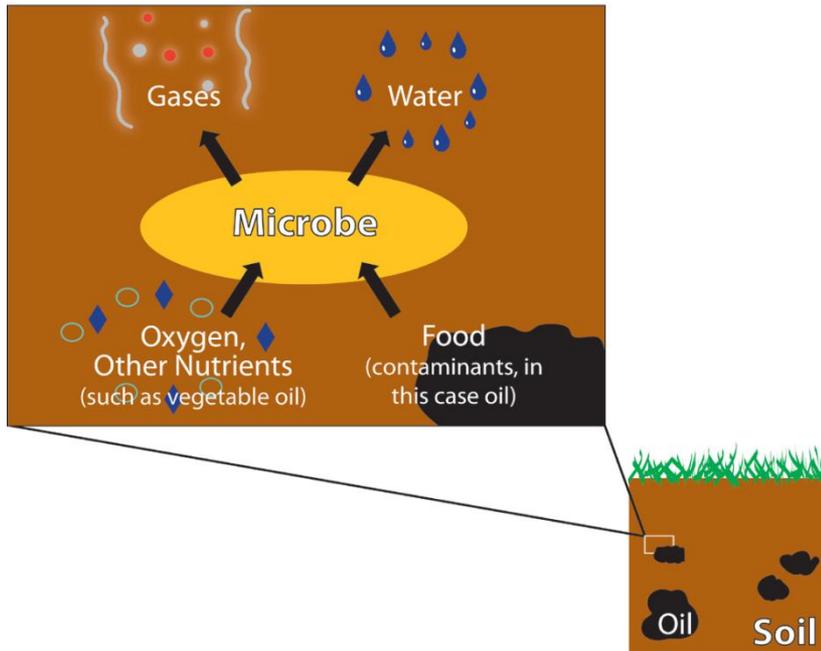
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# *In Situ* Treatment

- Injecting microbes, nutrients and/or other chemicals to reduce contaminant concentrations
- Limited on-site infrastructure requirements

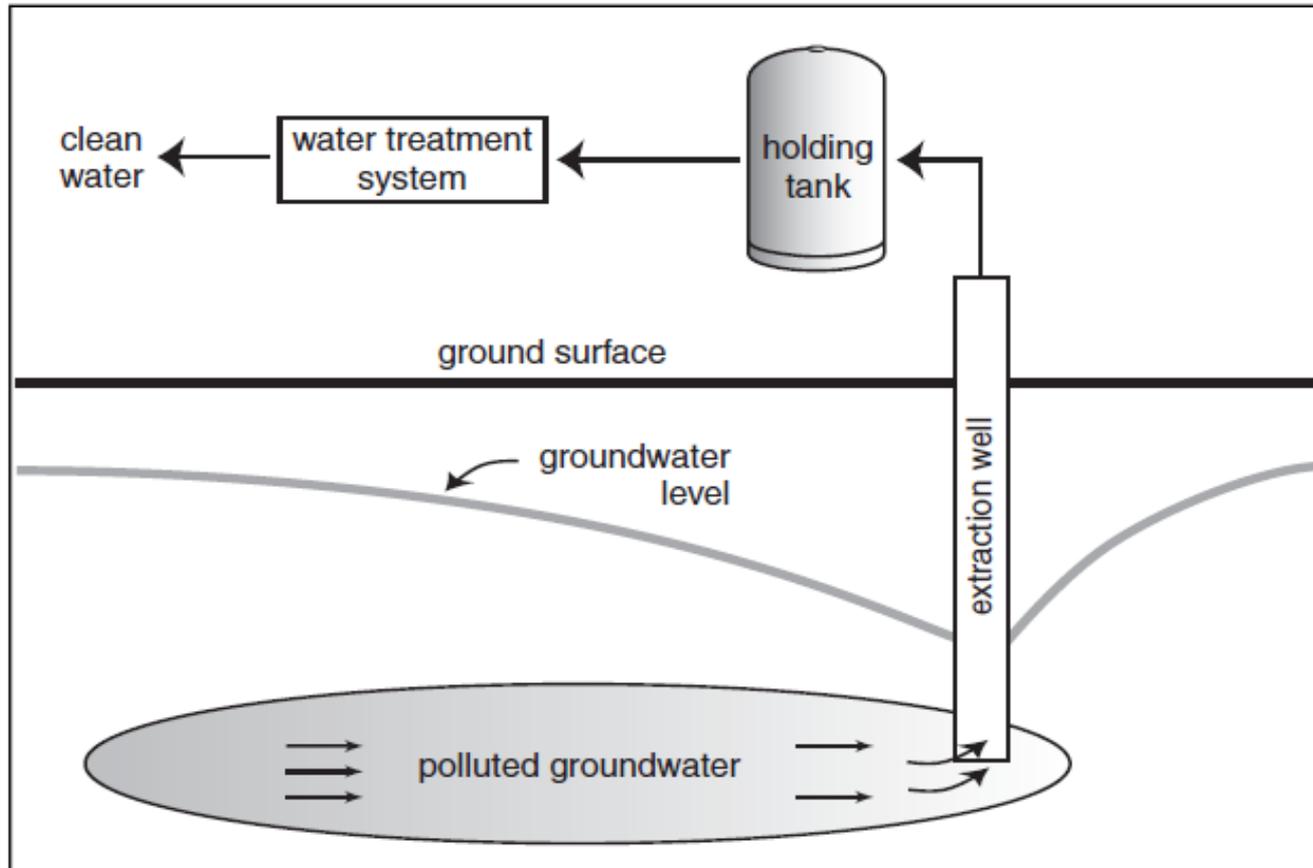


# Product Recovery



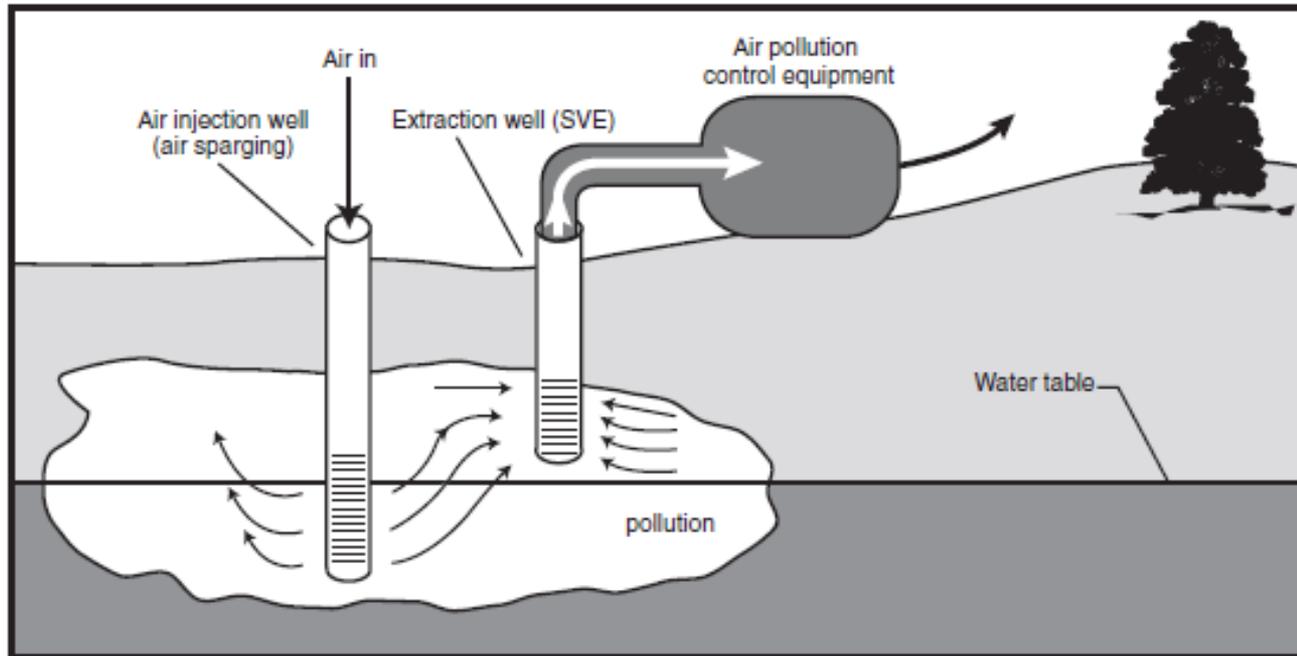
- Vacuum truck or bailing to continue product removal from the effected irrigation well at 2006 N. Colt Court
- Expanded product recovery potentially using trenches or extraction wells

# Pump and Treat



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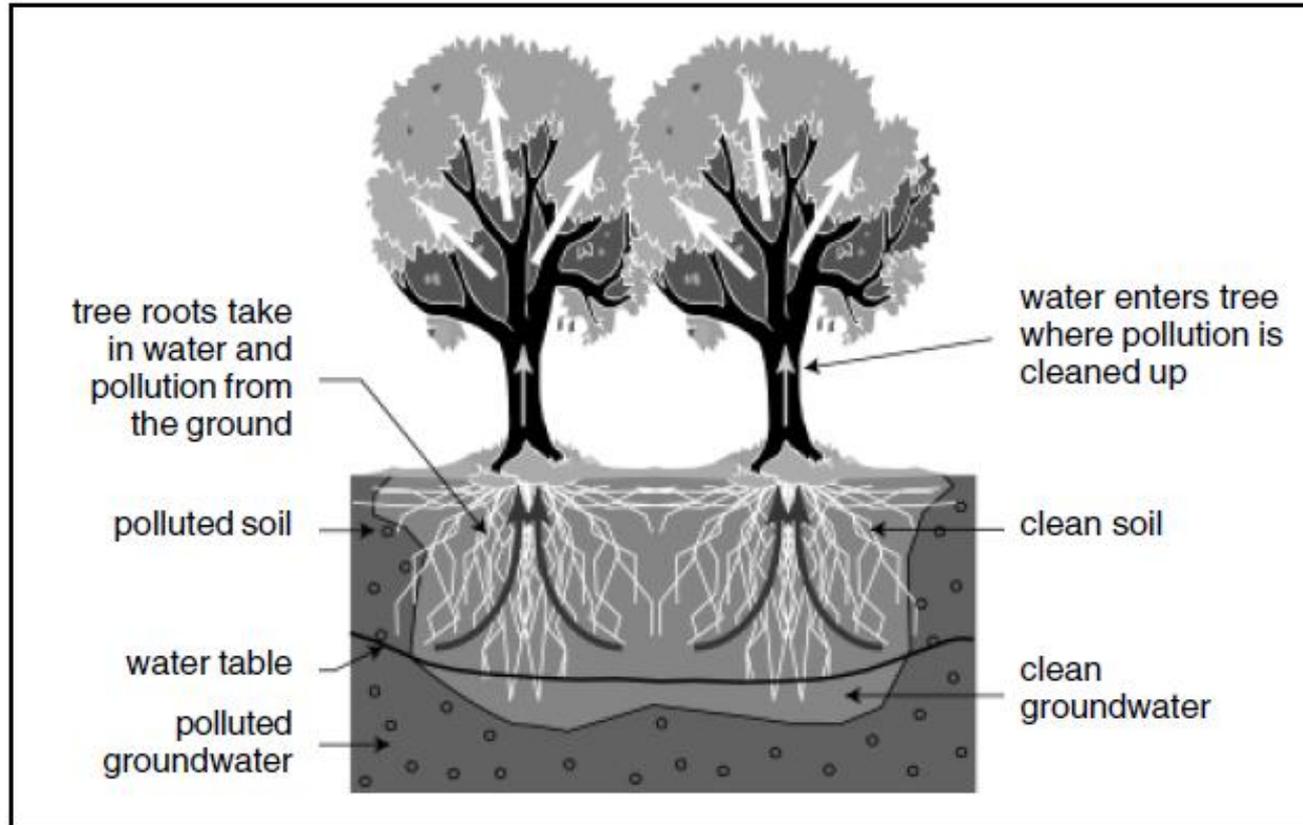
# Soil Vapor Extraction



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# Phytoremediation



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# Monitoring

- Routine groundwater sampling to evaluate the performance of the remedy.
- Will be a component of any remedial strategy selected for the site.



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# Community Involvement

- Purpose – strategy for community involvement and outreach:
  - Keep you informed of ongoing and planned activities
  - Hear your concerns
  - Be part of the decision-making process
  - Answers the 5 “W’s” of relaying information
- Conversation/Interviews

# Community Involvement Plan

Establishes a local information repository:

- Newsletter/Fact Sheets of current activities
- Work Plans
- Investigation Results/Reports
- Corrective Action Study
- Corrective Action Decision
- Remediation Work Plans and Reports

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# Community Involvement Plan

How would you like to obtain information?

- E-mails or mailing list
- Web site
- Newspaper/local media
- Neighborhood/public meetings

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# Contacts

- KDHE: Pamela Green
  - [pgreen@kdheks.gov](mailto:pgreen@kdheks.gov)
  - 785-296-1935
  
- NuStar: Dan Tibbits
  - [Dan.Tibbits@nustarenergy.com](mailto:Dan.Tibbits@nustarenergy.com)
  - 316-721-7056

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# Overview and Path Forward

- Preliminary results show elevated levels of benzene and other VOCs in soil and groundwater.
- Additional data are necessary to define the extent of impact, evaluate vapor intrusion and select appropriate response actions.
- KDHE will work with NuStar to complete this necessary work and develop a remedial strategy as quickly as possible.
- KDHE continues its efforts to develop a Community Involvement Plan and will be in touch with some Quail Crossing residents soon.

# Questions



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[www.kdheks.gov](http://www.kdheks.gov)

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