

Bureau of Environmental Remediation

Overview

July 21, 2016



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

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Updates

- State Cooperative Program Site Closure
- Groundwater Use
- Vapor Intrusion
- Total Petroleum Hydrocarbons
- Voluntary Cleanup Program Regulations

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State Cooperative Program Site Closure

Revised February 26, 2015

- Resolved
- Resolved with Restrictions
 - ➔ Environmental Use Controls

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State Cooperative Program Site Closure

Cleanup Standards

- Tier 2 RSK values
or
- Site Specific Risk Assessment

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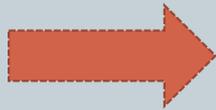


Groundwater Use

Policy Revised April 11, 2016

Unless shown otherwise: all groundwater is potable

Threshold question: is a potability evaluation warranted?



Provide evidence that it is not potable

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Groundwater Use

Threshold Criteria

- Identification of potential users
- Nature and extent of contamination
- Underlying groundwater bearing zones
- Exposure routes
- Interaction with surface water

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Groundwater Use

Required Information

- Depth to groundwater
- Aquifer thickness
- Seasonal trends (water elevation, concentration, etc.)
- Groundwater flow direction
- Well construction/well development (if applicable).

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Groundwater Use

Evaluation

- Quantity
- Quality

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Vapor Intrusion policy under revision

- Flexible
- Conceptual Site Model
- Site Screening
- Assessment
- Data Interpretation
- Mitigation

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Vapor intrusion

Chlorinated vs Petroleum

Petroleum vapors rapidly attenuate in the vadose zone due to aerobic biodegradation

Chlorinated compounds do not

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Vapor intrusion

Conceptual Site Model

- Source
- Route
- Building characteristics
- Residents

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Vapor Intrusion

Site Screening

- Chlorinated or Petroleum
- COCs present
- Preferential pathways
- Separation distance

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Vapor intrusion

Assessment

- Groundwater
- Sub-slab
- Soil
- Indoor air
- Sump water

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Vapor Intrusion

Data Interpretation

- Screening levels
- Attenuation factors
- Background (outside and inside)

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Vapor Intrusion

Mitigation

- Source control
- Building maintenance
- Sub-slab depressurization

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Total Petroleum Hydrocarbons (TPH) and Light Non-Aqueous Phase Liquid (LNAPL)

released Sept. 21, 2015

- Characterization
- Remediation
- Management

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TPH and LNAPL

Characterization

- Low-Range Hydrocarbons (LRH) for carbon range $\geq C5$ - $< C9$
- Mid-Range Hydrocarbons (MRH) for carbon range $\geq C9$ - $< C19$
- High-Range Hydrocarbons (HRH) for carbon range $\geq C19$ - $\leq C35$

Why? - More precise risk evaluation for high-range hydrocarbons

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TPH and LNAPL

Tier 2 Risk Concentrations

	Soil (mg/kg)		Groundwater (ug/L)		Soil-to-Groundwater (mg/kg)	
	Res.	Non-Res.	Res.	Non-Res.	Res.	Non-Res.
LRH ≥C5 - <C9	550	950	350	950	50	150
MRH ≥C9 - <C19	250	350	150	400	50	150
HRH ≥C19 - ≤C35	6000	27500	1000	2500	6000	13000

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TPH and LNAPL

Remediation

Tier 2 values

Site specific risk assessment – Tier 3
and Conceptual Site Model

Quantitative risk assessment – Tier 4
and presence of LNAPL

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TPH and LNAPL

Remediation

Recover LNAPL to the maximum extent practicable

Transmissivity $>0.8 \text{ ft}^2/\text{day}$

Receptors

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Voluntary Cleanup Program Regulations

Under Review by Department of Administration

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VCP Regulation Changes

- Property Classification: Reduced from 4 to 2
 - Class I – Contamination is from off-site source
 - Class II – Merges former Classes 2, 3 and 4: release originates onsite

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VCP Regulation Changes

- Qualified Environmental Professional – Deleted definition and references
- Voluntary Agreement Fee
 - Class I increases from \$1,000 to \$2,000
 - Class II remains \$5,000 max
 - No longer work down the deposit

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- VC Work plans and reports
 - Allow flexibility to bypass certain steps in the assessment /proposal/plan process if a site can go straight to NFA
 - Work Plans – More flexibility for VC Applicant consultant to develop a scope of work
 - Objectives based on human health and the environment risk
 - Verification sampling flexibility
 - Review times – 30 days for assessments, 60 days for plans

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VCP Regulation Changes

- NFA
 - NFA Class I – contamination documented as off-site source
 - NFA Class II – Contamination from on-site, no lingering significant risk
 - NFA Class II w/conditions – Contamination from on-site, remaining risk managed with controls

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VCP Regulation Changes

- Remedial standards – Allow site-specific risk based decisions (qualitative or quantitative)
- Public Notice requirements – newspaper/Kansas Register, web page

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KDHE Home Page – www.kdheks.gov

Workshop Website -

www.kdheks.gov/remedial/euc/environmental_risk_workshop.html

CELR, RMP, EUC Page - www.kdheks.gov/remedial/euc/index.html

Brownfields Website - www.kdheks.gov/ars/swp/index.html

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