

Importance of Stakeholder Developed Technical Guidance in the Successful Implementation of the New Jersey Site Remediation Reform Act (SRRA)

Presented by:

Steve Posten, LSRP, Amec Foster Wheeler Somerset, New Jersey stephen.posten@amecfw.com



Importance of Stakeholder Developed Technical Guidance - NJ SRRA



- Privatization of Site Remediation Oversight
- Evolution of the NJ Site Remediation Reform Act
 - Origins
 - Challenges
 - Key Lessens Learned
- The Stakeholder Process
- Technical Guidance Development
- Selected Technical Guidance Documents
 - Attainment of Compliance
 - Monitored Natural Attenuation
 - Off-Site Sources of Contamination
- Questions

States with Privatized/Semi-Privatized Programs





Privatized/Semi-Privatized Programs



Privatized

- Massachusetts Licensed Site Professional
 - Promulgated 1993,1995
 - 511 LSPs [LSPA]
- Connecticut Licensed Environmental Professional
 - Promulgated 1995,1997
 - 363 LEPs [EPOC]
- New Jersey Licensed Site Remediation Professional
 - Promulgated 2009
 - 642 LSRPs [LSRPA]

Semi-Privatized

- West Virginia Licensed Remediation Specialist; 1997 (143 LRS)
- Ohio Voluntary Action Program (VAP) Certified Professional; 1995 (120 CPs)

Privatized Program Elements



- Licenses by Statute
- Licensing Board
 - Enforces Code of Professional Conduct
 - Examination Board, licenses, fees
 - Continuing education requirements
- Agency enforces against Responsible Parties
- Agency makes rules and has the final say
- Licensed Professional Certification signifies work completed (e.g., NJ Response Action Outcome or RAO)
 - Subject to audits, engineering/institutional control permits
- NJ and MA regulations mandate timeframes for site investigation and remediation
 - New Jersey Regulatory Timeframes
 - RI Report: 3 years (soils only); 5 years (mixed media) after PA/SI
 - RA Report: 3 years (soils only); 5 years (mixed media) After RIR

Site Remediation Reform Act (SRRA) Origins



►A "Perfect Storm"

- "Kiddie Kollege"
- Growing backlog of site remediation cases (20,000+)

Diminishing government resources

- A sour economy, an "economic malaise"
- Primary concerns were that the growing backlog of agency cases was an impediment to both cleanup and economic growth
- Regulators, legislators and other stakeholders open to a new way

Site Remediation Reform Act How did it happen?



►Leadership

A robust, sustained stakeholder process

- Legislative reform committee
- NJDEP steering committee
- Technical guidance committees
- Real deliberation on policy and practice
 - "Do not presuppose you know all the issues or solutions" (Deputy Commissioner Irene Kropp)

► Compromise

Commitment to success

Site Remediation Reform Act Challenges





Site Remediation Reform Act (SRRA) Key Lessons Learned



- A robust and continuing stakeholder process is essential
- Environmental professionals must rise to the challenge of licensing, independence and obligations of certification
- The agency must acknowledge its new role, as well as differentiate responsibilities of remediating parties and licensed professionals
- Technical guidance is essential to the exercise of professional judgment and development of the standard of care



"The licensed site remediation professional shall apply any available and appropriate technical guidelines concerning site remediation as issued by the Department. The Department shall provide interested parties the opportunity to participate in the development and review of technical guidelines issued for the remediation of contaminated sites."



Initiated January 2010:

- "The Department will be undertaking a number of important initiatives as part of the Site Remediation reform process. Specifically, we will be developing technical and administrative guidance documents, reconstructing the Technical Requirements for Site Remediation, and developing measures to assess the success of the program. We are soliciting volunteers to work with us on each of the following teams:"
 - Guidance documents
 - Technical Requirements for Site Remediation
 - Short-Term Administrative Procedures
 - Measures of Success



Guidance Documents

Protocols, practices and actions, based on science and field experience that address technical aspects of site remediation

► Technical Requirements for Site Remediation

- Revise rule to focus on objectives; move prescriptive investigation requirements to technical guidance
- Short-Term Administrative Procedures
 - Transition protocols
- Measures of Success
 - Tracking metrics

Technical Guidance Development



Initial phased process for tech guidance development

- Priority/Short Term
 - Vapor Intrusion
 - LNAPL
 - Receptor Evaluation (SRRA focus)
 - Presumptive Remedies (SRRA focus: child care facilities)
 - Immediate Environmental Concerns (SRRA focus)
- Longer Term
 - Alternative Fill/Clean Fill
 - Historic Fill/DAP
 - Technical Impracticability
 - Conceptual Site Model Development
 - Analytical QA/QC

Technical Guidance Development

- Longer Term (continued)
 - Ecological Investigation
 - Attainment of Remediation
 - Monitored Natural Attenuation
 - Soil/Groundwater PA/SI
- Supplemental Phases (2012 & 2016)
 - Performance Monitoring of In-Situ Remedies
 - Historic Pesticide Use
 - Ground Water Discharge to Surface Water
 - Off-Site Sources of Contamination
 - Commingled Plumes
 - Contaminated Soil Capping





- Fundamental benefit of technical guidance development process was long-term engagement of senior NJDEP staff with a wide cross-section of experienced practitioners:
 - Process:
 - 18-24 months; monthly meetings at a minimum
 - Shared authorship
 - Achievement of consensus
 - Finalize the document!
 - Respond to public comment/reconvene for revisions
 - Participation:
 - Initial Phase (2010):
 - Senior NJDEP-SRP staff: 44
 - Stakeholders: 75
 - Subsequent Phases (2012 & 2014):
 - Senior NJDEP-SRP staff: 25
 - Stakeholders: 35

NJDEP-SRP Guidance Library



NJ Home | Services A to Z | Departments/Agencies | FAQs

newjersey **Deep** department of environmental protection

Site Remediation Program

Guidance Library

Site Remediation Guidance Library

Types of Guidance

1. Technical Guidance

Developed using a Stakeholder Process

The Technical Guidance Documents Contained in this Section were developed using a <u>Stakeholder process</u>. Click on the topics below for a brief description of the document content, a downloadable copy of the document, a response to significant comment (if available), and additional links to training opportunities. To view the Department's policy for varying from a rule and applying technical guidance, <u>click here</u>.

- 1. Analytical Methods
- 2. Attainment/Compliance
- 3. Capping of Sites Undergoing Remediation
- 4. Characterization of Contaminated Ground Water Discharge to Surface Water Technical Guidance
- 5. Commingled Plume Technical Guidance Document
- 6. Conceptual Site Model (CSM)
- 7. Ecological Evaluation Technical Guidance
- 8. Fill Material Guidance for SRP Sites (Formerly "Alternative and Clean Fill Guidance for SRP Sites")
- 9. Ground Water SI/RI/RA
- 10. Historic Fill Guidance
- 11. Historically Applied Pesticides
- 12. Immediate Environmental Concern (IEC)
- 13. Landfills Investigation Technical Guidance
- 14. Linear Construction Technical Guidance
- 15. LNAPL
- 16. Monitored Natural Attenuation
- 17. Off-Site Source Ground Water Investigation Technical Guidance
- 18. Planning for and Response to Catastrophic Events at Contaminated Sites
- 19. Preliminary Assessment
- 20. Presumptive and Alternate Remedy Guidance
- 21. Receptor Evaluation
- 22. Soil SI/RI/RA
- 23. Technical Impracticability (TI)
- 24. Technical Guidance for Investigating Child Care Centers and Educational Facilities
- 25. Technical Guidance for Investigation of Underground Storage Tank Systems
- 26. Vapor Intrusion

http://www.nj.gov/dep/srp/guidance/



Technical Consultation

The Department has established a process to allow Licensed Site Remediation Professionals (LSRPs) and remediating parties to consult with experienced DEP staff to consult on site-specific technical questions:

Groundwater issues

- Migration to groundwater framework and site-specific issues
- Migration to groundwater fate & transport models
- Remedial Action Permits
- Soil contamination and other technical issues
- Laboratory analysis and QA/QC issues
- Compliance Assistance
 - >81,000 phone calls and emails to date
 - 5,889 cases processed

Attainment of Compliance





New Jersey Department of Environmental Protection



Site Remediation Program

Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria

September 24, 2012 Version 1.0



- Traditionally, NJDEP required single point compliance for achievement of soil remediation standards and criteria
- Concept of exposure point concentration, analytical and sampling uncertainty, etc. considered to identify a range of appropriate compliance averaging techniques:
 - ► 75% 10 X
 - Remedial phase only: 75% of all post-excavation or performance data are below standard and no sample exceeds standard by 10X
 - Simple average / 95% UCL
 - Simple average (< 10 samples) or 95% UCL (≥10 samples)</p>
 - ProUCL (EPA-ORD); handles nondetect observations
 - Spatially weighted averaging
 - Iterative Thiessen Polygon analysis

Attainment of Compliance



Constraints on application of compliance averaging:

- Functional Area (Lateral)
 - Area within which compliance averaging must be performed
 - Intended to preclude "gaming" of the method
 - ¼ acre areas for residential land use
 - 2 acre areas for non-residential land use
- Functional Area (Vertical)
 - Interval within which compliance averaging must be performed
 - Direct Contact:
 - 0-2 ft (surface samples)
 - > 2 ft (all deeper samples)
 - Migration to Groundwater:
 - 0-2 ft above water table
 - All shallower samples























Figure 5 - Iteration 3:

Replacement of next highest concentration polygon with "background" concentration of 0.3 mg/kg. Recalculated area weighted mean concentration = 7.9 mg/kg. Area weighted mean concentration below applicable remediation standard. Remediation complete.

Monitored Natural Attenuation



New Jersey Department of Environmental Protection



Site Remediation Program

Monitored Natural Attenuation Technical Guidance

DATE 3/1/2012

Monitored Natural Attenuation



DHC-17 (47 yr)

DHC-17 (61 yr)

AH-25 (1.9 yr)



SRNL, WSRC-STI-2006-00096, Rev. 2, February 7, 2007

Ethanol

Monitored Natural Attenuation







Recommended Monitoring Well Sampling Frequency

Situation	Performance Well Sampling Frequency	Sentinel Well Sampling Frequency	Reporting Schedule
Permit issued	Annual years 1-4 *	1 travel time to nearest receptor or annual, whichever is more frequent	With CEA Biennial Certification
After 4 years	Biennial years 5-8 *	1∕₂ travel time to nearest receptor or biennial, whichever is more frequent	With CEA Biennial Certification
After 8 years	 BTEX: Every 8 years for the remainder of the permit. Contaminants other than BTEX > 10X GWQS: every 4 years Contaminants other than BTEX < 10X GWQS: every 8 years for remainder of the permit 	½ travel time to nearest receptor or the same frequency as the performance wells, whichever is more frequent	With next scheduled CEA Biennial Certification

* Progression through this sampling schedule is appropriate only if contaminant degradation is occurring as predicted during each monitoring event, and the remedy remains protective of receptors. If contaminant degradation is not occurring as predicted, the applicability of the MNA remedy must be revaluated in accordance with the MNA guidance.

Off-Site Sources of Contamination



New Jersey Department of Environmental Protection



Off-Site Source Ground Water Investigation Technical Guidance

April 2015 Version 1.0



- Regulatory Basis/Requirements
 - RP may investigate extent to which on-site soil and groundwater contamination is due to an off-site source
 - Sample collection:
 - Sufficient number of horizontal and vertical samples to adequately determine there is an offsite source
 - Samples must be collected at property boundary (or further upgradient if necessary) in order to be beyond influence of any onsite source
 - A Preliminary Assessment must be performed to determine whether a source of like contamination exists or could have existed on-site
- RP is not required to remediate the contamination migrating onto the site

Off-Site Sources of Contamination





Off-Site Sources of Contamination



Appendix C: Case Study #3 (Page 2 of 2)





foster wheele

1,939



Active Cases

- Pre-LSRP: 20,000+
- Current: 14,357
- Average 6,200 new cases/year
- Average 4,550 cases closed/year
- "Key Documents" filed by LSRPs: 31,557
- Quality of Response Action Outcomes (RAOs):
 - Total RAOs: 9,362
 - Number of RAOs voluntarily withdrawn: 287
 - Number of RAOs invalidated: 9
 - Less than 4% in question

