Trace ASSOCIATES

Sustainable Strategies for Site Remediation

RemTech: October 12, 2016

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Eric Van Gaalen

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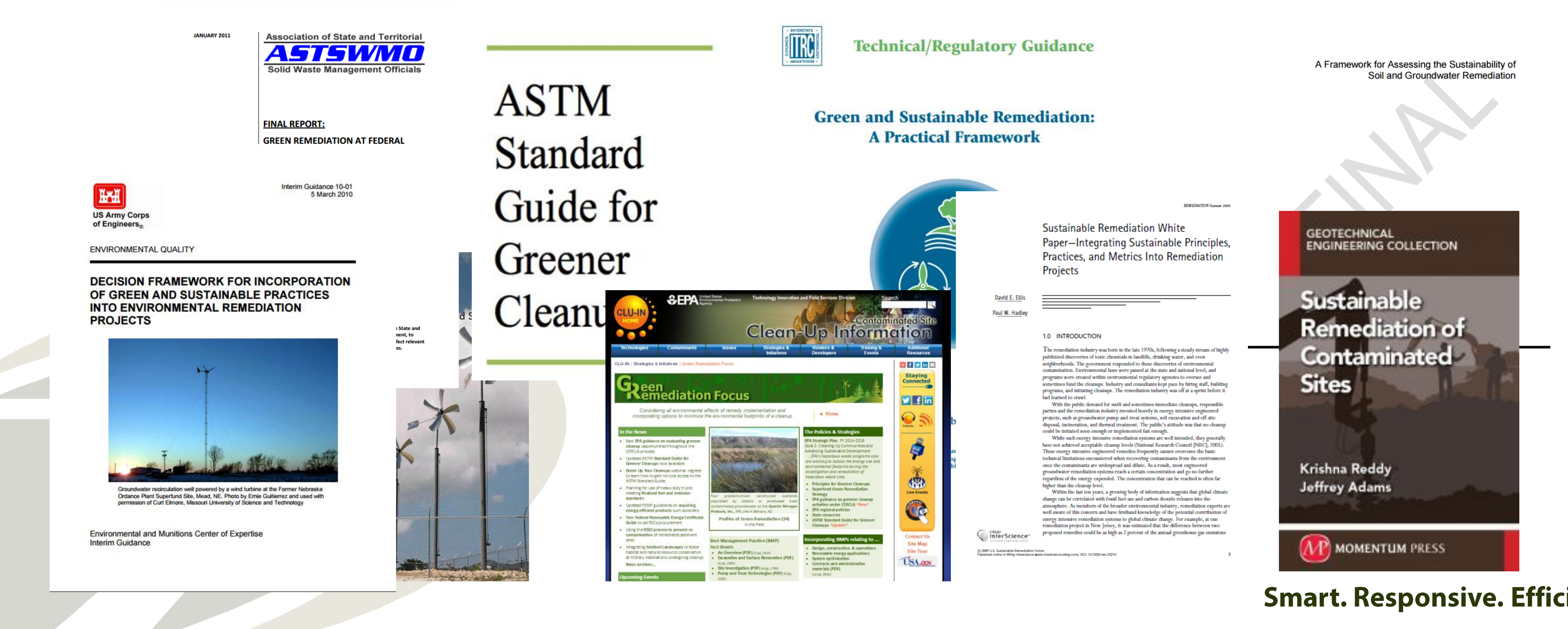
Sustainable Remediation

Source: http://cdmsmith.com/en-US/Insights/Features/Sustainable-Remediation-in-Action.aspx

Lots, and Lots, and…Lots of Guidance



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Elephant in the Room

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What Do We Want to Accomplish Today?

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What Do We Want to Accomplish Today?

- Share Trace learnings
- What can we do TODAY?
- What can we consider for the FUTURE?

Case Study 1: Phytoremediation

Client cost savings = $330,000

Improved safety = 60,000 km of driving avoided

GHG emissions reduced = 24,000 t CO_2e

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Case Study 1: Phytoremediation

Alternative Fuels	
Waste Reduction	✓
Recycling	
Renewable Energy	
Conservation of Resources	✓
Beneficial Land Reuse	✓

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Case Study 2: Subsoil Salinity Tool and Salt Risk Assessment

Client cost savings = $6,200,000

Improved safety = 1,100,000 km of driving avoided

GHG emissions reduced = 82,000 t CO_2e

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Case Study 2: Subsoil Salinity Tool and Salt Risk Assessment

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Alternative Fuels	
Waste Reduction	✓
Recycling	
Renewable Energy	
Conservation of Resources	✓
Beneficial Land Reuse	

Case Study 3: Tree Stimulation via Hormones

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Case Study 3: Tree Stimulation via Hormones

Alternative Fuels	
Waste Reduction	✓
Recycling	
Renewable Energy	
Conservation of Resources	✓
Beneficial Land Reuse	

What Can We All Consider Today?

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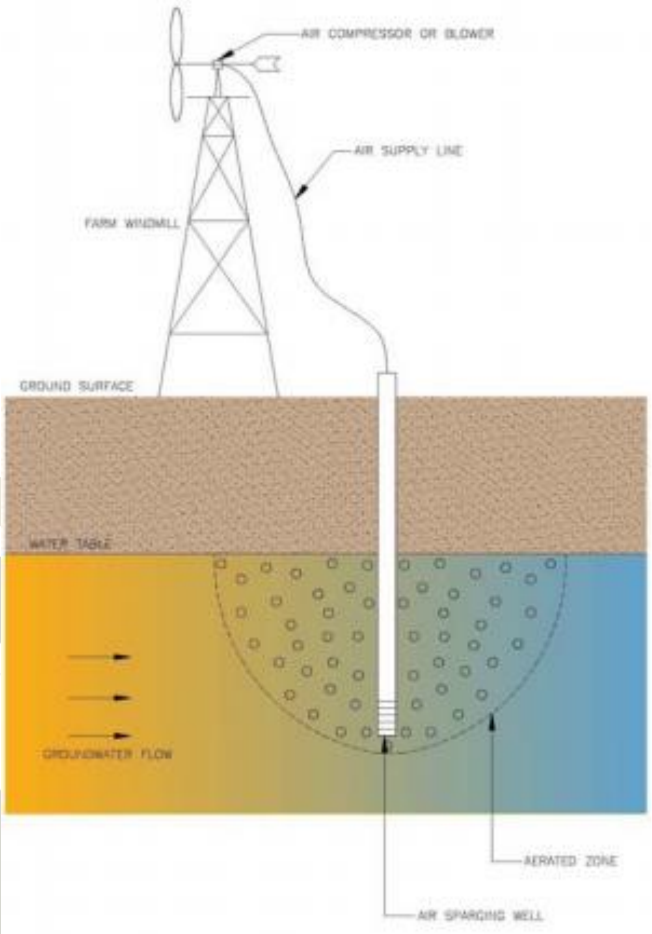
What Can We All Consider for the Future?

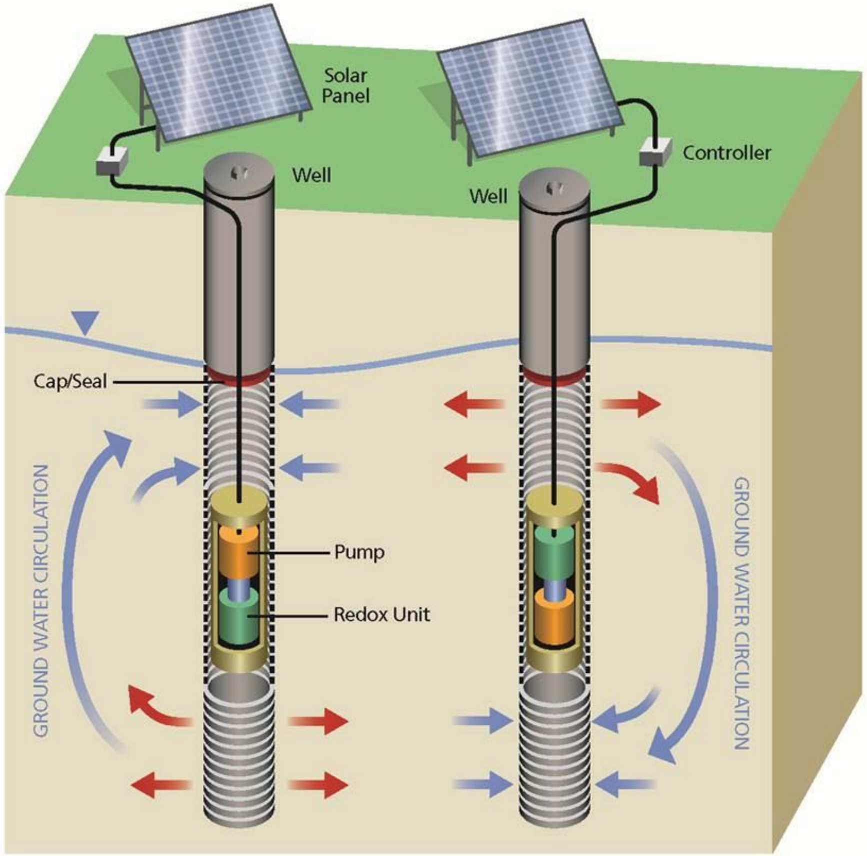
Environmental Effects
- Technology to decrease environmental effects
- Life cycle assessment (scale-dependent)

Social Effects
- Community employment and consultation
- Risk to workers

Life cycle costs
- Costs incurred over project lifespan, not just upfront

Technologies to Increase Sustainability





Source: http://www.esaa.org/wp-content/uploads/2015/06/07-Paper41.pdf

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Source: http://www.northeastern.edu/protect/research/p5/

Closing Thoughts

- Lots of opportunity
- Cost savings for clients
- Challenge: Start somewhere and start small!

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Questions

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