

The New ROI: Return on Investigation from Smart Characterization Methods

Quinnan & Welty-1

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THE NEW ROI

Return on Investigation from *Smart* Characterization Methods

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Nick Welty, CPG, PG
December 2, 2015

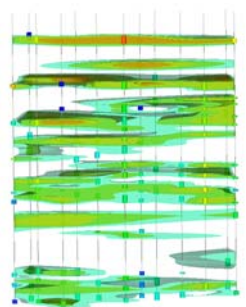
FRTR General Meeting
Site Characterization for Effective Remediation



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Agenda

- Health and Safety Moment
- Return on Investigation
 - Exit Ramp Strategies
 - Smart Characterization
 - Flux-Based CSMs



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Health and Safety Innovation

Zipliner




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Zipliner

FEATURES

- Operates with drill tooling similar to standard liners.
- Designed to fit with AMS Power-Probe and the Geoprobe Systems direct push technologies.
- The ZipTool is the safest opening tool for soil sampling sleeves.
- Similar durability as standard liners.




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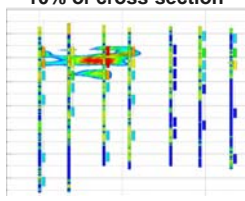
The ROI of Smart Characterization

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90% of relative flux in 10% of cross-section



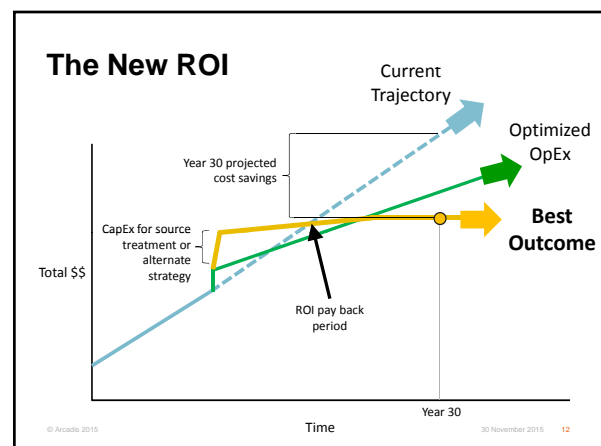
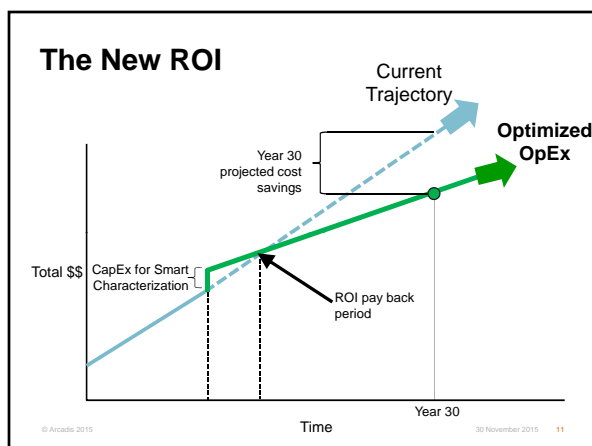
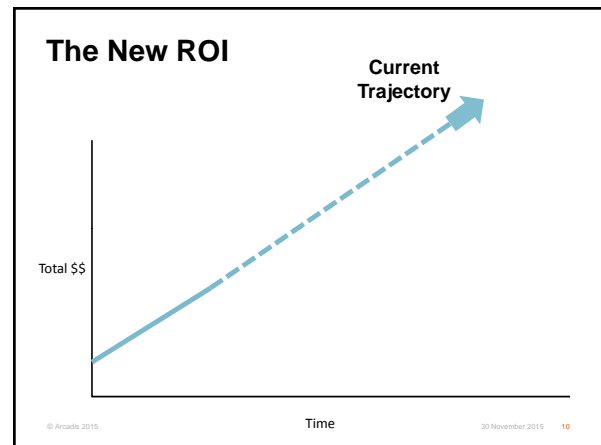
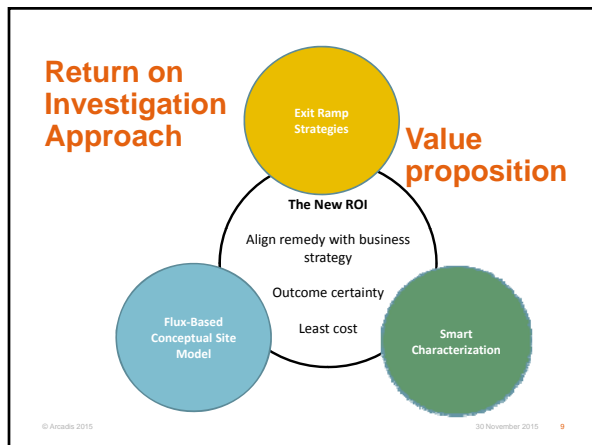
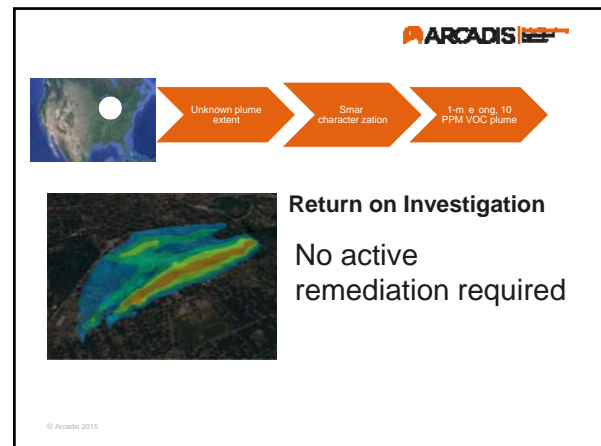
Return on Investigation

Client avoided spending > \$5M on slurry wall

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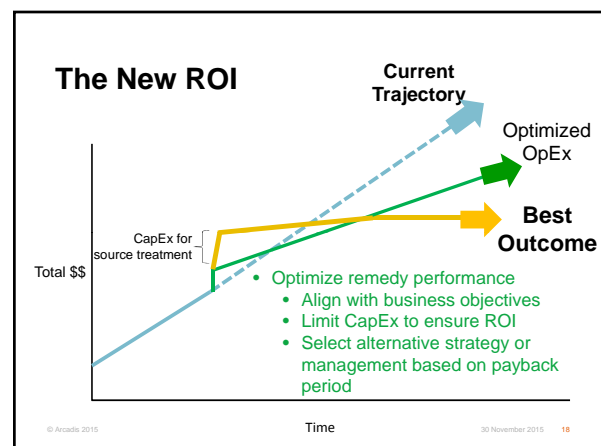
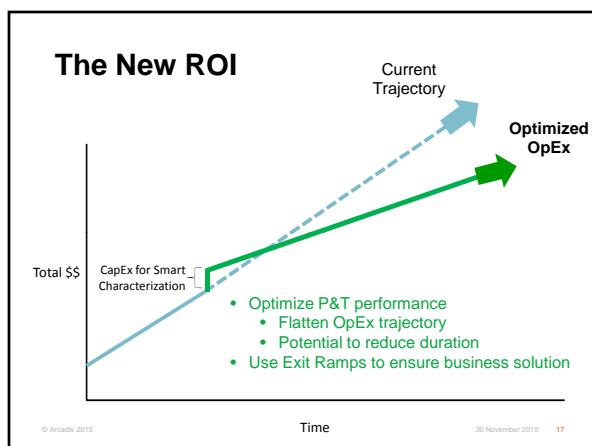
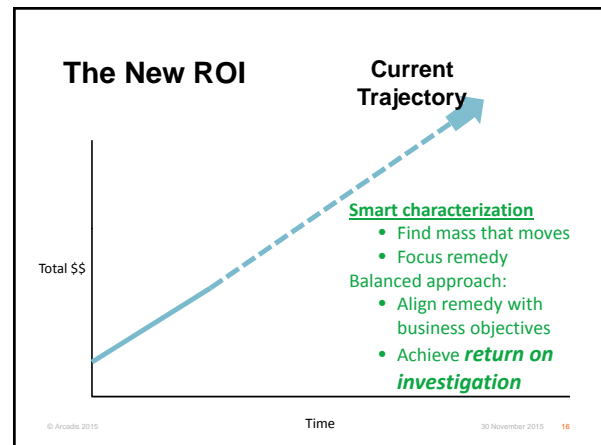
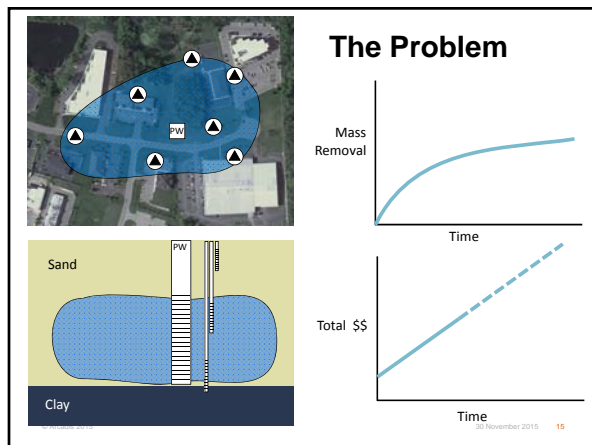
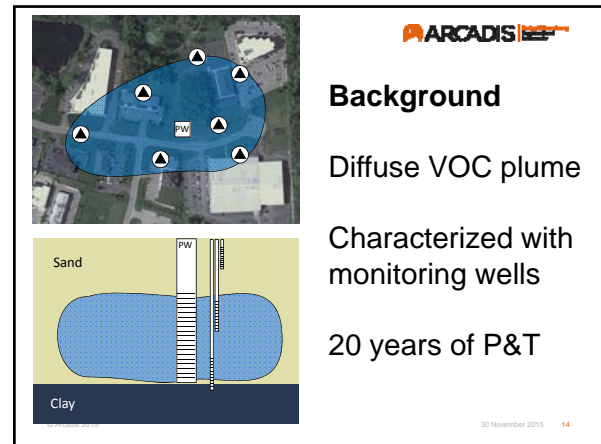
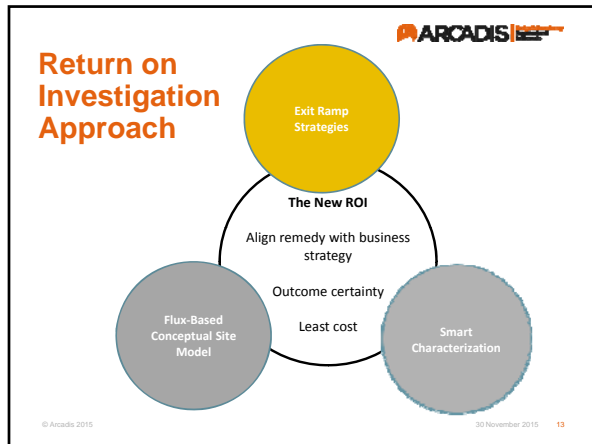
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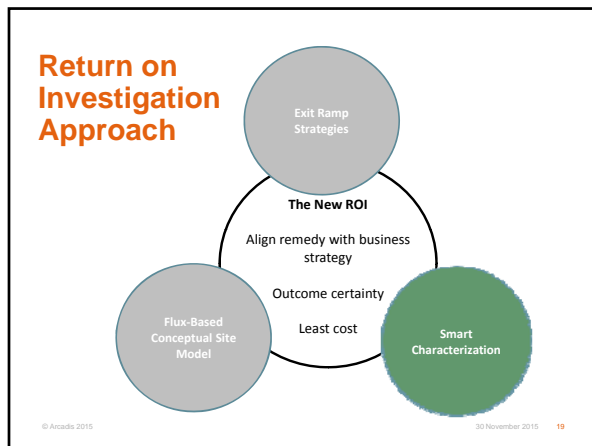
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Exit Ramp 1 – Can P&T be optimized?

\$50K investment

Goal:

- Optimize P&T
- Reduce OpEx
- Reduce duration & increase mass removal

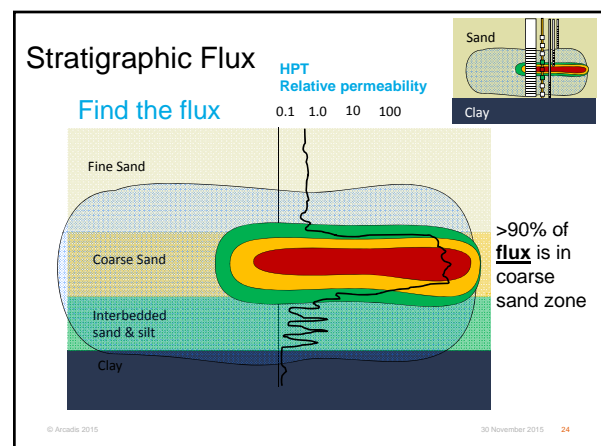
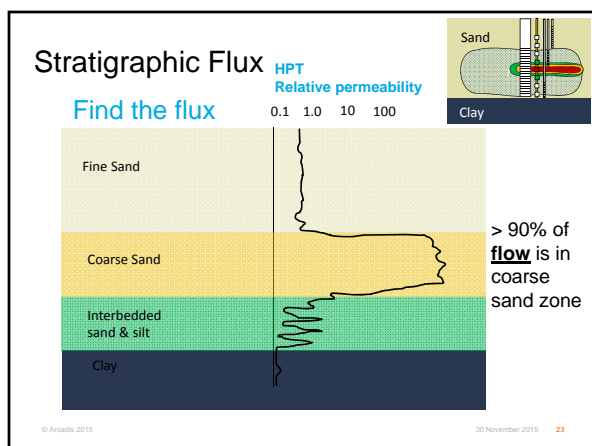
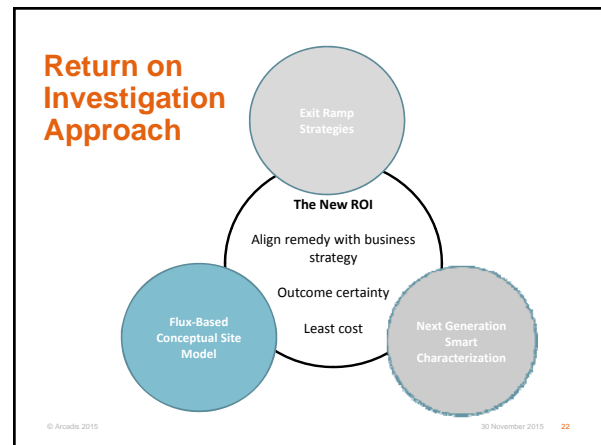
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Exit Ramp 1 Result: Flux transect

- Plume is concentrated
- Pumping can be optimized
- Change cost and performance curve

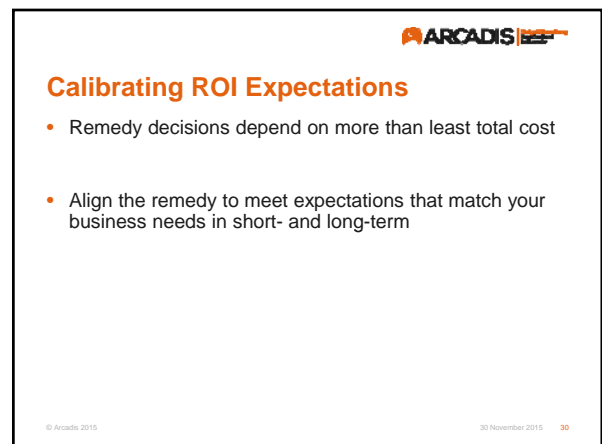
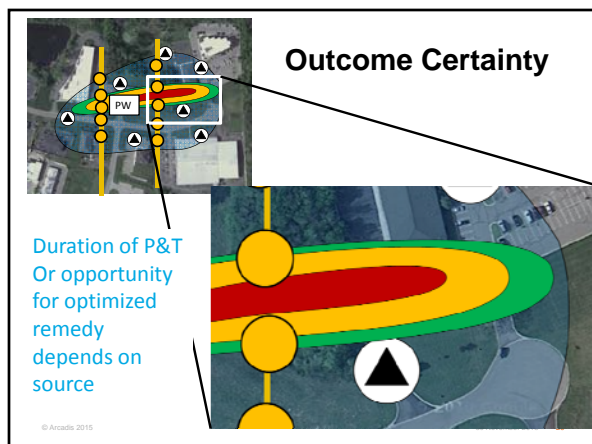
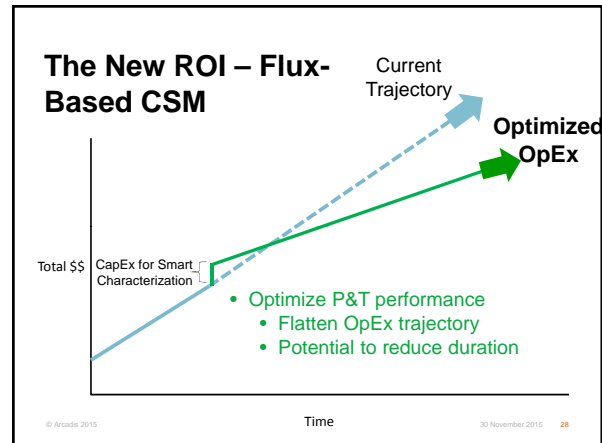
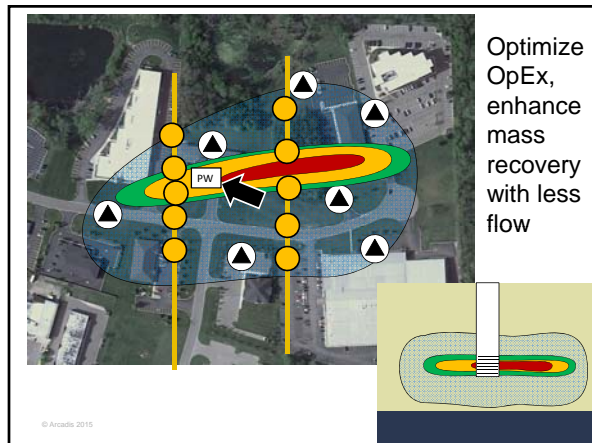
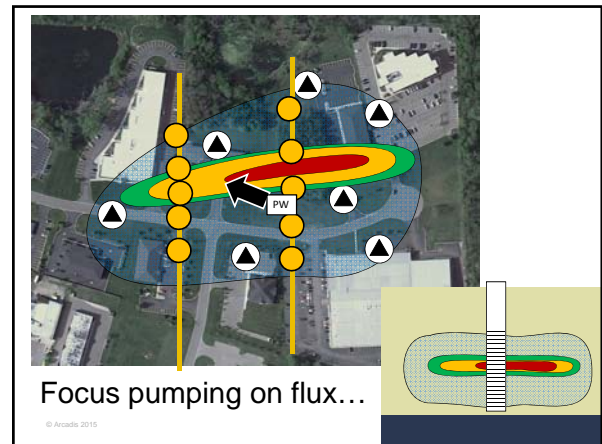
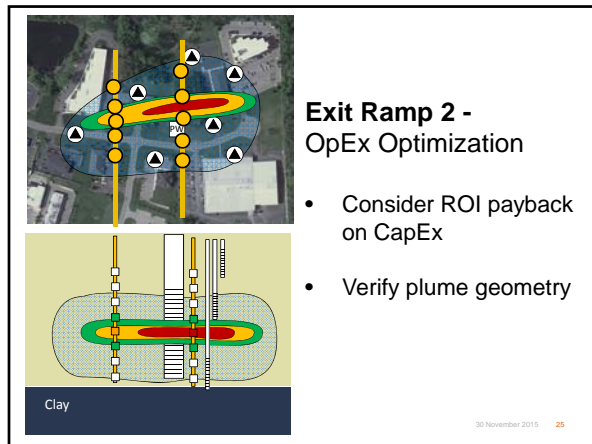
Why is plume concentrated?

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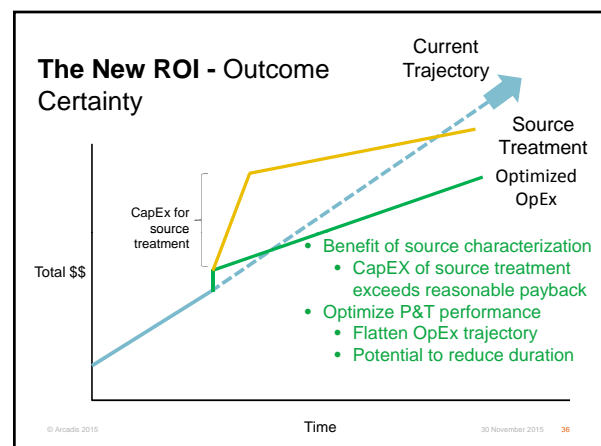
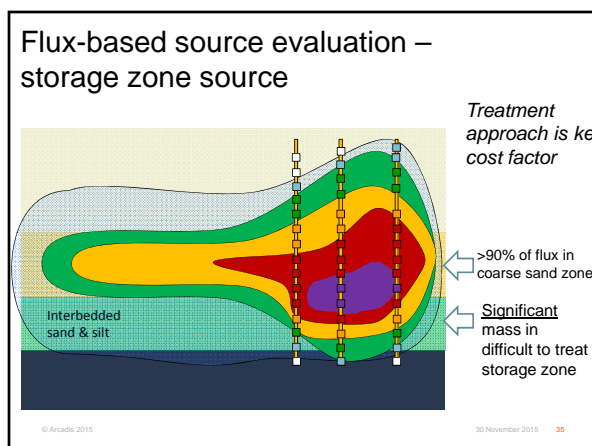
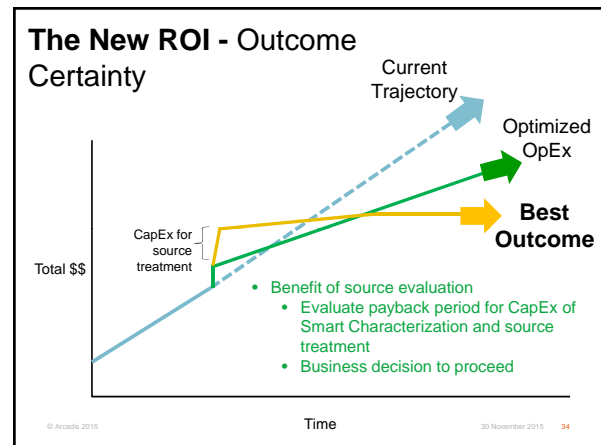
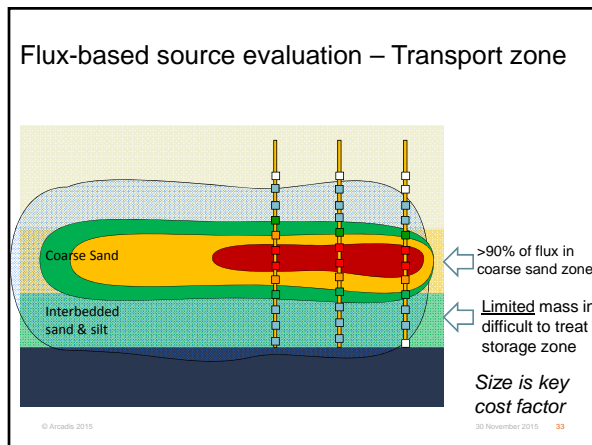
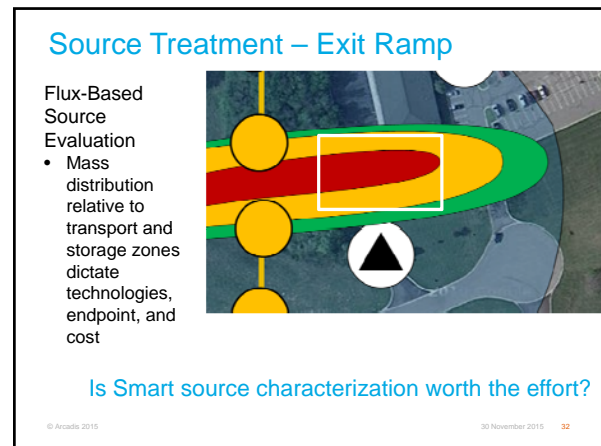
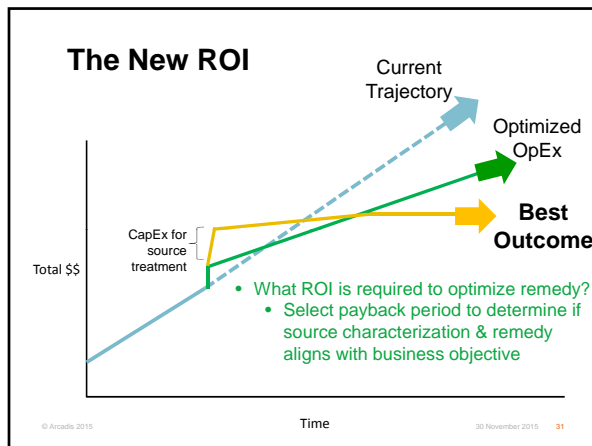
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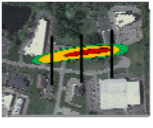
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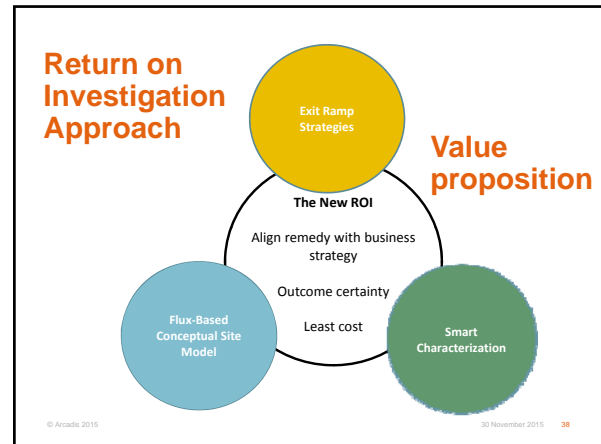
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For new sites, do it right the first time:

CONVENTIONAL	V S.	SMART CHARACTERIZATION
		
Investigation <ul style="list-style-type: none"> • Years of effort • Dozens of reports & work plans 		Investigation <ul style="list-style-type: none"> • Weeks of effort using real-time methods • ONE report & work plan
Remediation <ul style="list-style-type: none"> • Long-term, ineffective remedy • Poor outcome certainty 		Remediation <ul style="list-style-type: none"> • Focused, cost-effective remedy • Outcome certainty with opportunity to match business objectives

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Questions?




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