

NAPL Remediation
- Myths and Excuses -

Jim Cummings

Technology Innovation Office

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Phone: 703-603-7197

“It’s Too Expensive...”

- **26 Pump and Treat projects in TIO database**
 - **\$60-\$320,000/# of contaminant recovered**
 - **Visalia \$20M/1M# = \$20/#**
 - **Note also: SCE reports p&t costs at Visalia at over \$4000/#**
- **Greater attention to source term removal may lower total life cycle costs**

It Will Make the Problem Worse (downward migration potential)

- **‘Good News and Bad News’: Thermal processes are energetic and robust. They will mobilize contaminants**
- **Contaminant mobilization is an engineering design issue, NOT a technology flaw**

**“If You Can’t Get It All...”
(Don’t Bother To Try)**

- **Reality**

- **For some situations, thermal may ‘get it all’**
- **For others thermal removes soluble, mobile fraction (residual may be less/non problematic**
- **Reason to believe that natural and modest anthropogenic processes may ‘polish’ the residual**

**“You’ll frustrate Mother Nature”
(kill natural attenuative capacity)**

- **Reality:**
 - **Emerging evidence that micro-organisms survive and thrive at elevated temperatures**
 - **Shift in biotic consortia to thermophiles**
 - **Bio is particularly promising as a cost effective polishing step**
- **Goal: Link Active Source Term Remediation with MNA**