



# EHS & SUSTAINABILITY SOFTWARE

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## WEDNESDAY MARCH 8, 2017

### Using Data Visualization to Improve Your Balance Sheet

- Kristin Colberg, *Global Environment Manager*, H.B. Fuller Company



**H.B. Fuller**

# Using Data Visualization to Improve the Balance Sheet

*March 8, 2017*



# Presented By:

## Original Speaker

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## Speaker

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# Objective

Data Visualization is the visual and interactive exploration and graphic representation of data of any size, type (structured and unstructured) or origin.

## Purpose

- Analysis and decision insights of support
- Transparency of information seeking
- Multi-lateral understandings
- Investment(s) evaluation and validation

# Agenda

Reducing Environmental Liability Management

Challenges to Enhance Better Business Decisions

- Technical
- Strategic
- Traditional

Drivers for Building a Conceptual Site Model

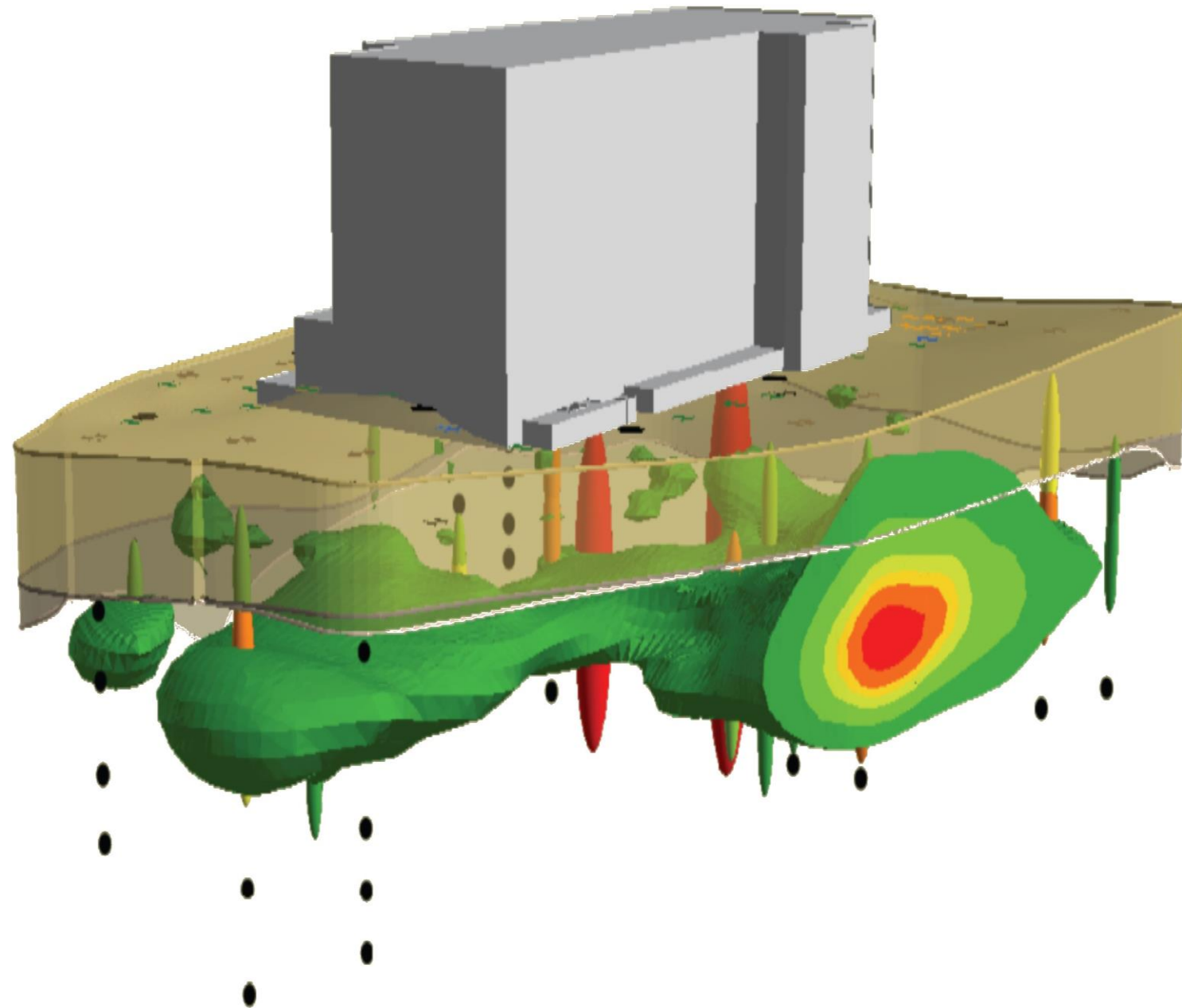
Building the Conceptual Site Model

Best Management Practices

Solution Advantages

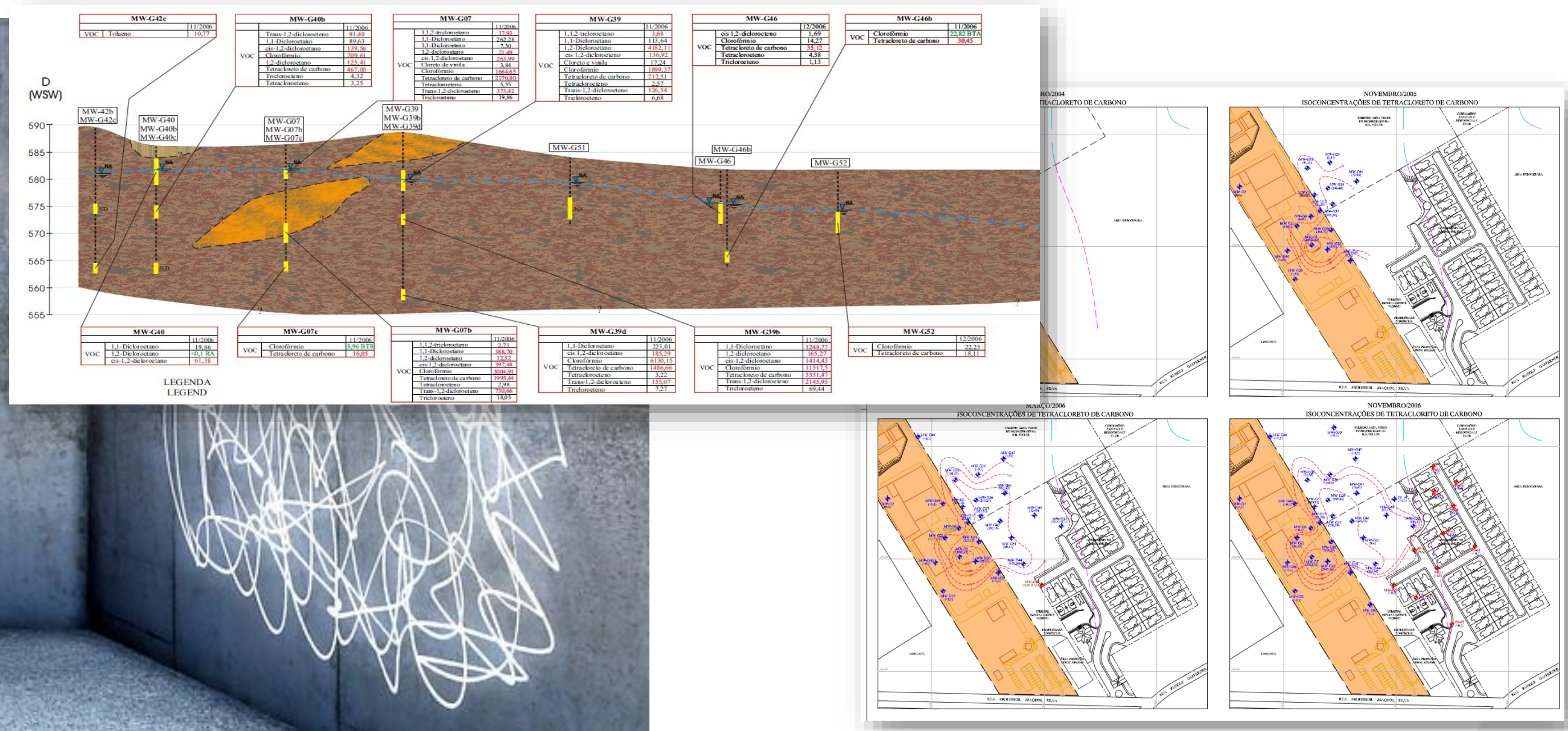
# Reducing Environmental Liability Management

- Leverage technology
- Enhanced data visualization and analytics provides:
  - A communication tool
  - Validation of strategies & investments that influences stakeholders
  - Reduction in project life cycle costs
  - Enhanced reserve cost modeling
  - Improvement to the bottom line





# Challenges to Enhance Better Business Decisions:



Not a Comprehensive Site Model (CSM)!

(# Figures in SI/RI Report vs 1 CSM)



# Challenges to Enhance Better Business Decisions:

## •Technical Challenges

- ✓ Complex data sets over several years
- ✓ Complex environmental systems
- ✓ Receptors & third-party potential impacts
- ✓ Varied regulatory requirements for cleanup: numeric vs risk-based
- ✓ Auditor fiscal accountability



# Challenges to Enhance Better Business Decisions (Con't):

## •Strategic Management Challenges

Stakeholders: Legal Regulatory Business/Real Estate Auditors



# Challenges to Enhance Better Business Decisions (Con't):

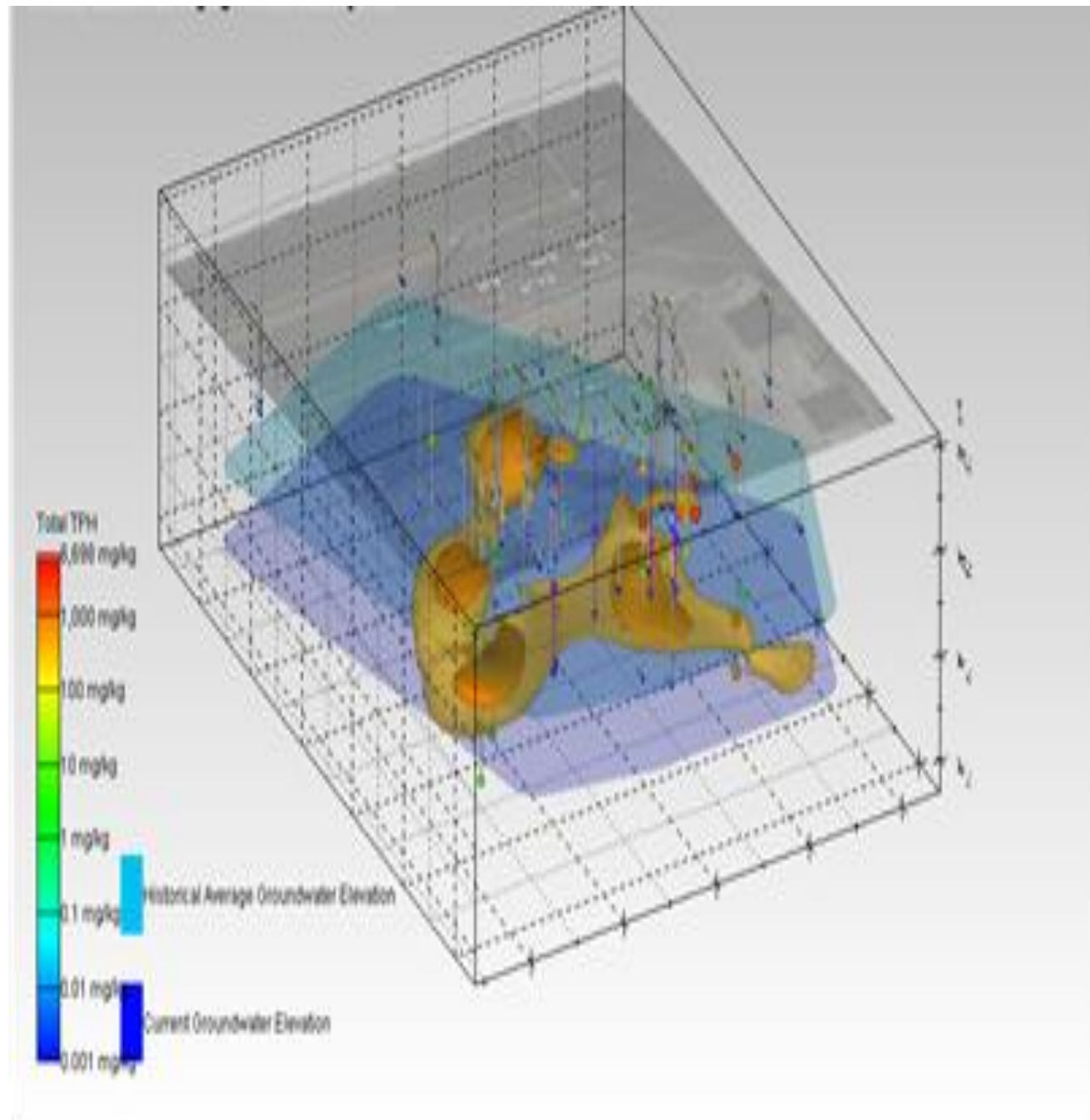
## •Traditional Workflow Challenges

- ✓ Site investigation methods
- ✓ Limited data representation
- ✓ Data compilation over years
- ✓ Inconsistent data interpretation
- ✓ Limited perspective (higher uncertainty)





# Drivers for Building a Conceptual Site Model

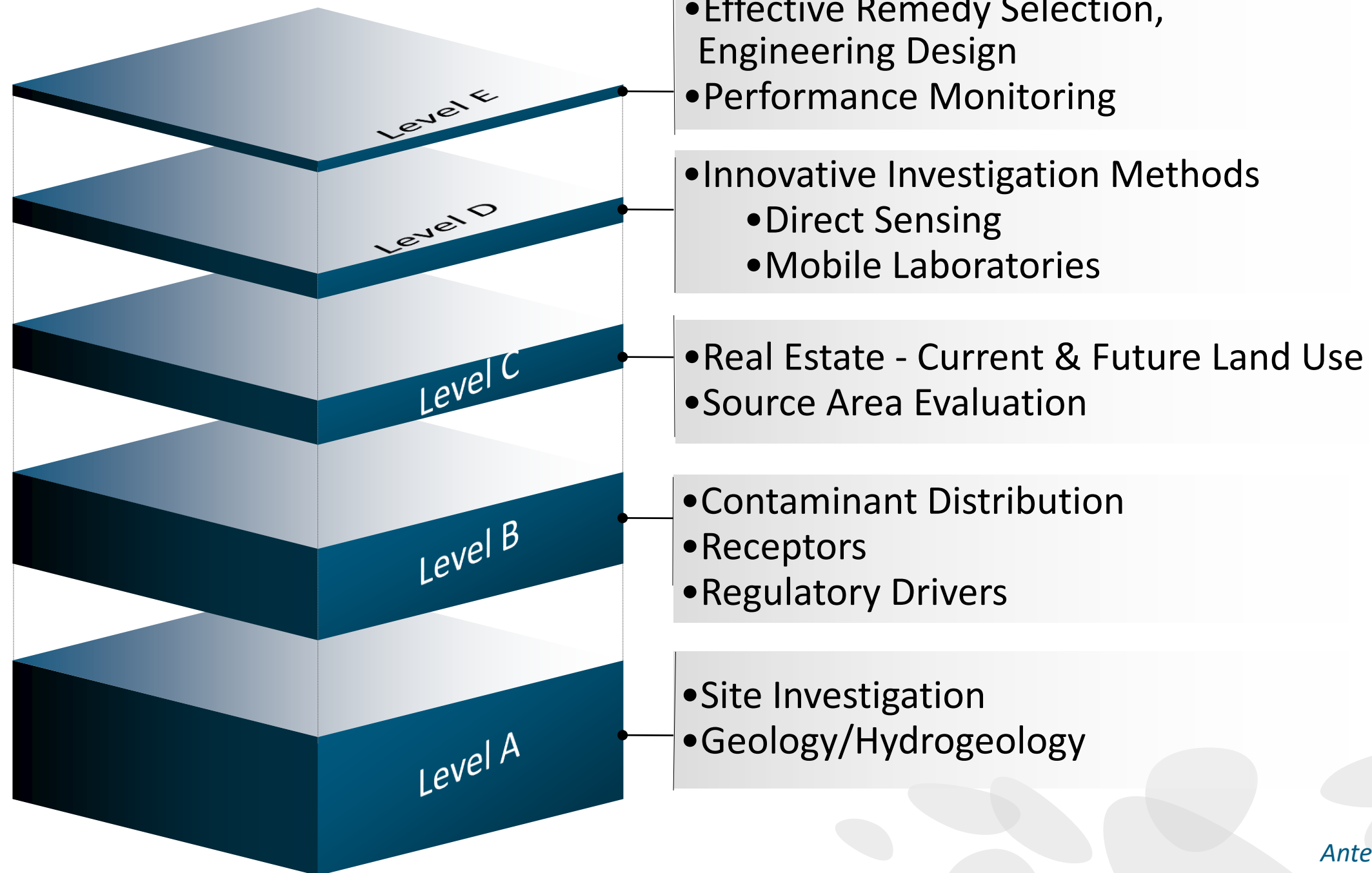


1. Build regulatory & legal confidence in site work & outcomes
2. Gain common understanding of complex, multi-year data sets
3. Promote effective stakeholder communications
4. Mutually acceptable risk-based decisions
5. Promotes more informed business decisions

# Building the Conceptual Site Model (CSM)

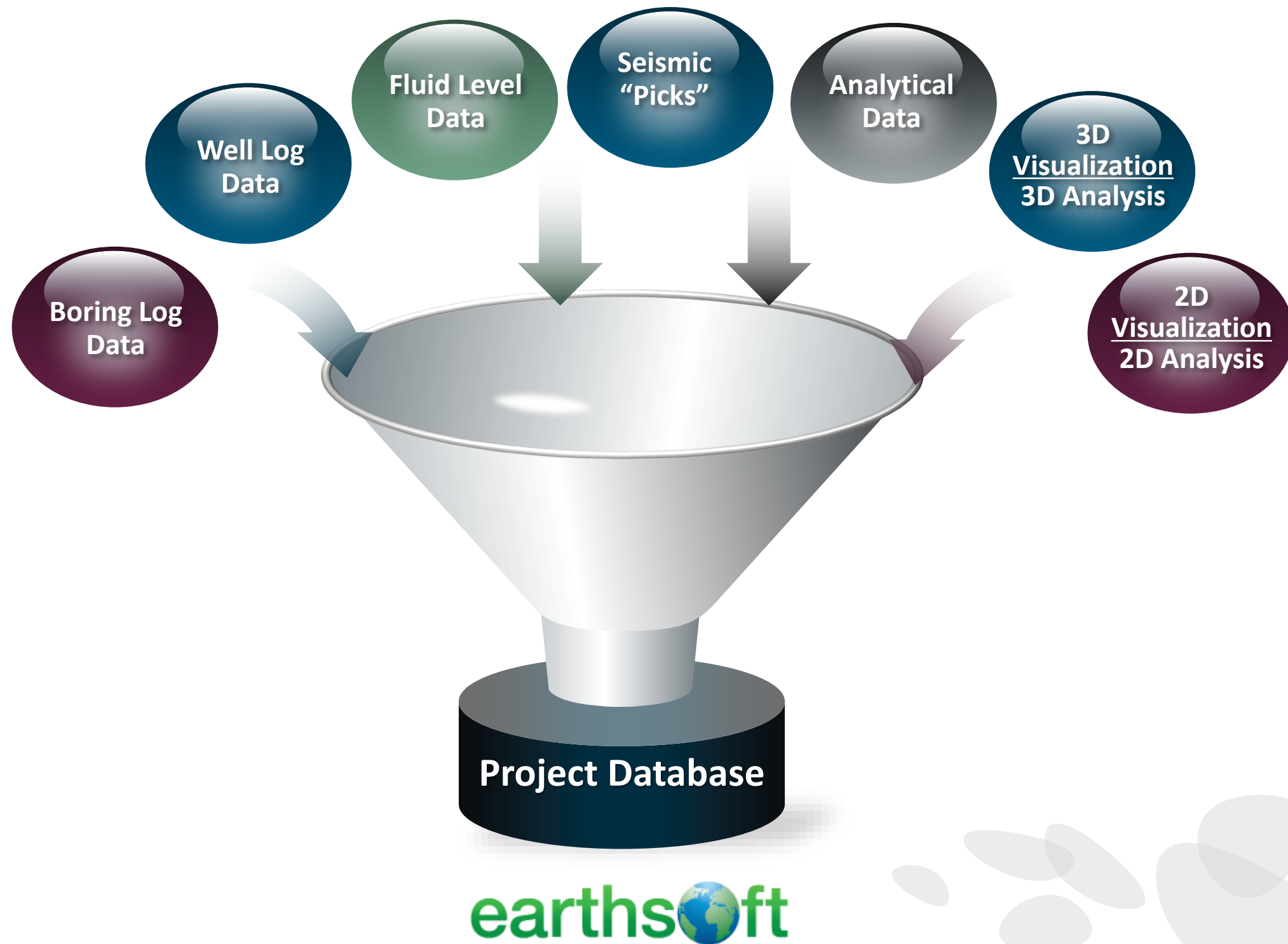
- **Goal: Build All Relevant Site Knowledge into the CSM**

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# Conceptual Site Model – Populating the EQulS Database



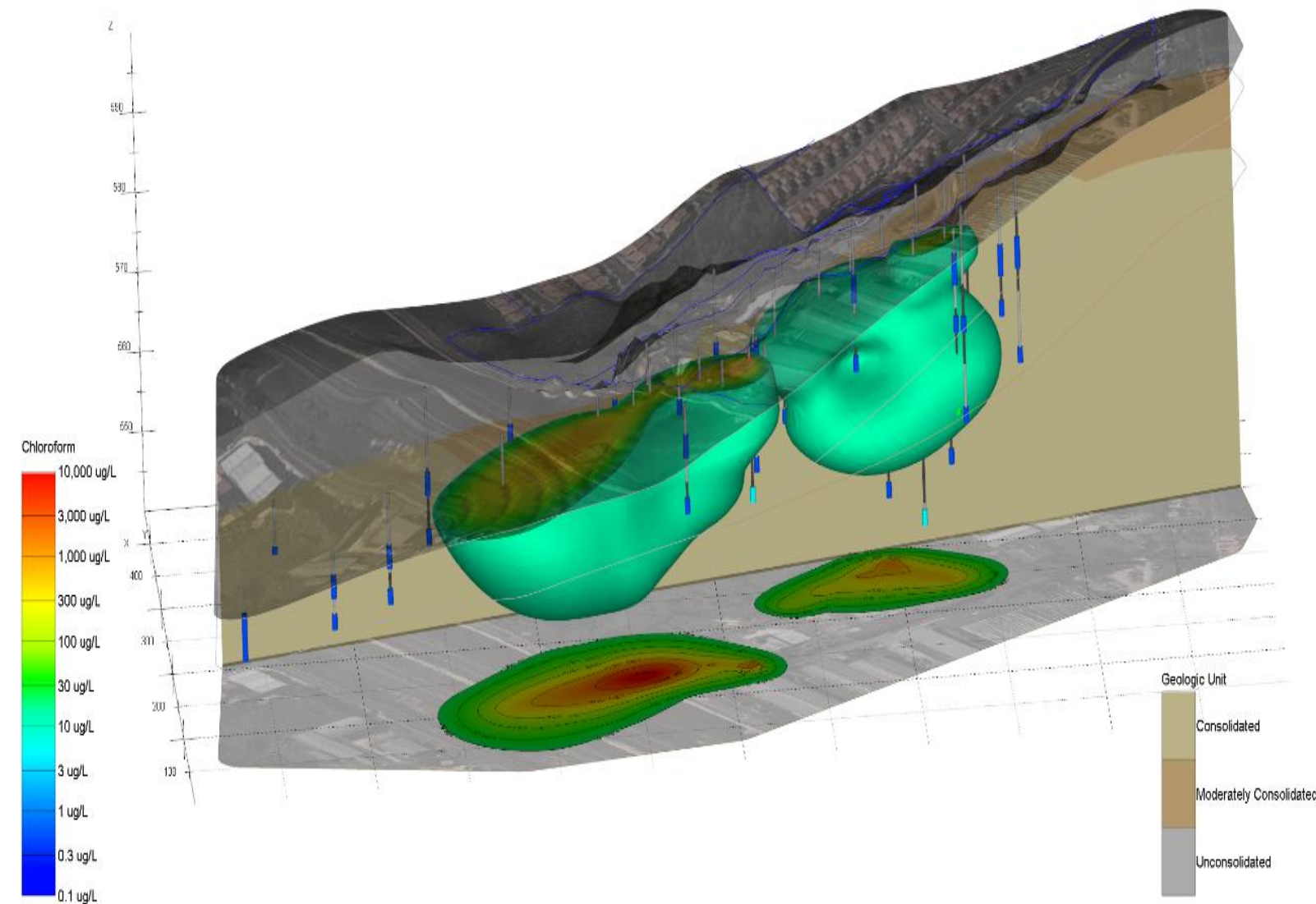
A baseline CSM analysis of site conditions and remedial options provide strategic insights for:

-



## Conceptual Site Model – 3D Analytical Data Visualization (Cont'd)

- Standardized calculation of mass and volume of groundwater plumes
- Identification of additional source area(s)
- Enhanced plume dynamics and degradation
- More precise reserve lifecycle cost modeling \$\$

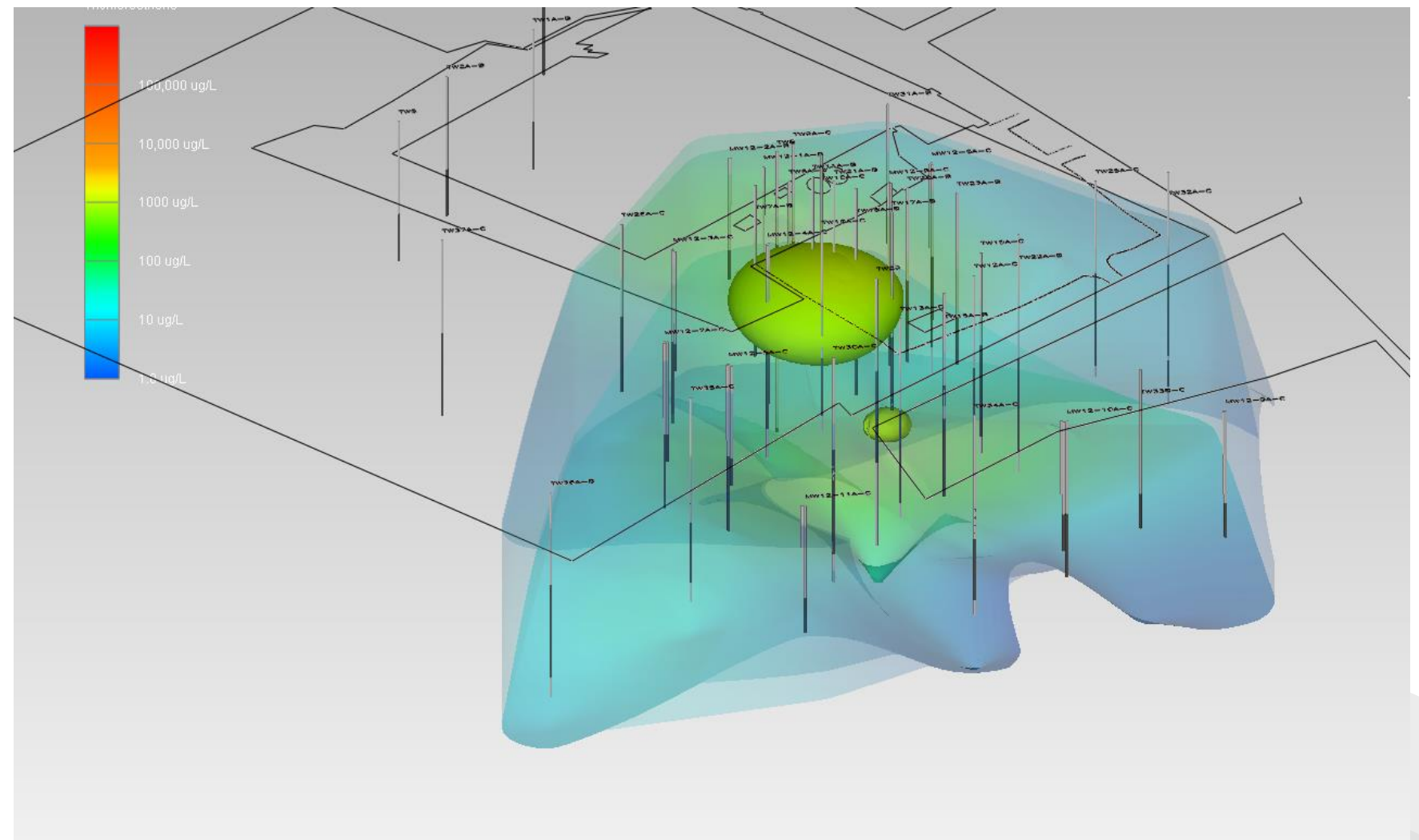


# Best Management Practice 3D CSM

Provides a standardized solution process for the management and representation of complex data sets leading to reduction of environmental liabilities & more informed business decisions

## 1. Business Stakeholders

- ✓ Operations management
- ✓ Real estate
- ✓ Third party stakeholders
- ✓ Regulatory navigation

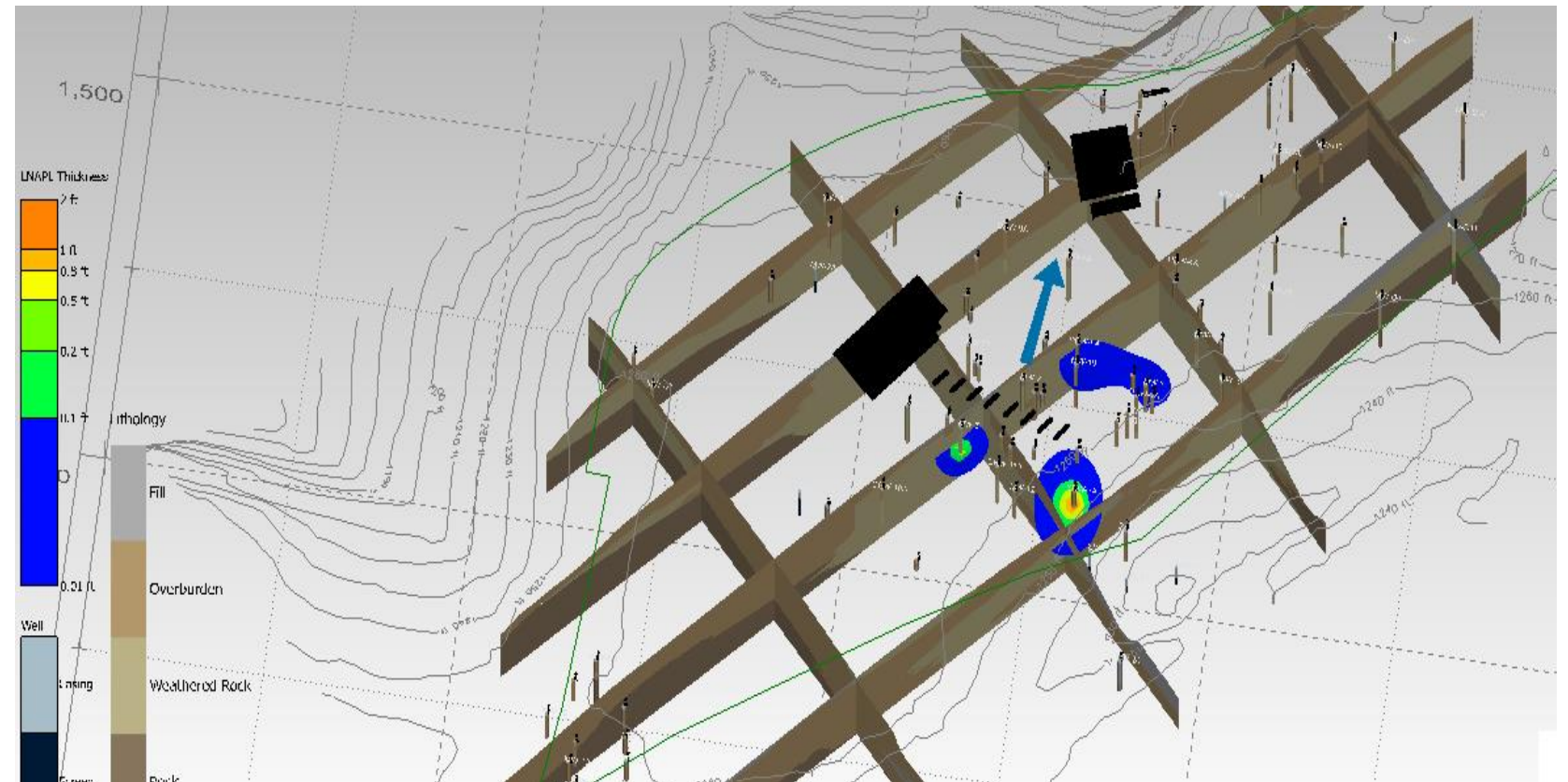




# Best Management Practice 3D CSM (Cont'd)

## 2. Technical Advantages

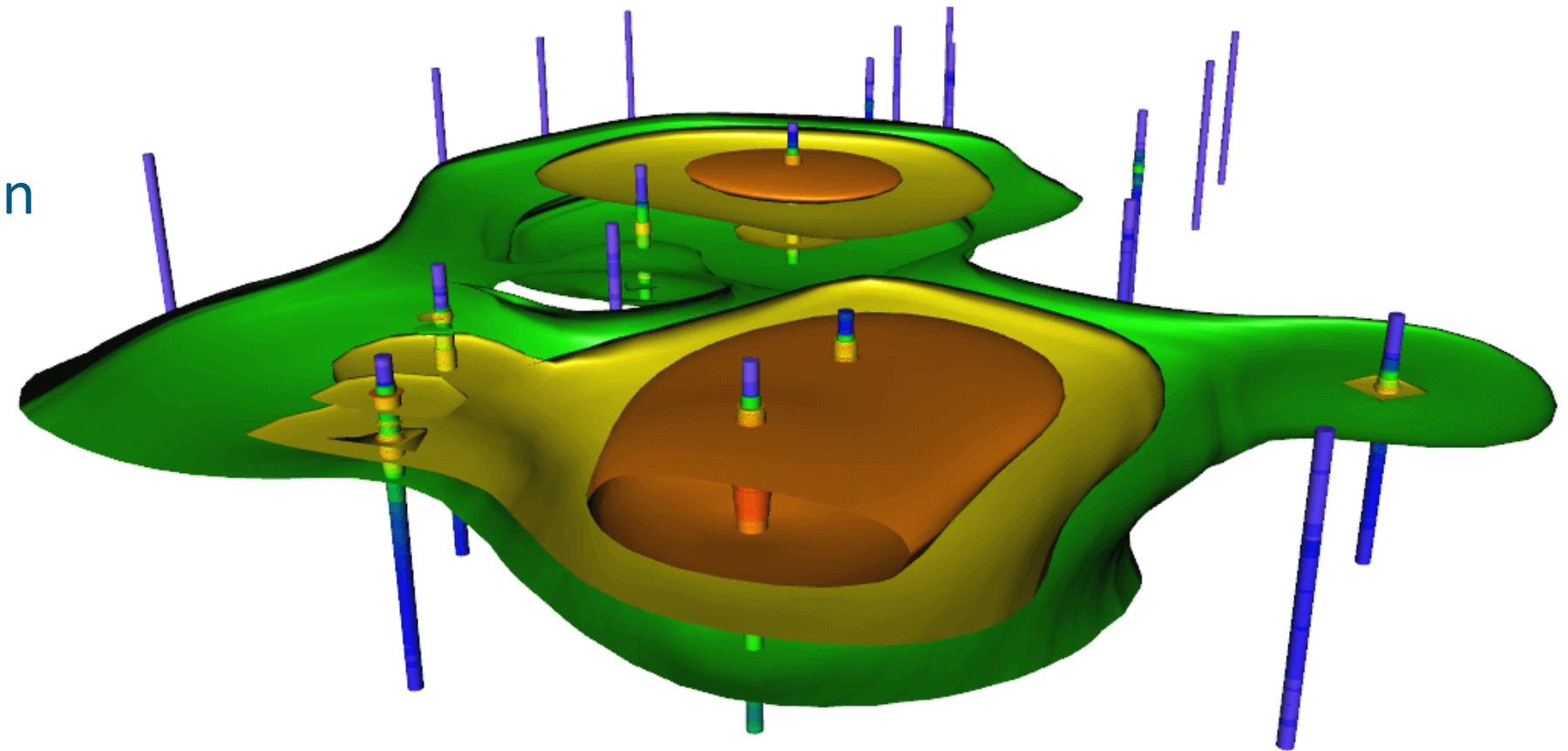
- ✓ Plume architecture credibility
- ✓ Validation of mass and volume estimates
- ✓ Easier visualization of data sets over time; predictive model (simulations)
- ✓ Improved risk management
- ✓ Lifecycle cost reductions



# Best Management Practice 3D CSM (Cont'd)

## 3. Cultural barriers minimized by Technology-Data Visualization Model

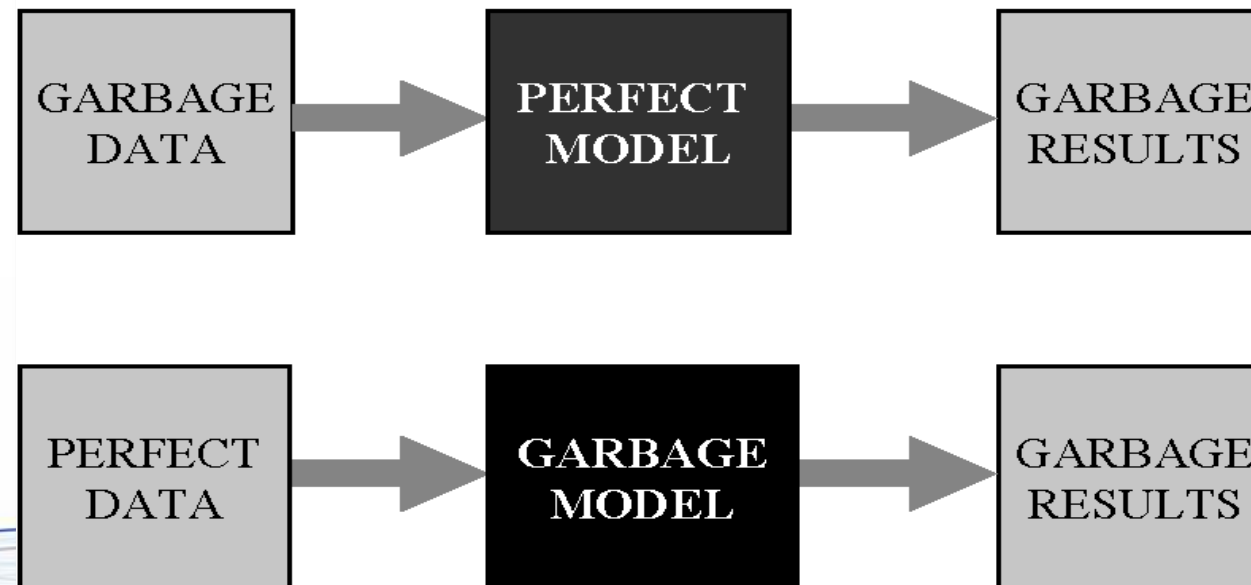
- ✓ *Best-fit solution strategy*
- ✓ Corporate reserve cost validation
- ✓ Refined targeted design and implementation remedial strategies
- ✓ Streamlines lifecycle management sensitive receptor risk-based assessment





# Solution Advantages

## MODEL CALCULATIONS "Garbage In-garbage Out" Paradigm



# Solution Advantages



- Investing in Technology-based solutions
  - Yields **High Resolution Site Characterization** to maximize field data density
  - Reduces labor & laboratory costs
  - Reduces engineering and field costs
  - Increases data QA/QC
  - Increases field quality performance
  - Confirms and reduces data gaps
  - Defines source areas
  - Reduces lifecycle and costs

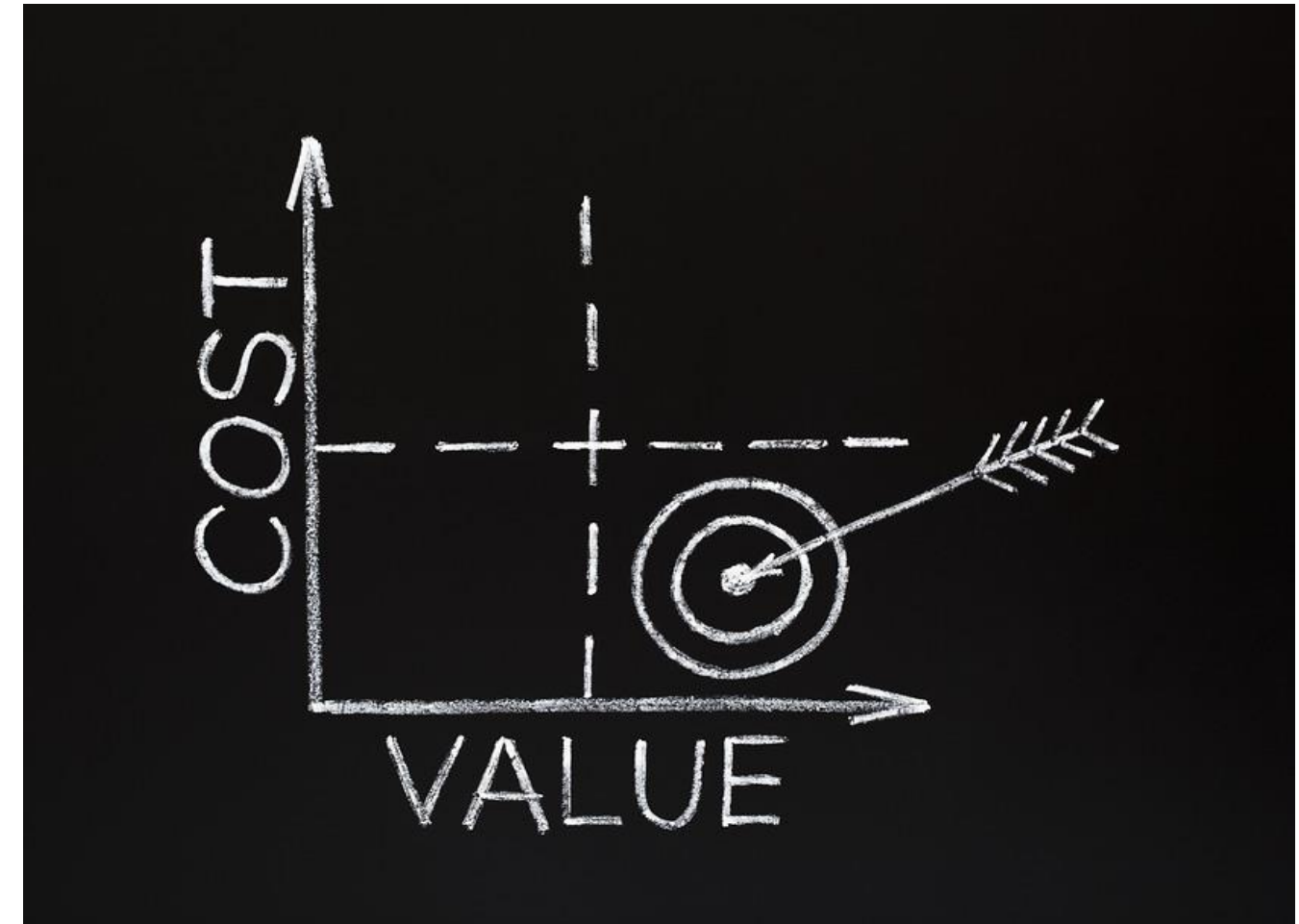
# Solution Advantages (Cont'd)

## ■ Promotes

- Streamlined investigation + remediation = lifecycle \$ reduction
- Refined probabilistic liability risk cost modeling
- Targeted remedial design and successful implementation
- Successful collaboration between diverse stakeholders

## ■ Focuses

- Stakeholders to holistic interpretation and effective negotiations





# Solution Advantages

*“A Picture is Worth a Thousand Words”*



*Think about this “Quote” and the real impact of Visualization Solutions to your Business.*

# Questions?



# Contact Information

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Antea Group – CAVe Solution

<https://www.youtube.com/watch?v=r2wsHKPSOXI&t=29s>

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