



# Dugway Proving Ground Restoration Advisory Board Meeting

May 7, 2007

Tooele County Courthouse Auditorium

Tooele, Utah

# UPDATE

# RCRA Facility Investigation

Jeff Fitzmayer  
Project Geologist, Parsons



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# Presentation

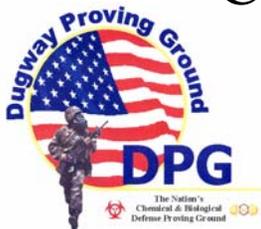
- **Status of RFI for SWMUs**
- **Work Completed Since November 2006**
- **Future Work Activity**
- **Current Field Work**
- **Overview of Downrange Groundwater Monitoring Area**



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# RCRA Corrective Action Process

- Solid Waste Management Units (SWMU) Definition
  - "Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released."
- Four Main Steps
  - RCRA Facility Assessment (RFA)
  - RCRA Facility Investigation (RFI)– Phase I
  - RCRA Facility Investigation (RFI)– Phase II
  - Corrective Measures Study (CMS)



# Status of RFI SWMUs

## Priority 1 (32 SWMUs )

- **21 SWMU RFI Final Reports DSHW Approved**
  - SWMUs 3, 16, 17, 18, 21, 44, 52, 54, 65, 79, 98, 172, 194 (A,B,C), 199, 200, 207, 212, 213, and 215
- **2 SWMUs with Final RFI Reports in Preparation**
  - SWMU 41 and 180
- **1 SWMUs with RFI Report in Draft Stage**
  - SWMU 60
- **8 SWMUs with Upcoming Removal Actions or Further Investigation Needed**
  - SWMUs 4, 15, 32, 35, 173, 177, 192 and 208



# Status of RFI SWMUs

## Priority II (39 SWMUs)

- **28 SWMU RFI Final Reports Approved by DSHW**
  - SWMUs 6, 8, 10, 19, 23, 25, 56, 56B, 75, 77, 113, 115, 116, 118, 150, 154, 171, 179, 185, 188, 189, 193, 197, 205, 206, 211, 214, and 216
- **6 SWMU RFI Final Reports in Preparation**
  - SWMUs 61, 97, 133, 150, 183, 201.
- **1 SWMU with RFI Report in Draft Stage**
  - SWMU 11
- **8 SWMUs with Upcoming Removal Actions or Further Investigation Needed**
  - SWMUs 31, 114, 209, 210



# Work Completed Since November 2006

## Reports

- **Response to UDEQ comments on Draft Final Carr GMA (alternate groundwater monitoring plan)**
- **Submitted Draft-Final Downrange GMA**
- **Submitted Final RFI Reports for SWMUs 8, 150, 154**
- **Submitted Draft-Final RFI Reports for SWMUs 201 and 183**
- **Submitted Draft RFI Reports for SWMUs 11, 183**



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# Work Completed Since November 2006

## Work Plans or Work Plan Variances (WPVs)

- Submitted (and approved) Final Work Plan for SWMUs 173 and 189
- Submitted (and approved) Final Work Plan for investigating former Biological sites
- Submitted (and approved) Final WPVs for SWMUs 180 (groundwater), 192 and 208



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# Future Report Activity

- **Prepare Final RFI Reports for SWMUs 61, 97, 133, and 183**
- **Prepare Draft-Final RFI Reports for SWMUs 11, 41, and 201.**
- **Prepare Draft RFI Report for SWMU 60**
- **Prepare Final Carr and Downrange GMAs**
- **Prepare Draft English Village GMA**



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# Current Field Work

## *RFI Field Work – Spring 2007 (on-going)*

- **Soil Sampling at SWMUs 4, 60, 114, 192, 209 and 210**
- **Groundwater investigation at SWMU-180**

## *Removal Actions – Summer 2007*

- **SWMUs 35, 173, 189 (v. cleanup), and 208**



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**UPDATE**  
**DOWNRANGE**  
Groundwater Management Area  
(GMA)



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# What is the GMA Program?

- An alternative, Regional Groundwater Monitoring Program
  - Meets requirements of regulation UAC R315-7-13
  - In part, based on the current and future “Use and Value” of the groundwater
  - More applicable to the unique conditions at Dugway
  - Protective of human health and the environment



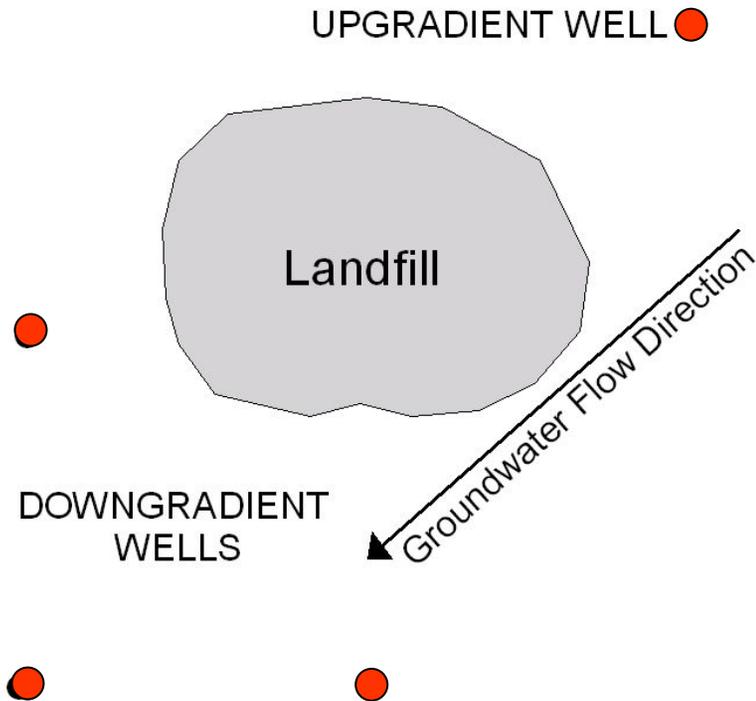
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# What is the GMA Program?

- Divides DPG into 4 regional Groundwater Management Areas (GMAs)
  - Ditto, Carr, Downrange, English Village
  - Each plan is stand-alone and uniquely tailored to the conditions at each GMA
  - Each plan is developed with input from the Army and UDEQ, with final approval by UDEQ
  - Allows for the addition of new sites
  - Each plan is incorporated into the DPG Part B Permit



# Previous Groundwater Monitoring



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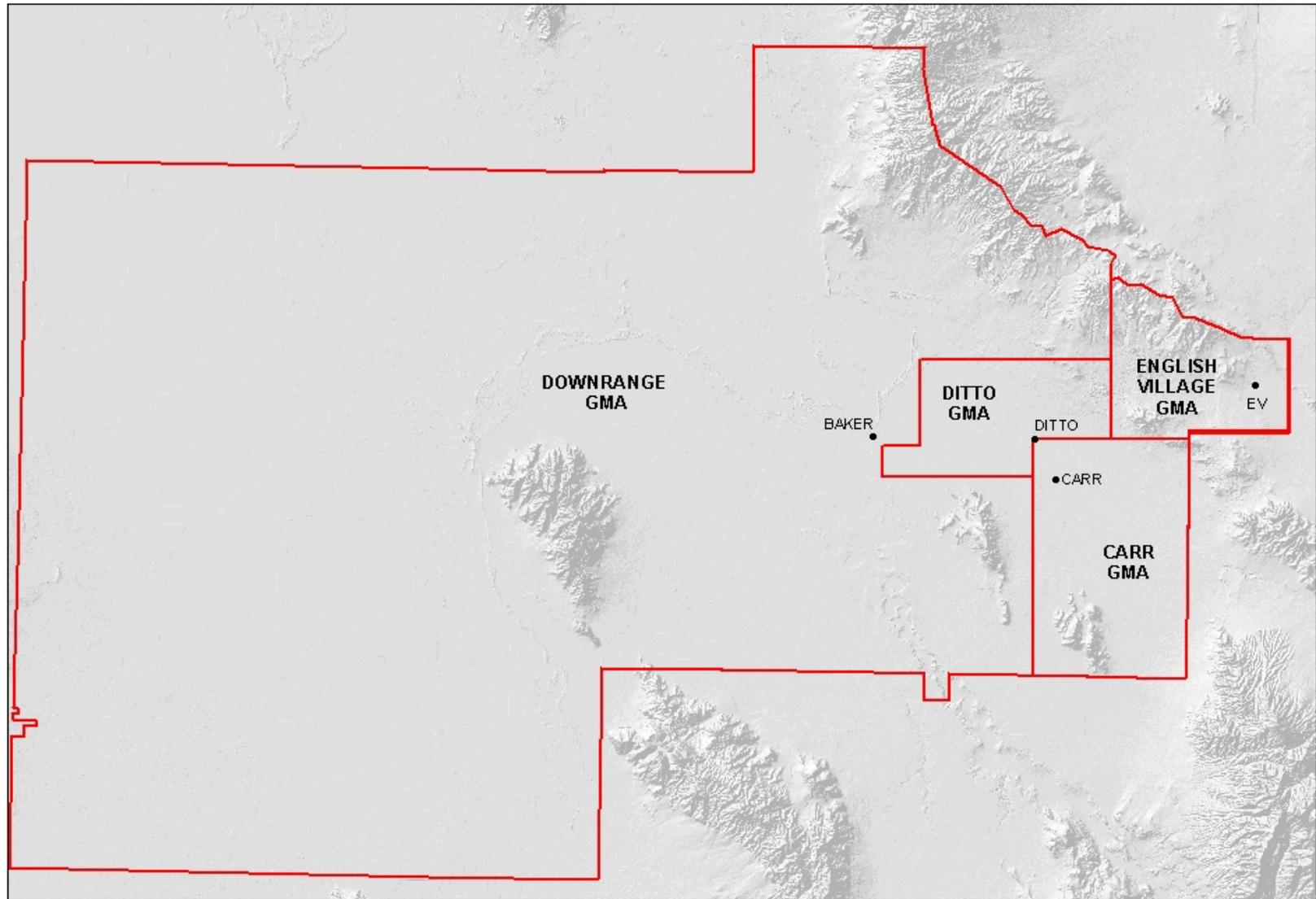
# Advantages of GMA Program

- Fewer Wells/Samples
- Limited Analyte List
- Well-Defined Exit or Ramp-down Strategy
- Lower Costs



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# REGIONAL GROUNDWATER MANAGEMENT AREAS, DUGWAY PROVING GROUND



# CARR AND DITTO GMAs

WATER  
WELL

VOC  
PLUME



**SHALLOW**

*(MOST SITES)*

**WATER-BEARING**

**ZONE**



*(SALT WATER)*

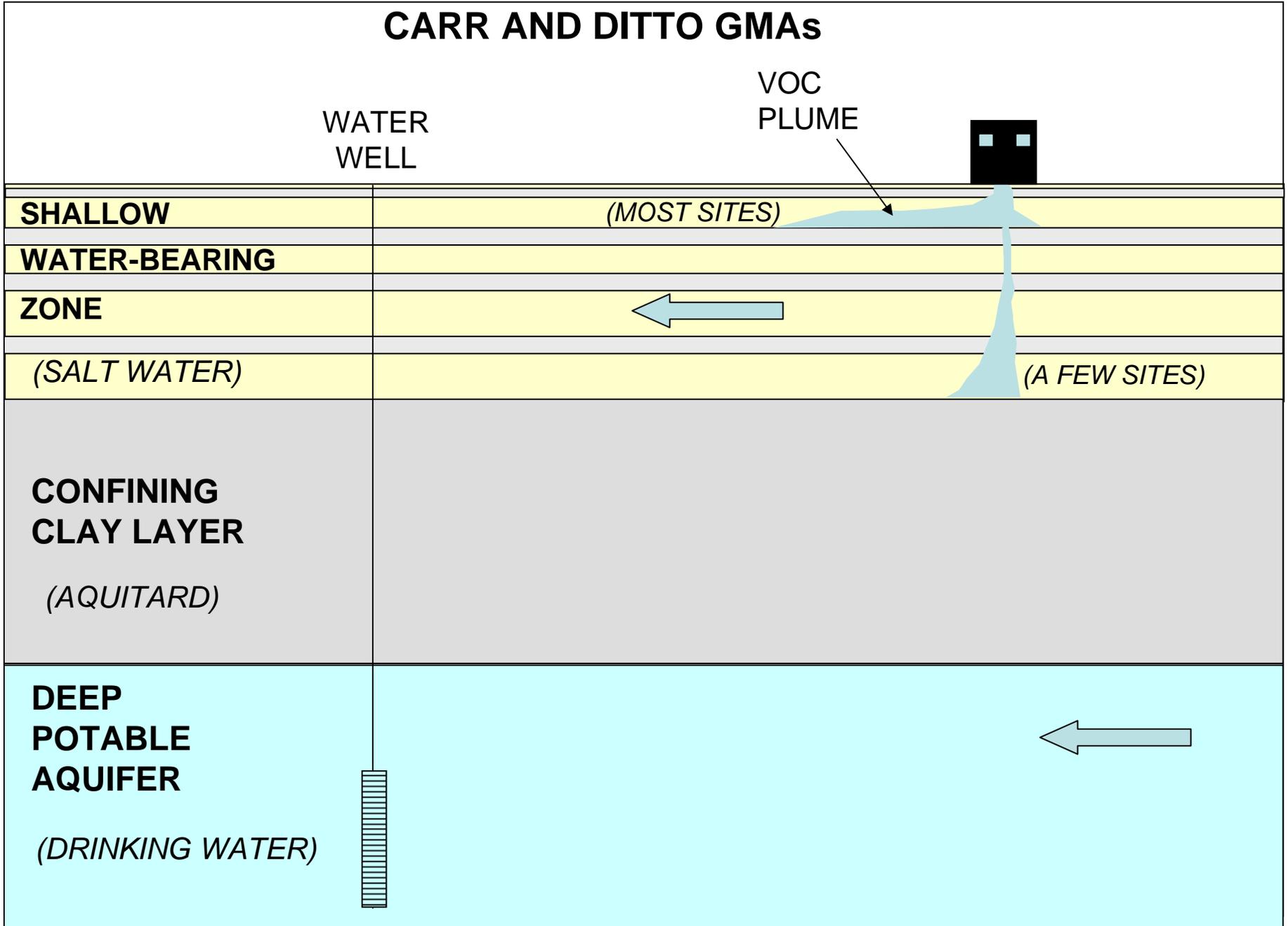
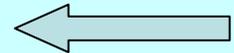
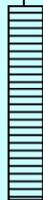
*(A FEW SITES)*

**CONFINING  
CLAY LAYER**

*(AQUITARD)*

**DEEP  
POTABLE  
AQUIFER**

*(DRINKING WATER)*



# DOWNRANGE GMA

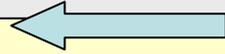
ABANDONED  
WATER  
WELL

(TWO SITES)

VOC  
PLUME

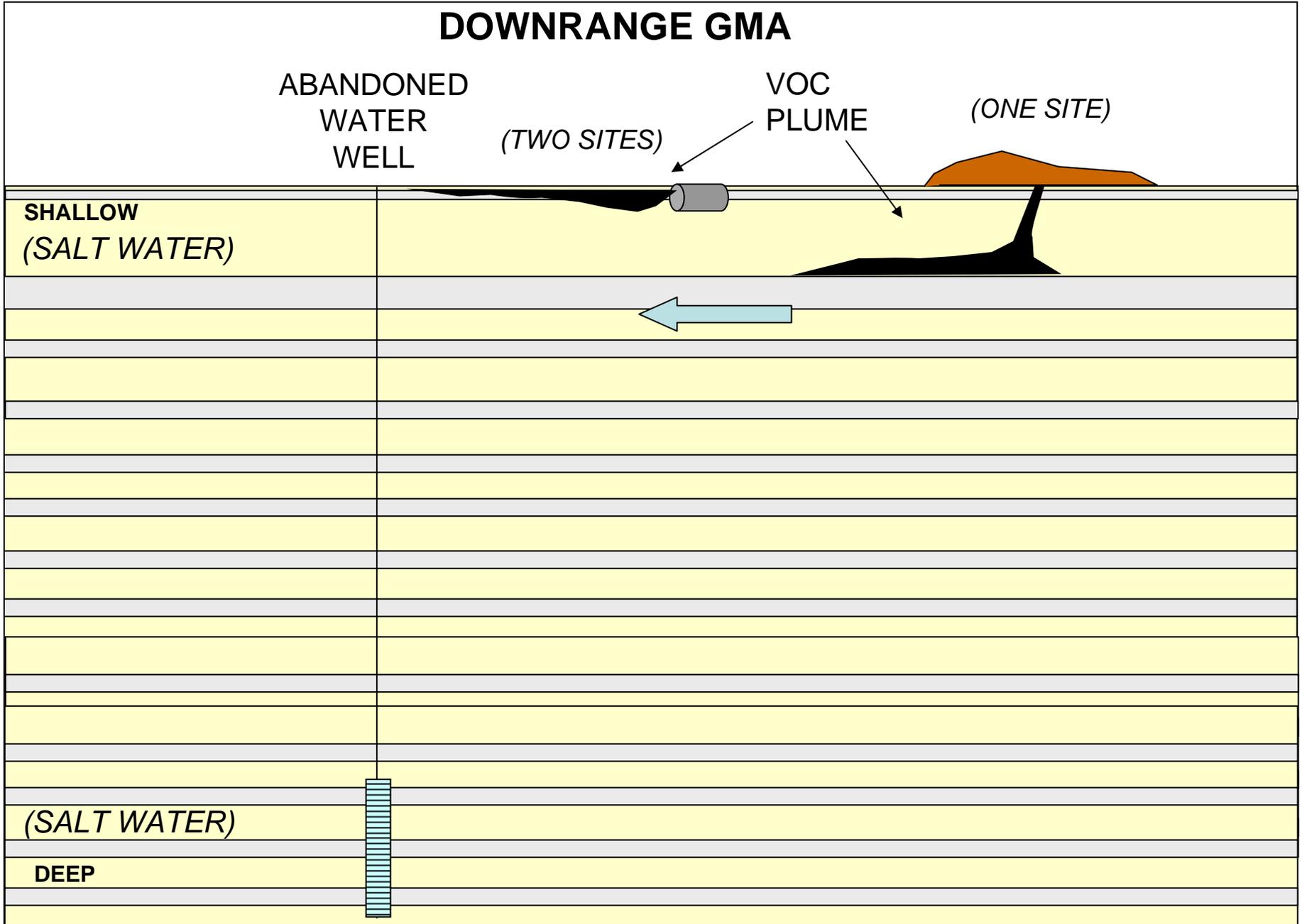
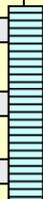
(ONE SITE)

SHALLOW  
(SALT WATER)

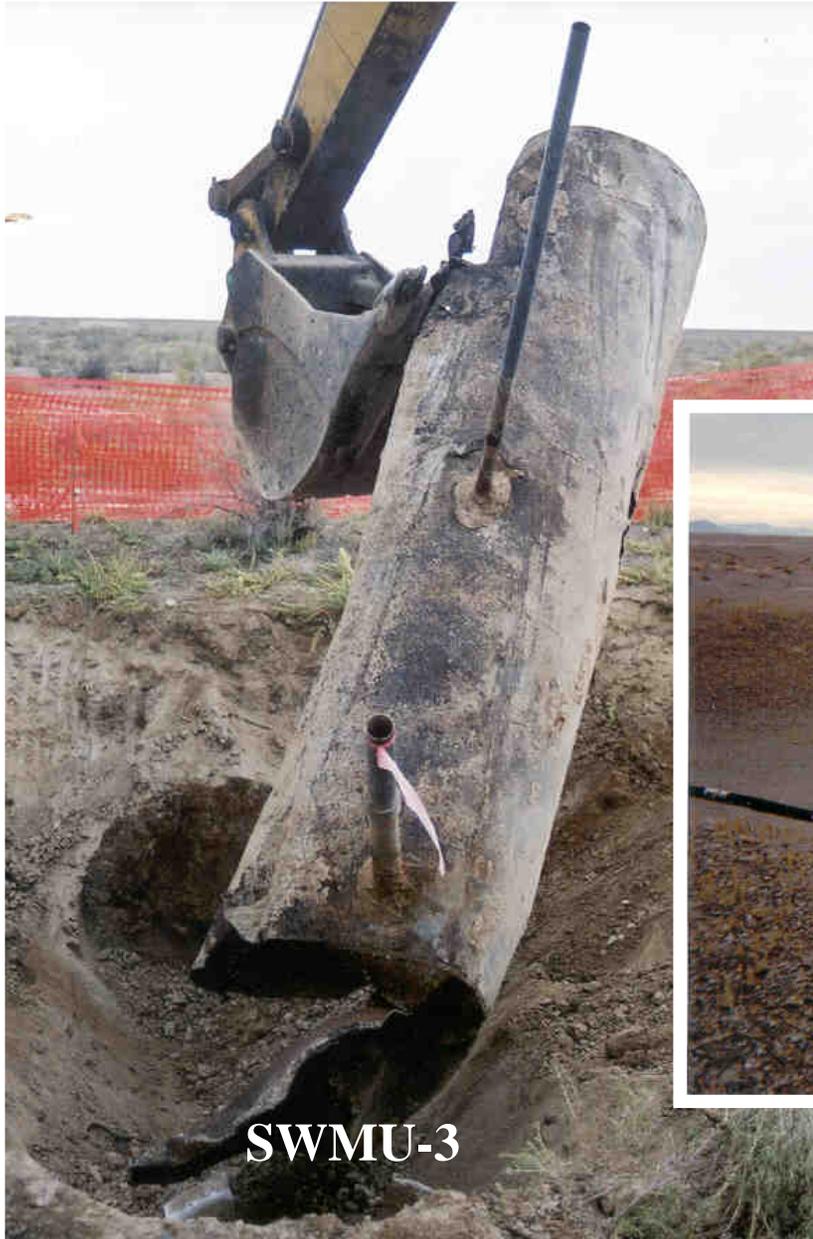


(SALT WATER)

DEEP



# Petroleum VOC Plumes



# Chlorobenzene VOC Plume



SWMU-197



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# Groundwater Monitoring Plan for Downrange GMA

- Shallow Source Area Monitoring
  - Identify trends in source concentrations
  - Use trends to develop future monitoring strategy or to remove from monitoring program
- Deep Source Area Monitoring (where applicable)
  - Detect migration of plume to deeper depths
- Downgradient Monitoring
  - Monitor horizontal spread of plume



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QUESTIONS?



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