Drilling Sump Restoration
Santa Maria Valley
California

presented by
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Geographic Location of Santa Maria

Created by URS Corporation.
Santa Maria Valley Agricultural and Oil Exploration History

Changing Land Use

Sump Restoration Program Evolution

- Drivers
  - Land Use Change
  - Proactive Due Diligence
  - Legal Issues

- Regulatory Oversight
  - State Water Board Delegation to County

- “Voluntary” Program
Sump Abandonment Practices

Sump Material Characteristics

- Chemical Components
  - Total Petroleum Hydrocarbons
  - C25-C40

- Non-hazardous
  - Waste Disposal

- Santa Maria Crude – Heavy Oil
  - API Gravity 10° to 20°
Sump Remediation Approach

- Identification
  - Well Documentation
  - Historic Aerial Photographs
  - Georeferencing

- Delineation
  - Borings, Trenching, Geophysics

- Remediation
  - Excavation and Disposal
Assessment Challenges

- Lack of Standard Sump Size and Configuration

- Challenges Associated with Using Standard
  - Planning
  - Extent
  - Access
  - Cost
Sump Identification and Delineation Challenge

- Interpreted Sump Areas with Minimal Delineation
- Actual Remediated Area

Created by URS Corporation. Source of aerial basemap: AirPhotoUSA, May 2002.
Georeferencing

- Historic Aerial Review
  - Sump Evolution
  - Graded Area

- Overlay with Features in GIS Database

- Current-Day Flights
  - Documents Development
  - Opportunity to Evaluate Assessment Locations
Georeferencing Example

Abandoned Wellhead

Area of Potential Impact

Potential Sump Limit

Sump Limit
Agricultural Work Challenges

- Crop Rotations
- Transportation Competition
- Penalty for Missed Deadlines
Commercial Work Challenges

- Visibility
- Traffic and Utilities
- Safety and Security
- Disruption to Local Business
Residential Work Challenges

- Homeowner Notification
- Securing Access Agreements
- Assessment on Private Property
- Negotiations for Home Purchase
Community Concerns

- Health
- Emotional Response
- Concerns of Migration
- Heightened Awareness
- Legal
Homeowner Concerns

- California Property Taxes
- Deed Notifications
- Property Values
- Relocation Alternatives
Conclusions

- **Sump Size and Location**
  - Aerial Photo Interpretation Combined with Site Specific Assessment

- **Stakeholder Involvement**
  - Communication
  - Sensitivity to Issues

- **Successful Sump Remediation**
  - Proactive Approach