FORT BLISS
Restoration Advisory Board
(RAB)

Robert Rowden
Environmental Support Manager
Army Environmental Command

AEC – Delivering Environmental Solutions!

IRP/MMRP Overview

Defense Environmental Restoration Program (DERP)
Installation Restoration Program (IRP)
Military Munitions Response Program (MMRP)

1. **The DERP was formally established by Congress in 1984, and**

2. **Codified at Title 10 United States Code (USC) §§2701 – 2707 and §2810**

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FORT BLISS RESTORATION SITE NAMES

1. North Castner Range Area of Interest (AOI) (FTBLS-007-R-01),
2. Snake Pit
   - Weston Solutions
3. Former Maneuver Area (FTBLS-002-R-01),
   - AECOM (Formally URS)
4. Biggs Army Air Field Open Burn/Open Detonation Site (OB/OD) Site I (FTBLS-006-R-01),
5. Biggs Army Air Field Open Burn (OB) Site II (FTBLS-006-R-02),
6. Far East Dump Site, (CCFTBL-001),
7. Oro Grande Landfill (FTBL-014),
   - CAPE/Parson Team
8. Closed Castner Range (FTBLS-004-R-01)
   - PIKA/ARCADS (JV)

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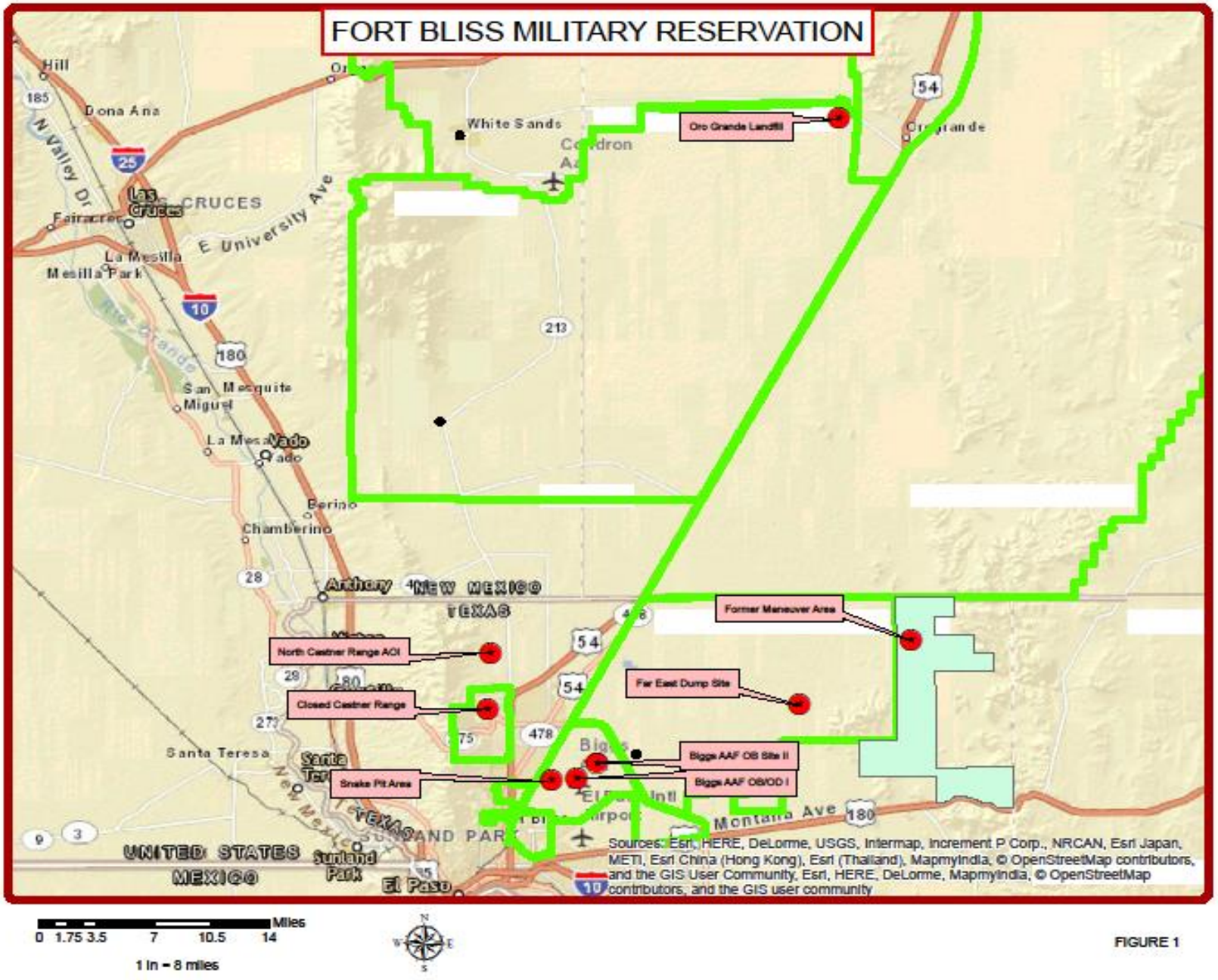

FIGURE 1

Robert Rowden, 210-466-1723, robert.l.rowden2.civ@mail.mil

1. North Castner Range Area of Interest (AOI) (FTBLS-007-R-01),

- Determine eligible for the Fort Bliss IRP,
- Entered into MMRP in 2015,
- Scope of Work Development

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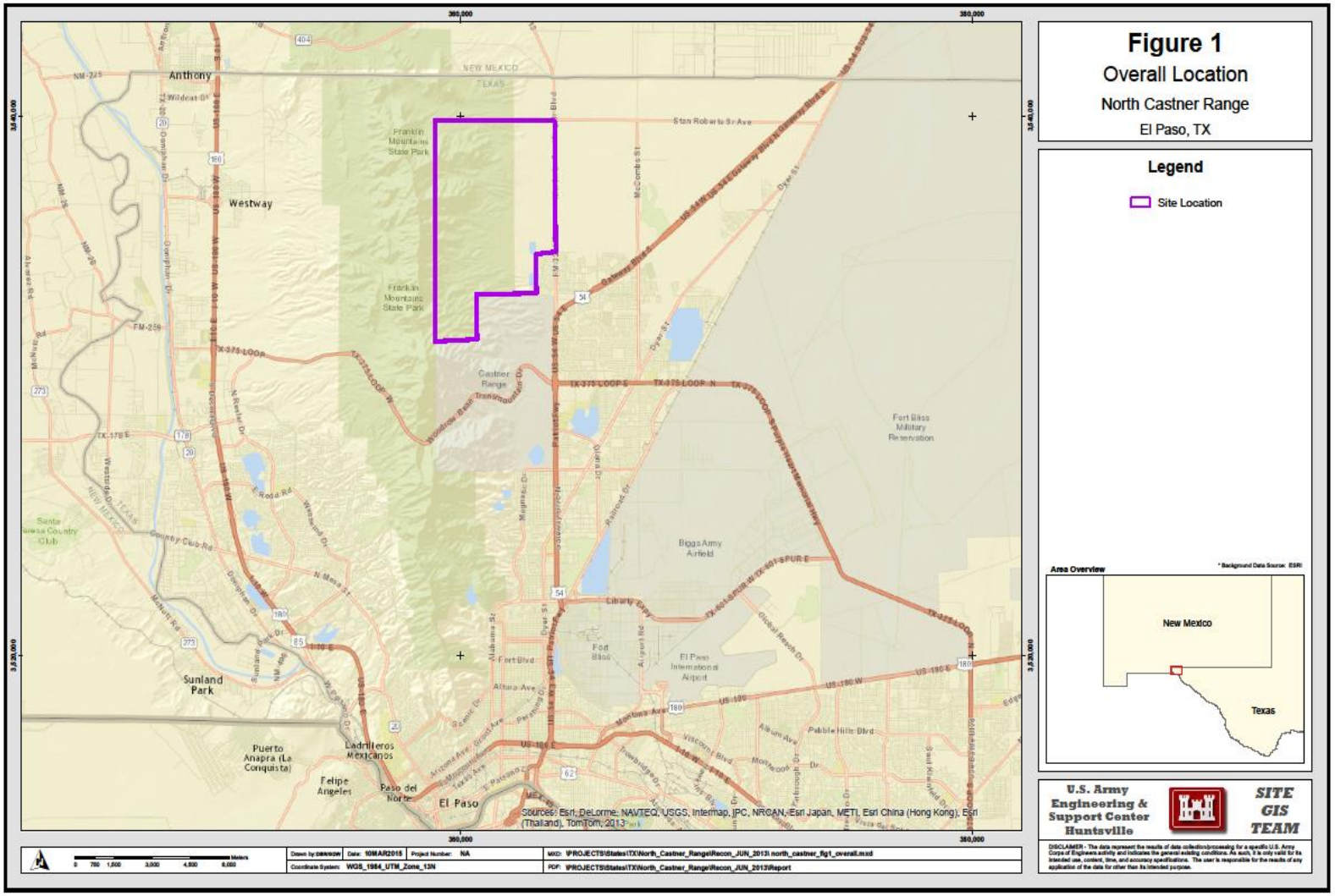

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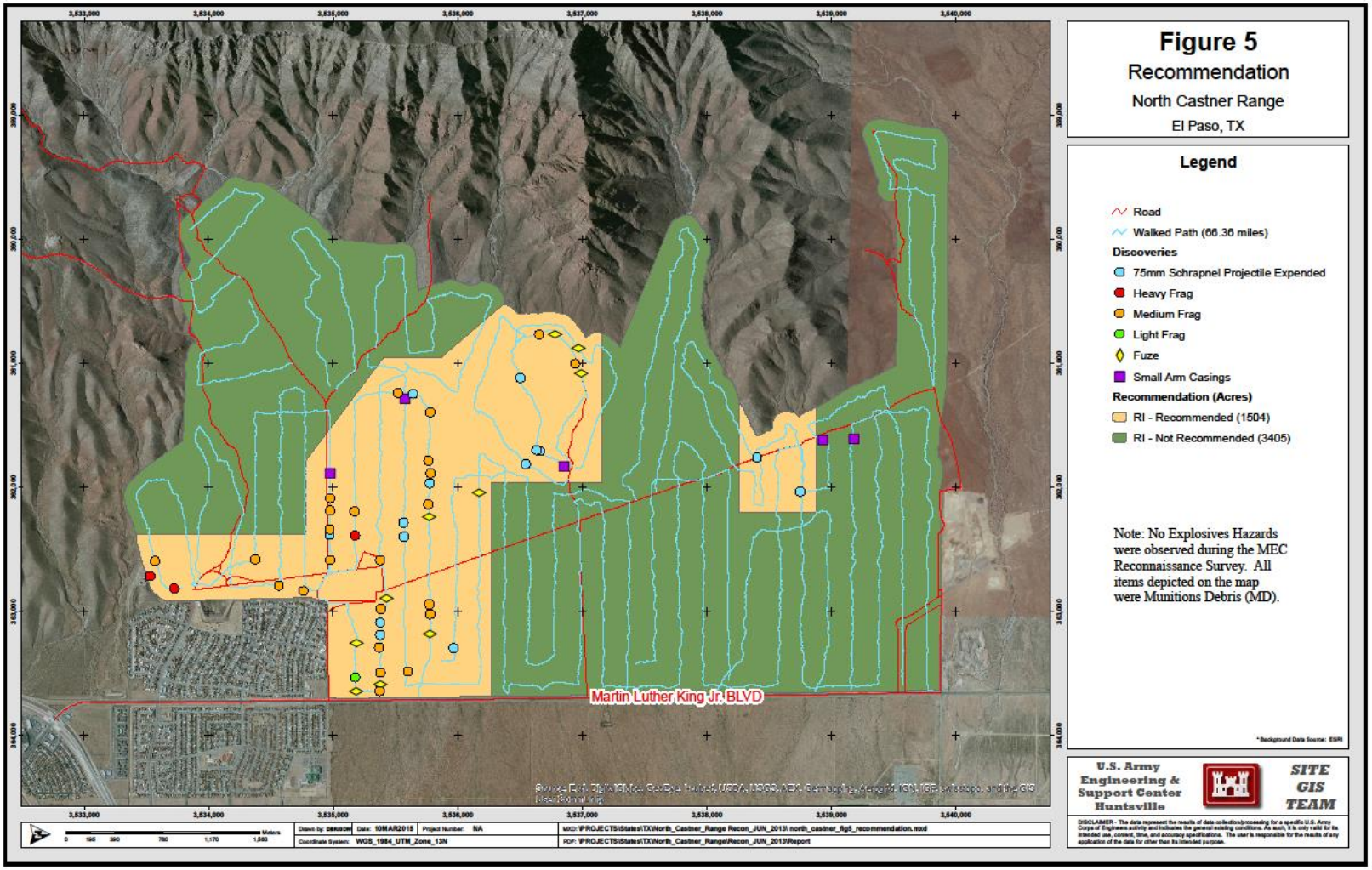

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END OF PRESENTATION

ARMY ENVIRONMENTAL COMMAND

"Sustain, Support and Defend"

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PRELIMINARY ASSESSMENT
SNAKE PIT SITE

Former US Biggs Army Air Field
Fort Bliss, Texas

Restoration Advisory Board
March 2016

US Army Corps of Engineers
BUILDING STRONG®

Agenda

- Site Setting and History
- Project Objectives
- Investigation Strategy
- Investigation Results
- Next Steps

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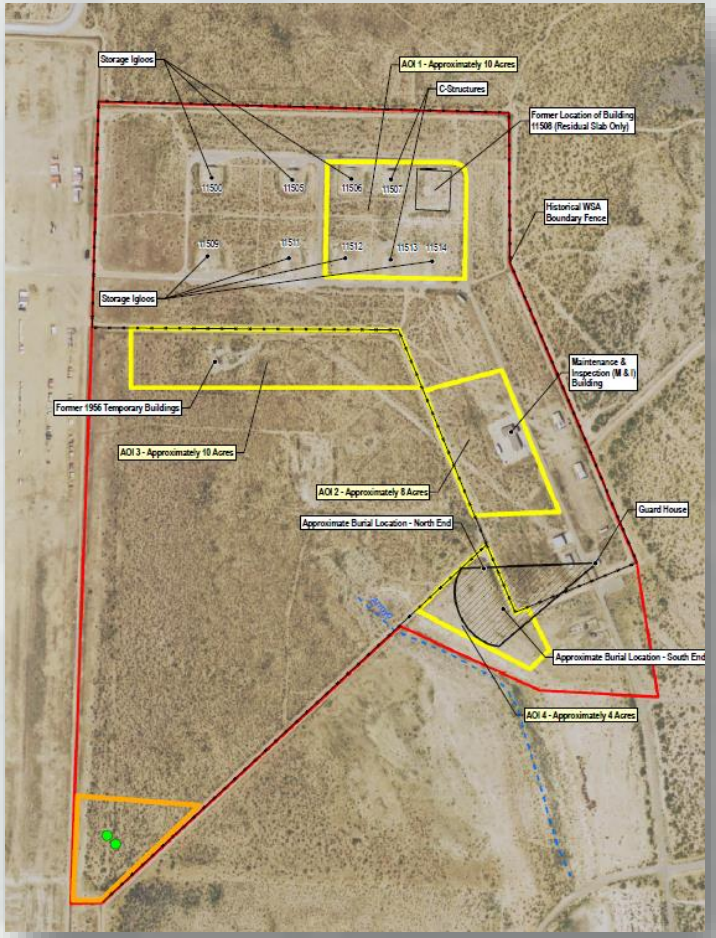
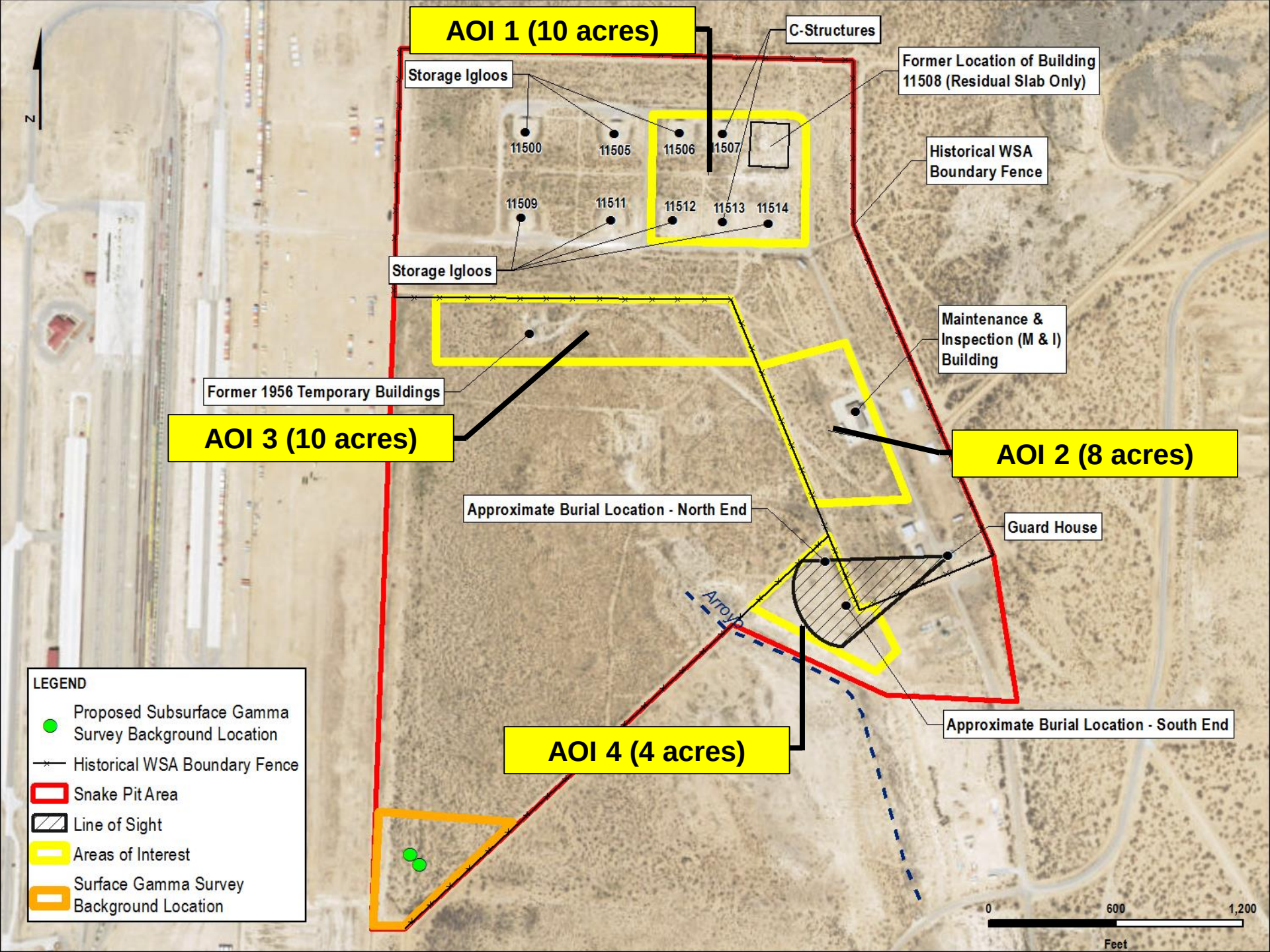
Site Setting and History

- Snake Pit Site is approximately 189 acres
- Designated as a Operational Storage Site location with a weapons storage area from 1954 to 1966
- Maintenance activities of the weapons may have generated low level radioactive waste
- Some of the waste may have been buried from 1955 to 1959
- Burial may have occurred in trench or cylindrical wells
- Disposal would have likely occurred in a 32 acre area near the former maintenance facilities at four areas of interest (AOI)



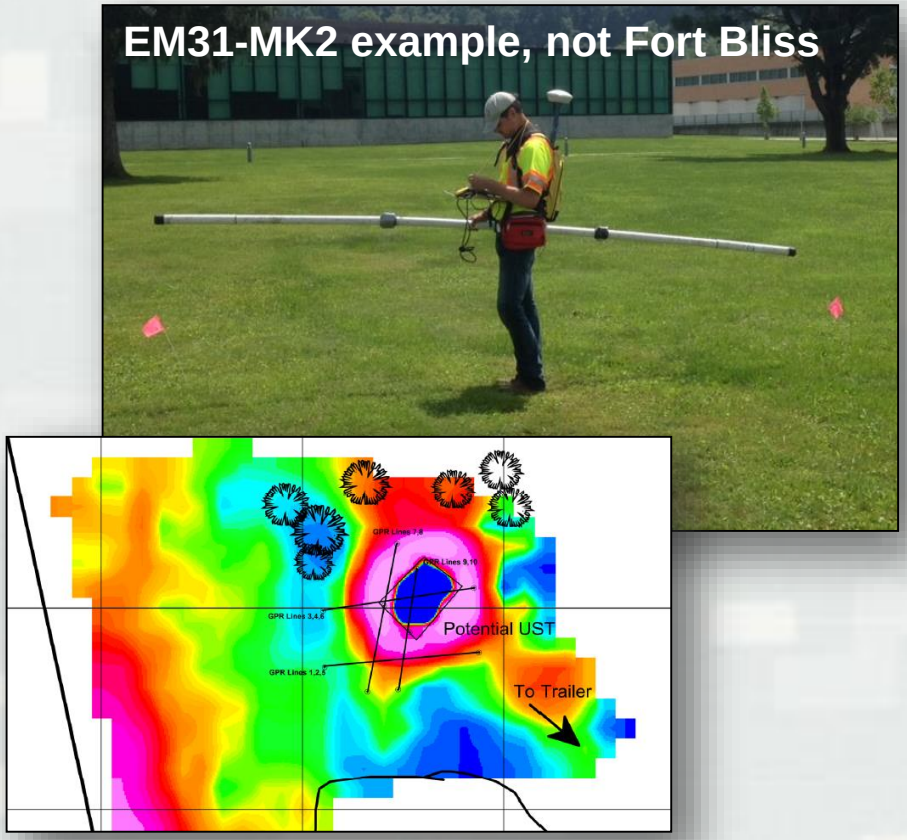

AOI 1 (10 acres)
C-Structures
Storage Igloos
Former Location of Building 11508 (Residual Slab Only)
11500
11505
11506
11507
Historical WSA Boundary Fence
11509
11511
11512
11513
11514
Storage Igloos
Maintenance & Inspection (M & I) Building
Former 1956 Temporary Buildings
AOI 3 (10 acres)
AOI 2 (8 acres)
Approximate Burial Location - North End
Guard House
Arroyo
Approximate Burial Location - South End
AOI 4 (4 acres)
N
LEGEND
Proposed Subsurface Gamma Survey Background Location
Historical WSA Boundary Fence
Snake Pit Area
Line of Sight
Areas of Interest
Surface Gamma Survey Background Location
0
600
1,200
Feet

Project Objectives for Planning

- Assess the four AOIs where disposal would have been most likely to occur
- Perform digital geophysical mapping (DGM) surveys to traverse and detect potential disposal features or other subsurface features of interest
- Perform focused surveys at selected locations to further characterize the subsurface conditions
- Conduct a surface gamma radiation survey
- Report findings and recommendations
- Conduct a subsurface gamma radiation surveys based on results

Investigation Strategy

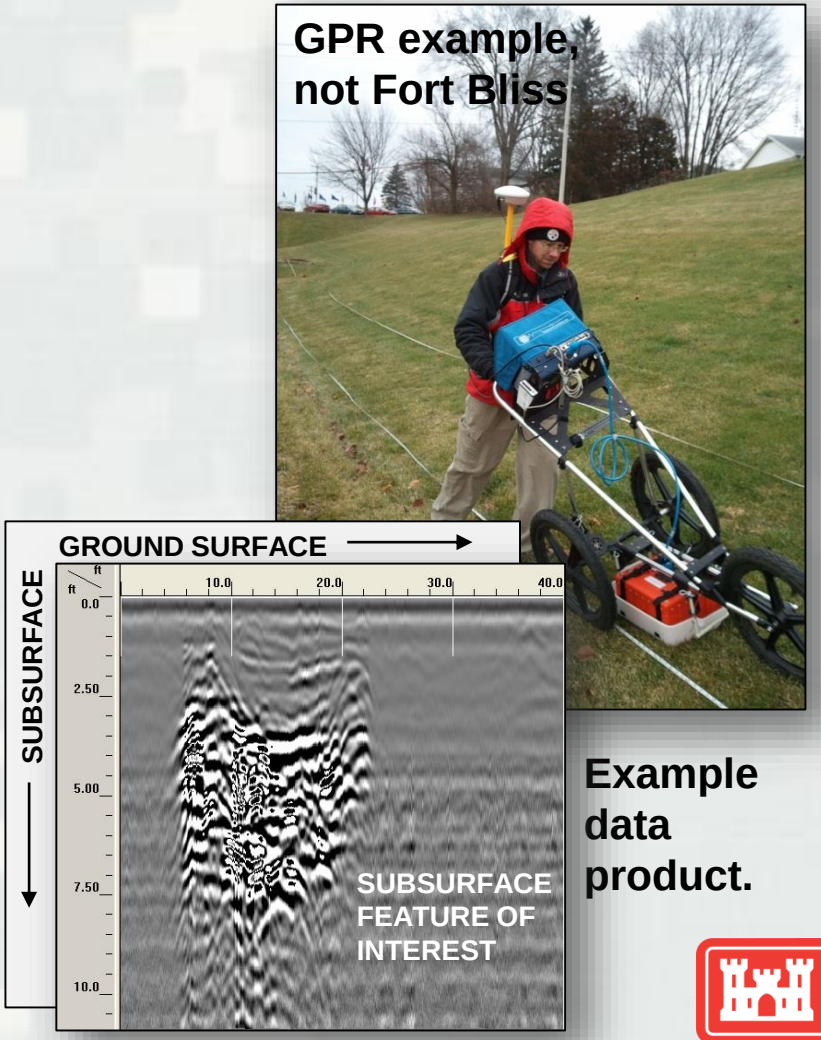
- **Digital Geophysical Mapping Surveys**
  - DGM surveys were performed using a Geonics EM31-MK2
  - A global positioning system (GPS) was used for data positioning
  - Data was collected along 5 ft wide lines across the 32 acre footprint
  - Digital data was processed using Geosoft Oasis montaj software to identify anomalies indicative of burial features
  - Locations of burial features were selected using waypoints and unique identifications for tracking and discussion



Example data product.

Investigation Strategy
(Continued)

- **Focused Surveys**
  - Anomalies detected during the EM31-MK2 survey were further assessed using Ground Penetrating Radar (GPR)
  - Anomaly locations were reacquired using GPS
  - We used a Geophysical Survey Systems SIR-3000
  - Bi-directional transects were completed across each location
  - Profiles were assessed to determine potential depth of material and other characteristics



Example data product.

Investigation Strategy
(Continued)

- **Surface Gamma Survey**
  - 10 ft spaced transect survey used Ludlum 44-10 sodium iodide detector integrated with a Trimble GPS back pack unit and data logger
  - 24 – 36 inches above the ground surface

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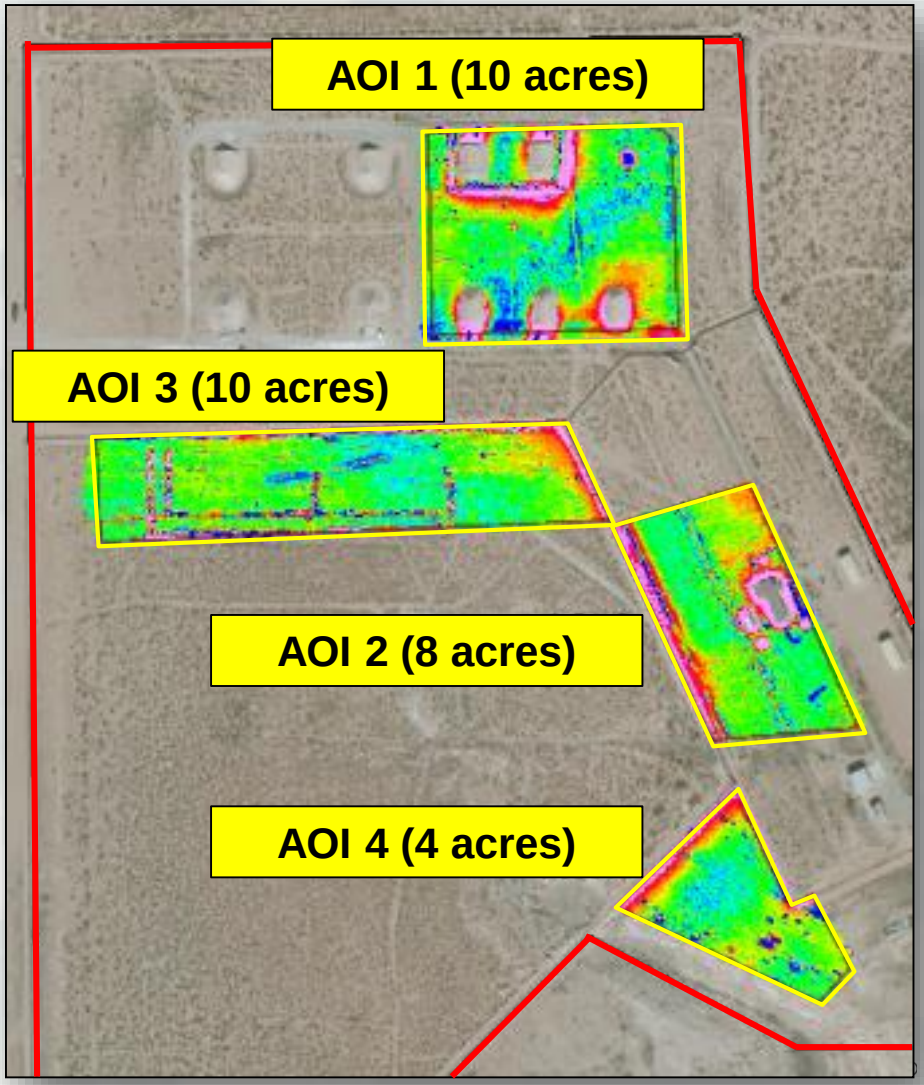
Investigation Results

- Completed >30 miles of EM31 geophysical and gamma transect surveys
- A total of 18 anomalous areas were detected based on electromagnetic survey results across the four AOIs
- Each anomalous area was evaluated using GPR
- No elevated gamma detections were observed
- Combined electromagnetic, GPR profile and gamma survey results were interpreted to determine if results indicate a potential waste disposal area



Investigation Results

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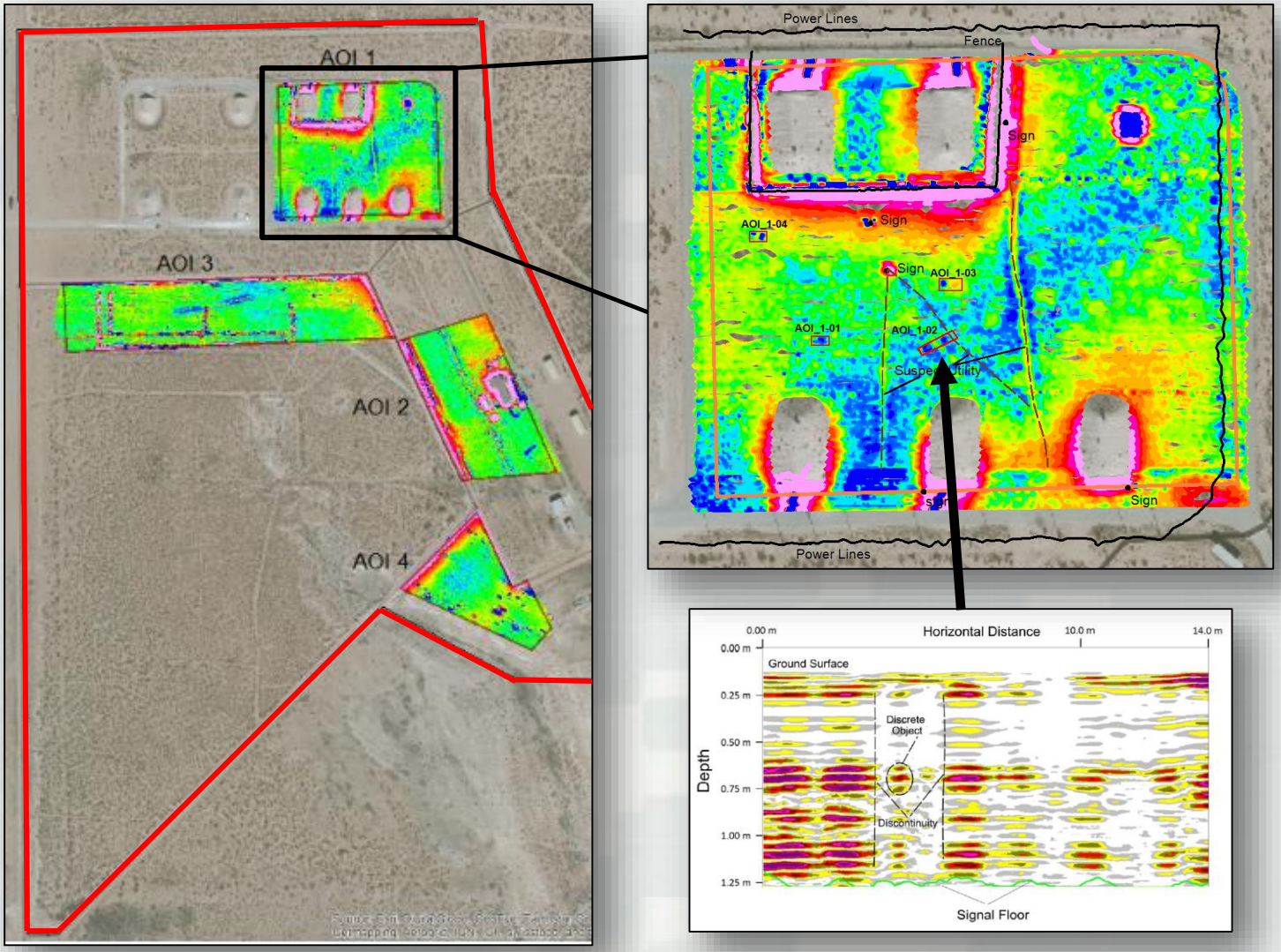
Area of Interest	ID	Rationale for Selection
AOI-1		
	AOI-1-01	Quadrature and Inphase responses above background
	AOI-1-02	Inphase above background; isolated lows; characteristic of smaller buried metal objects
	AOI-1-03	Quadrature and inphase responses above background
	AOI-1-04	Inphase response above background; isolated lows
AOI-2		
	AOI-2-01	Steep gradient changes on both components across several lines of survey
	AOI-2-02	Gradient change on inphase; isolated peak; characteristic of smaller buried metal objects
AOI-3		
	AOI-3-01	Steep gradient changes on both components; no cultural features identified; close to road
AOI-4		
	AOI-4-01	Steep gradient changes on both components; no cultural features identified; trench/burial pit characteristics
	AOI-4-02	Several isolated lows and highs on inphase; located within higher conductivity soils
	AOI-4-03	Steep gradient changes on inphase; characteristic of buried metal
	AOI-4-04	Strong inphase response with slight corresponding change in quadrature response; near drainage swale
	AOI-4-05	Both components display good variance from background, potential buried metal; no cultural features identified
	AOI-4-06	Linear feature on quadrature; some slightly low values on inphase; no cultural features identified; within site of guard shack
	AOI-4-07	Quadrature component significantly different from background; changes of soil properties; isolated inphase responses characteristic of buried small metal
	AOI-4-08	Isolated inphase responses characteristic of smaller buried metal objects
	AOI-4-09	Isolated inphase responses within the zone of quadrature zone that is significantly different from background; within site of guard shack
	AOI-4-10	Quadrature component significantly different from background; changes of soil properties; isolated inphase responses characteristic of buried metal; within site of guard shack
	AOI-4-11	Zone of lower conductive soils located near the drainage swale; potentially fill material

Investigation Results (EM31 and GPR)

(AOI-1 Example)



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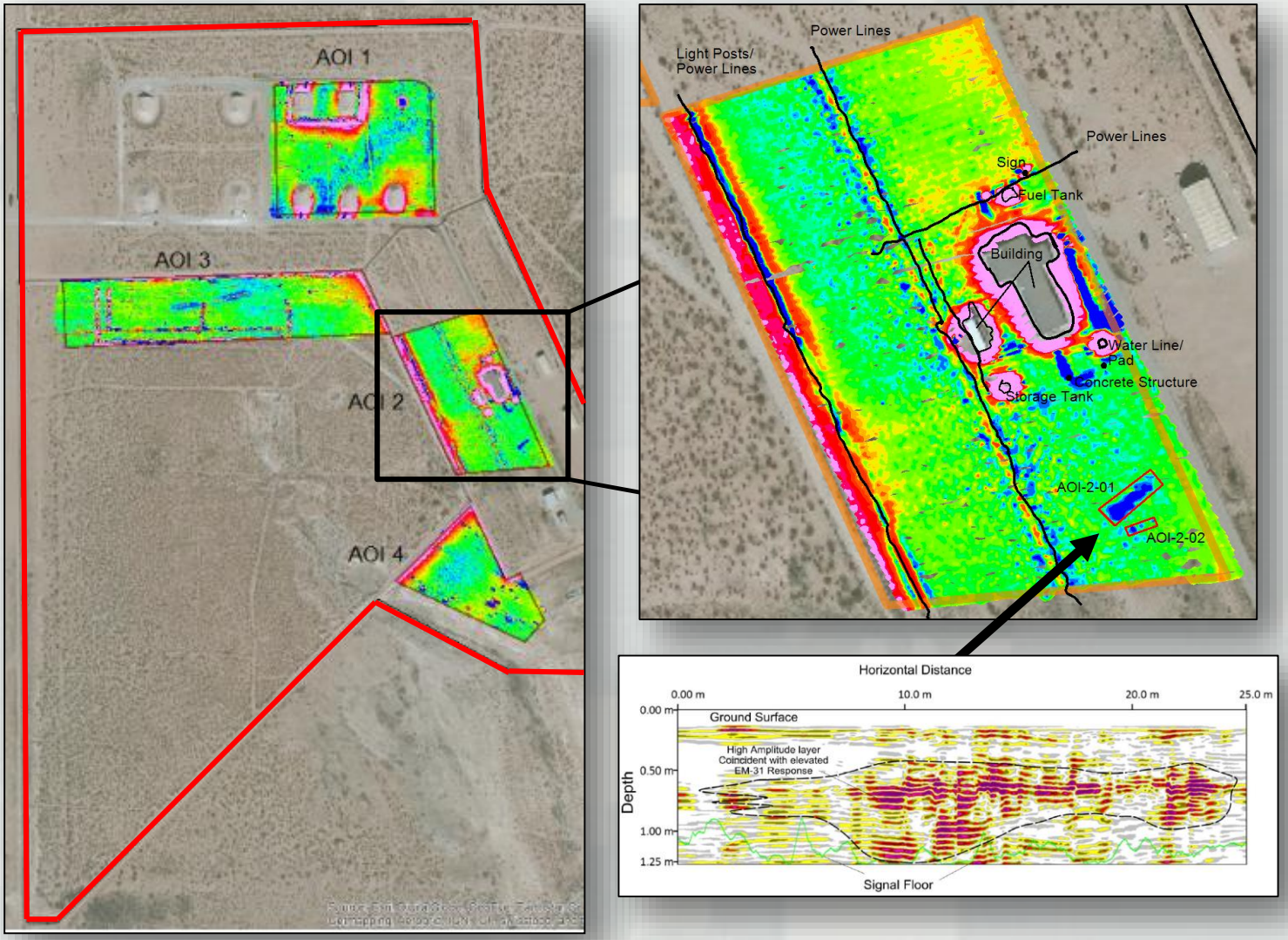
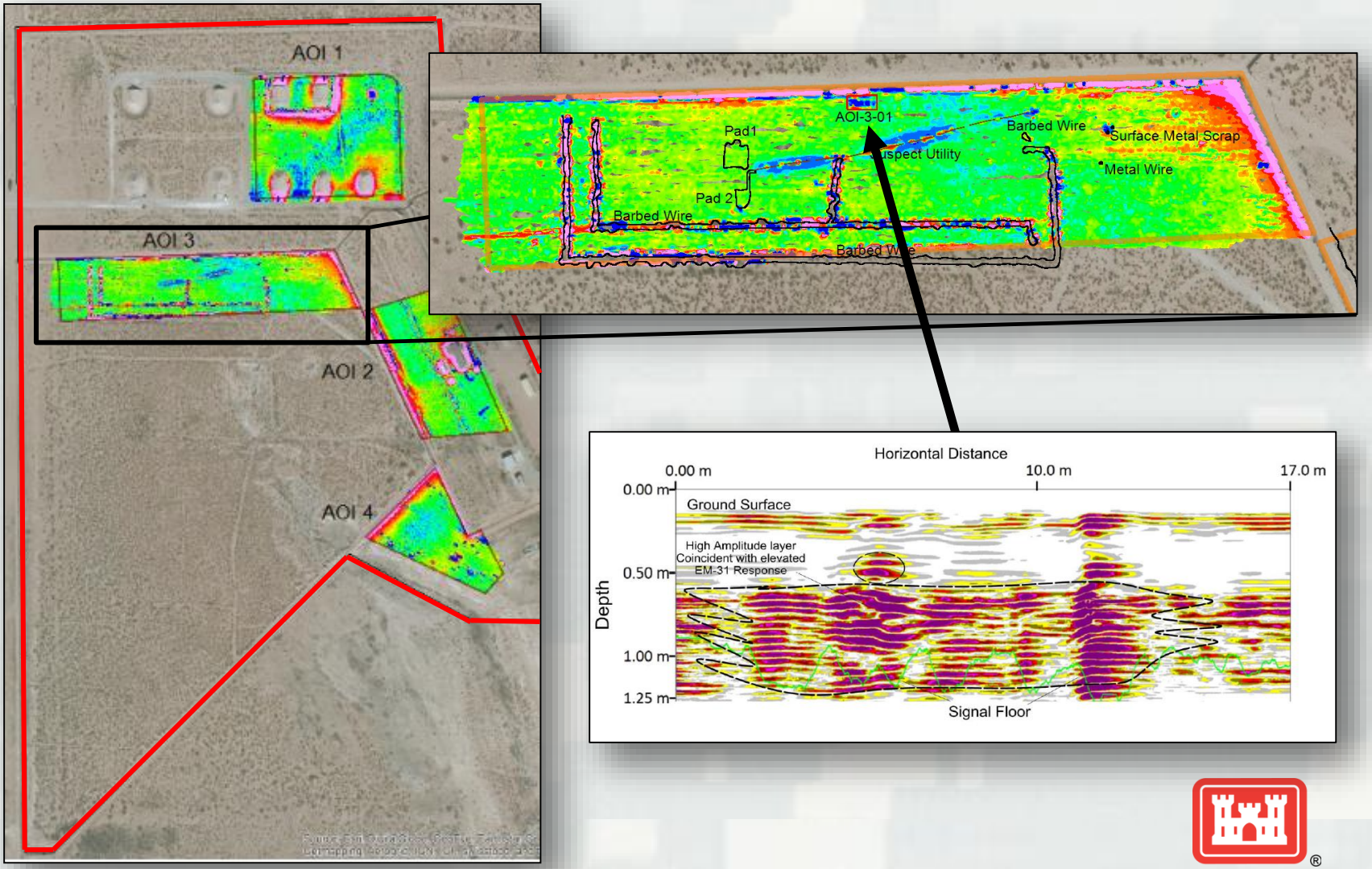
Investigation Results (EM31 and GPR)
(AOI-2 Example)

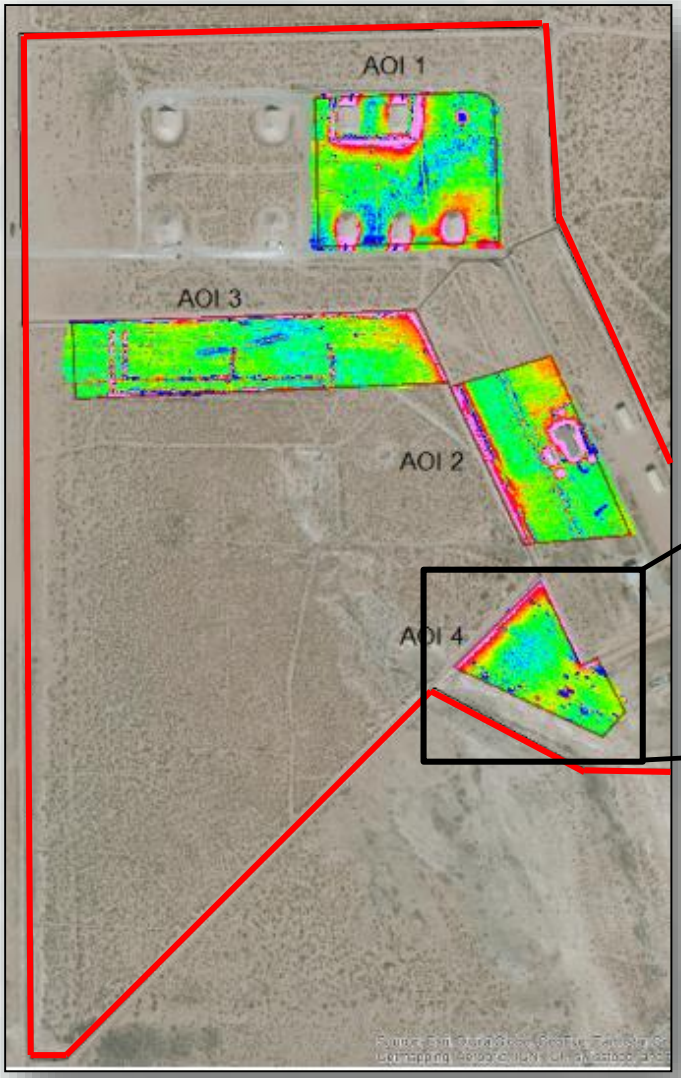


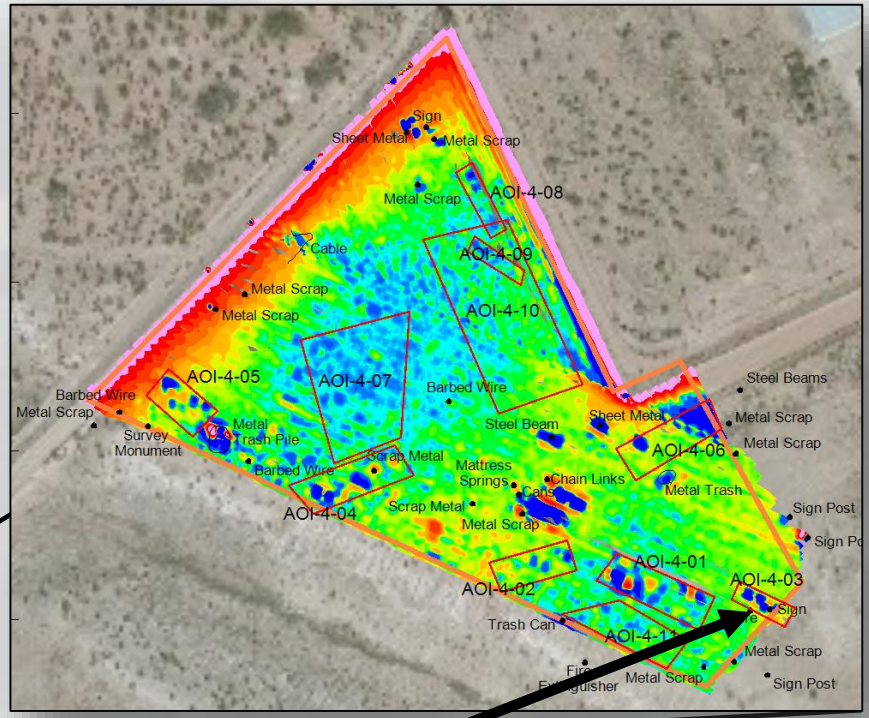
Investigation Results (EM31 and GPR)
(AOI-3 Example)

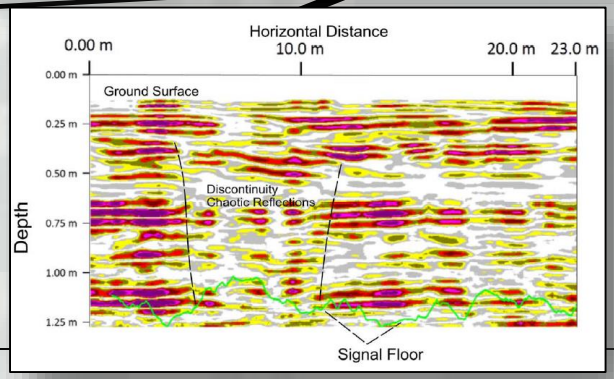


Investigation Results (EM31 and GPR)

(AOI-4 Example)







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Investigation Results (Surface Gamma Survey)

AOI-1

AOI-2

AOI-3

AOI-4

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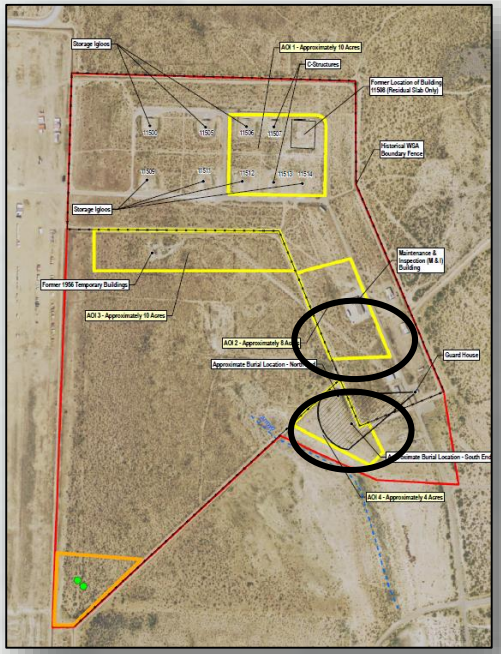
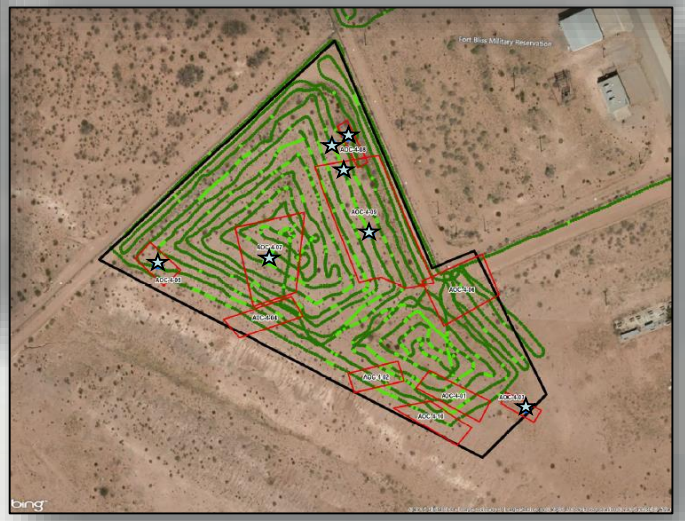
Next Steps

- Based on interpretation of electromagnetic, GPR and gamma survey data, subsurface gamma survey investigations are warranted
- A total of 10 anomalous areas were selected for intrusive work
- Boreholes will be installed at selected anomalous areas and range in depth between 20 ft and 40 ft below ground surface
- Samples will be screened for radioactivity at 5 ft intervals
- Locations exceeding action levels will be further investigated



AOI-2



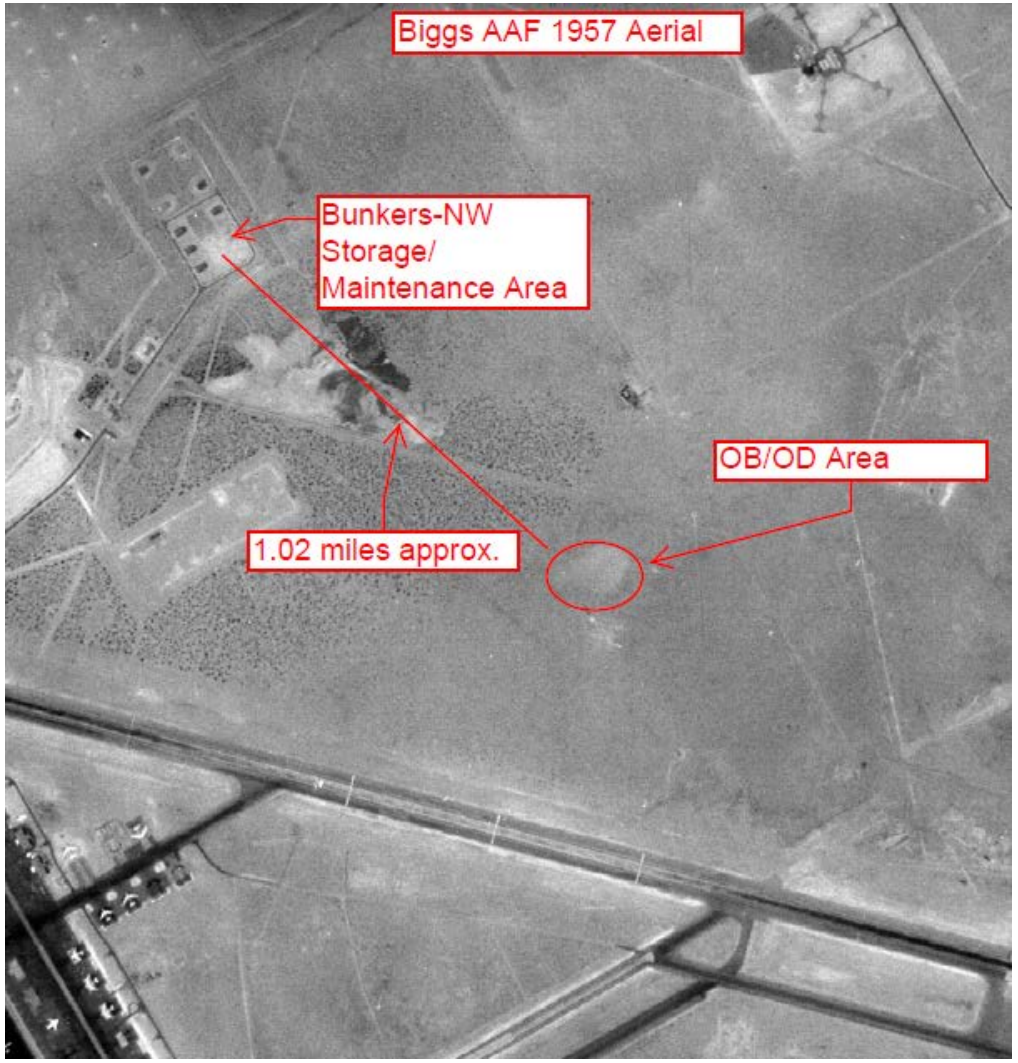
AOI-4

RAB Meeting
Fort Bliss

Biggs OB/OD Site I, Biggs OB Site II, Far East Illegal Dump Site and Oro Grande Landfill

Biggs OB/OD Site I – Site Location/Background

- 44-acre former USAF OB/OD Area, located west of main Biggs Air Field runway
- Current land use is industrial and not expected to change



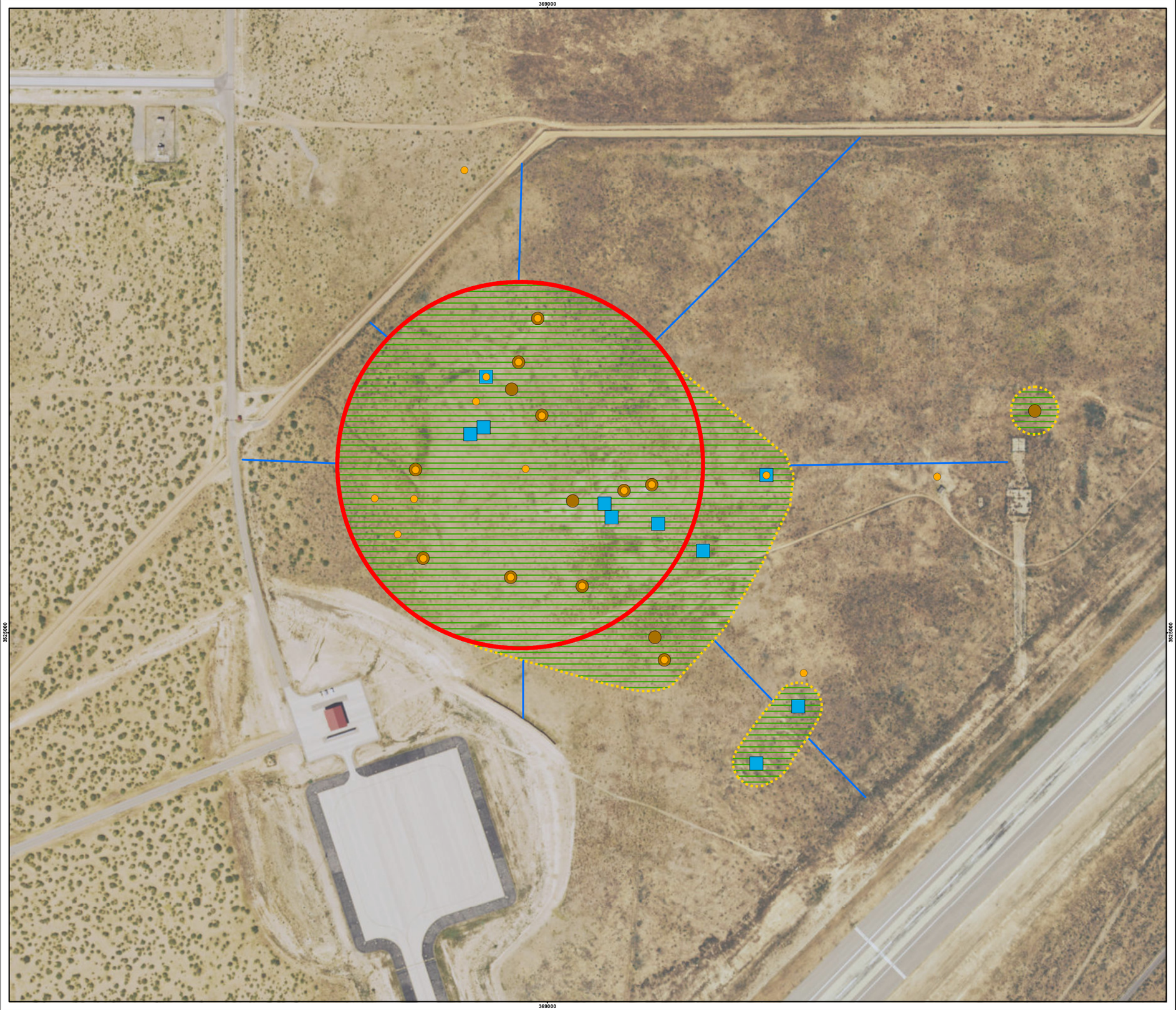
Biggs OB/OD Site I – Technical Approach

<u>Conduct Remedial Investigation (RI) and Final Report</u>

- RI Approach
  - Conduct Site Characterization to include:
    - perform field investigation
    - define nature and extent of contamination
    - identify Federal/State contaminants and location specific Applicable or Relevant and Appropriate Requirements (ARARs)
    - develop a Baseline Risk Assessment to identify and evaluate potential threats to human health and the environment
  - Prepare RI Report

Figure 17-1

Biggs OB/OD Site I
MEC Investigation Approach



Legend

- MD observed
- Possible Pit or Trench
- Mound
- Site Boundary
- Expanded Investigation Area
- 25 ft Spaced Parallel DGM Transect
- Radial DGM Transect

N

0 400 800 Feet

CAPE℠

U.S. Army
Environmental Command

DESIGNED BY: GP	**Remedial Investigation Biggs OB/OD Site I, Ft. Bliss, El Paso, Texas**	
DRAWN BY: GP		
CHECKED BY: JS	SCALE: As Shown	CONTRACT NUMBER:
SUBMITTED BY: JS	DATE: September 2015	PAGE NUMBER:
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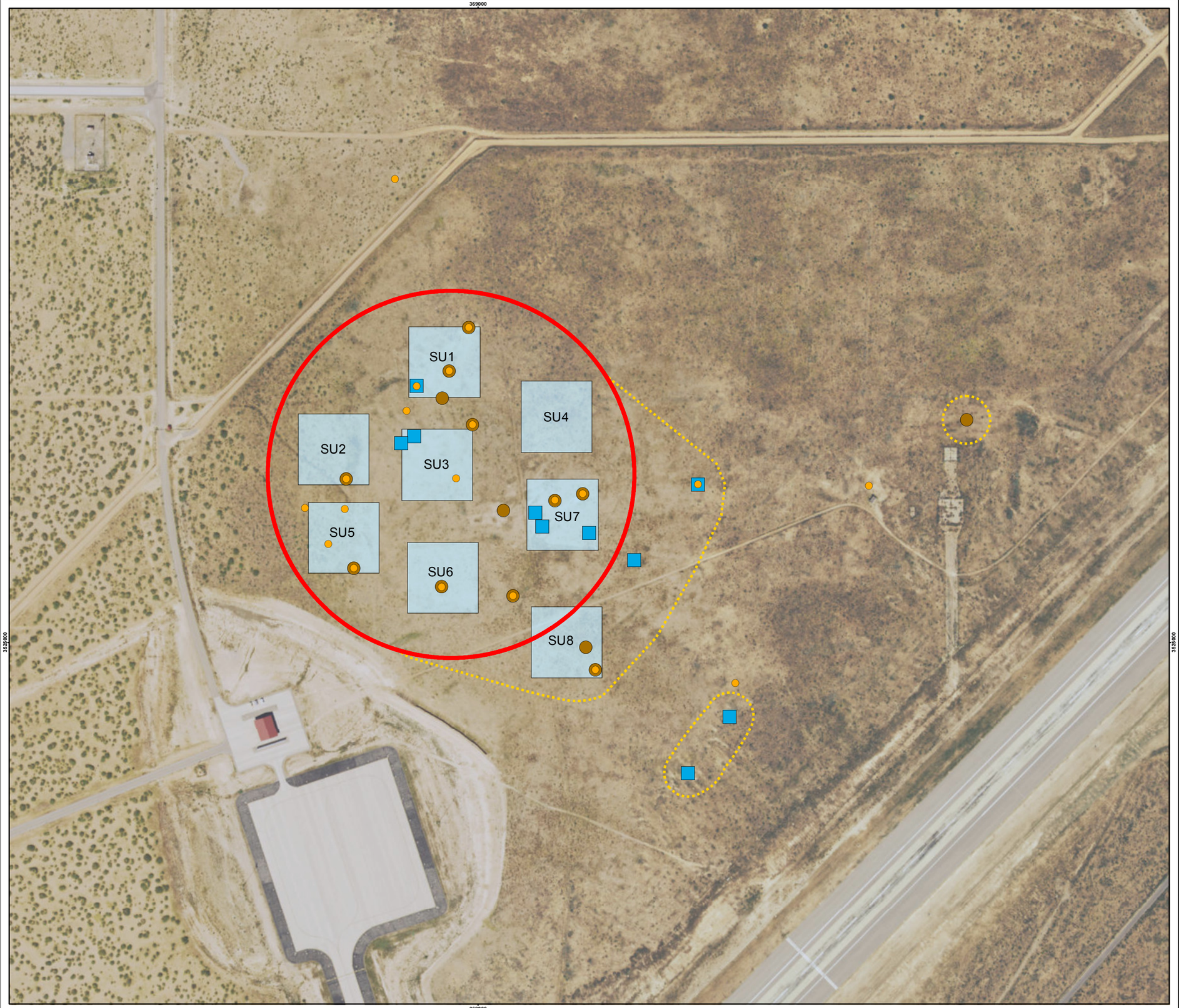
Figure 17-2

Biggs OB/OD Site I
MC Investigation Approach



Legend

- MD observed
- Possible Pit or Trench
- Mound
- Site Boundary
- Expanded Investigation Area
- Sampling Unit

N

0 400 800 Feet

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Environmental Command

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CHECKED BY: JS	SCALE: As Shown	CONTRACT NUMBER:
SUBMITTED BY: JS	DATE: September 2015	PAGE NUMBER:
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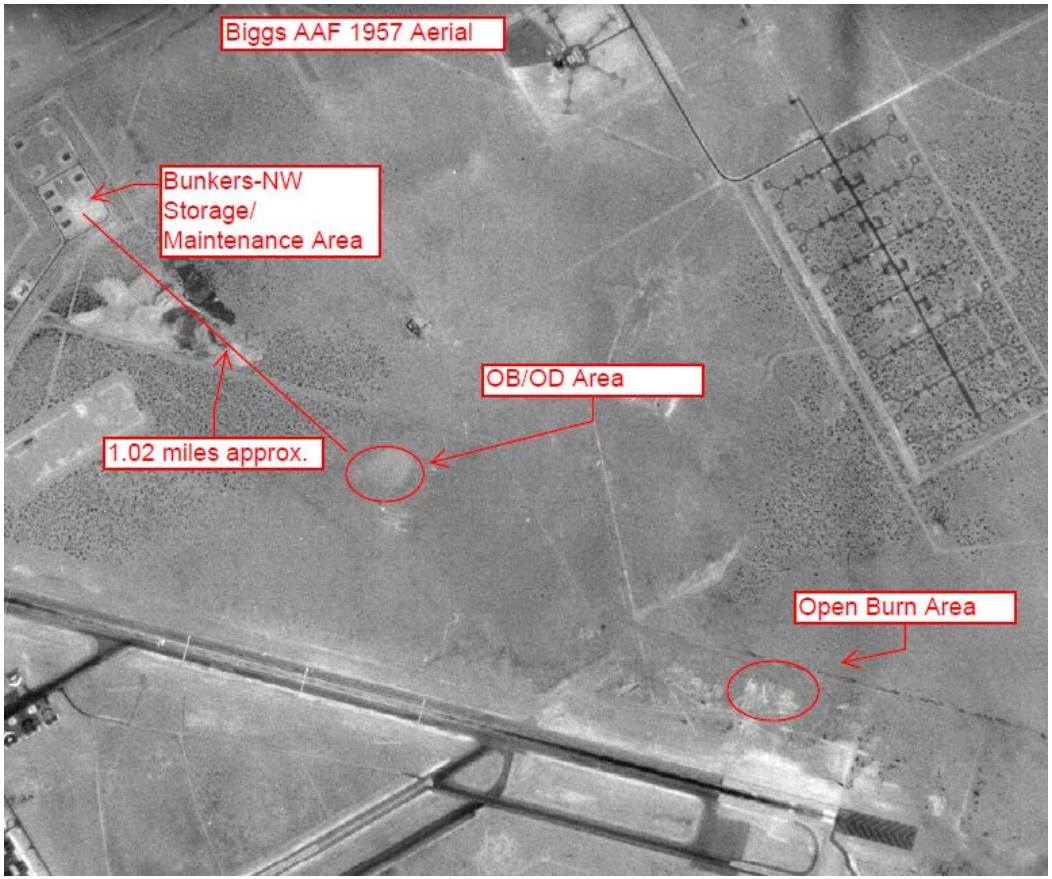
Biggs OB Site II – Site Location/Background

- 14-acre former OB area located north of the Main Biggs Biggs Air Field runway
- Current land use is industrial and not expected to change



Biggs OB Site II – Technical Approach

Conduct a Site Investigation (SI)

- **SI Approach**
  - **Conduct investigation to gather data for characterization of presence or absence of Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC)**
  - **Prepare SI Report**

Figure 17-1

Biggs OB Site II
MEC Investigation Approach

Legend

- Possible Pit or Trench
- Mound
- Site Boundary
- 10 ft Spaced Parallel DGM Transect

N

0 200 400 Feet

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DESIGNED BY: GP	**Site Inspection** **Biggs OB Site II,** **Ft. Bliss, El Paso, Texas**	
DRAWN BY: GP		
CHECKED BY: JS	SCALE: As Shown	CONTRACT NUMBER:
SUBMITTED BY: JS	DATE: September 2015	PAGE NUMBER:
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U.S.ARMY

Figure 17-2

Biggs OB Site II
MC Investigation Approach

Legend

- Possible Pit or Trench
- Mound
- Site Boundary
- Sampling Unit

N

0 200 400 Feet

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DRAWN BY: GP		
CHECKED BY: JS	SCALE: As Shown	CONTRACT NUMBER:
SUBMITTED BY: JS	DATE: September 2015	PAGE NUMBER:
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Far East Illegal Dump Site– Site Location/Background

- **The Far East Illegal Dump Site is a fenced-in 2.24-acre area parcel located in the eastern portion of Fort Bliss. Within the fenced area, there are several low piles of weathered debris on the ground surface suspected to contain medical waste (including syringes and needles), cans, bottles, and vehicle tires and parts.**

<u>Conduct Remedial Investigation (RI) and Final Report</u>

- **RI Approach**
  - **Conduct Site Characterization to include:**
    - **perform field investigation**
    - **define nature and extent of contamination**
    - **identify Federal/State contaminants and location specific ARARs**
    - **develop a Baseline Risk Assessment to identify and evaluate potential threats to human health and the environment**
  - **Prepare RI Report**

Far East Illegal Dump Site– Technical Approach

- **RI Approach, cont.**
  - **Site activities will include collecting soil samples from the surface and from 2-3 feet below ground surface in a phased approach.**
  - **Additional samples will be collected if needed to delineate the waste extents with the initial sampling.**
  - **A visual survey of the site will be performed to determine if wastes are observed outside the fenced area. Based on analytical results and field observations, CAPE will define the extent, distribution, and concentration of contamination at the site.**

Z:\CONUS\Federal\ARMY\FORT BLISS\21003.003.100\Far East Site Illegal Dump Site\QUAPP\Figures\Figure 17-2 Far East Illegal Dump Site.dwg Plot Date:1/12/2016 10:38 AM

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Norcross, GA 30071
(770) 908 – 7200

U.S. ARMY

Department of the Army

PROJECT NAME

ENVIRONMENTAL REMEDIATION
MULTIPLE SITES AT FORT BLISS, TX

SHEET TITLE

SITE MAP AND SAMPLING GRIDLINES
ILLEGAL DUMPING SITE IN FAR EAST FORT BLISS

REVISIONS:

No.	Date	By	Chk	Remarks

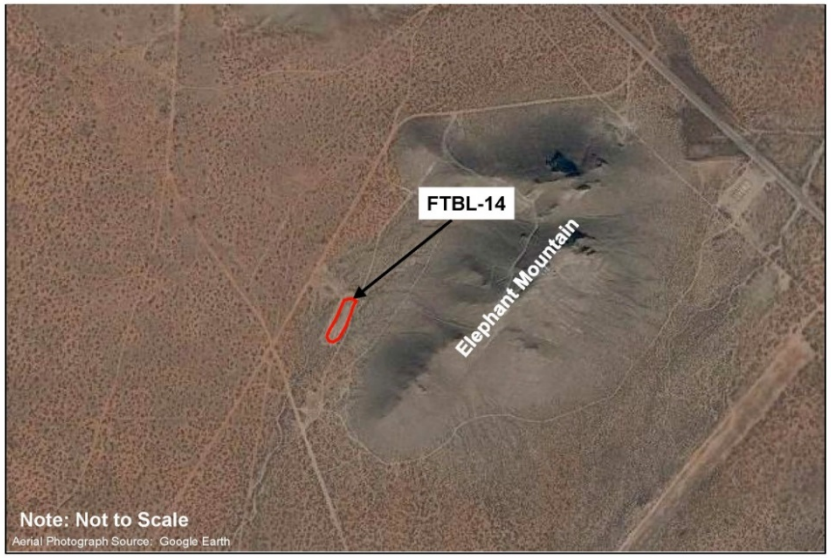
CONTRACT NO: W91ZLK-13-D-0003	JOB NO: 21003.003.100
CHECKED BY: M.MILLER	DRAWN BY: C.RIOS
REVIEWED BY: B.SHIVAR	DATE: DECEMBER 2015
SCALE: AS SHOWN	FILE NAME: Figure 17-2 Far East Illegal Dump Site

SHEET NUMBER:

FIGURE 17-2

Oro Grande Landfill–
Site Location/Background

- Past investigations at the Oro Grande Landfill have found that the landfill is composed of buried waste material including wood, plastic, paper, scrap metal, and demolition debris.
- Options were evaluated to close the Oro Grande Landfill site. These included: Close in place with an engineered cover; installation of an arid exemption/evapotranspiration (ET) cap; or excavation and disposal at a licensed off-site facility. NMED approved the recommended excavation and off-site disposal alternative.



Oro Grande Landfill– Technical Approach

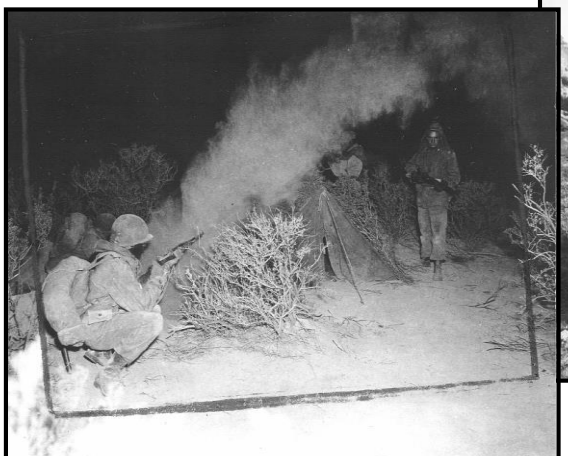
- **CA Approach, Cont.**
  - **The landfill area, which is currently staked, will be cleared and grubbed. Cleared brush/vegetation will be stockpiled and disposed. Clean cover soil (overburden) will be visually segregated, excavated and stockpiled on site. Waste materials will be excavated and directly loaded in dump trucks for disposal. Wastes will be removed to visual extents.**
  - **Confirmation samples will be collected from the base and walls of the excavation in areas determined visually to have been cleared of debris. Additional soil will be excavated if analytical results exceed residential screening levels.**

Former Maneuver Area A Remedial Investigation Fort Bliss, Texas

Restoration Advisory Board Meeting
March 9, 2016

Site History

- Land was originally acquired around 1939.
- Army used property for training from 1939 until the 1970s.
  - Motorized and mechanized unit training
  - Bombing and strafing missions
  - Battle conditioning of troops
  - Anti aircraft artillery training
- Property was returned to private ownership by late 1980s
- Based on potential past training activity, munitions include small arms, pyrotechnics, high explosives (HE) projectiles, and bombs

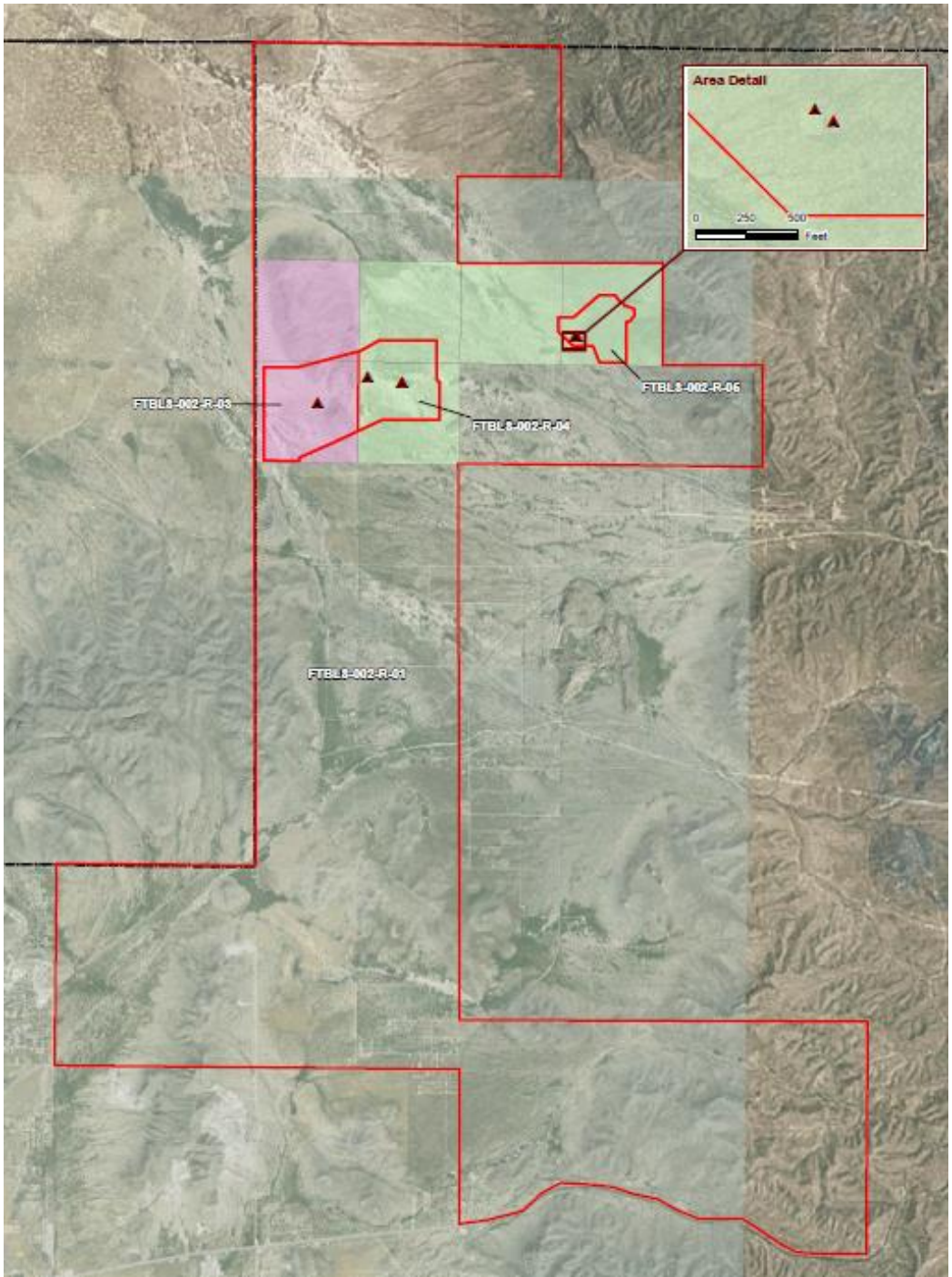


Completed Work

- Visual Survey – completed December 2012
- DGM Collection – completed February 2013
- Intrusive Investigation – completed March 2013
- Soil Sampling – completed May 2013
- Remedial Investigation Report – completed November 2014
- Feasibility Study
  - Draft Final submitted October 13, 2015 to AEC, Fort Bliss, TCEQ, & USACE
- Proposed Plans
  - Draft submitted November 15, 2015 to AEC, Fort Bliss, & USACE

Munition Restoration Site (MRS) Designations

- FTBLS-002-R-01 – Recommended for NFA
  - Uncontaminated Former Maneuver Area A
  - Encompasses 23,356.99 acres
- FTBLS-002-R-03
  - 520 acres privately owned
- FTBLS-002-R-04
  - 397 acres owned by the Texas General Land Office
- FTBLS-002-R-05
  - 203 acres owned by the Texas General Land Office


Area Detail
0
250
500
Feet
FTBL8-002-R-03
FTBL8-002-R-04
FTBL8-002-R-06
FTBL8-002-R-01

URS

Next Steps

- TCEQ agreement of the Feasibility Study
- Complete development of Proposed Plan for each MRS
- Thirty day public comment period and public meeting on the Proposed Plans
- Finalize Record of Decision Documents, incorporating public comments on the Proposed Plans

Remember the Three R's of UXO Safety

Closed Castner Firing Range Remedial Investigation

Restoration Advisory Board Meeting

9 March 2016

Presentation Topics

- Safety Considerations
- Remedial Investigation Objectives
- Current Project Status
- Field Work Review
- Current Project Schedule

Munitions Safety

- Castner Range is a restricted area – do not enter
- UXO is dangerous, no matter the size!!
- UXO can look like everyday objects

Definitions

- Munitions and Explosives of Concern (MEC) – term that specifies different categories of munitions with explosives hazards, including unexploded ordnance (UXO) and discarded military munitions (DMM)
- Munitions Constituents (MC) – materials originating from the above items, including explosive and non-explosive materials

MEC

MC

Key Definitions

- CMUA – Concentrated Munitions Use Area
  - Areas where there is a high likelihood of finding UXO or DMM and that have a high amount of munitions debris (MD)
- NCMUA – Non-Concentrated Munitions Use Area
  - Areas where there is a low amount of MD and UXO due to limited historical munitions use and fragmentation

What Is Being Done?

- The Remedial Investigation (RI) will:
  - Characterize site conditions
  - Determine nature and extent of MEC and MC
  - Determine risks/hazards to human health and environment; conduct risk assessments
- What is not addressed in this project?
  - Development of cleanup alternatives
    - To be conducted during the next project phase
  - Future land use decisions
  - Munitions removal / remediation

Task Status

Task	Status
TPP Meetings (4 total)	Meetings 1 & 2 complete Meetings 3 & 4 – 2016
Work Plan / Site Safety and Health Plan	Completed
Explosives Site Plan	*Approved 19 February 2016*
Public Meetings (2 total)	Meeting 1 complete Meeting 2 – 2017
Fort Bliss Restoration Advisory Board (RAB) Meetings (all sites)	Meeting 1 complete Meeting 2 – today Meeting 3 – 2017
Field Investigation	*March 2016 – Fall 2016*
Final RI Report	*Summer 2017*

What We Know

- For MEC:
  - Boundary of CMUAs on eastern side of Castner Range
  - CMUAs are delineated to an acceptable accuracy level
  - Nature and extent of MEC inside the CMUAs
- For MC:
  - Higher MC concentrations found within CMUAs
  - MC not present above screening levels within NCMUAs

What We Need to Determine

- Presence of CMUAs, if any, in western areas
- Verify low MEC density within NCMUAs
- Migration potential of MEC (and MC) from higher to lower elevation areas
- Potential for MC presence in subsurface soil, surface water, and sediment
- Overall risk to people and the environment

All of these will be determined through the field investigation

Field Work

- MEC investigation began 7 March 2016
- Activities you may see:
  - UXO personnel traversing entire site, including mountains
  - Sampling teams
  - Movement of trucks, UTVs, equipment
  - Possible demolition actions
- Do not enter Castner Range!

MEC Investigation

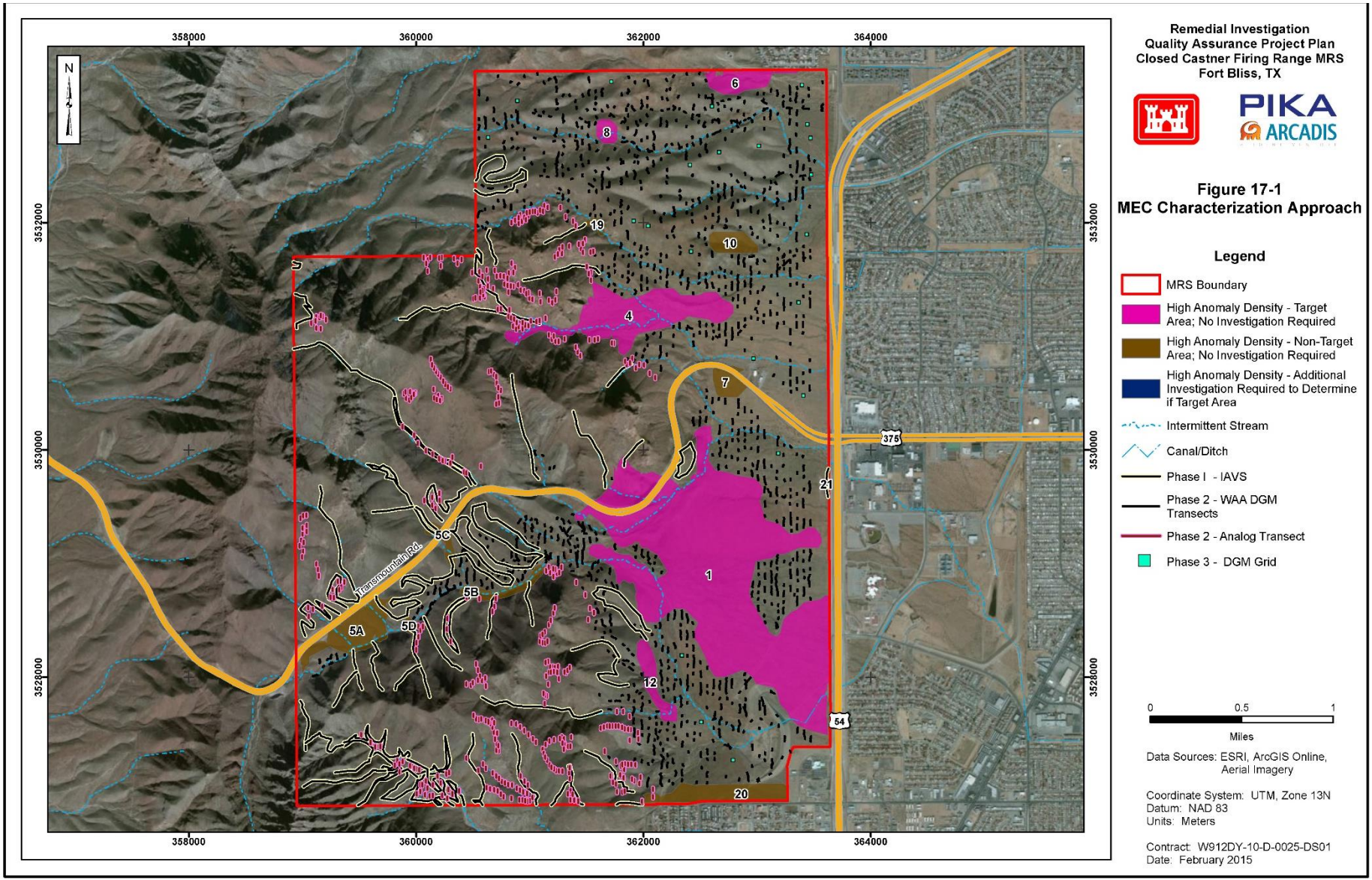
- **Visual Surveys**
  - Conducted in mountainous areas; meandering path surveys
- **Intrusive Investigation**
  - Investigation of existing anomalies* – flatter terrain areas
    - 1750 100-foot transect segments selected
  - Analog (“mag and dig”) transects – moderate terrain areas
    - 452 randomly placed100-foot transect segments
- **DGM Grids**
  - DGM surveys of 22 grids (100 feet x 100 feet) with highly accurate GPS positioning
  - Data recorded electronically, then processed by computer to select anomalies for investigation

Handheld Metal Detector

Intrusive Investigation

DGM Data Collection

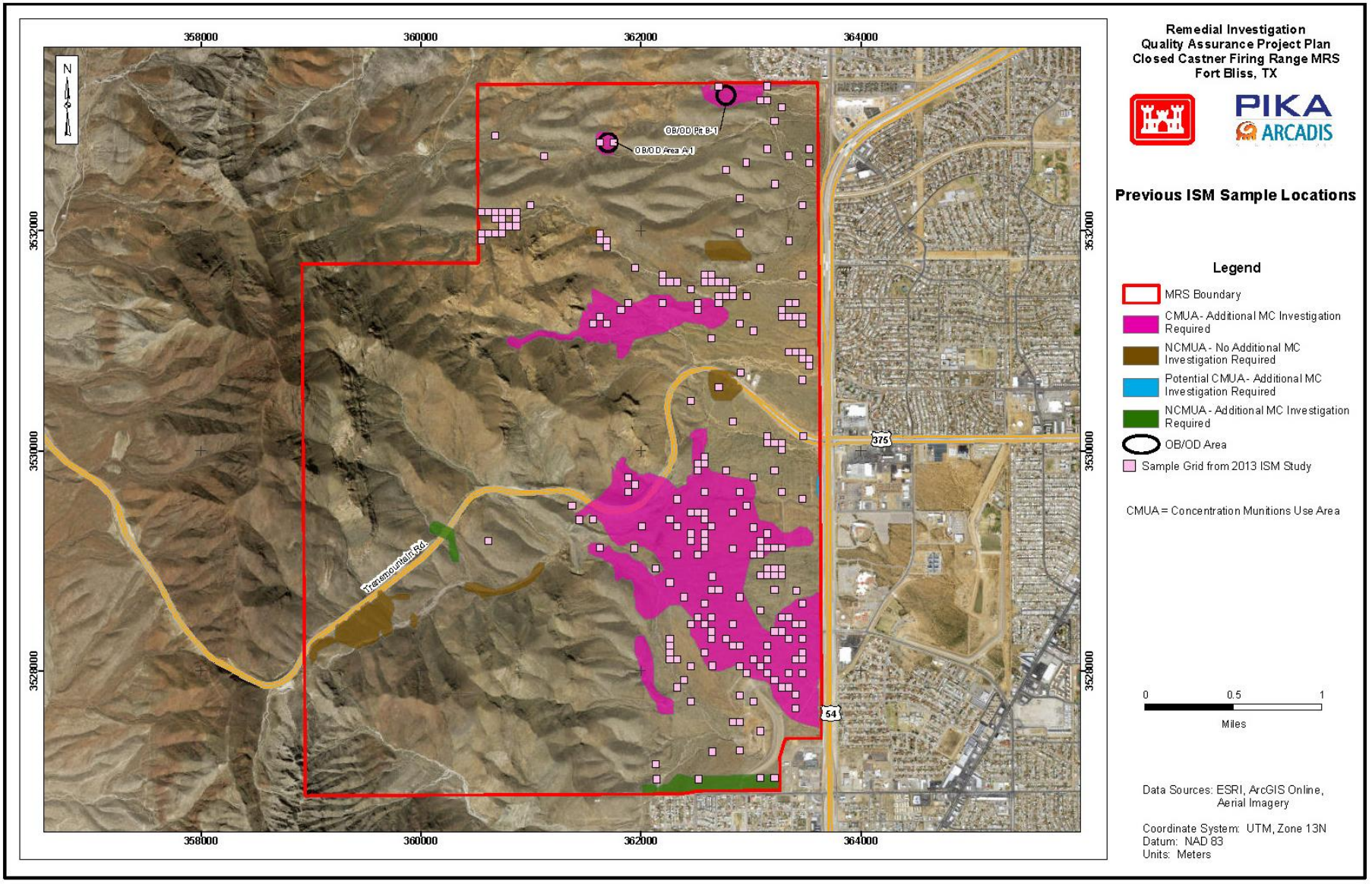
MEC Investigation Areas



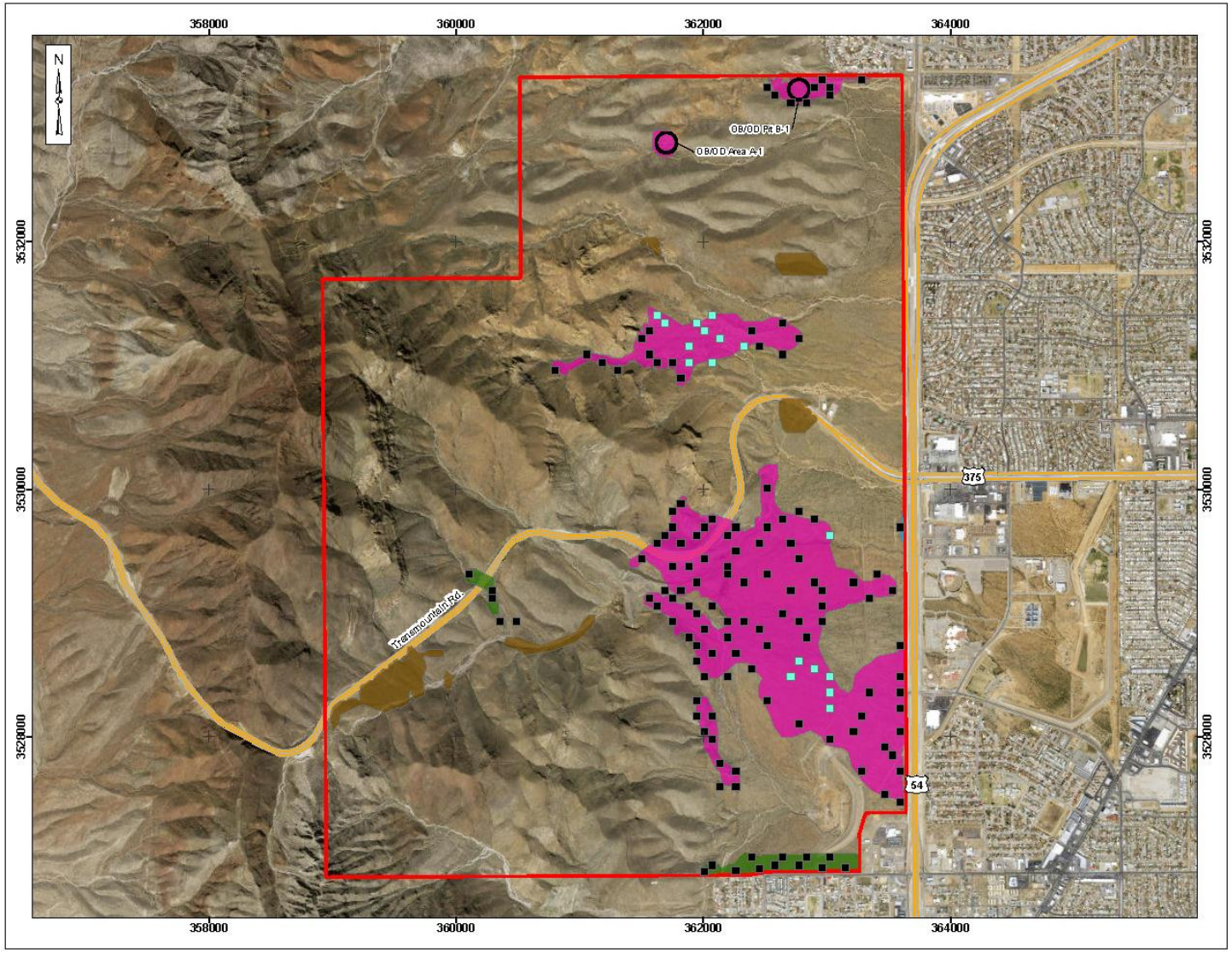
MC RI Activities - Phase I

- Surface Soil Sampling
  - Area Wide Horizontal Delineation
    - Using incremental sampling approach
    - 149 sample locations, located in areas previously not investigated
  - Small arms range backstop berms – 10 locations
- Drainage Area Sampling (arroyos)
  - Sediment samples – up to 50 samples
  - Surface water samples
    - Arroyo: Up to 12 locations
    - Seeps: 9 locations

Previous ISM Soil Sampling Locations



ISM Soil Sampling Locations



Remedial Investigation
Quality Assurance Project Plan
Closed Castner Firing Range MRS
Fort Bliss, TX

PIKA ARCADIS

ISM Sample Locations

Legend

- MRS Boundary
- CMUA- Additional MC Investigation Required
- NCMUA - No Additional MC Investigation Required
- Potential CMUA- Additional MC Investigation Required
- NCMUA - Additional MC Investigation Required
- ISM Sample -Metals & Explosives
- ISM Sample - Metals, Explosives, & Perchlorate
- OB/OD Area

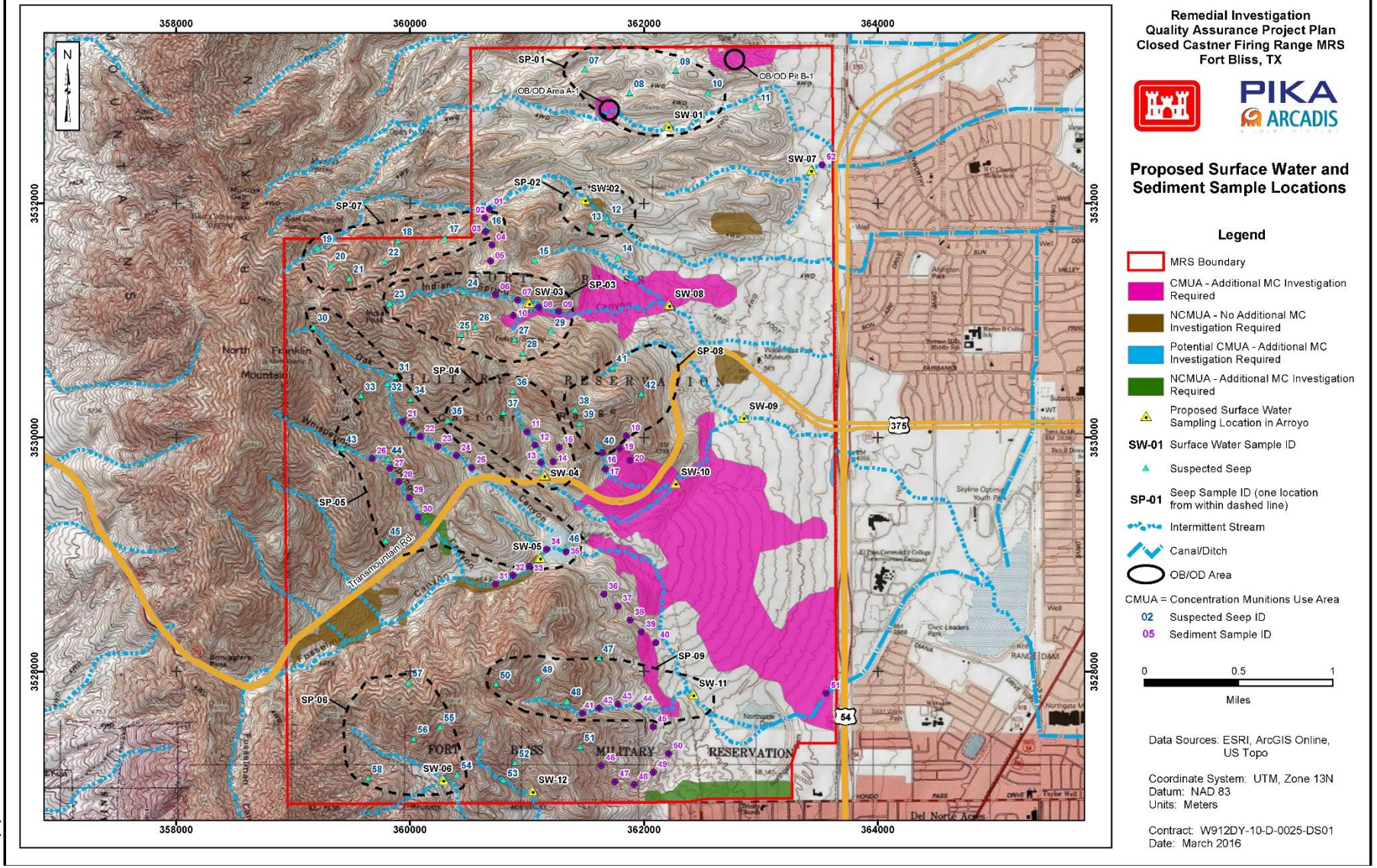
CMUA = Concentration Munitions Use Area

0 0.5 1
Miles

Data Sources: ESRI, ArcGIS Online, Aerial Imagery

Coordinate System: UTM, Zone 13N
Datum: NAD 83
Units: Meters

Surface Water and Sediment Sampling Locations



MC RI Activities – Additional Phases

- New CMUAs
- “Step Out” Sampling – surface soil, sediment
- Second surface water sampling event
- Subsurface soil
- Groundwater assessment (if required)
- MEC find

Upcoming Project Schedule

Task	Tentative Dates
Field Investigation	***March 2016 – Fall 2016***
MEC Investigation	*March – May 2016*
MC Investigation	*Phase 1: May – July 2016* *Phase 2: September – November 2016*
TPP Meetings	Meeting 3 – During Field Work Meeting 4 – During RI Report
Public Meeting #2	2017 – Reporting stage
Final RI Report	*Summer 2017*

Thank You For Attending

Questions?

And Remember:

Fort Bliss Environmental Restoration Projects
General Questions:

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Public Affairs Office
Fort Bliss, Texas
(915) 744-8498

Today's presentations can be found at the Fort Bliss website:
https://www.bliss.army.mil/DPW/Environmental/EISDocuments2.html