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FINAL AFTER ACTION REPORT FOR PRACTICE BOMBING TARGET NAS SAUFLEY FIELD  
FL  
5/9/2014  
TETRA TECH INC

**Final  
After Action Report  
for  
Remedial Investigation for  
MEC at  
Munitions Response Site  
Saufley Field**

Naval Air Station Pensacola  
Pensacola, Florida



**Naval Facilities Engineering Command  
Southeast**

**Contract Number N62470-08-D-1001  
Contract Task Order JM57**

May 2014

REVISION 0  
MAY 2014

**FINAL  
AFTER ACTION REPORT  
FOR  
REMEDIAL INVESTIGATION FOR MEC  
AT  
MUNITIONS RESPONSE SITE**

**SAUFLEY FIELD**

**PENSACOLA, FLORIDA**

**COMPREHENSIVE LONG-TERM  
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:  
Naval Facilities Engineering Command Southeast  
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Jacksonville, Florida 32212**

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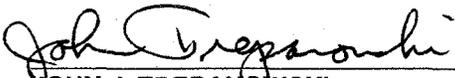
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**MAY 2014**

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## **ACRONYMS**

AAR	After Action Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CTO	Contract Task Order
DID	Data Item Description
DoD	Department of Defense
DoE	Department of Energy
EPA	Environmental Protection Agency
ESS	Explosives Safety Submission
EZ	Exclusion Zone
GPS	Global Positioning System
IVS	Instrument Verification Strip
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
MEC	Munitions and Explosives of Concern
MPPEH	Material Potentially Presenting an Explosive Hazard
NAS	Naval Air Station
NOSSA	Navy Ordnance Safety and Security Activity
NOSSAINST	Navy Ordnance Safety and Security Activity Instruction
PA	Preliminary Assessment
POC	Point of Contact
QA	Quality Assurance
QC	Quality Control
SUXOS	Senior Unexploded Ordnance Supervisor
Tetra Tech	Tetra Tech, Inc.
USACE	United States Army Corps of Engineers
UXO	Unexploded Ordnance
UXOQCS	UXO Quality Control Specialist
VSP	Visual Sampling Plan

## **1.0 SITE DESCRIPTION**

### **1.1 NAS Pensacola Saufley Field**

#### **1.1.1 Facility Location**

Outlying Landing Field, (OLF) Saufley Field (Saufley Field) is located in Pensacola Florida approximately 10 miles north of Naval Air Station (NAS) Pensacola. Figure 1 shows the general location of Saufley Field.

#### **1.1.2 Facility Description**

Saufley Field was acquired by the United States Navy in 1940 and was used primarily for naval aviation training throughout its history, and has been commissioned as a Naval Auxiliary Air Station, NAS, and outlying landing field. Presently, the 866-acre airfield is closed and contains two 4,000-foot runways and three aircraft hangars; 209 acres of the field are undeveloped wetlands. The current mission of Saufley Field is to serve as home for several Department of Defense (DoD) and other United States Government organizations as a joint use facility.

### **1.2 Saufley Field PRACTICE Bombing Targets**

#### **1.2.1 Site Location and Description**

The Saufley Field Practice Bombing Target site designated as UXO-0001 - Saufley Bombing Targets, is a 91.6-acre site located in the northwestern portion of Saufley Field, just north of the intersection of Runway 14 and Runway 23. Figure 2 shows the location of the practice bombing targets.

#### **1.2.2 Site History**

The Saufley Field Practice Bombing Target site, which is not listed in the Navy Range Inventory Database, was identified during reviews of documents, maps, and still photographs obtained from the National Archives during the 2007 Preliminary Assessment (PA) (Malcolm Pirnie, Inc., 2007). The site consists of two practice bombing targets that are depicted as two 200-foot diameter circles on maps dated 1943, and 1946 through 1949. The circles are visible on aerial photographs dated 1943 and 1945. The exact period in which the range was operational is unknown. Based on current aerial photography, an uninhabited structure and a densely wooded area are located in the northern portion of the site. No additional archival records or references to the Practice Bombing Targets were located that indicate munitions used or construction details. Because the Saufley Field Practice Bombing Target site is located in close proximity to the runways, munitions use was suspected as various sizes of inert practice

bombs with spotting charges. The site is located within the northern portion of the airfield. No Munitions and Explosives of Concern (MEC) or Material Potentially Presenting an Explosive Hazard (MPPEH) were observed during the Site Inspection (SI) of the Saufley Field Practice Bombing Targets. However, 215 discrete subsurface metallic anomalies and 5 high-density subsurface metallic anomalies were identified in the geophysical data that were considered to potentially represent individual or groups of MEC or munitions-related items. The Final SI Report recommended the RI for MEC which necessitated an Explosive Safety Submission (ESS).

For the Remedial Investigation (RI), all five of the high-density areas were selected for investigation. Of the 215 discrete subsurface metallic anomalies identified during the SI through a subsurface geophysical survey, 16 small anomalies were identified and all were selected for intrusive investigation. Of the remaining 199 medium to large metallic anomalies, Visual Sampling Plan (VSP) was used to randomly select 52 anomalies at a 95 percent confidence level for intrusive investigation to achieve the primary data quality objective of the RI. The VSP, developed with support from Department of Energy (DoE), Environmental Protection Agency (EPA), and DoD, is a statistical tool used at unexploded ordnance (UXO) sites that helps ensure that the right type, quality, and quantity of data are gathered to support confident decisions and provides statistical evaluation of the data with decision recommendations.

## **2.0 REQUESTS TO CANCEL EZ OR OTHER APPROVALS**

This After Action Report (AAR) requests the cancelation of exclusion zones (EZ) and Explosive Safety Quantity Distances established in the ESS for Remedial Investigation for MEC at Munitions Response Site Saufley Field, NAS Pensacola, Pensacola Florida, March 2012.

## **3.0 SUMMARY OF MEC AND MPPEH FOUND AND/OR RECOVERED**

### **3.1 General**

- A MEC Remedial Investigation operation was performed at the Saufley Field Practice Bombing Targets to collect the data required to determine the nature and extent of MEC at this site.
- A reacquisition was performed on subsurface anomalies located during SI operations.
- Of the 215 discrete subsurface anomalies identified during the SI, a total of 68 anomalies, 16 small anomalies (all that were identified) and 52 of the remaining 199 moderate to large anomalies were randomly selected using VSP, were reacquired and intrusively investigated using manual digging procedures.

- An additional five locations designated as high anomaly areas were also reacquired and intrusively investigated using mechanical procedures

A geo-referenced map showing all anomaly intrusive investigation locations is included in this AAR as Figure 3 in Appendix A. During SI geophysical surveys performed in February 2010 and the RI reacquisition and investigation in June 2012, no surface anomalies were located to suggest any presence of MEC/MPPEH. At the completion of all RI intrusive activities, no MEC/MPPEH was recovered. The Saufley Field Practice Bombing Target RI operations took place from June 25 to June 29, 2012.

### **3.2 MEC/MPPEH Documentation**

As stated in Section 3.1 above; no MEC/MPPEH items were recovered during this operation. Items recovered included scrap metal, nails, concrete, rebar, and construction debris. A digital photo was taken and a dig sheet containing the material collected was completed for each intrusively investigated location. All recovered scrap metal from cultural debris was placed in an on-site roll off container and managed by the base. This AAR contains a geo-referenced map of the area investigated (Figure 3). Coordinate data recorded in the field during this remedial investigation was collected in the Florida State Plane Coordinate System, North American Datum 1983. These settings are consistent with existing NAS Pensacola mapping.

## **4.0 TECHNOLOGIES USED AND EFFECTS ON RESIDUAL RISK**

### **4.1 Relative Effectiveness**

The MEC RI was effective in collecting information that can be used to develop a technical path forward at the Saufley Field Practice Bombing Target site.

The activities conducted at the Saufley Field Practice Bombing Target were performed to assist in providing the characterization and extent, if any, of MEC/MPPEH contamination at the Site. Anomalies were investigated to depth, which ranged between 0 and 3 feet below ground surface (bgs). The maximum depth allowed for intrusive investigation was 4 feet bgs.

#### **4.1.1 MEC/MPPEH Management Operations**

No MEC/MPPEH items were recovered during this operation. Donor charges were delivered, received, and stored on-site in a Type II storage Magazine. After all anomalies were intrusively investigated and it was confirmed that no demolition of MEC/MPPEH would be required, a clean-up shot was performed in order to dispose of all donor explosive material.

#### 4.1.2 UXO Operations

The RI Operations were conducted in four phases.

##### Phase 1 – Site Set-up

Site set-up included the receipt, placement, and grounding of two Type II storage magazines. One storage magazine was to be utilized in the event that safe to move MEC and or material documented as an explosive hazard (MDEH) was recovered during intrusive operations. This storage magazine remained empty and labeled as such during the duration of RI operations. The second storage magazine was used for the storage of Donor Explosives, which were kept on-site in the event that MEC/MDEH was recovered during RI operations. Barricades with contact information and Red Bravo Flags were placed at each access point. The instillation of the IVS on-site and the check out and calibration of site equipment was performed.

##### Phase 2 –Anomaly Reacquire

The reacquisition of 52 moderate to large subsurface anomalies and 16 small subsurface anomalies were reacquired for manual intrusive investigation. A total of five high anomaly areas were reacquired for mechanical intrusive investigation. All reacquire was performed using a G-858G horizontal gradient magnetometer the same instrumentation used during the SI geophysical survey. Reacquire locations were recorded using a Trimble GeoXH hand held GPS.

##### Phase 3 – Anomaly Intrusive Investigations

Anomaly intrusive investigations were performed on the 68 small to large anomalies located during the SI using manual digging techniques and 5 high anomaly areas were investigated using mechanical digging techniques. The Schonstedt GA-52Cx magnetometer was used to pinpoint each anomaly and to ensure that each intrusively investigated location was clear of additional suspect anomalies. A dig sheet was completed recording the number, coordinates, size of excavation, and recovered source of each anomaly at each intrusively investigated location. The source of each anomaly investigated was identified. All but one anomaly was identified as cultural debris such as scrap metal, nails, wire, banding, railroad spikes, axe head, coat hanger, rebar, and pipe. One anomaly was identified as a geologic anomaly. A photograph of the recovered anomalies' sources and a photograph log completed for all intrusively investigated locations is included in the supporting documentation.

#### Phase 4 – Demolition Operations

No MEC/MPPEH disposal was required for this operation. Demolition Operations were performed in order to consume all donor explosives stored on-site. All donor explosives and material were consumed during this operation. All demo operations were performed in accordance with the DDESB approved ESS.

#### **4.1.3 UXO Survey Instrumentation**

A G-858G horizontal gradient magnetometer and Schonstedt GA-52Cx magnetometer were the primary instruments used for the reacquire and intrusive investigation of subsurface anomalies. The detection depth for these instruments is limited by the size and orientation of a target anomaly and soil characteristics of the work area.

Field operational checks were conducted using target seed items buried in an IVS. For this operation, two medium (2 inch x 8 inch), and one large (4 inch by 12 inch) pipes, (McMaster-Carr surrogate items numbered 44615K137 and 44615K529) were used as IVS seed items. Failure to detect the test target is reason to reject an instrument. Instruments were checked daily at the IVS before starting the UXO activities and after battery changes. In addition, the UXO Technicians conducted random checks during daily operations. All instrument checks were satisfactory.

#### **4.2 Limitations of Technologies Used**

The munitions expected to be present at the Saufley Field Practice Bombing Target site were various sizes of inert practice bombs constructed with ferrous material and containing spotting charges. Therefore, industry standard equipment (G-858G horizontal gradient magnetometer and Schonstedt GA-52Cx magnetometer) were used to locate anomalies during the SI and RI phase. To manage the limitations of decreased response from potential subsurface MEC/MPPEH due to depth and orientation, all 16 small anomalies were investigated during the RI. To manage the limits of the technology in distinguishing between several small items and one large item all high-density anomaly areas were investigated. In addition, the same type of geophysical equipment and sub-meter accuracy GPS unit were used to reacquire the SI anomaly signal and provide accurate positional coordinates for each anomaly.

#### **4.3 Effects on Residual Hazards/Risk**

The 2007 PA conceptual site model assumed that the site could contain MEC/MPPEH risk and present an explosive hazard/risk because the site was a former practice bombing target. However, no evidence

of actual use of the site as a practice bombing target and no MEC/MPPEH or munitions-related debris of any kind were identified during the surface or subsurface investigations associated with the PA, SI, and RI. No evidence exists to support the PA conceptual site model. Therefore, the conclusion of the RI is that the former Saufley Field Practice Bombing Target site does not present any residual explosive hazard/risk. The conceptual site model has been updated to reflect this conclusion.

## **5.0 SUMMARY OF PROJECT QC AND QA REPORTS**

The Saufley Field Practice Bombing Target Work Plan (Tetra Tech, 2011) was developed to identify and implement Quality Assurance/Quality Control (QA/QC) requirements to ensure that overall project activities were accomplished using an acceptable level of internal controls and review procedures. The intent of such controls was to eliminate conflicts, errors, and omissions and to ensure the technical accuracy of the deliverables.

These requirements applied to all field activities that affected the quality of work and work products. All field activities affecting QC were performed in accordance with documented procedures, instructions, or drawings in the Work Plan or applicable Data Item Descriptions (DIDs). During all field activities, Tetra Tech used the following types of documentation:

- Field Activity Daily Logs
- Daily QC Reports
- Equipment Inspection Checklists
- Daily Safety Logs
- Preparatory Phase Inspection Reports
- Initial Phase Inspection Reports
- Follow-Up Phase Inspection Reports
- Safety Meeting Training Records

Field performance was evaluated to ensure that the quality standards and objectives of the Work Plan were met. The UXO Manager conducted audits of the Field Activity Daily Logs and QC/Daily Safety Logs. Additional audits were conducted periodically. The field team was responsible for reporting any suspected technical non-conformances or deficiencies to the UXO Program Manager.

The UXO Manager was then responsible for evaluation of the situation and taking action, if any was required, after notification of the Tetra Tech Project Manager. No suspected technical non-conformances or deficiencies were reported for activities conducted at the Saufley Field Practice Bombing Target.

Site Setup – Visual inspection of the suspected MEC area was completed by the UXO team, no hazards were located. The UXO Quality Control Specialist (UXOQCS) performed an additional visual survey of the area. No deficiencies were reported and no MEC/MPPEH were observed on the ground surface during the RI.

Anomaly Reacquisition – Reacquisition was performed by the site geophysicist with assistance of a UXO escort. Visual Inspections and detector-aided surveys were performed at each reacquire location. Millivolt levels were compared against SI levels at each anomaly to provide consistent values between the SI anomalies and RI reacquires. No deficiencies were reported.

Anomaly Intrusive Investigation - A detector-aided survey was performed on all anomaly intrusive investigation locations. Twenty five percent (25%) of each daily intrusive locations received quality control verification with no reported discrepancies. The UXOQCS placed one blind subsurface seed per daily lot of work. All blind subsurface seeds were recovered and the locations recorded by the field team. The location, placement, and seed identification number were recorded on the daily QC log. No discrepancies were noted.

GPS Positional Data – The positional accuracy of the GPS unit was checked and recorded twice daily. No issues with accuracy or discrepancies were noted.

MPPEH Management and Certification – No material designated as MEC/MDEH/Material Documented as Safe (MDAS) was recovered during this operation.

MEC Management, Treatment / Disposal – All activities prior to, during, and post disposal operations were performed under direct supervision of the UXOQCS. A total of one demolition clean-up shot was performed (6/29/12). All activities were performed in a safe and effective manner. All demolition operations were deemed successful. This includes the consumption of all donor charges and energetic materials being consumed. No discrepancies were noted.

## **6.0 AREAS OF INVESTIGATION**

### **6.1 MEC/MPPEH Removal Area**

Appendix A contains the following figures:

- Figure 1: Area Location Map
- Figure 2: Site Detail Map
- Figure 3: Intrusively Investigated Locations

## **6.2 Areas where Response Actions were not Performed**

The areas investigated during this operation were the 68 subsurface anomaly locations and 5 high anomaly areas. The areas in between each of the intrusively investigated locations were not investigated (Figure 3).

## **6.3 Known or Reasonably Anticipated End Use for Saufley Field Practice Bombing Target**

There is no change in land use planned at this time.

## **7.0 LAND USE CONTROLS IMPLEMENTATION**

Saufley Field is currently a guarded Military Installation. The Saufley Field Practice Bombing Target Area currently has restricted access due to its location adjoining the airfield runway. The Practice Bombing Target is located within the security fence. Access via a security checkpoint is required for this site. Saufley Field security personnel monitor all access to this area, and frequent motor vehicle patrols are conducted as part of the access control program. The area adjoins the runway and as such, falls under the access control program. There are no other land use controls planned for the site at this time.

## **8.0 LONG TERM MANAGEMENT PROVISIONS**

The MEC RI at the Saufley Field Practice Bombing Target is part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The conclusion of the RI is that the former Saufley Field Practice Bombing Target site does not present any residual explosive hazard/risk. Therefore, NAVFAC does not plan to implement any long-term management provisions above the restrictions currently in place for flight line controlled areas at Saufley Field.

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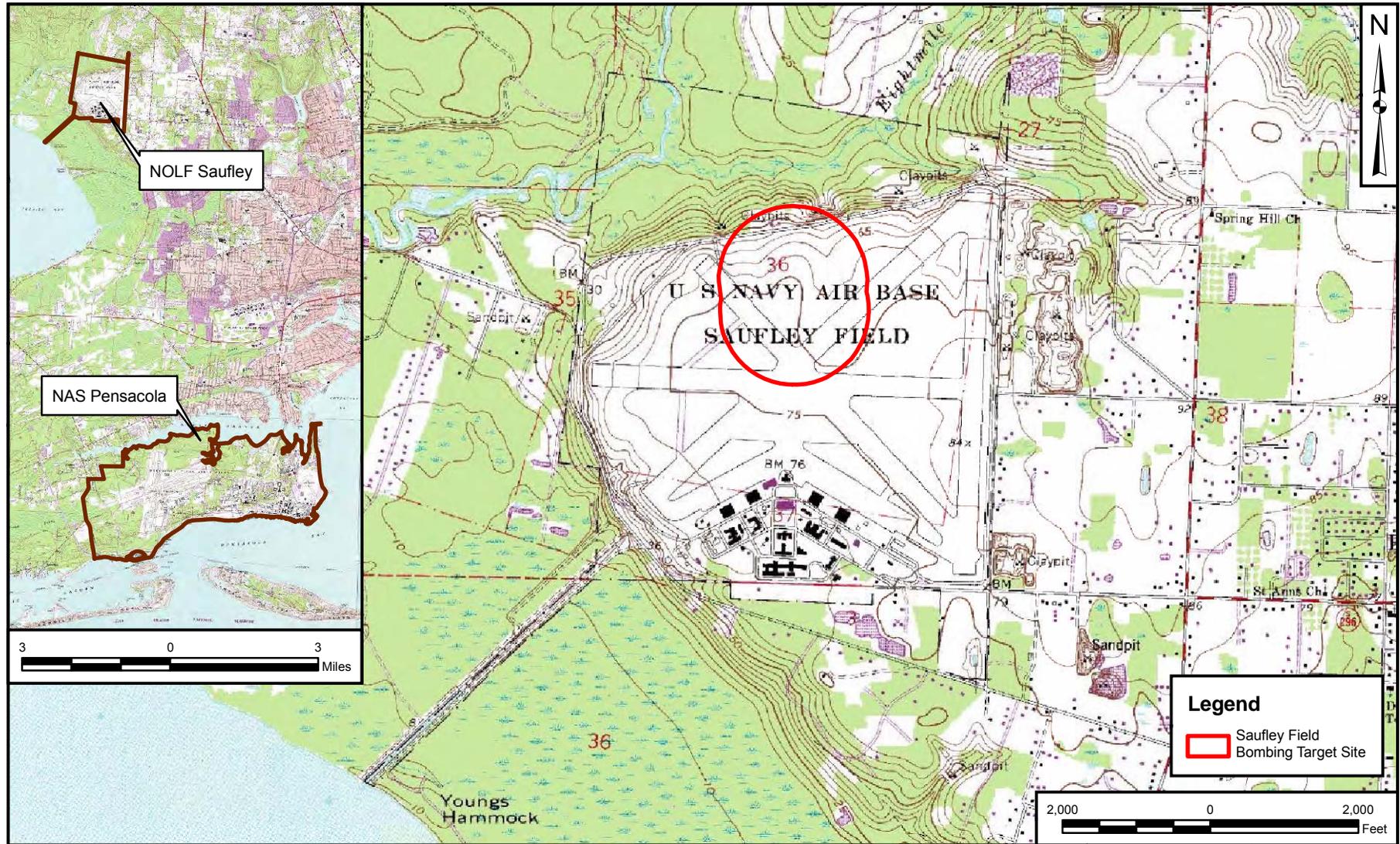
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## **APPENDIX A**

### **Maps and Figures**

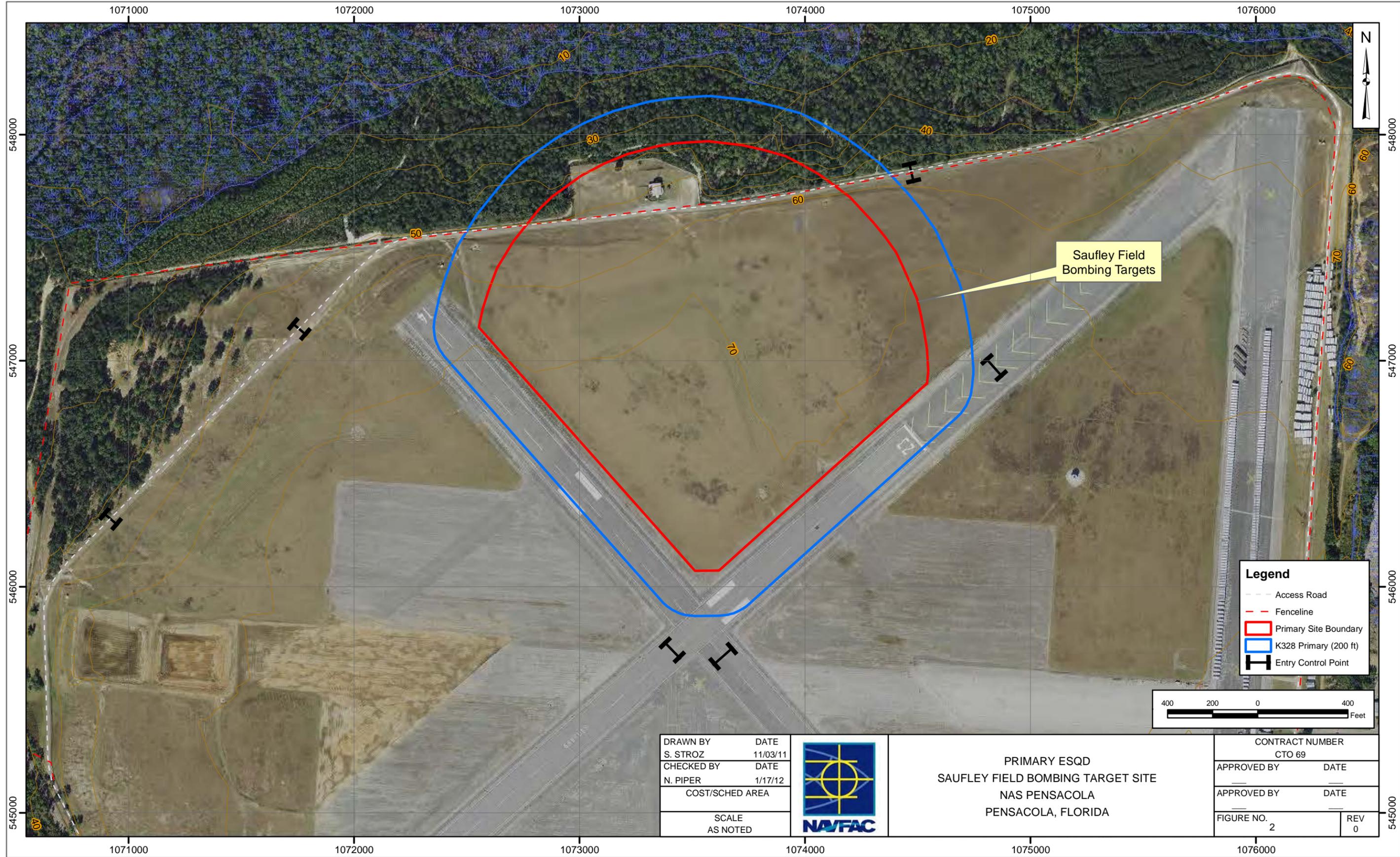


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**SITE LOCATION MAP**  
**MAGAZINE BOMBING TARGET SITE**  
**SAUFLEY FIELD BOMBING TARGET SITE**  
**NAS PENSACOLA**  
**PENSACOLA, FLORIDA**

CONTRACT NUMBER	CTO NUMBER
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FIGURE NO.	REV
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Legend	
	Access Road
	Fenceline
	Primary Site Boundary
	K328 Primary (200 ft)
	Entry Control Point

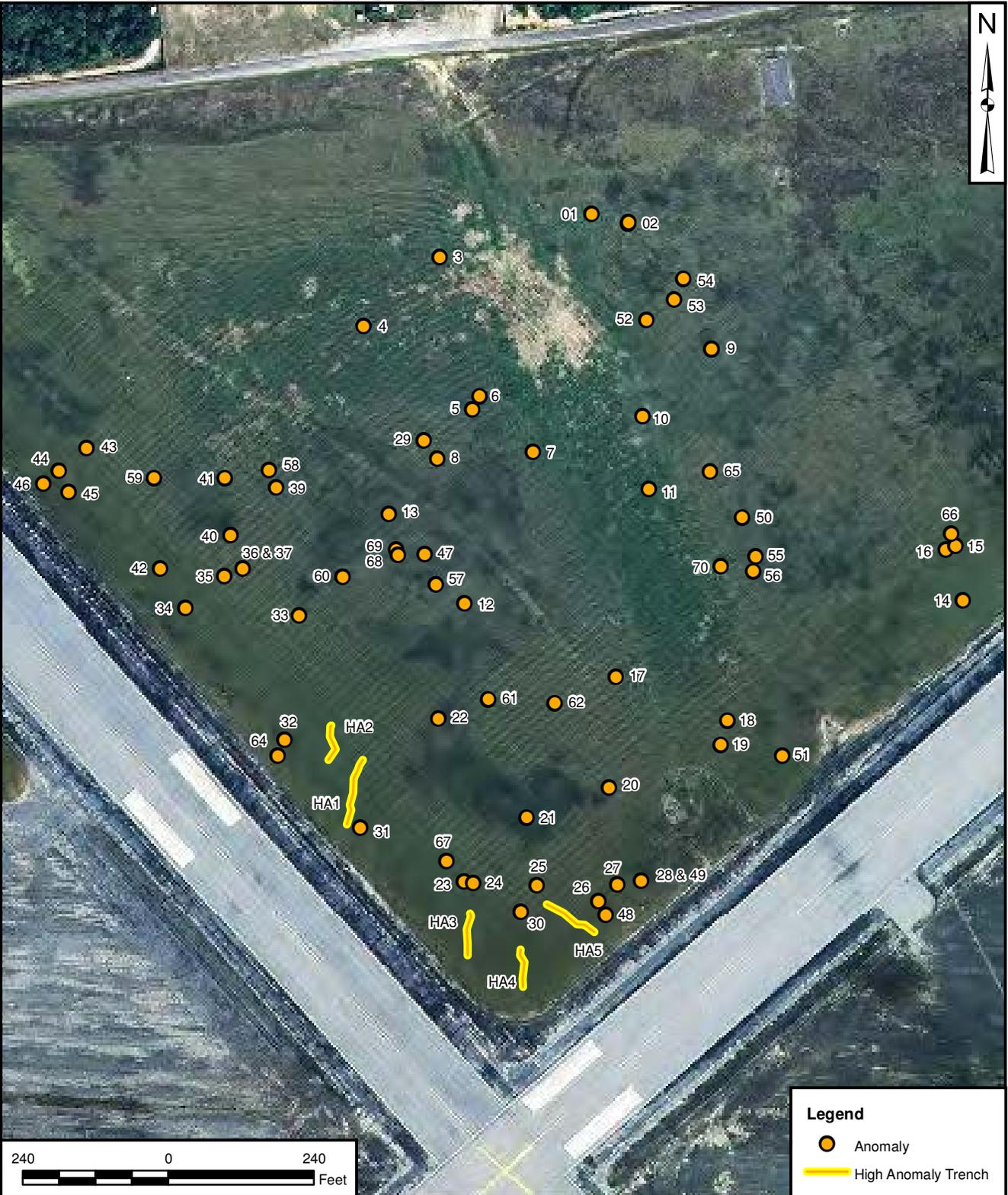


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N. PIPER	1/17/12
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PRIMARY ESQD  
 SAUFLEY FIELD BOMBING TARGET SITE  
 NAS PENSACOLA  
 PENSACOLA, FLORIDA

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**INTRUSIVE INVESTIGATION**  
**SAUFLEY BOMBING TARGET**  
**NAS PENSACOLA**  
**PENSACOLA, FLORIDA**

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