DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

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Hazardous Waste Bureau

DeAnna M. Rothhaupt
Chief, Environmental Compliance/Restoration
550 Tabosa Avenue
Holloman AFB NM 88330-8458

08-15-2013 P

New Mexico Environment Department
Attn: Mr. John Kieling, Chief
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe NM 87505-6303

Dear Mr. Kieling

In accordance with section IV, paragraph IV.B.1 of New Mexico Environmental Department (NMED) Permit number: NM6572124422, Holloman Air Force Base is submitting notice for three suspected Areas of Concern. See attachments 1 - 4 for details.

These locations were identified during initial investigation under the Military Munitions Response Program (MMRP) and will undergo further investigation and remediation under the New Mexcio-Arizona Performance Based Remediation contract that is scheduled to be awarded in late September.

After further review by NMED, if required, a Class 1 Permit modification will be requested to add these sites to Table A of the Permit.

If you have any questions, please contact DeAnna Rothhaupt, Chief of Environmental Compliance and Restoration, at 575-572-3931 or by e-mail at deanna.rothhaupt@holloman.af.mil.

Sincerely

DeAnna M. Rothhaupt, GS-12, DAFC

Attachments:
1-Site Location Map
2-Former Skeet Range (TS851) CSE Phase II Field Investigation Results
3-Former Skeet Range 2 (TS859) CSE Phase II Field Investigation Results
4-Jeep Target Area Skeet Range (TS862) CSE Phase II Field Investigation Results

cc:

(w/ Atch)
Mr. David Strasser
Hazardous Waste Bureau
5500 San Antonio Dr, NE
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Mr. Chuck Hendrickson
USEPA, Region 6 (6PD-F)
1445 Ross Ave, Ste 1200
Dallas TX 75202-2750

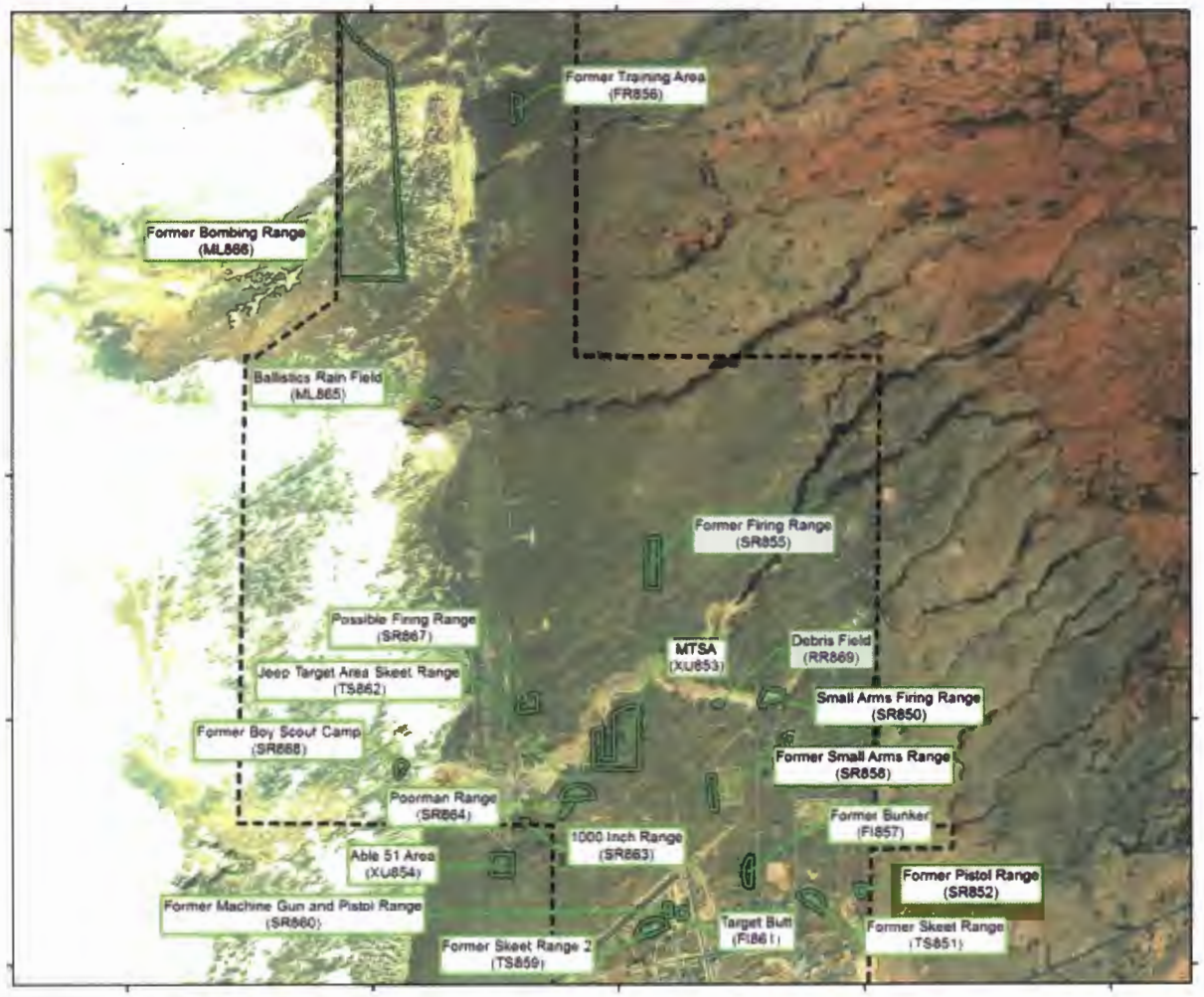


Figure 2-1

Munitions Response Areas
Holloman AFB, NM

0 1 2 3 Miles
0 1 2 3 4 5 Kilometers

N

SKY

Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13

Legend

MRA Boundaries
Installation Boundary**

BH 05/16/2012	GMF 05/16/2012	C Gardner 05/16/2012

5.0 CSE Phase II Field Investigation Results

~~5.1 Small Arms Firing Range (SR850)~~

~~5.1.1 Field Investigation Results~~

~~The Small Arms Firing Range (SR850) was not investigated during the CSE Phase II. Due to the operational status of this MRA, it is ineligible for consideration under MMRP. The range includes buildings 1276 (firing line) and1286 (classroom). Personal communication and email correspondence from MSgt. Brandon C. Adkins (NCOIC, Combat Arms) on January 31, 2012 states the following regarding the Small Arms Firing Range:~~

> ~~*"Our M203 range (located at 1286, old range) is still in use and used monthly to conduct M203 live fire qualification. The area from the Firing line/Tower to the Backstop is utilized for SMC (SF Initiative) and Taser training. In short, it's still an active range."*~~

5.2 Former Skeet Range (TS851)

5.2.1 Site Description

The Former Skeet Range (TS851) is located in the North Area, toward the eastern extent of the airfield. It measures approximately 1,960 ft by 900 ft with a perimeter of 5,078 ft and an area of 32.8 acres. The coordinates of the area are 32.86022 degrees latitude, -106.08012 degrees longitude. The location of the Former Skeet Range (TS851) exhibits relatively flat topography with soils consisting of the Alamogordo- Nasa-Corvus complex. Beneath Holloman AFB, groundwater ranges from 5 to 50 ft bgs, with shallower groundwater found on the southern end of the base. There are no wetlands associated with this MRA.

5.2.2 History of Munitions Related Activities

Review of available historical aerial photography shows what appears to be a two position skeet range at this location in 1972. The two firing point skeet range located at this site was used for small arms training and practice with moving targets. Shotgun shells (individual associated components) and clay target debris are typical items observed at a skeet range such as Former Skeet Range (TS851).

5.2.3 Land Use

More than one-third of the Former Skeet Range (TS851) is covered by the Fourth Space Command Complex. The footprint of the complex is covered entirely by buildings or pavement on the northwest portion of the MRA. A portion of the eastern range fan is occupied by a petroleum contaminated soil remediation area. The remainder of the MRA is open space, consisting of desert scrubland and dirt roads.

5.2.4 Access Controls and Restrictions

The Space Command Complex is a high security area. Authorization to work in the surrounding areas requires coordination with base Security Forces and Space Command Complex security. There is no fencing or other controls associated with the remainder of the MRA; however, access to Holloman AFB requires admittance through the security gate and there is a fence around the installation. Therefore, access to the Former Skeet Range (TS851) is restricted for the general public, but is open to base personnel, contractors, and base residents. Trespasser access is unlikely due to the security for the Space Command Complex.

5.2.5 Receptors

5.2.5.1 Nearby Population

The Former Skeet Range (TS851) is located in the North Area of the installation, approximately 1.5 miles north of base residential housing. Holloman AFB supports about 21,000 Active Duty, Guard, Reserve, retirees, DoD civilians, and their families (http://www.holloman.af.mil) (Holloman AFB). The base is located approximately 6 miles west of Alamogordo, New Mexico. According to a U.S. Census, the population of Alamogordo was estimated to be 30,403 in 2010 (USCB, 2010). The population density of Otero County is approximately 10 people per square mile.

5.2.5.2 Buildings near/within MRA

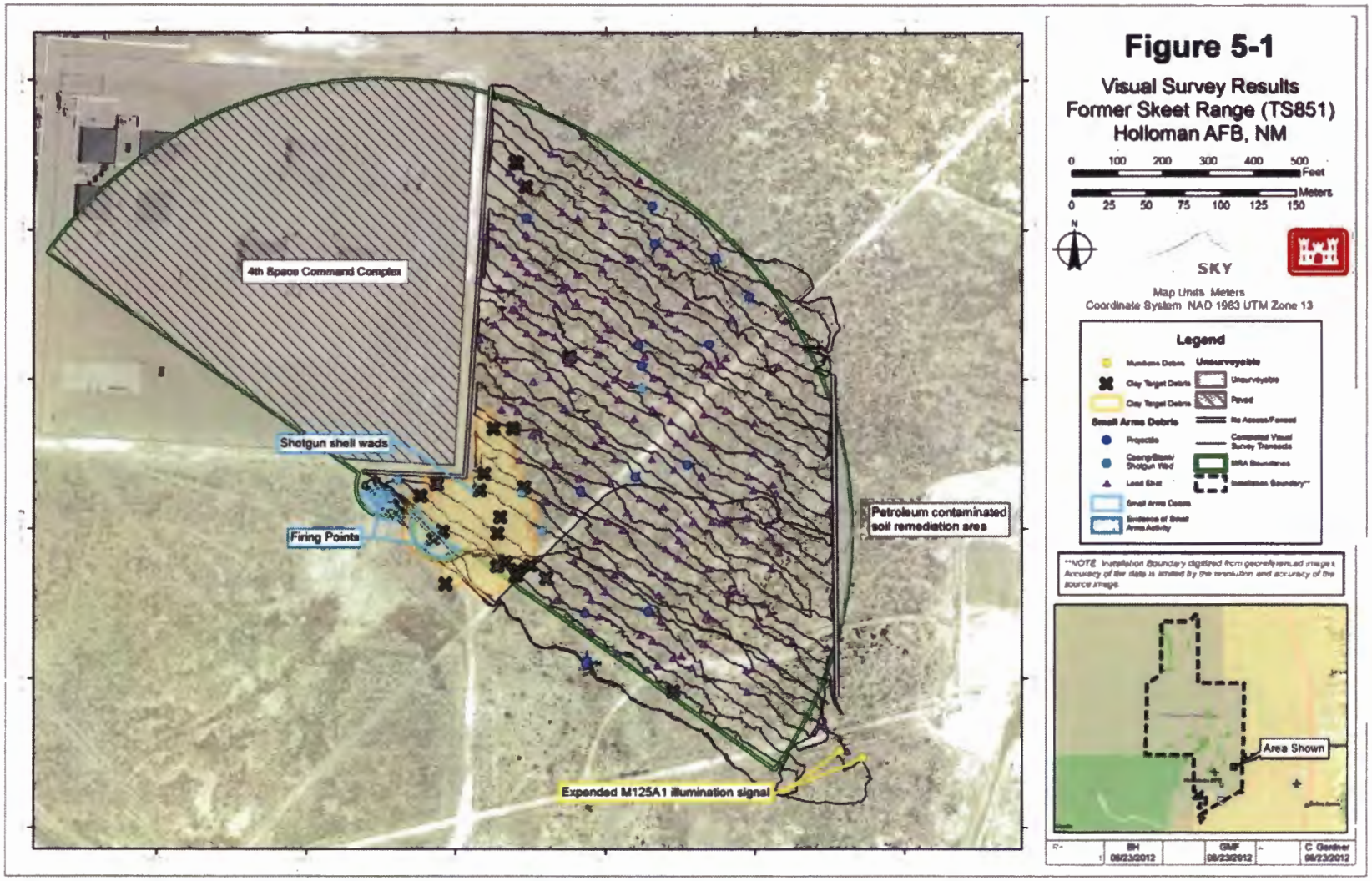
The Space Command Complex buildings are within the MRA. There are 1,400 buildings within a 2-mile radius of the Former Skeet Range TS851, primarily to the south. These buildings include base residential housing, recreational, operational and mission support buildings, and buildings that support the flight line.

5.2.6 Field Investigation Results

5.2.6.1 Visual Surveys Results

During the field investigation visual survey transects were completed at the Former Skeet Range (TS851) MRA as shown in **Figure 5-1**. The northwestern portion of the MRA was not surveyed due to the Fourth Space Command Complex and perimeter fence. A controlled 30-foot buffer zone was maintained around the fenced area. Additionally, a small portion of the MRA on the eastern range fan was not surveyed due to a fenced petroleum contaminated soil remediation area.

Clay target debris was observed within 300 feet of the historic firing points. Two firing points were still discernable; however, all other range infrastructure has been removed. Lead shot was observed within a typical lead shot fall zone area. The lead shot and clay target debris observed are consistent with historical skeet range usage. In addition to small arms debris, pistol bullets of 9mm, .38, and .45 calibers were also documented; however, these items are not typically associated with skeet range activities. The field team extended surveys outside of the original MRA boundaries based on the lead shot observed and documented two signal ground clusters adjacent to the MRA boundary.


4th Space Command Complex
Shotgun shell wads
Firing Points
Petroleum contaminated soil remediation area
Expended M125A1 illumination signal
Figure 5-1
Visual Survey Results
Former Skeet Range (TS851)
Holloman AFB, NM
0 100 200 300 400 500 Feet
0 25 50 75 100 125 150 Meters
N
SKY
Map Units Meters
Coordinate System NAD 1983 UTM Zone 13
Legend
Munitions Debris
Unsurveyable
Clay Target Debris
Clay Target Debris
Small Arms Debris
Projectile
Clamp/Steel/ Shotgun Wad
Lead Shot
Small Arms Debris
Evidence of Small Arms Activity
Unsurveyable
Paved
No Access/Fenced
Completed Visual Survey Transects
MRA Boundaries
Installation Boundary**
**NOTE Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image.
Area Shown
BH 08/23/2012
GMF 08/23/2012
C Gardner 08/23/2012

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5.2.6.2 Lead Sampling and XRF Results

Sixty-eight (68) surface soil samples were collected and analyzed for lead using XRF at the Former Skeet Range (TS851). XRF results ranged from below LOD (12 mg/kg) to 154 mg/kg. Of the 68 soil samples analyzed, 12 exhibited lead concentrations below LOD. No samples exceeded the human health screening level of 400 mg/kg. The XRF results are presented in **Table 5-1** and **Table 5-2**.

Table 5-1 XRF Lead Sampling Results, Former Skeet Range (TS851)

Sample ID*	XRF Lead Result (Average) (mg/kg)
C-XR-HL-02-SS-001	32
C-XR-HL-02-SS-002	71
C-XR-HL-02-SS-003	154
C-XR-HL-02-SS-004	22
C-XR-HL-02-SS-005	< LOD
C-XR-HL-02-SS-006	28
C-XR-HL-02-SS-007	< LOD
C-XR-HL-02-SS-008	42
C-XR-HL-02-SS-009	30
C-XR-HL-02-SS-010	13
C-XR-HL-02-SS-011	35
C-XR-HL-02-SS-012	< LOD
C-XR-HL-02-SS-013	14
C-XR-HL-02-SS-014	56
C-XR-HL-02-SS-015	14
C-XR-HL-02-SS-016	14
C-XR-HL-02-SS-017	24
C-XR-HL-02-SS-018	42
C-XR-HL-02-SS-019	15
C-XR-HL-02-SS-020	55
C-XR-HL-02-SS-021	< LOD
C-XR-HL-02-SS-022	21
C-XR-HL-02-SS-023	13
C-XR-HL-02-SS-024	108
C-XR-HL-02-SS-025	56
C-XR-HL-02-SS-026	19
C-XR-HL-02-SS-027	31
C-XR-HL-02-SS-028	26
C-XR-HL-02-SS-029	30
C-XR-HL-02-SS-030	17
C-XR-HL-02-SS-031	52
C-XR-HL-02-SS-032	< LOD
C-XR-HL-02-SS-033	56
C-XR-HL-02-SS-034	30
C-XR-HL-02-SS-035	17
C-XR-HL-02-SS-036	15
C-XR-HL-02-SS-037	12
C-XR-HL-02-SS-038	47
C-XR-HL-02-SS-039	19
C-XR-HL-02-SS-040	53
C-XR-HL-02-SS-041	24
C-XR-HL-02-SS-042	55

Table 5-1 XRF Lead Sampling Results, Former Skeet Range (TS851)

Sample ID*	XRF Lead Result (Average) (mg/kg)
C-XR-HL-02-SS-043	22
C-XR-HL-02-SS-044	23
C-XR-HL-02-SS-045	37
C-XR-HL-02-SS-046	22
C-XR-HL-02-SS-047	< LOD
C-XR-HL-02-SS-048	12
C-XR-HL-02-SS-049	18
C-XR-HL-02-SS-050	17
C-XR-HL-02-SS-051	16
C-XR-HL-02-SS-052	19
C-XR-HL-02-SS-053	14
C-XR-HL-02-SS-054	26
C-XR-HL-02-SS-055	< LOD
C-XR-HL-02-SS-056	24
C-XR-HL-02-SS-057	13
C-XR-HL-02-SS-058	16
C-XR-HL-02-SS-059	19
C-XR-HL-02-SS-060	< LOD
C-XR-HL-02-SS-061	< LOD
C-XR-HL-02-SS-062	21
C-XR-HL-02-SS-063	18
C-XR-HL-02-SS-064	16
C-XR-HL-02-SS-065	14
C-XR-HL-02-SS-066	< LOD
C-XR-HL-02-SS-067	< LOD
C-XR-HL-02-SS-068	< LOD

Notes:
< LOD = below limit of detection (12 mg/kg)
mg/kg = milligrams per kilogram
* All samples were collected at the surface interval of 0 -6 inches

5.2.6.3 PAH Sampling and Analysis

Twenty-eight (28) soil samples from the Former Skeet Range (TS851) were collected for laboratory PAH analysis. The total includes 24 surface samples, two (2) subsurface samples from the 6-12 inch depth interval, and two (2) samples from the 12-18 inch depth interval. In addition, four (4) background surface soil samples were collected for laboratory PAH analysis. The sample locations are presented in **Figure 5-3**.

PAH results exceeded the human health screening levels for at least one analyte for nine (9) of the 28 samples analyzed. The PAH results are presented in **Table 5-2**.

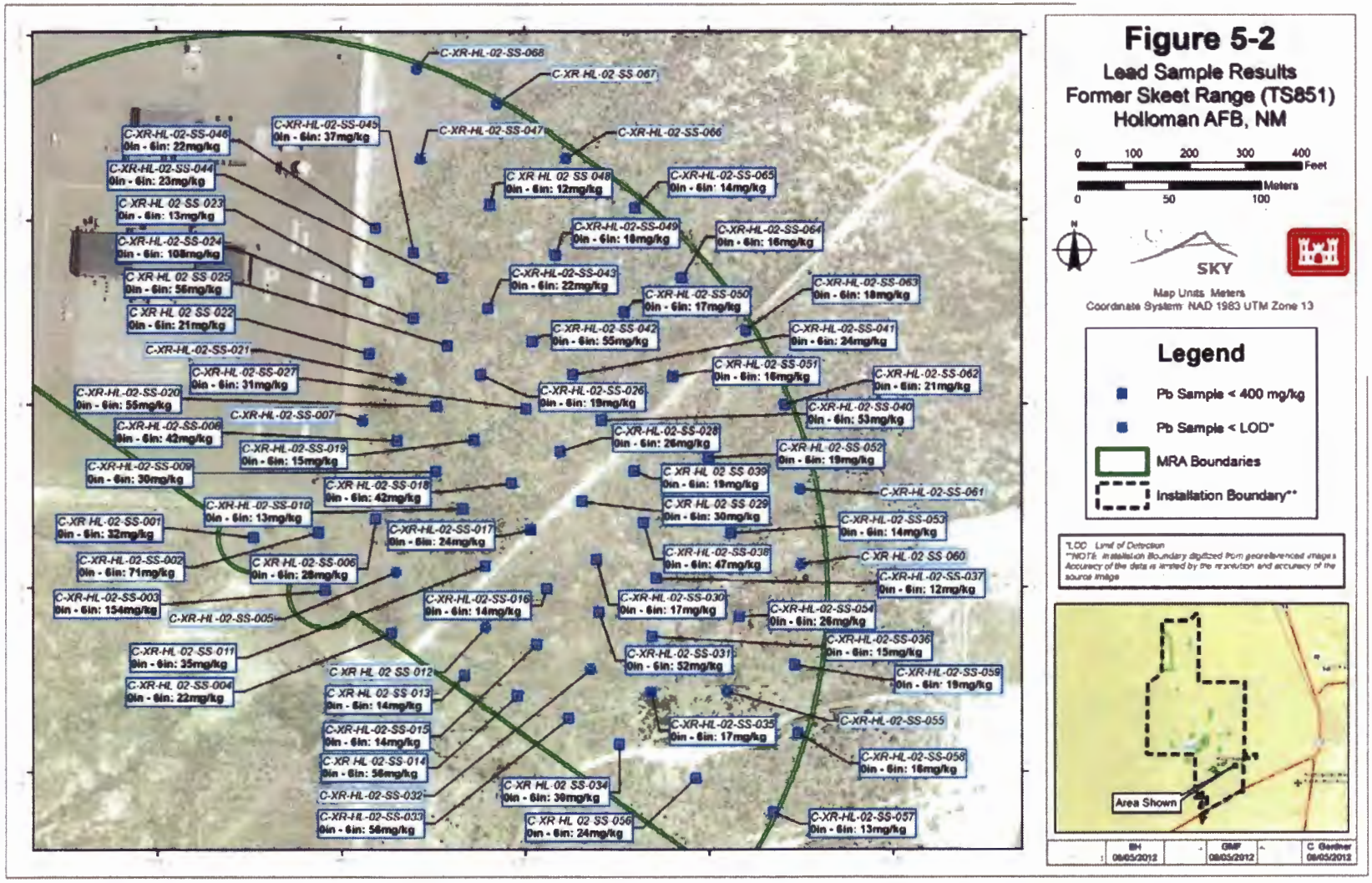
Figure 5-2
Lead Sample Results
Former Skeet Range (TS851)
Holloman AFB, NM
0 100 200 300 400 Feet
0 50 100 Meters
SKY
Map Units Meters
Coordinate System NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
Area Shown
BH 08/03/2012
GMP 08/03/2012
C Gardner 08/03/2012
C-XR-HL-02-SS-068
C-XR-HL-02-SS-067
C-XR-HL-02-SS-046 0in - 6in: 22mg/kg
C-XR-HL-02-SS-045 0in - 6in: 37mg/kg
C-XR-HL-02-SS-047
C-XR-HL-02-SS-066
C-XR-HL-02-SS-044 0in - 6in: 23mg/kg
C XR HL 02 SS 048 0in - 6in: 12mg/kg
C-XR-HL-02-SS-065 0in - 6in: 14mg/kg
C XR HL 02 SS 023 0in - 6in: 13mg/kg
C-XR-HL-02-SS-049 0in - 6in: 18mg/kg
C-XR-HL-02-SS-064 0in - 6in: 16mg/kg
C-XR-HL-02-SS-024 0in - 6in: 108mg/kg
C-XR-HL-02-SS-043 0in - 6in: 22mg/kg
C XR HL 02 SS 025 0in - 6in: 56mg/kg
C-XR-HL-02-SS-050 0in - 6in: 17mg/kg
C-XR-HL-02-SS-063 0in - 6in: 18mg/kg
C XR HL 02 SS 022 0in - 6in: 21mg/kg
C-XR-HL-02-SS-042 0in - 6in: 55mg/kg
C-XR-HL-02-SS-041 0in - 6in: 24mg/kg
C-XR-HL-02-SS-021
C-XR-HL-02-SS-027 0in - 6in: 31mg/kg
C XR HL 02 SS 051 0in - 6in: 16mg/kg
C-XR-HL-02-SS-062 0in - 6in: 21mg/kg
C-XR-HL-02-SS-020 0in - 6in: 55mg/kg
C-XR-HL-02-SS-026 0in - 6in: 19mg/kg
C-XR-HL-02-SS-040 0in - 6in: 53mg/kg
C-XR-HL-02-SS-007
C-XR-HL-02-SS-006 0in - 6in: 42mg/kg
C-XR-HL-02-SS-028 0in - 6in: 26mg/kg
C-XR-HL-02-SS-019 0in - 6in: 15mg/kg
C-XR-HL-02-SS-052 0in - 6in: 19mg/kg
C-XR-HL-02-SS-009 0in - 6in: 30mg/kg
C XR HL 02 SS 039 0in - 6in: 19mg/kg
C-XR-HL-02-SS-018 0in - 6in: 42mg/kg
C-XR-HL-02-SS-061
C-XR-HL-02-SS-010 0in - 6in: 13mg/kg
C XR HL 02 SS 029 0in - 6in: 30mg/kg
C-XR-HL-02-SS-001 0in - 6in: 32mg/kg
C-XR-HL-02-SS-017 0in - 6in: 24mg/kg
C-XR-HL-02-SS-053 0in - 6in: 14mg/kg
C-XR-HL-02-SS-038 0in - 6in: 47mg/kg
C-XR-HL-02-SS-002 0in - 6in: 71mg/kg
C XR HL 02 SS 006 0in - 6in: 28mg/kg
C XR HL 02 SS 060
C-XR-HL-02-SS-037 0in - 6in: 12mg/kg
C-XR-HL-02-SS-003 0in - 6in: 154mg/kg
C-XR-HL-02-SS-016 0in - 6in: 14mg/kg
C-XR-HL-02-SS-030 0in - 6in: 17mg/kg
C-XR-HL-02-SS-005
C-XR-HL-02-SS-054 0in - 6in: 26mg/kg
C-XR-HL-02-SS-036 0in - 6in: 15mg/kg
C-XR-HL-02-SS-011 0in - 6in: 35mg/kg
C-XR-HL-02-SS-031 0in - 6in: 52mg/kg
C-XR-HL-02-SS-059 0in - 6in: 19mg/kg
C XR HL 02 SS 012
C-XR-HL-02-SS-004 0in - 6in: 22mg/kg
C XR HL 02 SS 013 0in - 6in: 14mg/kg
C-XR-HL-02-SS-035 0in - 6in: 17mg/kg
C-XR-HL-02-SS-055
C-XR-HL-02-SS-015 0in - 6in: 14mg/kg
C XR HL 02 SS 014 0in - 6in: 56mg/kg
C-XR-HL-02-SS-058 0in - 6in: 16mg/kg
C-XR-HL-02-SS-032
C XR HL 02 SS 034 0in - 6in: 30mg/kg
C-XR-HL-02-SS-033 0in - 6in: 56mg/kg
C XR HL 02 SS 056 0in - 6in: 24mg/kg
C-XR-HL-02-SS-057 0in - 6in: 13mg/kg

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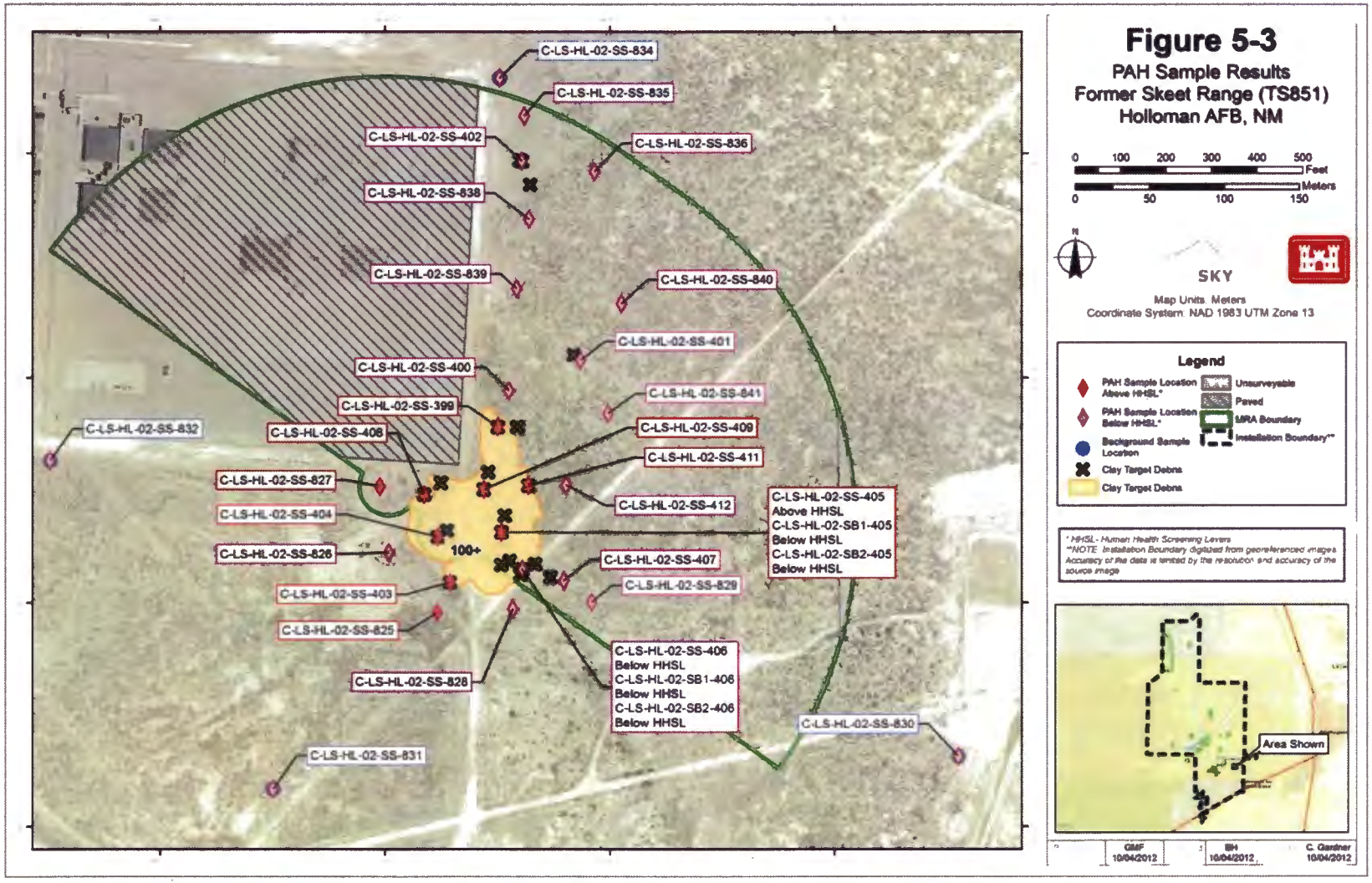
C-LS-HL-02-SS-834
C-LS-HL-02-SS-835
C-LS-HL-02-SS-402
C-LS-HL-02-SS-836
C-LS-HL-02-SS-838
C-LS-HL-02-SS-839
C-LS-HL-02-SS-840
C-LS-HL-02-SS-401
C-LS-HL-02-SS-400
C-LS-HL-02-SS-841
C-LS-HL-02-SS-399
C-LS-HL-02-SS-832
C-LS-HL-02-SS-408
C-LS-HL-02-SS-409
C-LS-HL-02-SS-411
C-LS-HL-02-SS-827
C-LS-HL-02-SS-412
C-LS-HL-02-SS-404
C-LS-HL-02-SS-405
Above HHSL
C-LS-HL-02-SB1-405
Below HHSL
C-LS-HL-02-SB2-405
Below HHSL
C-LS-HL-02-SS-826
100+
C-LS-HL-02-SS-407
C-LS-HL-02-SS-829
C-LS-HL-02-SS-403
C-LS-HL-02-SS-825
C-LS-HL-02-SS-406
Below HHSL
C-LS-HL-02-SB1-406
Below HHSL
C-LS-HL-02-SB2-406
Below HHSL
C-LS-HL-02-SS-828
C-LS-HL-02-SS-830
C-LS-HL-02-SS-831
Figure 5-3
PAH Sample Results
Former Skeet Range (TS851)
Holloman AFB, NM
0 100 200 300 400 500 Feet
0 50 100 150 Meters
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
PAH Sample Location Above HHSL*
PAH Sample Location Below HHSL*
Background Sample Location
Clay Target Debris
Clay Target Debris
Unsurveyable
Paved
MRA Boundary
Installation Boundary**
* HHSL - Human Health Screening Levels
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
Area Shown
GMF 10/04/2012
BH 10/04/2012
C. Gardner 10/04/2012

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Table 5-2 PAH Sampling Results, Former Skeet Range (TS851)

Field ID:	C-LS-HL-02-SS-399			C-LS-HL-02-SS-400			C-LS-HL-02-SS-401			C-LS-HL-02-SS-402			C-LS-HL-02-SS-403			C-LS-HL-02-SS-404		
Sampling Date:	12/13/2011			12/13/2011			12/13/2011			12/13/2011			12/13/2011			12/13/2011		
Lab ID:	L1120933-07			L1120933-28			L1120933-22			L1120933-23			L1120933-19			L1120933-26		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0084	< 0.0084	U	0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	< 0.015	U	0.18	< 0.18	U	0.071	0.064	J
Acenaphthene	0.0084	0.012		0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	< 0.015	U	0.18	0.37		0.071	0.51	
Acenaphthylene	0.0084	< 0.0084	U	0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	0.0038	J	0.18	< 0.18	U	0.071	< 0.071	U
Anthracene	0.0084	0.019		0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	0.0041	J	0.18	0.48		0.071	0.88	
Benzo(a)anthracene	0.0084	0.14		0.0072	0.005	J	0.0075	0.0048	J	0.015	0.0084	J	0.18	4.9		0.071	5.4	
Benzo(a)pyrene	0.0084	0.21		0.0072	0.008		0.0075	0.0061	J	0.015	0.014	J	0.18	7		0.071	6.3	
Benzo(b)fluoranthene	0.0084	0.18	J	0.0072	0.0044	J	0.0075	0.004	J	0.015	0.011	J	0.18	4.9	J	0.071	6.4	J
Benzo(ghi)perylene	0.0084	0.17		0.0072	0.0058	J	0.0075	0.0033	J	0.015	0.012	J	0.18	6.1		0.071	4.6	
Benzo(k)fluoranthene	0.0084	0.16	J	0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	< 0.015	U	0.18	4	J	0.071	4.1	J
Chrysene	0.0084	0.16		0.0072	0.0069	J	0.0075	0.0057	J	0.015	0.014	J	0.18	6		0.071	5.6	
Dibenzo(a,h)anthracene	0.0084	0.047		0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	0.013	J	0.18	1.5		0.071	1.3	
Fluoranthene	0.0084	0.2		0.0072	0.0075		0.0075	0.0085		0.015	0.018		0.18	4.2		0.071	6.5	
Fluorene	0.0084	0.0064	J	0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	< 0.015	U	0.18	0.16	J	0.071	0.31	
Indeno(1,2,3-cd)pyrene	0.0084	0.14		0.0072	0.0072	J	0.0075	0.006	J	0.015	0.016		0.18	3.8		0.071	4	
Naphthalene	0.0084	< 0.0084	U	0.0072	< 0.0072	U	0.0075	< 0.0075	U	0.015	< 0.015	U	0.18	0.084	J	0.071	0.12	
Phenanthrene	0.0084	0.098		0.0072	0.0036	J	0.0075	0.0032	J	0.015	0.0092	J	0.18	2.2		0.071	3.4	
Pyrene	0.0084	0.17		0.0072	0.0074		0.0075	0.0074	J	0.015	0.015	J	0.18	5.1		0.071	5.7	

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-2 PAH Sampling Results, Former Skeet Range (TS851) (continued)

Field ID:	C-LS-HL-02-SS-405			C-LS-HL-02-SB1-405[3]			C-LS-HL-02-SB1-823[2,3]			C-LS-HL-02-SB2-405			C-LS-HL-02-SS-406			C-LS-HL-02-SB1-406		
Sampling Date:	12/13/2011			2/24/2012			2/24/2012			2/29/2012			12/13/2011			2/24/2012		
Lab ID:	L1120933-12			L1203320-20			L1203320-03			L1203620-10			L1120933-20			L1203320-16		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0075	0.02		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Acenaphthene	0.0075	0.034		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Acenaphthylene	0.0075	< 0.0075	U	0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Anthracene	0.0075	0.06		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Benzo(a)anthracene	0.0075	0.32		0.0088	0.0043	J	0.01	< 0.01	U	0.0094	0.0036	J	0.0084	< 0.0084	U	0.011	< 0.011	U
Benzo(a)pyrene	0.0075	0.43		0.0088	0.0086	J	0.01	< 0.01	U	0.0094	0.006	J	0.0084	< 0.0084	U	0.011	< 0.011	U
Benzo(b)fluoranthene	0.0075	0.39	J	0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Benzo(ghi)perylene	0.0075	0.32		0.0088	0.014		0.01	< 0.01	U	0.0094	0.0061	J	0.0084	< 0.0084	U	0.011	< 0.011	U
Benzo(k)fluoranthene	0.0075	0.34	J	0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Chrysene	0.0075	0.34		0.0088	0.007	J	0.01	< 0.01	U	0.0094	0.0051	J	0.0084	0.0024	J	0.011	< 0.011	U
Dibenzo(a,h)anthracene	0.0075	0.063		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Fluoranthene	0.0075	0.45		0.0088	0.0026	J	0.01	< 0.01	U	0.0094	0.0047	J	0.0084	0.0028	J	0.011	< 0.011	U
Fluorene	0.0075	0.018		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Indeno(1,2,3-cd)pyrene	0.0075	0.29		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	0.0038	J	0.0084	< 0.0084	U	0.011	< 0.011	U
Naphthalene	0.0075	0.0085		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Phenanthrene	0.0075	0.22		0.0088	< 0.0088	U	0.01	< 0.01	U	0.0094	< 0.0094	U	0.0084	< 0.0084	U	0.011	< 0.011	U
Pyrene	0.0075	0.4		0.0088	0.0033	J	0.01	< 0.01	U	0.0094	0.0047	J	0.0084	0.0024	J	0.011	< 0.011	U

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

Table 5-2 PAH Sampling Results, Former Skeet Range (TS851) (continued)

Field ID:	C-LS-HL-02-SB2-406			C-LS-HL-02-SS-407			C-LS-HL-02-SS-408			C-LS-HL-02-SS-409[4]			C-LS-HL-02-SS-410[2,4]			C-LS-HL-02-SS-411		
Sampling Date:	2/29/2012			12/13/2011			12/13/2011			12/13/2011			12/13/2011			12/13/2011		
Lab ID:	L1203620-02			L1120933-03			L1120933-21			L1120933-25			L1120933-01			L1120933-09		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	0.098	J	0.014	< 0.014	U	0.015	< 0.015	U	0.074	0.068	J
Acenaphthene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	0.7		0.014	0.03		0.015	0.017		0.074	0.48	
Acenaphthylene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	< 0.2	U	0.014	< 0.014	U	0.015	< 0.015	U	0.074	< 0.074	U
Anthracene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	0.74		0.014	0.068		0.015	0.041		0.074	0.68	
Benzo(a)anthracene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	9.9		0.014	0.52		0.015	0.32		0.074	5	
Benzo(a)pyrene	0.0084	< 0.0084	U	0.0088	0.0038	J	0.2	13		0.014	0.71		0.015	0.44		0.074	6.3	
Benzo(b)fluoranthene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	9.5	J	0.014	0.89	J	0.015	0.41	J	0.074	5.6	J
Benzo(ghi)perylene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	9.8		0.014	0.64		0.015	0.4		0.074	5	
Benzo(k)fluoranthene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	6.7	J	0.014	0.46	J	0.015	0.34	J	0.074	4.3	J
Chrysene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	13		0.014	0.58		0.015	0.36		0.074	5	
Dibenzo(a,h)anthracene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	2.8		0.014	0.16		0.015	0.1		0.074	1.2	
Fluoranthene	0.0084	< 0.0084	U	0.0088	0.0023	J	0.2	7		0.014	0.62		0.015	0.4		0.074	6.1	
Fluorene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	0.2	J	0.014	0.017		0.015	0.0084	J	0.074	0.2	
Indeno(1,2,3-cd)pyrene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	6.4		0.014	0.47		0.015	0.32		0.074	3.9	
Naphthalene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	0.1	J	0.014	0.0042	J	0.015	< 0.015	U	0.074	0.053	J
Phenanthrene	0.0084	< 0.0084	U	0.0088	< 0.0088	U	0.2	3.2		0.014	0.31		0.015	0.2		0.074	2.8	
Pyrene	0.0084	< 0.0084	U	0.0088	0.0023	J	0.2	9.5		0.014	0.53		0.015	0.35		0.074	5.8	

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
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SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-2 PAH Sampling Results, Former Skeet Range (TS851) (continued)

Field ID:	C-LS-HL-02-SS-412			C-LS-HL-02-SS-825			C-LS-HL-02-SS-826			C-LS-HL-02-SS-827			C-LS-HL-02-SS-828			C-LS-HL-02-SS-829		
Sampling Date:	12/13/2011			2/24/2012			2/24/2012			2/24/2012			2/24/2012			2/24/2012		
Lab ID:	L1120933-02			L1203320-04			L1203320-18			L1203345-13			L1203320-29			L1203345-02		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0078	< 0.0078	U	0.034	< 0.034	U	0.0072	< 0.0072	U	0.0085	< 0.0085	U	0.0084	< 0.0084	U	0.0085	< 0.0085	U
Acenaphthene	0.0078	< 0.0078	U	0.034	< 0.034	U	0.0072	< 0.0072	U	0.0085	0.0052	J	0.0084	< 0.0084	U	0.0085	< 0.0085	U
Acenaphthylene	0.0078	< 0.0078	U	0.034	0.014	J	0.0072	< 0.0072	U	0.0085	< 0.0085	U	0.0084	< 0.0084	U	0.0085	< 0.0085	U
Anthracene	0.0078	< 0.0078	U	0.034	0.023	J	0.0072	< 0.0072	U	0.0085	0.011		0.0084	< 0.0084	U	0.0085	< 0.0085	U
Benzo(a)anthracene	0.0078	0.002	J	0.034	0.14		0.0072	< 0.0072	U	0.0085	0.073		0.0084	0.0061	J	0.0085	0.0073	J
Benzo(a)pyrene	0.0078	< 0.0078	U	0.034	0.24		0.0072	< 0.0072	U	0.0085	0.12		0.0084	0.0092	J	0.0085	0.0082	J
Benzo(b)fluoranthene	0.0078	< 0.0078	U	0.034	0.25	J	0.0072	< 0.0072	U	0.0085	0.091	J	0.0084	0.016	J	0.0085	0.0068	J
Benzo(ghi)perylene	0.0078	< 0.0078	U	0.034	0.27		0.0072	0.0062	J	0.0085	0.09		0.0084	0.0082	J	0.0085	< 0.0085	U
Benzo(k)fluoranthene	0.0078	< 0.0078	U	0.034	0.17	J	0.0072	< 0.0072	U	0.0085	0.065	J	0.0084	< 0.0084	U	0.0085	< 0.0085	U
Chrysene	0.0078	0.0026	J	0.034	0.34		0.0072	< 0.0072	U	0.0085	0.14		0.0084	0.008	J	0.0085	< 0.0085	U
Dibenzo(a,h)anthracene	0.0078	< 0.0078	U	0.034	0.07		0.0072	< 0.0072	U	0.0085	0.023		0.0084	< 0.0084	U	0.0085	< 0.0085	U
Fluoranthene	0.0078	< 0.0078	U	0.034	0.22		0.0072	0.0021	J	0.0085	0.083		0.0084	0.009		0.0085	0.003	J
Fluorene	0.0078	< 0.0078	U	0.034	< 0.034	U	0.0072	< 0.0072	U	0.0085	< 0.0085	U	0.0084	< 0.0084	U	0.0085	< 0.0085	U
Indeno(1,2,3-cd)pyrene	0.0078	< 0.0078	U	0.034	0.2		0.0072	< 0.0072	U	0.0085	0.064		0.0084	0.0069	J	0.0085	< 0.0085	U
Naphthalene	0.0078	< 0.0078	U	0.034	< 0.034	U	0.0072	< 0.0072	U	0.0085	< 0.0085	U	0.0084	< 0.0084	U	0.0085	< 0.0085	U
Phenanthrene	0.0078	< 0.0078	U	0.034	0.1		0.0072	< 0.0072	U	0.0085	0.042		0.0084	0.0046	J	0.0085	< 0.0085	U
Pyrene	0.0078	0.0028	J	0.034	0.25		0.0072	0.0021	J	0.0085	0.1		0.0084	0.0084	J	0.0085	0.0027	J

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-2 PAH Sampling Results, Former Skeet Range (TS851) (continued)

Field ID:	C-LS-HL-02-SS-830[1]			C-LS-HL-02-SS-831[1]			C-LS-HL-02-SS-832[1]			C-LS-HL-02-SS-834[1]			C-LS-HL-02-SS-835			C-LS-HL-02-SS-836[5]		
Sampling Date:	2/24/2012			2/24/2012			2/24/2012			2/24/2012			2/24/2012			2/24/2012		
Lab ID:	L1203345-05			L1203345-17			L1203345-11			L1203320-12			L1203320-10			L1203320-17		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	< 0.0068	U	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Acenaphthene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	< 0.0068	U	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Acenaphthylene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	< 0.0068	U	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Anthracene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	0.0022	J	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Benzo(a)anthracene	0.0071	0.0082		0.007	0.0041	J	0.0068	0.01		0.0072	0.0028	J	0.008	< 0.008	U	0.007	0.002	J
Benzo(a)pyrene	0.0071	0.0093		0.007	0.004	J	0.0068	0.012		0.0072	0.0045	J	0.008	< 0.008	U	0.007	0.0028	J
Benzo(b)fluoranthene	0.0071	0.0093	J	0.007	0.011	J	0.0068	0.015	J	0.0072	0.013	J	0.008	< 0.008	U	0.007	< 0.007	U
Benzo(ghi)perylene	0.0071	0.0086		0.007	0.0034	J	0.0068	0.011		0.0072	0.0056	J	0.008	< 0.008	U	0.007	0.0028	J
Benzo(k)fluoranthene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	0.0084	J	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Chrysene	0.0071	0.0063	J	0.007	0.0065	J	0.0068	0.015		0.0072	0.0057	J	0.008	0.0022	J	0.007	0.0047	J
Dibenzo(a,h)anthracene	0.0071	0.0068	J	0.007	< 0.007	U	0.0068	0.0068		0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Fluoranthene	0.0071	0.01		0.007	0.0085		0.0068	0.054		0.0072	0.0092		0.008	0.005	J	0.007	0.0068	J
Fluorene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	< 0.0068	U	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Indeno(1,2,3-cd)pyrene	0.0071	0.011		0.007	0.0028	J	0.0068	0.013		0.0072	0.004	J	0.008	< 0.008	U	0.007	0.0023	J
Naphthalene	0.0071	< 0.0071	U	0.007	< 0.007	U	0.0068	< 0.0068	U	0.0072	< 0.0072	U	0.008	< 0.008	U	0.007	< 0.007	U
Phenanthrene	0.0071	0.0041	J	0.007	0.0039	J	0.0068	0.03		0.0072	0.0039	J	0.008	0.0028	J	0.007	0.0028	J
Pyrene	0.0071	0.0072		0.007	0.0078		0.0068	0.033		0.0072	0.008		0.008	0.0038	J	0.007	0.0058	J

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-2 PAH Sampling Results, Former Skeet Range (TS851) (continued)

Field ID:	~~C-LS-HL-02-SS-837[2,3]~~			C-LS-HL-02-SS-838			C-LS-HL-02-SS-839			C-LS-HL-02-SS-840			C-LS-HL-02-SS-841		
Sampling Date:	2/24/2012			2/24/2012			2/24/2012			2/24/2012			2/24/2012		
Lab ID:	L1203345-10			L1203320-13			L1203320-07			L1203320-11			L1203345-07		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Acenaphthene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Acenaphthylene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Anthracene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Benzo(a)anthracene	0.008	0.007	J	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0064	J
Benzo(a)pyrene	0.008	0.0082		0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0076	
Benzo(b)fluoranthene	0.008	0.0072	J	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0066	J
Benzo(ghi)perylene	0.008	0.0068	J	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0064	J
Benzo(k)fluoranthene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Chrysene	0.008	0.0028	J	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.003	J
Dibenzo(a,h)anthracene	0.008	0.0068	J	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.006	J
Fluoranthene	0.008	0.0041	J	0.0066	0.0016	J	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0026	J
Fluorene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Indeno(1,2,3-cd)pyrene	0.008	0.01		0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0092	
Naphthalene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Phenanthrene	0.008	< 0.008	U	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	< 0.0069	U
Pyrene	0.008	0.0035	J	0.0066	< 0.0066	U	0.0071	< 0.0071	U	0.008	< 0.008	U	0.0069	0.0027	J

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-9 PAH Sampling Results, Former Skeet Range 2 (TS859)

Field ID:	C-LS-HL-04-SS-385[2]			C-LS-HL-04-SS-386			C-LS-HL-04-SS-387			C-LS-HL-04-SS-388			C-LS-HL-04-SB1-388			C-LS-HL-04-SB2-388		
Sampling Date:	12/13/2011			12/13/2011			12/13/2011			12/13/2011			2/27/2012			3/1/2012		
Lab ID:	L1120933-13			L1120933-27			L1120933-11			L1120933-05			L1203345-19			L1203620-15		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0079	< 0.0079	U	0.008	< 0.008	U	0.0082	< 0.0082	U	0.19	< 0.19	U	0.0081	< 0.0081	U	0.0095	< 0.0095	U
Acenaphthene	0.0079	0.0021	J	0.008	< 0.008	U	0.0082	0.0042	J	0.19	0.19		0.0081	< 0.0081	U	0.0095	< 0.0095	U
Acenaphthylene	0.0079	< 0.0079	U	0.008	< 0.008	U	0.0082	< 0.0082	U	0.19	< 0.19	U	0.0081	< 0.0081	U	0.0095	< 0.0095	U
Anthracene	0.0079	0.0089		0.008	< 0.008	U	0.0082	0.018		0.19	0.57		0.0081	< 0.0081	U	0.0095	0.016	
Benzo(a)anthracene	0.0079	0.11		0.008	0.003	J	0.0082	0.17		0.19	7.4		0.0081	0.011		0.0095	0.1	
Benzo(a)pyrene	0.0079	0.12		0.008	0.0048	J	0.0082	0.19		0.19	7.4		0.0081	0.012		0.0095	0.09	
Benzo(b)fluoranthene	0.0079	0.15	J	0.008	< 0.008	U	0.0082	0.19	J	0.19	8.1	J	0.0081	0.021	J	0.0095	0.096	J
Benzo(ghi)perylene	0.0079	0.1		0.008	0.0023	J	0.0082	0.14		0.19	5.4		0.0081	0.0086		0.0095	0.061	
Benzo(k)fluoranthene	0.0079	0.1	J	0.008	< 0.008	U	0.0082	0.17	J	0.19	7.4	J	0.0081	0.0096	J	0.0095	0.096	J
Chrysene	0.0079	0.13		0.008	0.0037	J	0.0082	0.2		0.19	8.1		0.0081	0.013		0.0095	0.11	
Dibenzo(a,h)anthracene	0.0079	0.029		0.008	< 0.008	U	0.0082	0.039		0.19	1.6	J	0.0081	0.0022	J	0.0095	0.017	
Fluoranthene	0.0079	0.18		0.008	0.0047	J	0.0082	0.28		0.19	10		0.0081	0.02		0.0095	0.2	
Fluorene	0.0079	< 0.0079	U	0.008	< 0.008	U	0.0082	< 0.0082	U	0.19	0.056	J	0.0081	< 0.0081	U	0.0095	< 0.0095	U
Indeno(1,2,3-cd)pyrene	0.0079	0.09		0.008	0.0052	J	0.0082	0.12		0.19	4.8		0.0081	0.0077	J	0.0095	0.058	
Naphthalene	0.0079	< 0.0079	U	0.008	< 0.008	U	0.0082	0.0028	J	0.19	0.2		0.0081	< 0.0081	U	0.0095	< 0.0095	U
Phenanthrene	0.0079	0.059		0.008	0.0023	J	0.0082	0.1		0.19	3.3		0.0081	0.0072	J	0.0095	0.09	
Pyrene	0.0079	0.16		0.008	0.0042	J	0.0082	0.25		0.19	9.3		0.0081	0.018		0.0095	0.17	

Notes:

[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
[6] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-9 PAH Sampling Results, Former Skeet Range 2 (TS859) (continued)

Field ID:	C-LS-HL-04-SS-389			C-LS-HL-04-SS-390			C-LS-HL-04-SS-391			C-LS-HL-04-SS-392			C-LS-HL-04-SS-393			C-LS-HL-04-SB1-393[2]		
Sampling Date:	12/13/2011			12/13/2011			12/13/2011			12/13/2011			12/13/2011			2/27/2012		
Lab ID:	L1120933-17			L1120933-08			L1120933-15			L1120933-14			L1120933-16			L1203320-30		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0077	< 0.0077	U	0.0075	< 0.0075	U	0.042	< 0.042	U	0.0089	< 0.0089	U	1.7	< 1.7	U	0.0086	< 0.0086	U
Acenaphthene	0.0077	< 0.0077	U	0.0075	< 0.0075	U	0.042	< 0.042	U	0.0089	< 0.0089	U	1.7	1	J	0.0086	< 0.0086	U
Acenaphthylene	0.0077	< 0.0077	U	0.0075	< 0.0075	U	0.042	< 0.042	U	0.0089	< 0.0089	U	1.7	< 1.7	U	0.0086	< 0.0086	U
Anthracene	0.0077	< 0.0077	U	0.0075	< 0.0075	U	0.042	< 0.042	U	0.0089	< 0.0089	U	1.7	5.5		0.0086	0.0024	J
Benzo(a)anthracene	0.0077	0.0046	J	0.0075	0.01		0.042	0.17		0.0089	0.0095		1.7	46		0.0086	0.033	
Benzo(a)pyrene	0.0077	0.0066	J	0.0075	0.013		0.042	0.26		0.0089	0.013		1.7	42		0.0086	0.039	
Benzo(b)fluoranthene	0.0077	0.0048	J	0.0075	0.013	J	0.042	0.34	J	0.0089	0.012	J	1.7	51	J	0.0086	0.046	J
Benzo(ghi)perylene	0.0077	0.0043	J	0.0075	0.01		0.042	0.25		0.0089	0.0099		1.7	27		0.0086	0.029	
Benzo(k)fluoranthene	0.0077	< 0.0077	U	0.0075	0.011	J	0.042	0.24	J	0.0089	0.011	J	1.7	37	J	0.0086	0.035	J
Chrysene	0.0077	0.0063	J	0.0075	0.014		0.042	0.3		0.0089	0.014		1.7	50		0.0086	0.041	
Dibenzo(a,h)anthracene	0.0077	< 0.0077	U	0.0075	< 0.0075	U	0.042	0.073		0.0089	< 0.0089	U	1.7	7.8		0.0086	0.0076	J
Fluoranthene	0.0077	0.0074	J	0.0075	0.022		0.042	0.37		0.0089	0.02		1.7	78		0.0086	0.052	
Fluorene	0.0077	< 0.0077	U	0.0075	< 0.042	U	0.042	< 0.042	U	0.0089	< 0.0089	U	1.7	< 1.7	U	0.0086	< 0.0086	U
Indeno(1,2,3-cd)pyrene	0.0077	0.0069	J	0.0075	0.012		0.042	0.22		0.0089	0.012		1.7	25		0.0086	0.028	
Naphthalene	0.0077	< 0.0077	U	0.0075	< 0.0075	U	0.042	< 0.042	U	0.0089	< 0.0089	U	1.7	1.1	J	0.0086	< 0.0086	U
Phenanthrene	0.0077	0.0029	J	0.0075	0.0077		0.042	0.088		0.0089	0.0065	J	1.7	30		0.0086	0.014	
Pyrene	0.0077	0.0064	J	0.0075	0.019		0.042	0.33		0.0089	0.018		1.7	69		0.0086	0.048	

Notes:

[1] Background sample location
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[4] Field Duplicate Pair
[5] Field Duplicate Pair
[6] Field Duplicate Pair
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SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-9 PAH Sampling Results, Former Skeet Range 2 (TS859)(continued)

Field ID:	~~C-LS-HL-04-SB2-393[4]~~			C-LS-HL-04-SS-394			C-LS-HL-04-SS-395			C-LS-HL-04-SS-396			~~C-LS-HL-04-SS-397[4]~~			~~C-LS-HL-04-SS-398[2,3]~~		
Sampling Date:	~~3/1/2012~~			12/13/2011			12/13/2011			12/13/2011			~~12/13/2011~~			~~12/13/2011~~		
Lab ID:	~~L1203820-09~~			L1120933-10			L1120933-06			L1120933-04			L1120933-24			L1120933-18		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0091	< 0.0091	U	0.077	0.039	J	0.0089	< 0.0089	U	0.081	0.061	J	1.7	< 1.7	U	0.0078	< 0.0078	U
Acenaphthene	0.0091	< 0.0091	U	0.077	0.12		0.0089	< 0.0089	U	0.081	0.21		1.7	1.4	J	0.0078	0.0028	J
Acenaphthylene	0.0091	< 0.0091	U	0.077	< 0.077	U	0.0089	< 0.0089	U	0.081	< 0.081	U	1.7	< 1.7	U	0.0078	< 0.0078	U
Anthracene	0.0091	0.0028	J	0.077	0.19		0.0089	< 0.0089	U	0.081	0.48		1.7	10		0.0078	0.0087	
Benzo(a)anthracene	0.0091	0.023		0.077	3.7		0.0089	0.0036	J	0.081	5.6		1.7	60		0.0078	0.11	
Benzo(a)pyrene	0.0091	0.02		0.077	3.6		0.0089	0.0054	J	0.081	5.1		1.7	51		0.0078	0.13	
Benzo(b)fluoranthene	0.0091	0.032	J	0.077	3.8	J	0.0089	0.0024	J	0.081	5.5	J	1.7	65	J	0.0078	0.15	J
Benzo(ghi)perylene	0.0091	0.015		0.077	2.4		0.0089	0.0027	J	0.081	3.1		1.7	34		0.0078	0.11	
Benzo(k)fluoranthene	0.0091	0.021	J	0.077	3.5	J	0.0089	< 0.0089	U	0.081	4.6	J	1.7	45	J	0.0078	0.11	J
Chrysene	0.0091	0.025		0.077	3.9		0.0089	0.0041	J	0.081	5.7		1.7	62		0.0078	0.13	
Dibenzo(a,h)anthracene	0.0091	0.0036	J	0.077	0.77		0.0089	< 0.0089	U	0.081	1		1.7	9.2		0.0078	0.03	
Fluoranthene	0.0091	0.049		0.077	4		0.0089	0.0069	J	0.081	7.2		1.7	110		0.0078	0.18	
Fluorene	0.0091	< 0.0091	U	0.077	0.041	J	0.0089	< 0.0089	U	0.081	0.087		1.7	0.51	J	0.0078	< 0.0078	U
Indeno(1,2,3-cd)pyrene	0.0091	0.014		0.077	2.2		0.0089	0.006	J	0.081	3		1.7	30		0.0078	0.093	
Naphthalene	0.0091	< 0.0091	U	0.077	0.15		0.0089	< 0.0089	U	0.081	0.23		1.7	1.4	J	0.0078	0.0028	J
Phenanthrene	0.0091	0.019		0.077	1		0.0089	0.0023	J	0.081	2.2		1.7	52		0.0078	0.053	
Pyrene	0.0091	0.041		0.077	3.9		0.0089	0.0053	J	0.081	6.7		1.7	96		0.0078	0.16	

Notes:

[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
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[6] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-9 PAH Sampling Results, Former Skeet Range 2 (TS859) (continued)

Field ID: / Sampling Date: / Lab ID:	C-LS-HL-04-SS-842 2/27/2012 L1203345-06			C-LS-HL-04-SS-843 2/27/2012 L1203345-09			C-LS-HL-04-SS-844 2/24/2012 L1203345-12			C-LS-HL-04-SS-845 2/27/2012 L1203345-15			C-LS-HL-04-SS-846[1] 2/27/2012 L1203320-27			C-LS-HL-04-SS-847 2/27/2012 L1203345-14		
Polyaromatic Hydrocarbons (mg/Kg)	**RL**	**Result**	**Qualifier**	**RL**	**Result**	**Qualifier**	**RL**	**Result**	**Qualifier**	**RL**	**Result**	**Qualifier**	**RL**	**Result**	**Qualifier**	**RL**	**Result**	**Qualifier**
2-Methylnaphthalene	0.0074	< 0.0074	U	0.14	< 0.14	U	0.035	< 0.035	U	0.0074	< 0.0074	U	0.0083	< 0.0083	U	0.0069	< 0.0069	U
Acenaphthene	0.0074	< 0.0074	U	0.14	< 0.14	U	0.035	0.017	J	0.0074	0.005	J	0.0083	< 0.0083	U	0.0069	< 0.0069	U
Acenaphthylene	0.0074	< 0.0074	U	0.14	< 0.14	U	0.035	< 0.035	U	0.0074	< 0.0074	U	0.0083	< 0.0083	U	0.0069	< 0.0069	U
Anthracene	0.0074	0.0052	J	0.14	< 0.14	U	0.035	0.069	J	0.0074	0.016		0.0083	< 0.0083	U	0.0069	< 0.0069	U
Benzo(a)anthracene	0.0074	0.056		0.14	0.44		0.035	0.76		0.0074	0.22		0.0083	0.0034	J	0.0069	0.01	
Benzo(a)pyrene	0.0074	0.06		0.14	0.45		0.035	0.8		0.0074	0.25		0.0083	0.0033	J	0.0069	0.011	
Benzo(b)fluoranthene	0.0074	0.056	J	0.14	0.47	J	0.035	0.95	J	0.0074	0.29	J	0.0083	< 0.0083	U	0.0069	0.02	J
Benzo(ghi)perylene	0.0074	0.047		0.14	0.34		0.035	0.72		0.0074	0.17		0.0083	0.0026	J	0.0069	0.0098	
Benzo(k)fluoranthene	0.0074	0.053	J	0.14	0.3	J	0.035	0.71	J	0.0074	0.17	J	0.0083	< 0.0083	U	0.0069	0.0092	J
Chrysene	0.0074	0.06		0.14	0.41		0.035	0.85		0.0074	0.27		0.0083	0.004	J	0.0069	0.013	
Dibenzo(a,h)anthracene	0.0074	0.016		0.14	0.18		0.035	0.17		0.0074	0.051		0.0083	< 0.0083	U	0.0069	0.0023	J
Fluoranthene	0.0074	0.1		0.14	0.66		0.035	1.2		0.0074	0.36		0.0083	0.0069	J	0.0069	0.018	
Fluorene	0.0074	< 0.0074	U	0.14	< 0.14	U	0.035	< 0.035	U	0.0074	< 0.0074	U	0.0083	< 0.0083	U	0.0069	< 0.0069	U
Indeno(1,2,3-cd)pyrene	0.0074	0.047		0.14	0.36		0.035	0.64		0.0074	0.16		0.0083	0.0026	J	0.0069	0.0083	
Naphthalene	0.0074	< 0.0074	U	0.14	< 0.14	U	0.035	0.011	J	0.0074	0.003	J	0.0083	< 0.0083	U	0.0069	< 0.0069	U
Phenanthrene	0.0074	0.029		0.14	0.16		0.035	0.37		0.0074	0.1		0.0083	0.0029	J	0.0069	0.0061	J
Pyrene	0.0074	0.088		0.14	0.62		0.035	1.1		0.0074	0.34		0.0083	0.0057	J	0.0069	0.017	

Notes:
[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
[6] Field Duplicate Pair
SS = Surface sample 0-6 inches
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U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-9 PAH Sampling Results, Former Skeet Range 2 (TS859) (continued)

Field ID:	C-LS-HL-04-SS-848			C-LS-HL-04-SS-849[1,5]			C-LS-HL-04-SS-850[2,5]			C-LS-HL-04-SS-851[1]			C-LS-HL-04-SS-852[1]			C-LS-HL-04-SS-853		
Sampling Date:	2/27/2012			2/27/2012			2/27/2012			2/27/2012			2/27/2012			2/27/2012		
Lab ID:	L1203345-10			L1203320-28			L1203320-08			L1203320-25			L1203345-08			L1203320-21		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Acenaphthene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Acenaphthylene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Anthracene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Benzo(a)anthracene	0.008	0.0022	J	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	0.0015	J	0.0092	0.017		0.0098	< 0.0098	U
Benzo(a)pyrene	0.008	0.0022	J	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	0.017		0.0098	< 0.0098	U
Benzo(b)fluoranthene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	0.017	J	0.0098	< 0.0098	U
Benzo(ghi)perylene	0.008	0.002	J	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	0.014		0.0098	< 0.0098	U
Benzo(k)fluoranthene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Chrysene	0.008	0.003	J	0.011	< 0.011	U	0.0086	0.0033	J	0.0072	0.0023	J	0.0092	0.012		0.0098	< 0.0098	U
Dibenzo(a,h)anthracene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Fluoranthene	0.008	0.004	J	0.011	0.0028	J	0.0086	0.0029	J	0.0072	0.0039	J	0.0092	0.021		0.0098	< 0.0098	U
Fluorene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Indeno(1,2,3-cd)pyrene	0.008	0.002	J	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	0.017		0.0098	< 0.0098	U
Naphthalene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	< 0.0092	U	0.0098	< 0.0098	U
Phenanthrene	0.008	< 0.008	U	0.011	< 0.011	U	0.0086	< 0.0086	U	0.0072	< 0.0072	U	0.0092	0.0072	J	0.0098	< 0.0098	U
Pyrene	0.008	0.0034	J	0.011	0.0032	J	0.0086	0.0027	J	0.0072	0.0028	J	0.0092	0.018		0.0098	< 0.0098	U

Notes:

[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
[6] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-9 PAH Sampling Results, Former Skeet Range 2 (TS859) (continued)

Field ID: / Sampling Date: / Lab ID:	C-LS-HL-04-SS-854[6] 2/27/2012 L1203320-26			C-LS-HL-04-SS-855[2,6] 2/27/2012 L1203320-22		
Polyaromatic Hydrocarbons (mg/Kg)	**RL**	**Result**	**Qualifier**	**RL**	**Result**	**Qualifier**
2-Methylnaphthalene	0.01	< 0.01	U	0.0082	< 0.0082	U
Acenaphthene	0.01	0.0055	J	0.0082	< 0.0082	U
Acenaphthylene	0.01	< 0.01	U	0.0082	< 0.0082	U
Anthracene	0.01	0.0034	J	0.0082	< 0.0082	U
Benzo(a)anthracene	0.01	0.0034	J	0.0082	0.0046	J
Benzo(a)pyrene	0.01	0.0032	J	0.0082	0.0053	J
Benzo(b)fluoranthene	0.01	< 0.01	U	0.0082	0.015	J
Benzo(ghi)perylene	0.01	< 0.01	U	0.0082	0.0044	J
Benzo(k)fluoranthene	0.01	< 0.01	U	0.0082	< 0.0082	U
Chrysene	0.01	0.0039	J	0.0082	0.006	J
Dibenzo(a,h)anthracene	0.01	< 0.01	U	0.0082	< 0.0082	U
Fluoranthene	0.01	0.008	J	0.0082	0.0093	
Fluorene	0.01	0.0037	J	0.0082	< 0.0082	U
Indeno(1,2,3-cd)pyrene	0.01	< 0.01	U	0.0082	0.0043	J
Naphthalene	0.01	0.0075	J	0.0082	< 0.0082	U
Phenanthrene	0.01	0.013		0.0082	0.0034	J
Pyrene	0.01	0.0068	J	0.0082	0.0083	

Notes:

[1] Background sample location
[2] MS/MSD
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
[6] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

5.10 Former Skeet Range 2 (TS859)

5.10.1 Site Description

Former Skeet Range 2 (TS859) is located approximately 1,300 ft north of Forty Niner Avenue and 650 ft north of the Holloman runway control tower. Former Skeet Range 2 (TS859) measures approximately 2,190 ft by 900 ft with a perimeter of 5,651 ft and an area of 37.5 acres. The coordinates of the area are 32.85483 degrees latitude, -106.11523 degrees longitude. Former Skeet Range 2 (TS859) exhibits relatively flat topography with soils consisting of the Yesum-Nasa complex. Beneath Holloman AFB, groundwater ranges from 5 to 50 ft bgs, with shallower groundwater found on the southern end of the base. There are no wetlands associated with this MRA.

5.10.2 History of Munitions Related Activities

A cultural resource survey documented shotgun shell cases, burned clay pigeons, .45-caliber automatic pistol cartridges (era 1941 to 1942), and hundreds of spent cartridges located in three of four trash piles. Additionally, 1940s historic aerial photos show a four firing point skeet range at this location. Dark areas in contrast to the natural terrain, indicative of clay pigeon debris, are also visible on aerial photography from 1945. Shotgun shells and clay target debris are typical items observed at a skeet range such as Former Skeet Range 2 (TS859).

5.10.3 Land Use

The majority of the Former Skeet Range 2 (TS859) is currently unused. A portion of the range is currently occupied by the Holding Area Munitions Storage (HAMS) yard. The area consists of open space within the northern triangle formed by the Holloman AFB runways. Vegetation at the MRA is consistent with desert scrubland.

5.10.4 Access Controls and Restrictions

Access to Holloman AFB requires admittance through the security gate and there is a fence around the installation. There are restricted access controls associated with Former Skeet Range 2 (TS859); due to its location within the flight line. The HAMS yard, building 1091, is located within the MRA footprint. The field team attended a safety briefing specific to this area prior to beginning work at the MRA due to the HAMS yard. Due to its location on the Holloman AFB flight line, access is limited to authorized base personnel and contractors. Flight line driver training and an escort was required for the team to access the flight line. Trespasser access to the flight line is unlikely.

5.10.5 Receptors

5.10.5.1 Nearby Population

Former Skeet Range 2 (TS859) is located on the Holloman AFB flight line, approximately 2.5 miles northwest of base residential housing. Holloman AFB supports about 21,000 Active Duty, Guard, Reserve, retirees, DoD civilians, and their families (Holloman AFB). The base is located approximately 6 miles west of Alamogordo, New Mexico in Otero County. According to a U.S. Census, the population of Alamogordo was estimated to be 30,403 in 2010 (USCB, 2010). The population density of Otero County is approximately 10 people per square mile (Advameg, 2003-2010).

5.10.5.2 Buildings near/within MRA

There are 480 buildings with a 2-mile radius of Former Skeet Range 2 (TS859). Operational mission support, recreational, and buildings that support the flight line are located within a 3-mile radius of Former Skeet Range 2 (TS859)

5.10.6 Field Investigation Results

5.10.6.1 Visual Surveys Results

During the field investigation visual survey transects were completed at the Former Skeet Range 2 (TS859) as shown in **Figure 5-18**. The Former Skeet Range 2 (TS859) MRA is located within the triangle created by runways 04/22, 16/34, and 07/25. No firing points or range structures remain.

Clay target debris is densely concentrated around the firing points, in places thick enough to completely obscure the ground surface. In some areas the clay target debris appeared melted. Visual survey transects were extended to the south of the MRA based on the clay target debris observed during visual surveys. Lead shot is scattered across the MRA, with the highest concentrations near the typical maximum shot fall zone. Waddings, shotgun casings and primers are scattered over the MRA, with more frequent occurrences to the west. Other items unrelated to typical skeet range activities such as a .50 cal casing and projectile, 5.56mm blanks, and two intact 7.62mm rounds were observed. The intact rounds were reported to Holloman EOD. Holloman EOD instructed the team to collect the small arms items for drop-off at the EOD building for later disposal. This was done 13 December 2011.

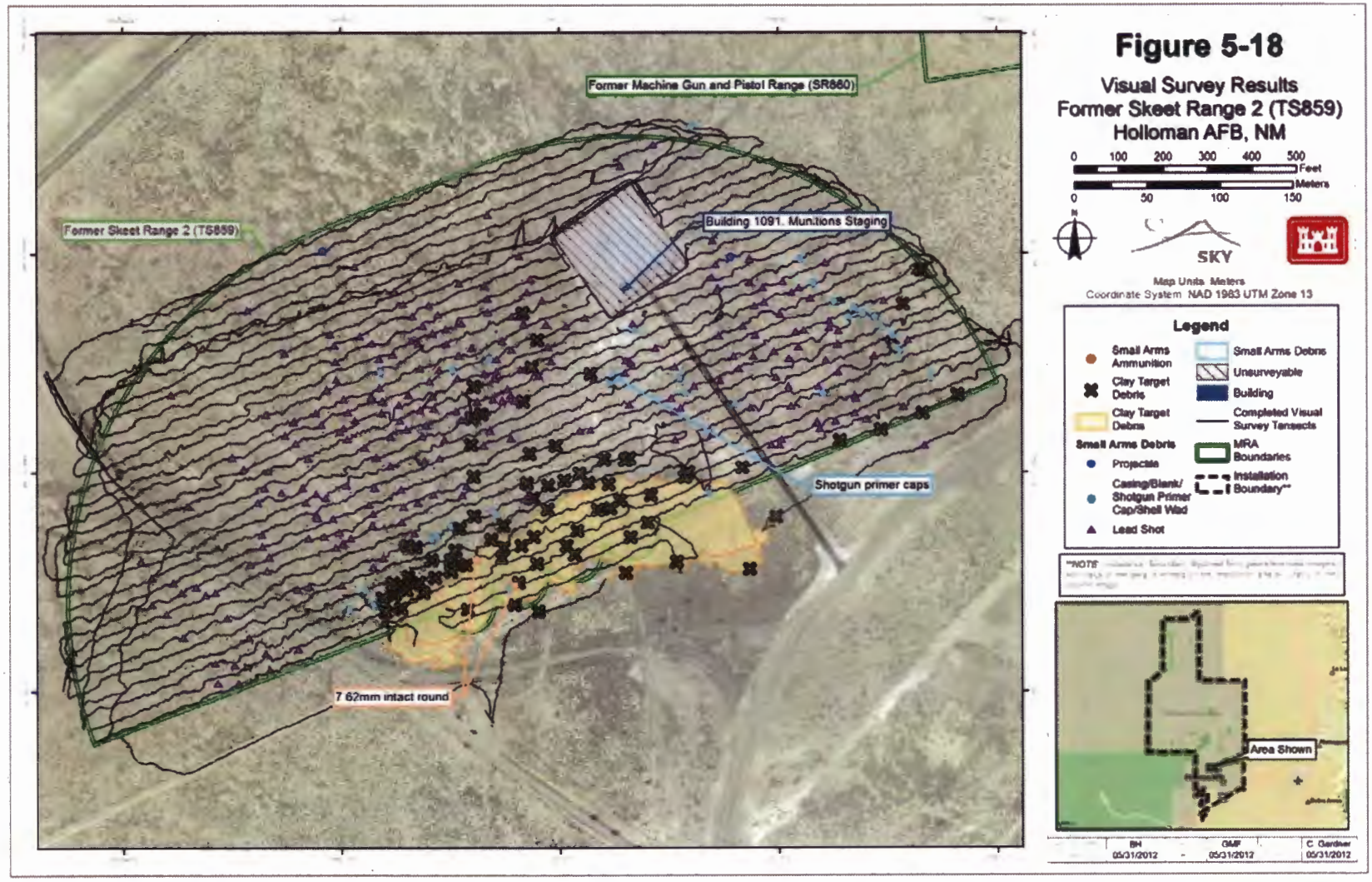

Figure 5-18
Visual Survey Results
Former Skeet Range 2 (TS859)
Holloman AFB, NM

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5.10.6.2 Lead Sampling and XRF Results

One hundred forty-three (143) soil samples were collected and analyzed using XRF at the Former Skeet Range 2 (TS859). This total includes 140 surface soil samples and three (3) subsurface (6-12 inch depth) samples. XRF results ranged from below the LOD (12 mg/kg) to 463 mg/kg. One sample, C-XR-HL-04-SS-338, exceeded the 400 mg/kg human health screening level. The XRF sample results are presented in **Table 5-8** and **Figure 5-19** through **Figure 5-22**.

Table 5-8 XRF Lead Sampling Results, Former Skeet Range 2 (TS859)

Sample ID	XRF Lead Result (Average) (mg/kg)
C-XR-HL-04-SS-176	< LOD
C-XR-HL-04-SS-177	20
C-XR-HL-04-SS-178	17
C-XR-HL-04-SS-179	< LOD
C-XR-HL-04-SS-180	13
C-XR-HL-04-SS-181	17
C-XR-HL-04-SS-182	< LOD
C-XR-HL-04-SS-183	< LOD
C-XR-HL-04-SS-184	< LOD
C-XR-HL-04-SS-185	< LOD
C-XR-HL-04-SS-186	18
C-XR-HL-04-SS-187	< LOD
C-XR-HL-04-SS-188	19
C-XR-HL-04-SS-189	< LOD
C-XR-HL-04-SS-190	17
C-XR-HL-04-SS-191	< LOD
C-XR-HL-04-SS-192	< LOD
C-XR-HL-04-SS-193	< LOD
C-XR-HL-04-SS-194	< LOD
C-XR-HL-04-SS-195	< LOD
C-XR-HL-04-SS-196	< LOD
C-XR-HL-04-SS-197	< LOD
C-XR-HL-04-SS-198	120
C-XR-HL-04-SS-199	54
C-XR-HL-04-SS-200	17
C-XR-HL-04-SS-201	< LOD
C-XR-HL-04-SS-202	< LOD
C-XR-HL-04-SS-203	< LOD
C-XR-HL-04-SS-204	28
C-XR-HL-04-SS-205	20
C-XR-HL-04-SS-206	49
C-XR-HL-04-SS-207	36
C-XR-HL-04-SS-208	22
C-XR-HL-04-SS-209	14
C-XR-HL-04-SS-210	< LOD
C-XR-HL-04-SS-211	16
C-XR-HL-04-SS-212	12
C-XR-HL-04-SS-213	22

Table 5-8 XRF Lead Sampling Results, Former Skeet Range 2 (TS859)

Sample ID	XRF Lead Result (Average) (mg/kg)
C-XR-HL-04-SS-214	< LOD
C-XR-HL-04-SS-215	12
C-XR-HL-04-SS-216	100
C-XR-HL-04-SS-217	60
C-XR-HL-04-SS-218	39
C-XR-HL-04-SS-219	85
C-XR-HL-04-SS-220	47
C-XR-HL-04-SS-221	< LOD
C-XR-HL-04-SS-222	28
C-XR-HL-04-SS-223	69
C-XR-HL-04-SS-224	128
C-XR-HL-04-SS-225	27
C-XR-HL-04-SS-226	61
C-XR-HL-04-SS-227	131
C-XR-HL-04-SS-228	67
C-XR-HL-04-SS-229	113
C-XR-HL-04-SS-230	176
C-XR-HL-04-SS-231	< LOD
C-XR-HL-04-SS-232	< LOD
C-XR-HL-04-SS-233	148
C-XR-HL-04-SS-234	325
C-XR-HL-04-SS-235	253
C-XR-HL-04-SS-236	156
C-XR-HL-04-SS-237	322
C-XR-HL-04-SS-238	202
C-XR-HL-04-SS-239	164
C-XR-HL-04-SS-240	103
C-XR-HL-04-SS-241	< LOD
C-XR-HL-04-SS-242	< LOD
C-XR-HL-04-SS-243	57
C-XR-HL-04-SS-244	369
C-XR-HL-04-SB1-244	< LOD
C-XR-HL-04-SS-245	318
C-XR-HL-04-SS-246	314
C-XR-HL-04-SS-247	244
C-XR-HL-04-SS-248	306
C-XR-HL-04-SS-249	210
C-XR-HL-04-SS-250	50
C-XR-HL-04-SS-251	141
C-XR-HL-04-SS-252	94
C-XR-HL-04-SS-253	37
C-XR-HL-04-SS-254	140
C-XR-HL-04-SS-255	63
C-XR-HL-04-SS-256	42

Table 5-8 XRF Lead Sampling Results, Former Skeet Range 2 (TS859)

Sample ID	XRF Lead Result (Average) (mg/kg)
C-XR-HL-04-SS-257	54
C-XR-HL-04-SS-258	25
C-XR-HL-04-SS-259	138
C-XR-HL-04-SS-260	102
C-XR-HL-04-SS-261	26
C-XR-HL-04-SS-262	194
C-XR-HL-04-SS-263	121
C-XR-HL-04-SS-264	86
C-XR-HL-04-SS-265	86
C-XR-HL-04-SS-266	104
C-XR-HL-04-SS-267	132
C-XR-HL-04-SS-268	43
C-XR-HL-04-SS-269	25
C-XR-HL-04-SS-270	28
C-XR-HL-04-SS-271	44
C-XR-HL-04-SS-272	264
C-XR-HL-04-SS-273	72
C-XR-HL-04-SS-274	59
C-XR-HL-04-SS-275	266
C-XR-HL-04-SS-276	113
C-XR-HL-04-SS-277	45
C-XR-HL-04-SS-278	131
C-XR-HL-04-SS-279	47
C-XR-HL-04-SS-280	46
C-XR-HL-04-SS-281	66
C-XR-HL-04-SS-282	97
C-XR-HL-04-SS-283	85
C-XR-HL-04-SS-284	152
C-XR-HL-04-SS-285	228
C-XR-HL-04-SS-286	< LOD
C-XR-HL-04-SS-287	< LOD
C-XR-HL-04-SS-288	243
C-XR-HL-04-SS-289	56
C-XR-HL-04-SS-290	16
C-XR-HL-04-SS-291	147
C-XR-HL-04-SS-292	106
C-XR-HL-04-SS-293	124
C-XR-HL-04-SS-294	< LOD
C-XR-HL-04-SS-295	< LOD
C-XR-HL-04-SS-296	22
C-XR-HL-04-SS-297	178
C-XR-HL-04-SS-298	< LOD
C-XR-HL-04-SS-299	244
C-XR-HL-04-SS-300	< LOD

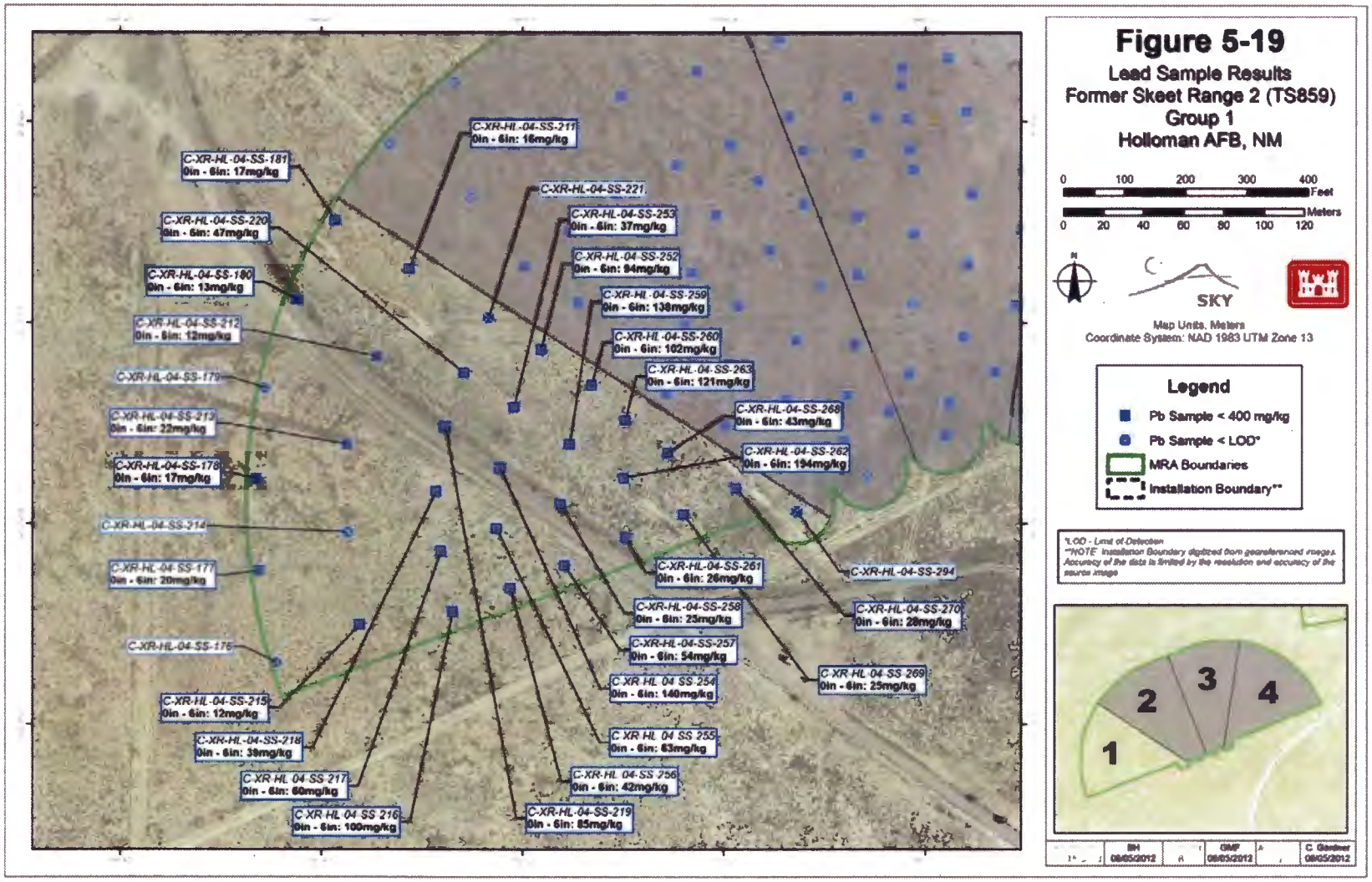
Table 5-8 XRF Lead Sampling Results, Former Skeet Range 2 (TS859)

Sample ID	XRF Lead Result (Average) (mg/kg)
C-XR-HL-04-SS-301	20
C-XR-HL-04-SS-302	33
C-XR-HL-04-SS-303	20
C-XR-HL-04-SS-304	54
C-XR-HL-04-SS-305	44
C-XR-HL-04-SS-306	147
C-XR-HL-04-SS-307	38
C-XR-HL-04-SS-308	123
C-XR-HL-04-SS-309	25
C-XR-HL-04-SS-310	< LOD
C-XR-HL-04-SS-311	43
C-XR-HL-04-SS-336	39
C-XR-HL-04-SS-337	381
C-XR-HL-04-SB1-337	30
C-XR-HL-04-SS-338	463
C-XR-HL-04-SB1-338	71
C-XR-HL-04-SS-339	260

Notes:
< LOD = below limit of detection (12 mg/kg).
mg/kg = milligrams per kilograms.
SS – surface sample interval 0- 6 inches.
SB1 – subsurface sample interval 6 – 12 inches.
Human Health Exceedance

5.10.6.3 PAH Sampling and Analysis

Twenty-four (24) soil samples from the Former Skeet Range 2 (TS859) were collected for laboratory PAH analysis. This total includes 20 surface samples, two (2) subsurface samples from the 6-12 inch depth interval and two (2) samples from the 12-18 inch depth interval. In addition, four (4) background surface soil samples were collected for laboratory PAH analysis. The PAH sample locations are presented in **Figure 5-23**. PAH, results exceed the human health screening levels for at least one analyte in 15 of the 24 samples. The PAH analytical results are presented in **Table 5-9**.


C-XR-HL-04-SS-211
0in - 6in: 16mg/kg
C-XR-HL-04-SS-181
0in - 6in: 17mg/kg
C-XR-HL-04-SS-221
C-XR-HL-04-SS-220
0in - 6in: 47mg/kg
C-XR-HL-04-SS-253
0in - 6in: 37mg/kg
C-XR-HL-04-SS-180
0in - 6in: 13mg/kg
C-XR-HL-04-SS-252
0in - 6in: 94mg/kg
C-XR-HL-04-SS-259
0in - 6in: 136mg/kg
C-XR-HL-04-SS-212
0in - 6in: 12mg/kg
C-XR-HL-04-SS-260
0in - 6in: 102mg/kg
C-XR-HL-04-SS-263
0in - 6in: 121mg/kg
C-XR-HL-04-SS-179
C-XR-HL-04-SS-268
0in - 6in: 43mg/kg
C-XR-HL-04-SS-213
0in - 6in: 22mg/kg
C-XR-HL-04-SS-262
0in - 6in: 194mg/kg
C-XR-HL-04-SS-178
0in - 6in: 17mg/kg
C-XR-HL-04-SS-214
C-XR-HL-04-SS-261
0in - 6in: 26mg/kg
C-XR-HL-04-SS-177
0in - 6in: 20mg/kg
C-XR-HL-04-SS-294
C-XR-HL-04-SS-258
0in - 6in: 25mg/kg
C-XR-HL-04-SS-270
0in - 6in: 28mg/kg
C-XR-HL-04-SS-176
C-XR-HL-04-SS-257
0in - 6in: 54mg/kg
C XR HL 04 SS 269
0in - 6in: 25mg/kg
C XR HL 04 SS 254
0in - 6in: 140mg/kg
C-XR-HL-04-SS-215
0in - 6in: 12mg/kg
C-XR-HL-04-SS-218
0in - 6in: 39mg/kg
C XR HL 04 SS 255
0in - 6in: 63mg/kg
C XR HL 04 SS 217
0in - 6in: 60mg/kg
C-XR-HL-04-SS-256
0in - 6in: 42mg/kg
C XR HL 04 SS 216
0in - 6in: 100mg/kg
C-XR-HL-04-SS-219
0in - 6in: 85mg/kg
Figure 5-19
Lead Sample Results
Former Skeet Range 2 (TS859)
Group 1
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD - Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
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BH 08/05/2012
GMF 08/05/2012
C Gardner 08/05/2012

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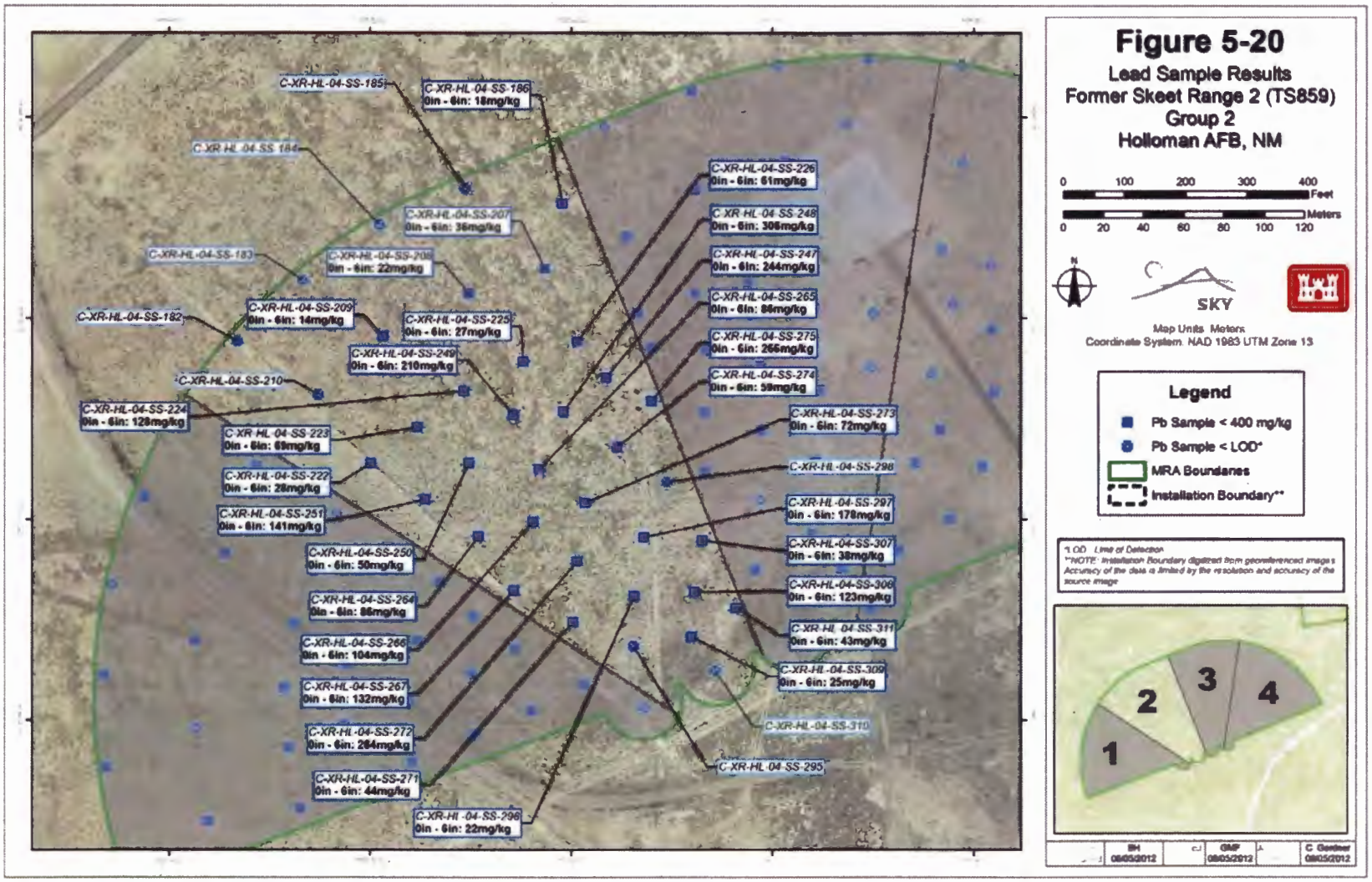
C-XR-HL-04-SS-185
C-XR-HL-04-SS-186
0in - 6in: 18mg/kg
C-XR-HL-04-SS-184
C-XR-HL-04-SS-207
0in - 6in: 36mg/kg
C-XR-HL-04-SS-183
C-XR-HL-04-SS-208
0in - 6in: 22mg/kg
C-XR-HL-04-SS-182
C-XR-HL-04-SS-209
0in - 6in: 14mg/kg
C-XR-HL-04-SS-225
0in - 6in: 27mg/kg
C-XR-HL-04-SS-249
0in - 6in: 210mg/kg
C-XR-HL-04-SS-210
C-XR-HL-04-SS-224
0in - 6in: 128mg/kg
C-XR-HL-04-SS-223
0in - 6in: 69mg/kg
C-XR-HL-04-SS-222
0in - 6in: 28mg/kg
C-XR-HL-04-SS-251
0in - 6in: 141mg/kg
C-XR-HL-04-SS-250
0in - 6in: 50mg/kg
C-XR-HL-04-SS-264
0in - 6in: 86mg/kg
C-XR-HL-04-SS-266
0in - 6in: 104mg/kg
C-XR-HL-04-SS-267
0in - 6in: 132mg/kg
C-XR-HL-04-SS-272
0in - 6in: 264mg/kg
C-XR-HL-04-SS-271
0in - 6in: 44mg/kg
C-XR-HL-04-SS-296
0in - 6in: 22mg/kg
C-XR-HL-04-SS-226
0in - 6in: 61mg/kg
C-XR-HL-04-SS-248
0in - 6in: 306mg/kg
C-XR-HL-04-SS-247
0in - 6in: 244mg/kg
C-XR-HL-04-SS-265
0in - 6in: 86mg/kg
C-XR-HL-04-SS-275
0in - 6in: 266mg/kg
C-XR-HL-04-SS-274
0in - 6in: 59mg/kg
C-XR-HL-04-SS-273
0in - 6in: 72mg/kg
C-XR-HL-04-SS-298
C-XR-HL-04-SS-297
0in - 6in: 178mg/kg
C-XR-HL-04-SS-307
0in - 6in: 38mg/kg
C-XR-HL-04-SS-308
0in - 6in: 123mg/kg
C-XR-HL-04-SS-311
0in - 6in: 43mg/kg
C-XR-HL-04-SS-309
0in - 6in: 25mg/kg
C-XR-HL-04-SS-310
C-XR-HL-04-SS-295
Figure 5-20
Lead Sample Results
Former Skeet Range 2 (TS859)
Group 2
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units Meters
Coordinate System NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images
Accuracy of the data is limited by the resolution and accuracy of the source image
1
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GMP 08/05/2012
C Gardner 08/05/2012

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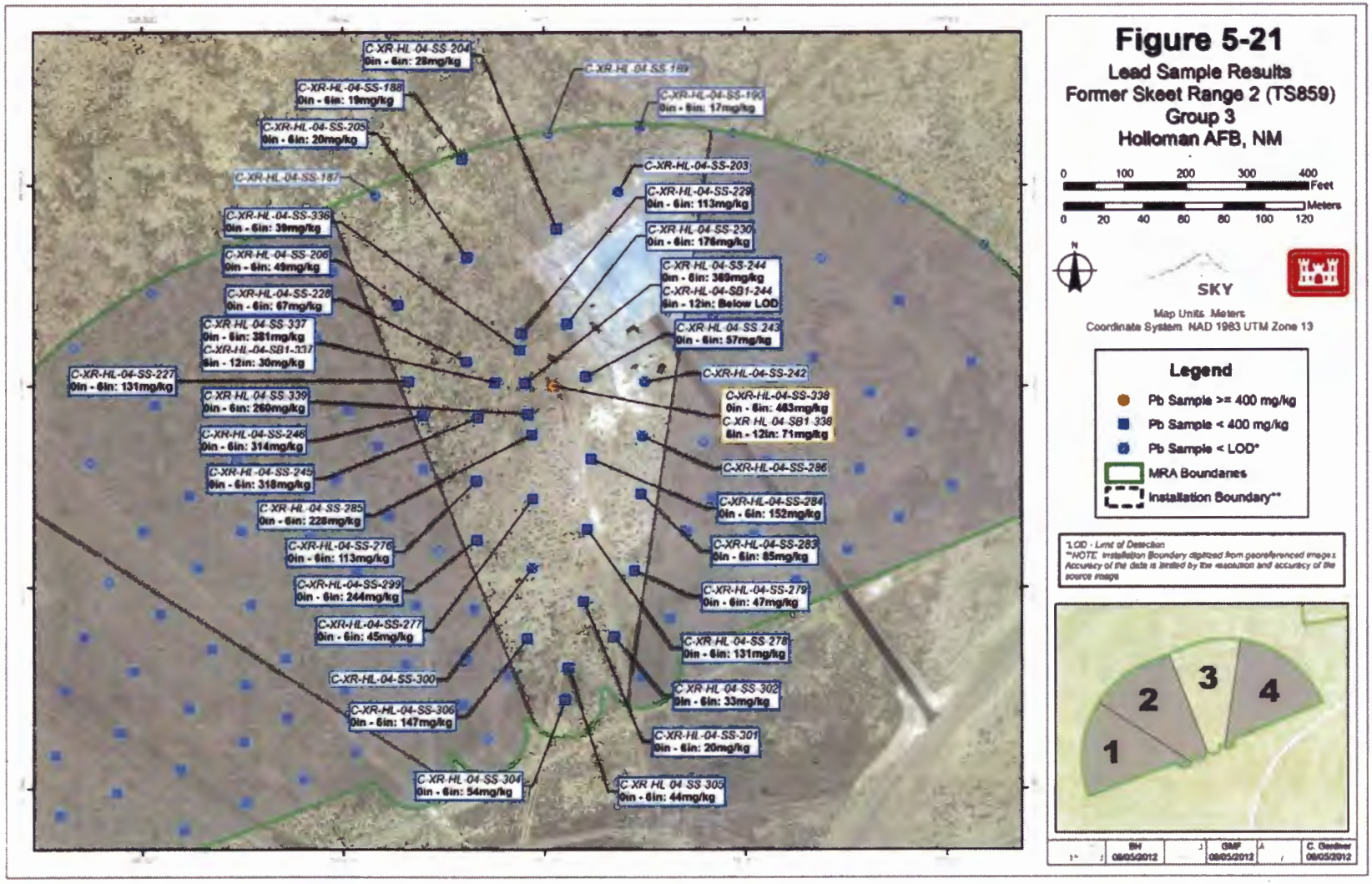
C-XR-HL-04-SS-204
0in - 6in: 28mg/kg
C-XR-HL-04-SS-189
C-XR-HL-04-SS-188
0in - 6in: 19mg/kg
C-XR-HL-04-SS-190
0in - 6in: 17mg/kg
C-XR-HL-04-SS-205
0in - 6in: 20mg/kg
C-XR-HL-04-SS-187
C-XR-HL-04-SS-203
C-XR-HL-04-SS-229
0in - 6in: 113mg/kg
C-XR-HL-04-SS-336
0in - 6in: 39mg/kg
C-XR-HL-04-SS-230
0in - 6in: 176mg/kg
C-XR-HL-04-SS-206
0in - 6in: 49mg/kg
C-XR-HL-04-SS-244
0in - 6in: 369mg/kg
C-XR-HL-04-SB1-244
6in - 12in: Below LOD
C-XR-HL-04-SS-228
0in - 6in: 67mg/kg
C-XR-HL-04-SS-337
0in - 6in: 381mg/kg
C-XR-HL-04-SB1-337
6in - 12in: 30mg/kg
C-XR-HL-04-SS-243
0in - 6in: 57mg/kg
C-XR-HL-04-SS-227
0in - 6in: 131mg/kg
C-XR-HL-04-SS-242
C-XR-HL-04-SS-339
0in - 6in: 260mg/kg
C-XR-HL-04-SS-338
0in - 6in: 483mg/kg
C-XR-HL-04-SB1-338
6in - 12in: 71mg/kg
C-XR-HL-04-SS-246
0in - 6in: 314mg/kg
C-XR-HL-04-SS-286
C-XR-HL-04-SS-245
0in - 6in: 318mg/kg
C-XR-HL-04-SS-284
0in - 6in: 152mg/kg
C-XR-HL-04-SS-285
0in - 6in: 228mg/kg
C-XR-HL-04-SS-276
0in - 6in: 113mg/kg
C-XR-HL-04-SS-283
0in - 6in: 85mg/kg
C-XR-HL-04-SS-299
0in - 6in: 244mg/kg
C-XR-HL-04-SS-279
0in - 6in: 47mg/kg
C-XR-HL-04-SS-277
0in - 6in: 45mg/kg
C-XR-HL-04-SS-278
0in - 6in: 131mg/kg
C-XR-HL-04-SS-300
C-XR-HL-04-SS-302
0in - 6in: 33mg/kg
C-XR-HL-04-SS-306
0in - 6in: 147mg/kg
C-XR-HL-04-SS-301
0in - 6in: 20mg/kg
C-XR-HL-04-SS-304
0in - 6in: 54mg/kg
C-XR-HL-04-SS-305
0in - 6in: 44mg/kg
Figure 5-21
Lead Sample Results
Former Skeet Range 2 (TS859)
Group 3
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Pb Sample >= 400 mg/kg
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD - Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
1
2
3
4
BH 08/03/2012
GMF 08/03/2012
C. Gardner 08/03/2012

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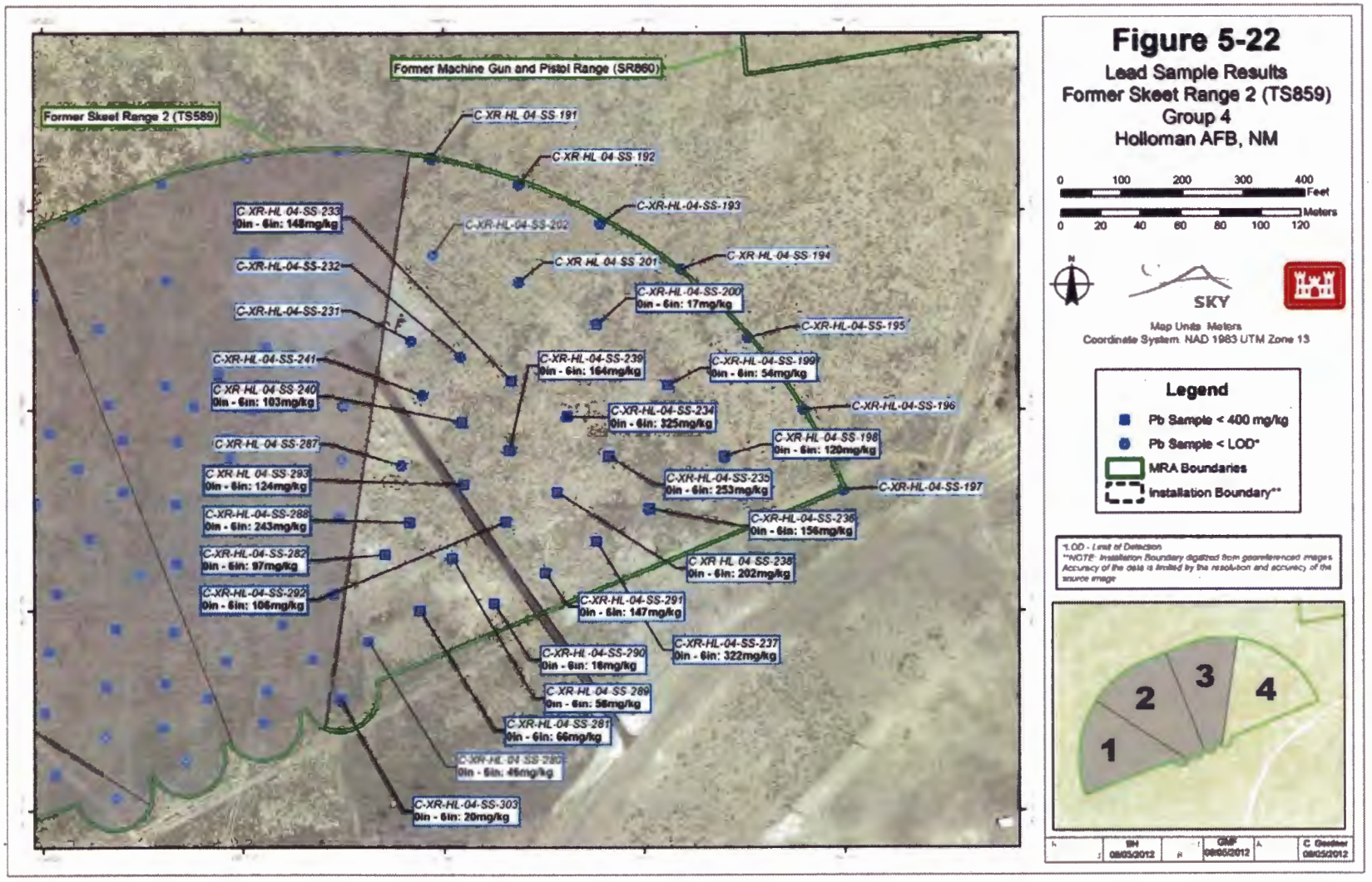
Former Machine Gun and Pistol Range (SR860)
Former Skeet Range 2 (TS589)
C-XR-HL-04-SS-191
C-XR-HL-04-SS-192
C-XR-HL-04-SS-193
C-XR-HL-04-SS-202
C-XR-HL-04-SS-194
C-XR-HL-04-SS-201
C-XR-HL-04-SS-200
0in - 6in: 17mg/kg
C-XR-HL-04-SS-195
C-XR-HL-04-SS-233
0in - 6in: 148mg/kg
C-XR-HL-04-SS-232
C-XR-HL-04-SS-231
C-XR-HL-04-SS-241
C-XR-HL-04-SS-239
0in - 6in: 164mg/kg
C-XR-HL-04-SS-199
0in - 6in: 54mg/kg
C-XR-HL-04-SS-240
0in - 6in: 103mg/kg
C-XR-HL-04-SS-234
0in - 6in: 325mg/kg
C-XR-HL-04-SS-196
C-XR-HL-04-SS-287
C-XR-HL-04-SS-198
0in - 6in: 120mg/kg
C-XR-HL-04-SS-293
0in - 6in: 124mg/kg
C-XR-HL-04-SS-235
0in - 6in: 253mg/kg
C-XR-HL-04-SS-197
C-XR-HL-04-SS-288
0in - 6in: 243mg/kg
C-XR-HL-04-SS-236
0in - 6in: 156mg/kg
C-XR-HL-04-SS-282
0in - 6in: 97mg/kg
C-XR-HL-04-SS-238
0in - 6in: 202mg/kg
C-XR-HL-04-SS-292
0in - 6in: 106mg/kg
C-XR-HL-04-SS-291
0in - 6in: 147mg/kg
C-XR-HL-04-SS-237
0in - 6in: 322mg/kg
C-XR-HL-04-SS-290
0in - 6in: 18mg/kg
C-XR-HL-04-SS-289
0in - 6in: 58mg/kg
C-XR-HL-04-SS-281
0in - 6in: 66mg/kg
C-XR-HL-04-SS-280
0in - 6in: 46mg/kg
C-XR-HL-04-SS-303
0in - 6in: 20mg/kg
Figure 5-22
Lead Sample Results
Former Skeet Range 2 (TS859)
Group 4
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD - Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
1
2
3
4
BH 08/03/2012
GMF 08/03/2012
C Gardner 08/03/2012

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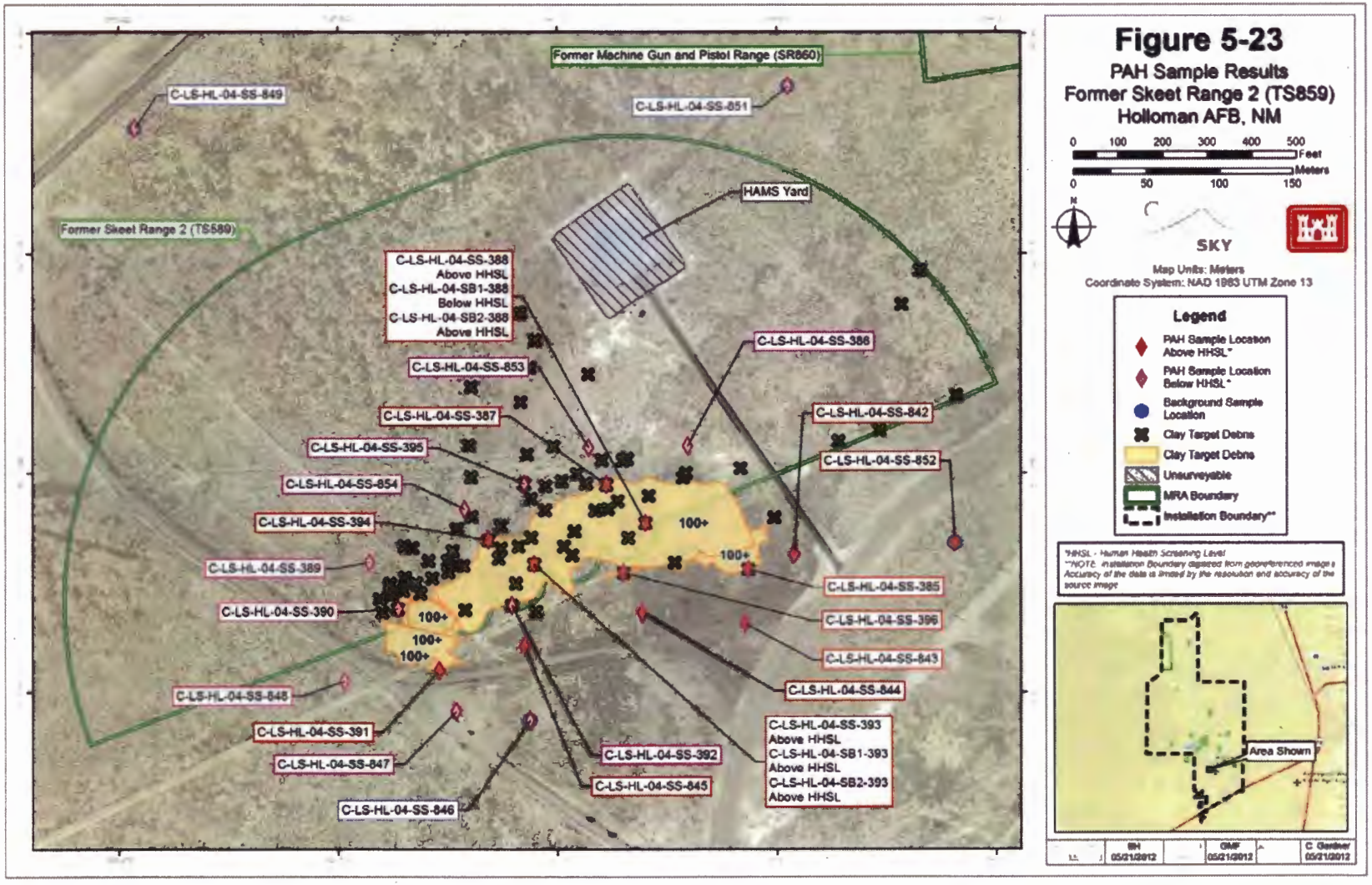
Figure 5-23
PAH Sample Results
Former Skeet Range 2 (TS859)
Holloman AFB, NM
0 100 200 300 400 500 Feet
0 50 100 150 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
PAH Sample Location Above HHSL*
PAH Sample Location Below HHSL*
Background Sample Location
Clay Target Debris
Clay Target Debris
Unsurveyable
MRA Boundary
Installation Boundary**
*HHSL - Human Health Screening Level
**NOTE: Installation Boundary digitized from georeferenced image. Accuracy of the data is limited by the resolution and accuracy of the source image
Area Shown
BH 05/21/2012
GMF 05/21/2012
C Gardner 05/21/2012
Former Machine Gun and Pistol Range (SR860)
Former Skeet Range 2 (TS589)
HAMS Yard
C-LS-HL-04-SS-849
C-LS-HL-04-SS-851
C-LS-HL-04-SS-388
Above HHSL
C-LS-HL-04-SB1-388
Below HHSL
C-LS-HL-04-SB2-388
Above HHSL
C-LS-HL-04-SS-386
C-LS-HL-04-SS-853
C-LS-HL-04-SS-387
C-LS-HL-04-SS-842
C-LS-HL-04-SS-395
C-LS-HL-04-SS-852
C-LS-HL-04-SS-854
C-LS-HL-04-SS-394
C-LS-HL-04-SS-389
C-LS-HL-04-SS-385
C-LS-HL-04-SS-390
C-LS-HL-04-SS-396
C-LS-HL-04-SS-843
C-LS-HL-04-SS-844
C-LS-HL-04-SS-848
C-LS-HL-04-SS-391
C-LS-HL-04-SS-847
C-LS-HL-04-SS-392
C-LS-HL-04-SS-845
C-LS-HL-04-SS-846
C-LS-HL-04-SS-393
Above HHSL
C-LS-HL-04-SB1-393
Above HHSL
C-LS-HL-04-SB2-393
Above HHSL
100+
100+
100+
100+

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5.13 Jeep Target Area Skeet Range (TS862)

5.13.1 Site Description

The Jeep Target Area Skeet Range (TS862) is located just northeast of the active Jeep Target Area. The MRA is estimated to have measured 2,190 ft by 900 ft with a perimeter of 5,650 ft and an area of approximately 37.5 acres. The coordinates of the area are 32.87951 degrees latitude, -106.13140 degrees longitude. The location of the Jeep Target Area Skeet Range (TS862) exhibits relatively flat topography with soils consisting of the Yesum-Nasa complex. Beneath Holloman AFB, groundwater ranges from 5 to 50 ft bgs, with shallower groundwater found on the southern end of the base. There are no wetlands associated with this MRA.

5.13.2 History of Munitions Related Activities

A Laboratory of Anthropology Site Record describes a skeet or trap range in addition to the Jeep Target Area. Firing positions, consisting of 5 ft by 6 ft concrete pads and connected by rock-lined paths, are identified approximately 1,500 ft northeast of the Jeep Target Area berm. Clay target debris and shotgun shells were reported among other non-munitions-related artifacts recorded at the site.

Burned shotgun shells were reported at a location approximately 2,000 ft northwest of the skeet range firing positions. Additionally, shotgun shells were reported among a 20 ft diameter concentration of .45-caliber cartridge casings and other miscellaneous carbine casings located approximately 1,800 ft west of the firing positions. Review of available historical aerial photography shows a four position skeet range at the location in 1948 with a direction of fire toward the north. Similar features are visible in 1945 aerial photography; however, the resolution of the 1945 photograph makes range features difficult to identify.

5.13.3 Land Use

The Jeep Target Area Skeet Range (TS862) is currently unused. Training activities associated with the Prime BEEF Training Area may use part of the MRA on occasion. No live ammunition would be associated with this use and therefore no continued lead or PAH contamination is expected; however, blanks, smoke grenades, and artillery and grenade simulators may be used during training activities. The MRA is currently open space with vegetation consistent with desert scrubland.

5.13.4 Access Controls and Restrictions

Access to Holloman AFB requires admittance through the security gate and there is a fence around the installation. The site is located to the north of gate IP-8 and may be accessed through IP-8 or IP-7, both of which are locked with a combination lock. The fence is incomplete with respect to the MRA, and there is a heavily rutted dirt road that may be used to access the site without using the gates. Therefore, access to the Jeep Target Area Skeet Range (TS862) is restricted, but is open to base personnel and contractors.

5.13.5 Receptors

5.13.5.1 Nearby Population

The Jeep Target Area Skeet Range (TS862) is located in a relatively undeveloped portion of the installation near the southern end of the HSTT, approximately 4 miles northwest of the base residential housing. Holloman AFB supports about 21,000 Active Duty, Guard, Reserve, retirees, DoD civilians, and their families (Holloman AFB). The base is located approximately 6 miles west of Alamogordo, New Mexico in Otero County. According to a U.S. Census, the population of Alamogordo was estimated to be 30,403 in 2010 (USCB, 2010). The population density of Otero County is approximately 10 people per square mile (Advameg, 2003-2010)

5.13.5.2 Buildings near/within MRA

There are 100 buildings within a 2-mile radius of the Jeep Target Area Skeet Range (TS862). Operational mission support, recreational, and buildings that support the flight line are located to the southeast of the Jeep Target Area Skeet Range (TS862) within a 4-mile radius.

5.13.6 Field Investigation Results

5.13.6.1 Visual Surveys Results

During the field investigation visual survey transects were completed at the Jeep Target Area Skeet Range (TS862) as shown in **Figure 5-28**. A line of razor wire runs west-north-west from the southeastern corner of the MRA, terminating before reaching the center of the MRA.

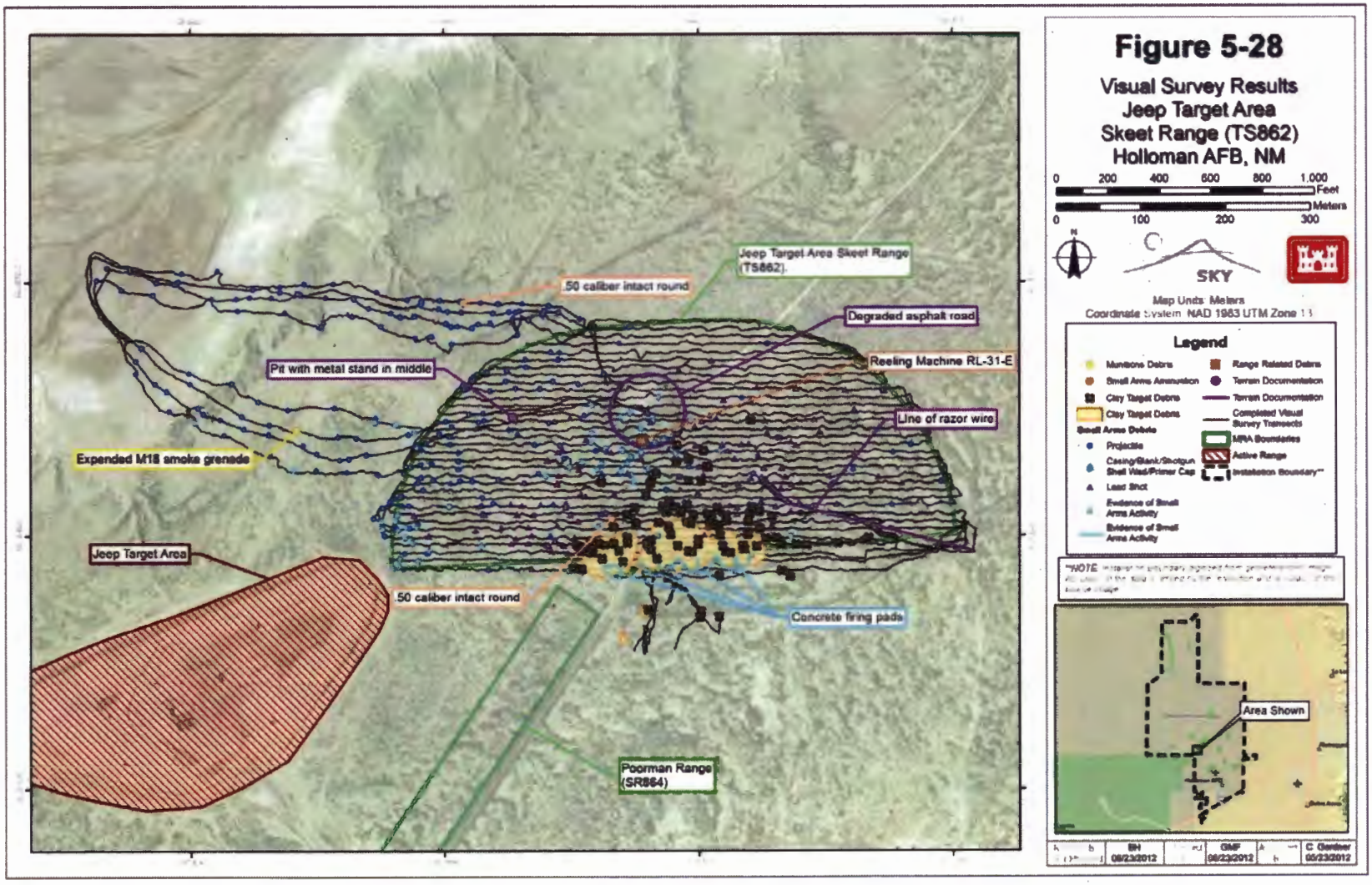
The circular asphalt feature postdates the Jeep Target Area Skeet Range, Poorman Range, and old Jeep Target Area. In the center of the circular feature stands a Radioplane Rotary Launcher (RL-2). The rotary launcher is labeled with a serial number plate, indicating a date of "57" (1957). These features are described as Feature 6 in Laboratory of Anthropology Record 104440 (April 17, 1994) as part of site HAR-082. It is likely that this feature was used to launch target drones, although it is uncertain whether this activity was associated with the Poorman Range (SR864) or other activities.

Many of the firing pads from the skeet range are nearly intact; however, the road to access the rotary launcher cuts through the eastern half of the westernmost firing point. Wood and metal debris in the area suggests that there was more infrastructure at the range than currently remains. No remnants of trap or skeet houses were observed. The rock-lined gravel pathways leading to, from, and between the firing stations are still present, though degraded.

Clay target debris is densely concentrated near the firing points. Waddings are also frequent in this vicinity. Lead shot is scattered across the MRA. Clay target debris and shotgun shells were found farther south of the MRA. Clay target debris was also observed scattered along the eastern edge of the Poorman Range (SR864). Some clay target debris and shotgun shell debris is scattered along the side of the gravel road from the grading of the road bed.

Additional small arms debris including .45 and .50 caliber bullets, casings, and two intact .50 cal rounds were observed from the center of the MRA continuing far west of the MRA. These are not consistent with skeet range activities. Some blanks were present in the southwestern portion of the MRA, near the current Prime BEEF Training Area. These are likely associated with more recent training activities at Prime BEEF.

Exploratory transects were added outside the MRA boundary to the west of the MRA. The .50 caliber debris documented likely is associated with the area of .50 caliber projectiles observed at the Possible Firing Range (SR867) and to the north of the 1000-Inch Range (SR863). It was confirmed that the .50 caliber debris extends to the Lost River, where much of it is collected on the islands in the wash while the arroyo consist of recent sediment that would conceal any projectiles present. One expended smoke grenade was observed north of the Prime BEEF Training Area during the exploratory surveys.


Jeep Target Area Skeet Range (TS862)
.50 caliber intact round
Degraded asphalt road
Reeling Machine RL-31-E
Pit with metal stand in middle
Line of razor wire
Expended M18 smoke grenade
Jeep Target Area
.50 caliber intact round
Concrete firing pads
Poorman Range (SR864)
Figure 5-28
Visual Survey Results
Jeep Target Area
Skeet Range (TS862)
Holloman AFB, NM
0 200 400 600 800 1,000 Feet
0 100 200 300 Meters
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Munitions Debris
Small Arms Ammunition
Clay Target Debris
Clay Target Debris
Small Arms Debris
Projectile
Casing/Blank/Shotgun Shell Wad/Primer Cap
Lead Shot
Evidence of Small Arms Activity
Evidence of Small Arms Activity
Range Related Debris
Terrain Documentation
Terrain Documentation
Completed Visual Survey Transects
MRA Boundaries
Active Range
Installation Boundary**
Area Shown
BH 08/23/2012
GMF 08/23/2012
C Gardner 08/23/2012

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5.13.6.2 Lead Sampling and XRF Results

One hundred thirty-seven (137) surface soil samples were collected and analyzed using XRF at the Jeep Target Area Skeet Range (TS862). XRF results range from below LOD (12 mg/kg) to 101 mg/kg. No samples exceeded the human health screening level of 400 mg/kg. The XRF results are presented in **Table 5-12** and **Figure 5-29** through **Figure 5-32**.

Table 5-12 XRF Lead Sampling Results, Jeep Target Skeet Range (TS863)

Sample ID*	XRF Lead Result (Average) (mg/kg)
C-XR-HL-05-SS-518	< LOD
C-XR-HL-05-SS-519	< LOD
C-XR-HL-05-SS-520	< LOD
C-XR-HL-05-SS-521	< LOD
C-XR-HL-05-SS-522	< LOD
C-XR-HL-05-SS-523	< LOD
C-XR-HL-05-SS-524	< LOD
C-XR-HL-05-SS-525	< LOD
C-XR-HL-05-SS-526	< LOD
C-XR-HL-05-SS-527	< LOD
C-XR-HL-05-SS-528	< LOD
C-XR-HL-05-SS-529	101
C-XR-HL-05-SS-530	< LOD
C-XR-HL-05-SS-531	< LOD
C-XR-HL-05-SS-532	< LOD
C-XR-HL-05-SS-533	< LOD
C-XR-HL-05-SS-534	< LOD
C-XR-HL-05-SS-535	< LOD
C-XR-HL-05-SS-536	< LOD
C-XR-HL-05-SS-537	< LOD
C-XR-HL-05-SS-538	< LOD
C-XR-HL-05-SS-539	< LOD
C-XR-HL-05-SS-540	< LOD
C-XR-HL-05-SS-541	< LOD
C-XR-HL-05-SS-542	< LOD
C-XR-HL-05-SS-543	< LOD
C-XR-HL-05-SS-544	< LOD
C-XR-HL-05-SS-545	< LOD
C-XR-HL-05-SS-546	< LOD
C-XR-HL-05-SS-547	< LOD
C-XR-HL-05-SS-548	< LOD
C-XR-HL-05-SS-549	< LOD
C-XR-HL-05-SS-550	< LOD
C-XR-HL-05-SS-551	< LOD
C-XR-HL-05-SS-552	< LOD
C-XR-HL-05-SS-553	15
C-XR-HL-05-SS-554	14
C-XR-HL-05-SS-555	< LOD
C-XR-HL-05-SS-556	< LOD
C-XR-HL-05-SS-557	< LOD
C-XR-HL-05-SS-558	< LOD
C-XR-HL-05-SS-559	< LOD
C-XR-HL-05-SS-560	< LOD

Table 5-12 XRF Lead Sampling Results, Jeep Target Skeet Range (TS863)

Sample ID*	XRF Lead Result (Average) (mg/kg)
C-XR-HL-05-SS-561	< LOD
C-XR-HL-05-SS-562	< LOD
C-XR-HL-05-SS-563	< LOD
C-XR-HL-05-SS-564	< LOD
C-XR-HL-05-SS-565	< LOD
C-XR-HL-05-SS-566	< LOD
C-XR-HL-05-SS-567	< LOD
C-XR-HL-05-SS-568	< LOD
C-XR-HL-05-SS-569	< LOD
C-XR-HL-05-SS-570	< LOD
C-XR-HL-05-SS-571	< LOD
C-XR-HL-05-SS-572	< LOD
C-XR-HL-05-SS-573	< LOD
C-XR-HL-05-SS-574	21
C-XR-HL-05-SS-575	17
C-XR-HL-05-SS-576	< LOD
C-XR-HL-05-SS-577	< LOD
C-XR-HL-05-SS-578	< LOD
C-XR-HL-05-SS-579	50
C-XR-HL-05-SS-580	< LOD
C-XR-HL-05-SS-581	36
C-XR-HL-05-SS-582	< LOD
C-XR-HL-05-SS-583	< LOD
C-XR-HL-05-SS-584	< LOD
C-XR-HL-05-SS-585	< LOD
C-XR-HL-05-SS-586	< LOD
C-XR-HL-05-SS-587	< LOD
C-XR-HL-05-SS-588	< LOD
C-XR-HL-05-SS-589	15
C-XR-HL-05-SS-590	< LOD
C-XR-HL-05-SS-591	< LOD
C-XR-HL-05-SS-592	< LOD
C-XR-HL-05-SS-593	< LOD
C-XR-HL-05-SS-594	< LOD
C-XR-HL-05-SS-595	< LOD
C-XR-HL-05-SS-596	< LOD
C-XR-HL-05-SS-597	< LOD
C-XR-HL-05-SS-598	20
C-XR-HL-05-SS-599	< LOD
C-XR-HL-05-SS-600	< LOD
C-XR-HL-05-SS-601	< LOD
C-XR-HL-05-SS-602	< LOD
C-XR-HL-05-SS-603	< LOD
C-XR-HL-05-SS-604	< LOD
C-XR-HL-05-SS-605	< LOD
C-XR-HL-05-SS-606	< LOD
C-XR-HL-05-SS-607	< LOD
C-XR-HL-05-SS-608	< LOD
C-XR-HL-05-SS-609	< LOD

Table 5-12 XRF Lead Sampling Results, Jeep Target Skeet Range (TS863)

Sample ID*	XRF Lead Result (Average) (mg/kg)
C-XR-HL-05-SS-610	< LOD
C-XR-HL-05-SS-611	< LOD
C-XR-HL-05-SS-612	< LOD
C-XR-HL-05-SS-613	< LOD
C-XR-HL-05-SS-614	< LOD
C-XR-HL-05-SS-615	< LOD
C-XR-HL-05-SS-616	< LOD
C-XR-HL-05-SS-617	< LOD
C-XR-HL-05-SS-618	< LOD
C-XR-HL-05-SS-619	< LOD
C-XR-HL-05-SS-620	< LOD
C-XR-HL-05-SS-621	< LOD
C-XR-HL-05-SS-622	< LOD
C-XR-HL-05-SS-623	< LOD
C-XR-HL-05-SS-624	< LOD
C-XR-HL-05-SS-625	< LOD
C-XR-HL-05-SS-626	< LOD
C-XR-HL-05-SS-627	< LOD
C-XR-HL-05-SS-628	< LOD
C-XR-HL-05-SS-629	< LOD
C-XR-HL-05-SS-630	< LOD
C-XR-HL-05-SS-631	< LOD
C-XR-HL-05-SS-632	< LOD
C-XR-HL-05-SS-633	< LOD
C-XR-HL-05-SS-634	< LOD
C-XR-HL-05-SS-635	< LOD
C-XR-HL-05-SS-636	< LOD
C-XR-HL-05-SS-637	< LOD
C-XR-HL-05-SS-638	< LOD
C-XR-HL-05-SS-639	< LOD
C-XR-HL-05-SS-640	< LOD
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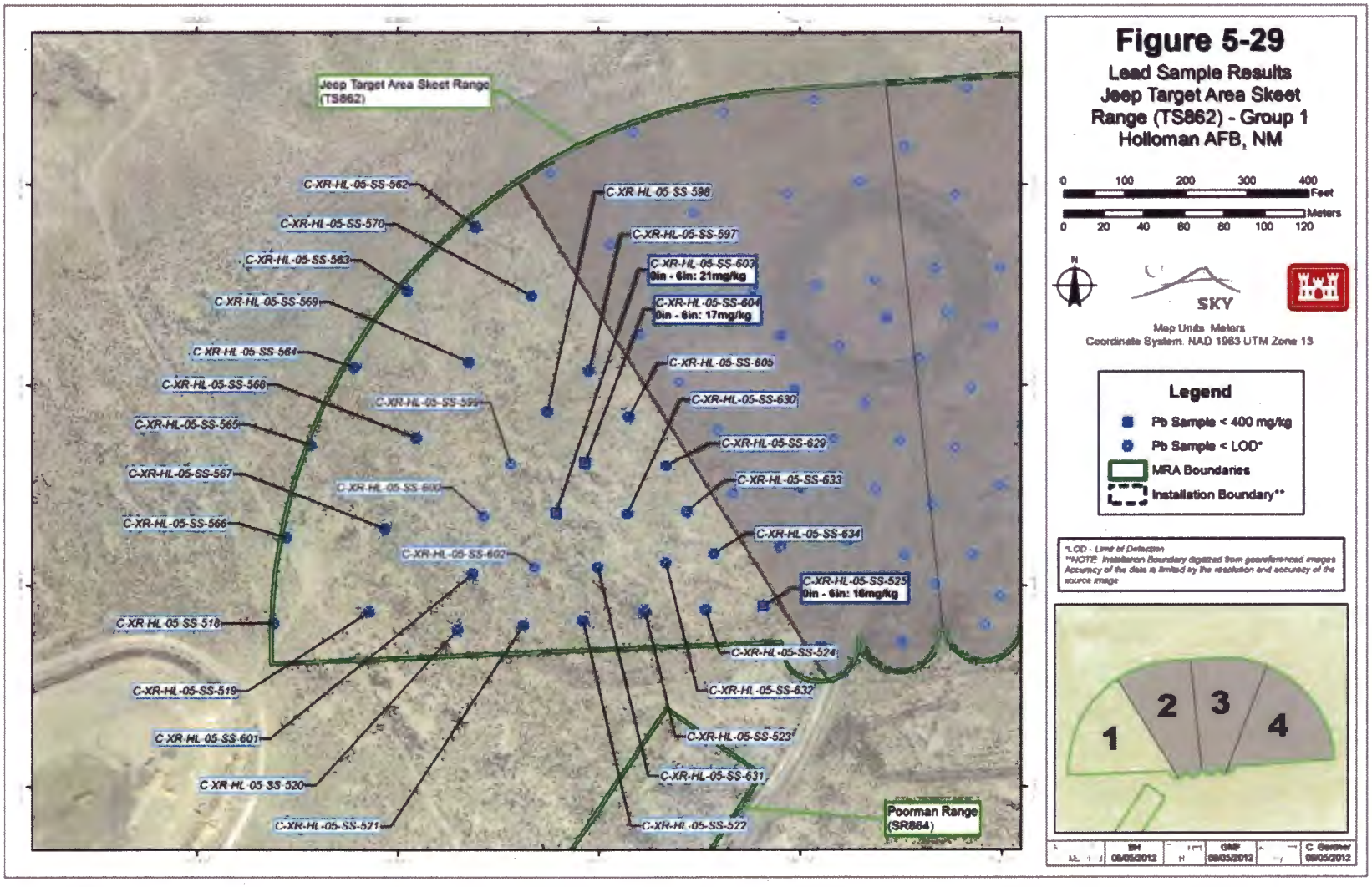
C-XR-HL-05-SS-647	< LOD
C-XR-HL-05-SS-648	< LOD
C-XR-HL-05-SS-649	< LOD
C-XR-HL-05-SS-650	< LOD
C-XR-HL-05-SS-651	< LOD
C-XR-HL-05-SS-652	< LOD
C-XR-HL-05-SS-653	< LOD
C-XR-HL-05-SS-654	< LOD

Notes:
< LOD = below limit of detection (12 mg/kg).
mg/kg = milligrams per kilograms.
*All samples were collected at the surface interval of 0 -6 inches.

5.13.6.3 PAH Sampling and Analysis

Forty-one (41) soil samples were collected from the Jeep Target Area Skeet Range (TS862) for laboratory PAH analysis. This total included 31 surface samples, five (5) subsurface samples from the 6-12 inch depth interval and five (5) subsurface samples from the 12-18 inch depth interval. The PAH sample locations are presented in **Figure 5-33**. PAH results exceeded the human health screening levels in at least one analyte in 16 of the 41 samples analyzed. The PAH analytical results are presented in **Table 5-13**.


Jeep Target Area Skeet Range (TS862)
C-XR-HL-05-SS-562
C-XR-HL-05-SS-570
C-XR-HL-05-SS-563
C-XR-HL-05-SS-569
C-XR-HL-05-SS-564
C-XR-HL-05-SS-568
C-XR-HL-05-SS-565
C-XR-HL-05-SS-567
C-XR-HL-05-SS-566
C-XR-HL-05-SS-518
C-XR-HL-05-SS-519
C-XR-HL-05-SS-601
C-XR-HL-05-SS-520
C-XR-HL-05-SS-521
C-XR-HL-05-SS-599
C-XR-HL-05-SS-600
C-XR-HL-05-SS-602
C-XR-HL-05-SS-596
C-XR-HL-05-SS-597
C-XR-HL-05-SS-603
0in - 6in: 21mg/kg
C-XR-HL-05-SS-604
0in - 6in: 17mg/kg
C-XR-HL-05-SS-605
C-XR-HL-05-SS-630
C-XR-HL-05-SS-629
C-XR-HL-05-SS-633
C-XR-HL-05-SS-634
C-XR-HL-05-SS-525
0in - 6in: 16mg/kg
C-XR-HL-05-SS-524
C-XR-HL-05-SS-632
C-XR-HL-05-SS-523
C-XR-HL-05-SS-631
C-XR-HL-05-SS-522
Poorman Range (SR864)
Figure 5-29
Lead Sample Results
Jeep Target Area Skeet Range (TS862) - Group 1
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD - Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
1
2
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BH 08/05/2012
GMF 08/03/2012
C Gardner 08/05/2012

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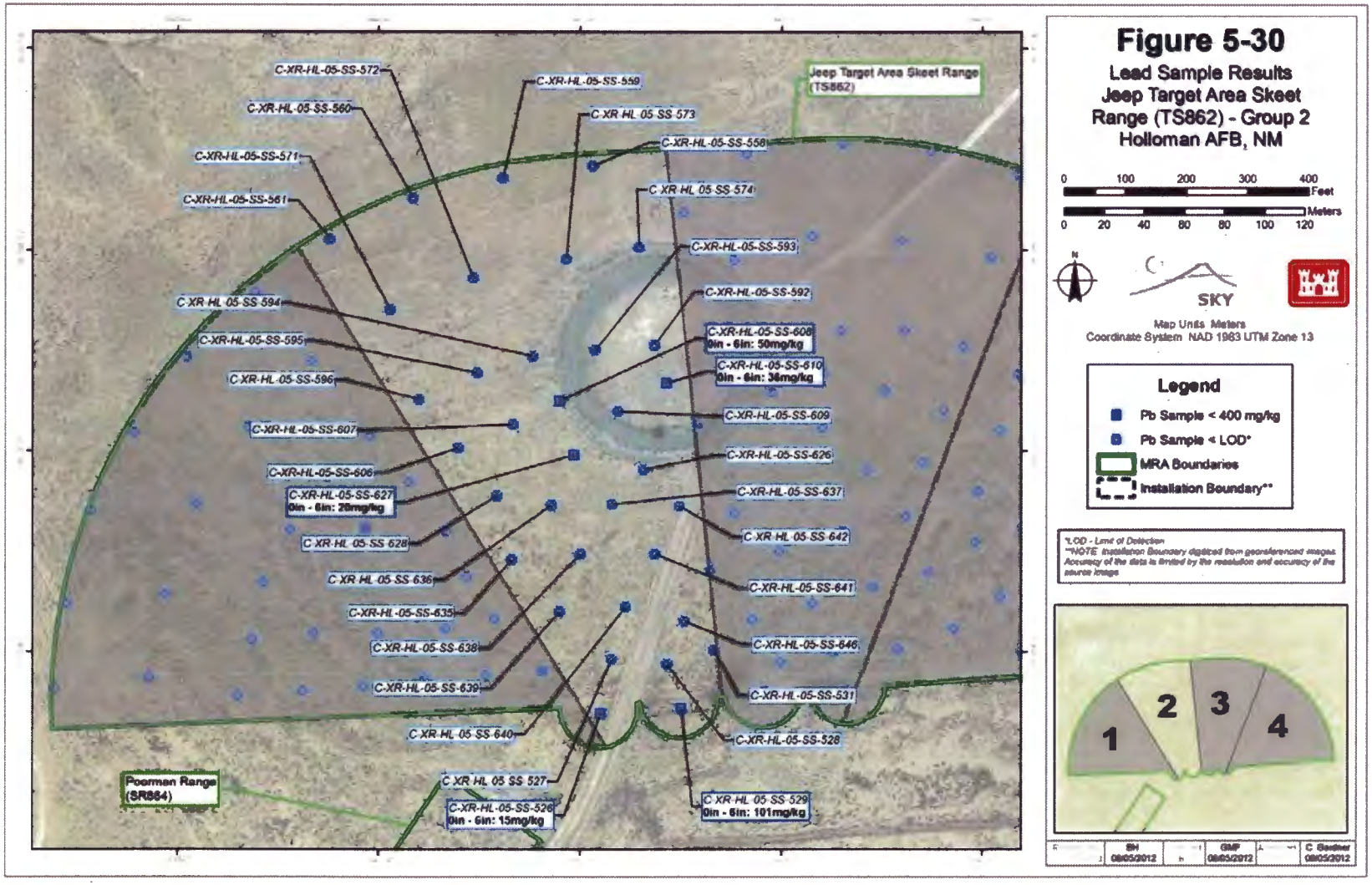
Figure 5-30
Lead Sample Results
Jeep Target Area Skeet Range (TS862) - Group 2
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units Meters
Coordinate System NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD - Limit of Detection
**NOTE Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
1
2
3
4
Jeep Target Area Skeet Range (TS862)
Poorman Range (SR884)
C-XR-HL-05-SS-572
C-XR-HL-05-SS-559
C-XR-HL-05-SS-560
C XR HL 05 SS 573
C-XR-HL-05-SS-558
C-XR-HL-05-SS-571
C-XR-HL-05-SS-561
C XR HL 05 SS 574
C-XR-HL-05-SS-593
C-XR-HL-05-SS-592
C XR HL 05 SS 594
C-XR-HL-05-SS-608
0in - 6in: 50mg/kg
C-XR-HL-05-SS-595
C-XR-HL-05-SS-610
0in - 6in: 36mg/kg
C-XR-HL-05-SS-596
C-XR-HL-05-SS-609
C-XR-HL-05-SS-607
C-XR-HL-05-SS-626
C-XR-HL-05-SS-606
C-XR-HL-05-SS-627
0in - 6in: 20mg/kg
C-XR-HL-05-SS-637
C XR HL 05 SS 628
C XR HL 05 SS 642
C XR HL 05 SS 636
C-XR-HL-05-SS-641
C-XR-HL-05-SS-635
C-XR-HL-05-SS-638
C-XR-HL-05-SS-646
C-XR-HL-05-SS-639
C-XR-HL-05-SS-531
C XR HL 05 SS 640
C-XR-HL-05-SS-528
C XR HL 05 SS 527
C-XR-HL-05-SS-526
0in - 6in: 15mg/kg
C XR HL 05 SS 529
0in - 6in: 101mg/kg
SH 08/05/2012
GMP 08/05/2012
C Gardner 08/05/2012

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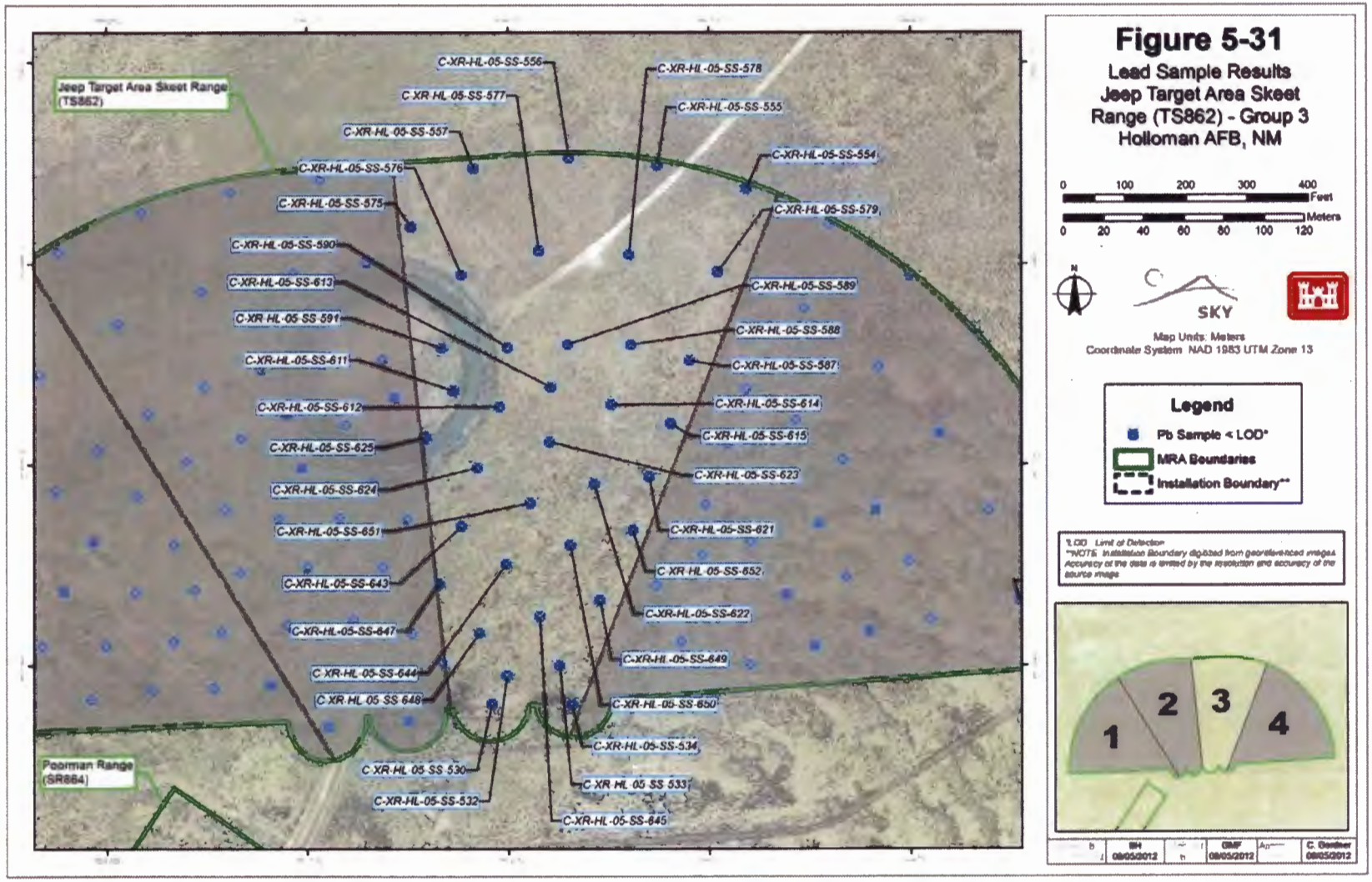
Jeep Target Area Skeet Range (TS862)
Poorman Range (SR864)
C-XR-HL-05-SS-556
C-XR-HL-05-SS-577
C-XR-HL-05-SS-557
C-XR-HL-05-SS-576
C-XR-HL-05-SS-575
C-XR-HL-05-SS-590
C-XR-HL-05-SS-613
C-XR-HL-05-SS-591
C-XR-HL-05-SS-611
C-XR-HL-05-SS-612
C-XR-HL-05-SS-625
C-XR-HL-05-SS-624
C-XR-HL-05-SS-651
C-XR-HL-05-SS-643
C-XR-HL-05-SS-647
C-XR-HL-05-SS-644
C-XR-HL-05-SS-648
C-XR-HL-05-SS-530
C-XR-HL-05-SS-532
C-XR-HL-05-SS-578
C-XR-HL-05-SS-555
C-XR-HL-05-SS-554
C-XR-HL-05-SS-579
C-XR-HL-05-SS-589
C-XR-HL-05-SS-588
C-XR-HL-05-SS-587
C-XR-HL-05-SS-614
C-XR-HL-05-SS-615
C-XR-HL-05-SS-623
C-XR-HL-05-SS-621
C-XR-HL-05-SS-652
C-XR-HL-05-SS-622
C-XR-HL-05-SS-649
C-XR-HL-05-SS-650
C-XR-HL-05-SS-534
C-XR-HL-05-SS-533
C-XR-HL-05-SS-645
Figure 5-31
Lead Sample Results
Jeep Target Area Skeet Range (TS862) - Group 3
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD: Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
1
2
3
4
BH 08/05/2012
GMF 08/05/2012
C. Gardner 08/05/2012

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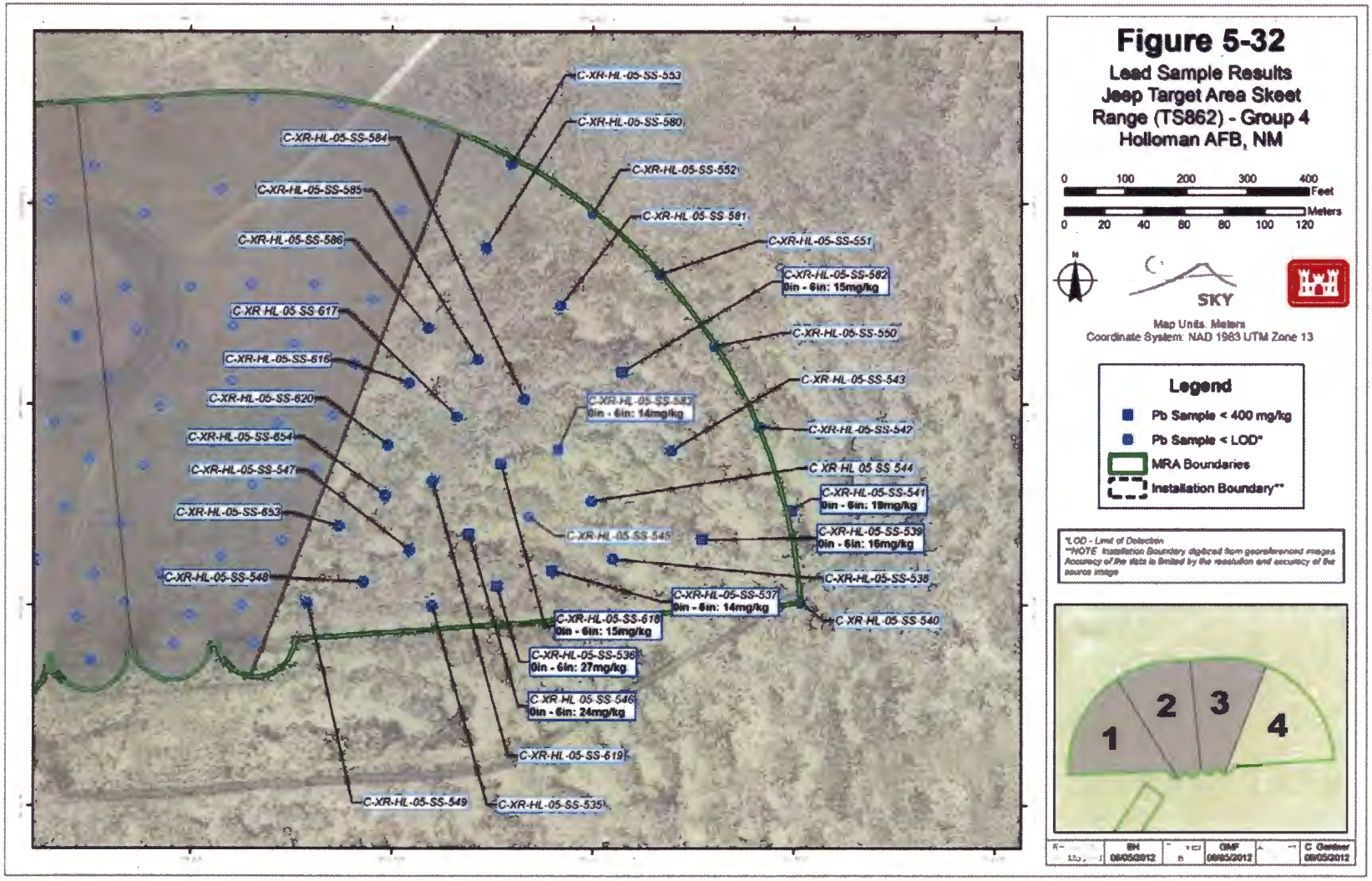
C-XR-HL-05-SS-553
C-XR-HL-05-SS-580
C-XR-HL-05-SS-584
C-XR-HL-05-SS-552
C-XR-HL-05-SS-585
C-XR-HL-05-SS-581
C-XR-HL-05-SS-586
C-XR-HL-05-SS-551
C-XR-HL-05-SS-582
0in - 6in: 15mg/kg
C-XR-HL-05-SS-617
C-XR-HL-05-SS-550
C-XR-HL-05-SS-616
C-XR-HL-05-SS-543
C-XR-HL-05-SS-620
C-XR-HL-05-SS-583
0in - 6in: 14mg/kg
C-XR-HL-05-SS-654
C-XR-HL-05-SS-542
C-XR-HL-05-SS-547
C-XR-HL-05-SS-544
C-XR-HL-05-SS-541
0in - 6in: 19mg/kg
C-XR-HL-05-SS-653
C-XR-HL-05-SS-545
C-XR-HL-05-SS-539
0in - 6in: 16mg/kg
C-XR-HL-05-SS-548
C-XR-HL-05-SS-538
C-XR-HL-05-SS-537
0in - 6in: 14mg/kg
C-XR-HL-05-SS-618
0in - 6in: 15mg/kg
C-XR-HL-05-SS-540
C-XR-HL-05-SS-536
0in - 6in: 27mg/kg
C-XR-HL-05-SS-546
0in - 6in: 24mg/kg
C-XR-HL-05-SS-619
C-XR-HL-05-SS-549
C-XR-HL-05-SS-535
Figure 5-32
Lead Sample Results
Jeep Target Area Skeet
Range (TS862) - Group 4
Holloman AFB, NM
0 100 200 300 400 Feet
0 20 40 60 80 100 120 Meters
N
SKY
Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13
Legend
Pb Sample < 400 mg/kg
Pb Sample < LOD*
MRA Boundaries
Installation Boundary**
*LOD - Limit of Detection
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image
1
2
3
4
BH 09/05/2012
GMF 09/05/2012
C Gardner 09/05/2012

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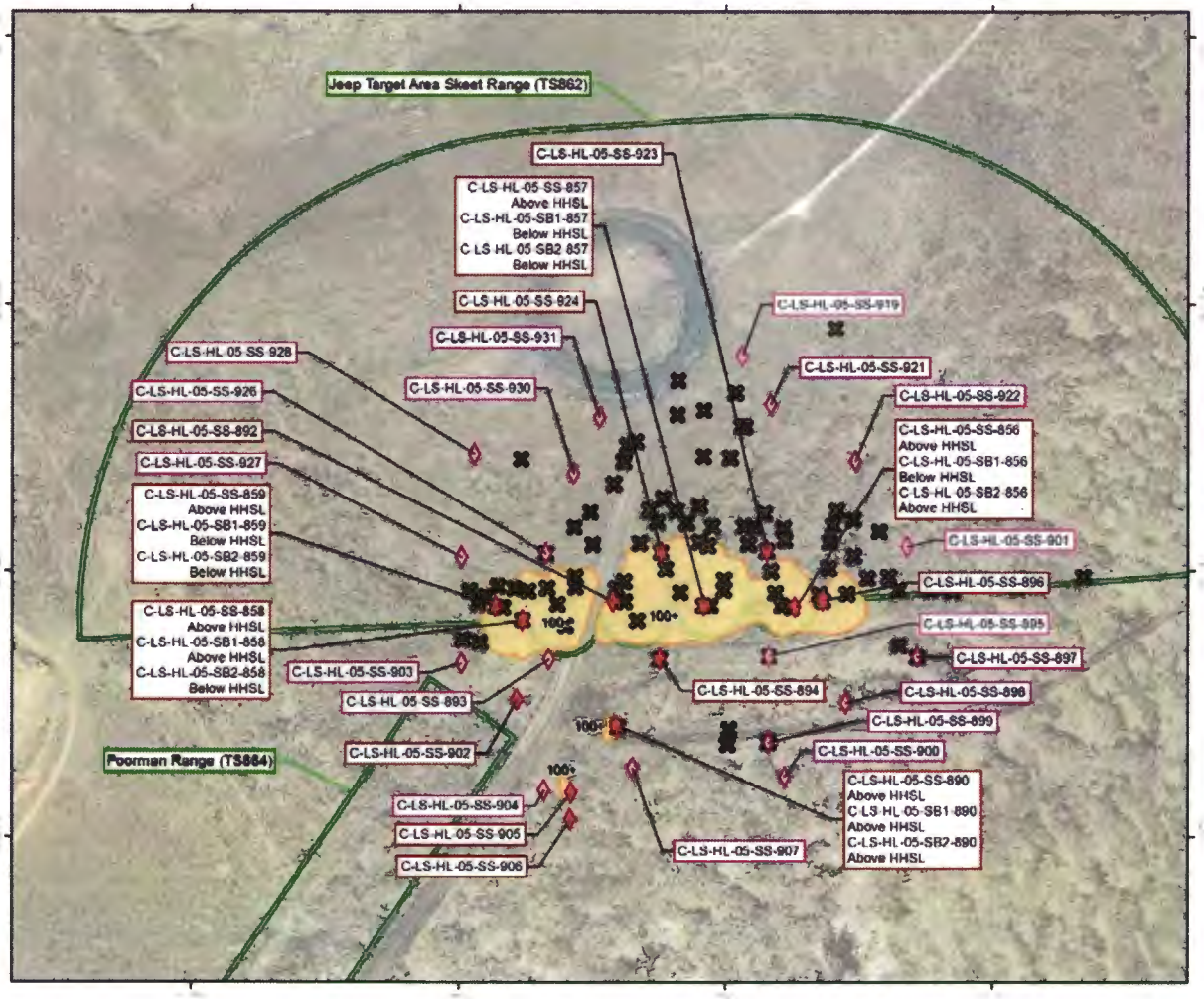

Figure 5-33

PAH Sample Results
Jeep Target Area
Skeet Range (TS862)
Holloman AFB, NM

0 100 200 300 400 500 Feet
0 25 50 75 100 125 150 Meters

N

SKY

Map Units: Meters
Coordinate System: NAD 1983 UTM Zone 13

Legend

- PAH Sample Location Above HHSL*
- PAH Sample Location Below HHSL*
- Clay Target Debris
- Clay Target Debris
- MRA Boundary
- Installation Boundary**

*HHSL - Human Health Screening Level
**NOTE: Installation Boundary digitized from georeferenced images. Accuracy of the data is limited by the resolution and accuracy of the source image

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Table 5-13 PAH Analytical Results, Jeep Target Area Skeet Range (TS862)

Field ID:	C-LS-HL-05-SS-856			C-LS-HL-05-SB1-856			C-LS-HL-05-SB2-856			C-LS-HL-05-SS-857			C-LS-HL-05-SB1-857			C-LS-HL-05-SB2-857		
Sampling Date:	2/27/2012			2/27/2012			2/28/2012			2/27/2012			2/27/2012			2/28/2012		
Lab ID:	L1203320-23			L1203320-02			L1203620-01			L1203345-03			L1203320-06			L1203620-16		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.074	0.042	J	0.0082	< 0.0082	U	0.0081	< 0.0081	U	0.036	< 0.036	U	0.0086	< 0.0086	U	0.0089	< 0.0089	U
Acenaphthene	0.074	0.29		0.0082	< 0.0082	U	0.0081	< 0.0081	U	0.036	0.04		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Acenaphthylene	0.074	< 0.074	U	0.0082	< 0.0082	U	0.0081	< 0.0081	U	0.036	< 0.036	U	0.0086	< 0.0086	U	0.0089	< 0.0089	U
Anthracene	0.074	0.98		0.0082	< 0.0082	U	0.0081	0.0018	J	0.036	0.13		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Benzo(a)anthracene	0.074	7.2		0.0082	0.01		0.0081	0.023		0.036	1.4		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Benzo(a)pyrene	0.074	7.2		0.0082	0.012		0.0081	0.029		0.036	1.4		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Benzo(b)fluoranthene	0.074	5.4	J	0.0082	0.011	J	0.0081	0.03	J	0.036	1.4	J	0.0086	< 0.0086	U	0.0089	< 0.0089	U
Benzo(ghi)perylene	0.074	4.6		0.0082	0.0096		0.0081	0.02		0.036	0.91		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Benzo(k)fluoranthene	0.074	5.4	J	0.0082	< 0.0082	U	0.0081	0.028	J	0.036	1.2	J	0.0086	< 0.0086	U	0.0089	< 0.0089	U
Chrysene	0.15	8.8		0.0082	0.0087		0.0081	0.035		0.036	1.7		0.0086	< 0.0086	U	0.0089	0.0032	J
Dibenzo(a,h)anthracene	0.074	1.4		0.0082	0.0076	J	0.0081	0.0056	J	0.036	0.27		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Fluoranthene	0.15	14		0.0082	0.0095		0.0081	0.041		0.036	2.4		0.0086	< 0.0086	U	0.0089	0.0044	J
Fluorene	0.074	0.08		0.0082	< 0.0082	U	0.0081	< 0.0081	U	0.036	< 0.036	U	0.0086	< 0.0086	U	0.0089	< 0.0089	U
Indeno(1,2,3-cd)pyrene	0.074	4.5		0.0082	0.013		0.0081	0.018		0.036	0.97		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Naphthalene	0.074	0.055	J	0.0082	< 0.0082	U	0.0081	< 0.0081	U	0.036	0.011	J	0.0086	< 0.0086	U	0.0089	< 0.0089	U
Phenanthrene	0.074	5.7		0.0082	0.003	J	0.0081	0.013		0.036	0.81		0.0086	< 0.0086	U	0.0089	< 0.0089	U
Pyrene	0.15	14		0.0082	0.01		0.0081	0.048		0.036	2.5		0.0086	< 0.0086	U	0.0089	0.0037	J

Notes:

[1] MS/MSD

[2] Field Duplicate Pair

[3] Field Duplicate Pair

[4] Field Duplicate Pair

[5] Field Duplicate Pair

SS = Surface sample 0-6 inches

SB1 = Subsurface sample 6-12 inches

SB2 = Subsurface sample 12 -18 inches

J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.

U = Undetected at the limit of detection.

Detections < RL and > MDL reported and qualified J per DoD QSM 4.2

Detections above the RL

Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862) (continued)

Field ID:	C-LS-HL-05-SS-858			C-LS-HL-05-SB1-858			C-LS-HL-05-SB2-858			C-LS-HL-05-SS-859			C-LS-HL-05-SB1-859			C-LS-HL-05-SB2-859		
Sampling Date:	2/27/2012			2/27/2012			2/28/2012			2/27/2012			2/27/2012			2/28/2012		
Lab ID:	L1203320-05			L1203320-01			L1203620-05			L1203320-19			L1203320-09			L1203620-22		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.0085	< 0.0085	U	0.0074	< 0.0074	U	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Acenaphthene	0.072	0.032	J	0.0083	0.0029	J	0.0085	< 0.0085	U	0.0074	< 0.0074	U	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Acenaphthylene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.0085	< 0.0085	U	0.0074	< 0.0074	U	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Anthracene	0.072	0.12		0.0083	0.01		0.0085	< 0.0085	U	0.0074	0.0034	J	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Benzo(a)anthracene	0.072	1.1		0.0083	0.095		0.0085	< 0.0085	U	0.0074	0.033		0.0099	< 0.0099	U	0.0086	< 0.0086	U
Benzo(a)pyrene	0.072	1.4		0.0083	0.098		0.0085	< 0.0085	U	0.0074	0.045		0.0099	< 0.0099	U	0.0086	< 0.0086	U
Benzo(b)fluoranthene	0.072	1.2	J	0.0083	0.081	J	0.0085	< 0.0085	U	0.0074	0.048	J	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Benzo(ghi)perylene	0.072	1.1		0.0083	0.07		0.0085	< 0.0085	U	0.0074	0.035		0.0099	< 0.0099	U	0.0086	< 0.0086	U
Benzo(k)fluoranthene	0.072	1.1	J	0.0083	0.098	J	0.0085	< 0.0085	U	0.0074	0.041	J	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Chrysene	0.072	1.6		0.0083	0.12		0.0085	< 0.0085	U	0.0074	0.054		0.0099	< 0.0099	U	0.0086	< 0.0086	U
Dibenzo(a,h)anthracene	0.072	0.28		0.0083	0.021		0.0085	< 0.0085	U	0.0074	0.0072	J	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Fluoranthene	0.072	2.1		0.0083	0.17		0.0085	0.0029	J	0.0074	0.076		0.0099	< 0.0099	U	0.0086	0.0026	J
Fluorene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.0085	< 0.0085	U	0.0074	< 0.0074	U	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Indeno(1,2,3-cd)pyrene	0.072	0.94		0.0083	0.069		0.0085	< 0.0085	U	0.0074	0.034		0.0099	< 0.0099	U	0.0086	< 0.0086	U
Naphthalene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.0085	< 0.0085	U	0.0074	< 0.0074	U	0.0099	< 0.0099	U	0.0086	< 0.0086	U
Phenanthrene	0.072	0.88		0.0083	0.063		0.0085	< 0.0085	U	0.0074	0.025		0.0099	< 0.0099	U	0.0086	< 0.0086	U
Pyrene	0.072	2.3		0.0083	0.17		0.0085	0.0024	J	0.0074	0.074		0.0099	< 0.0099	U	0.0086	0.0028	J

Notes:

[1] MS/MSD
[2] Field Duplicate Pair
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862) (continued)

Field ID:	C-LS-HL-05-SS-890			C-LS-HL-05-SB1-890			C-LS-HL-05-SB2-890[2]			C-LS-HL-05-SS-891[1,2]			C-LS-HL-05-SS-892			C-LS-HL-05-SS-893		
Sampling Date:	2/28/2012			2/28/2012			2/28/2012			2/28/2012			2/29/2012			2/29/2012		
Lab ID:	L1203620-20			L1203620-23			L1203620-19			L1203620-08			L1203620-26			L1203620-03		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.36	0.61		0.043	< 0.043	U	0.03	< 0.03	U	0.39	0.65		0.24	< 0.24	U	0.01	< 0.01	U
Acenaphthene	0.36	2.5		0.043	0.014	J	0.03	0.0088	J	0.39	2.8		0.24	0.51		0.01	< 0.01	U
Acenaphthylene	0.36	< 0.36	U	0.043	< 0.043	U	0.03	< 0.03	U	0.39	0.09	J	0.24	< 0.24	U	0.01	< 0.01	U
Anthracene	0.36	20		0.043	0.13		0.03	0.15		0.39	20		0.24	1.4		0.01	< 0.01	U
Benzo(a)anthracene	3.6	180		0.043	1.4		0.03	1		3.9	180		0.24	12		0.01	< 0.01	U
Benzo(a)pyrene	3.6	160		0.043	1.4		0.03	0.88		3.9	170		0.24	12		0.01	< 0.01	U
Benzo(b)fluoranthene	3.6	190	J	0.043	1.8	J	0.03	1	J	3.9	220	J	0.24	12	J	0.01	< 0.01	U
Benzo(ghi)perylene	3.6	110		0.043	1.1		0.03	0.6		3.9	120		0.24	6.4		0.01	< 0.01	U
Benzo(k)fluoranthene	3.6	130	J	0.043	1	J	0.03	0.79	J	3.9	130	J	0.24	8.8	J	0.01	< 0.01	U
Chrysene	3.6	170		0.043	1.1		0.03	0.98		3.9	190		0.24	14		0.01	< 0.01	U
Dibenzo(a,h)anthracene	0.36	35		0.043	0.28		0.03	0.16		3.9	33		0.24	2		0.01	< 0.01	U
Fluoranthene	3.6	330		0.043	2.4		0.03	2.1		3.9	330		0.24	20		0.01	< 0.01	U
Fluorene	0.36	0.59		0.043	< 0.043	U	0.03	< 0.03	U	0.39	0.65		0.24	0.11	J	0.01	< 0.01	U
Indeno(1,2,3-cd)pyrene	3.6	100		0.043	0.94		0.03	0.56		3.9	110		0.24	6.6		0.01	< 0.01	U
Naphthalene	0.36	2.8		0.043	0.014	J	0.03	0.015	J	0.39	2.9		0.24	0.16	J	0.01	< 0.01	U
Phenanthrene	3.6	140		0.043	0.88		0.03	0.95		3.9	120		0.24	7.5		0.01	< 0.01	U
Pyrene	3.6	290		0.043	2.2		0.03	1.8		3.9	280		0.24	19		0.01	< 0.01	U

Notes:

[1] MS/MSD

[2] Field Duplicate Pair

[3] Field Duplicate Pair

[4] Field Duplicate Pair

[5] Field Duplicate Pair

SS = Surface sample 0-6 inches

SB1 = Subsurface sample 6-12 inches

SB2 = Subsurface sample 12 -18 inches

J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.

U = Undetected at the limit of detection.

Detections < RL and > MDL reported and qualified J per DoD QSM 4.2

Detections above the RL

Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862) (continued)

Field ID:	C-LS-HL-05-SS-894			C-LS-HL-05-SS-895			C-LS-HL-05-SS-896			C-LS-HL-05-SS-897			C-LS-HL-05-SS-898			C-LS-HL-05-SS-899		
Sampling Date:	2/29/2012			2/29/2012			2/29/2012			2/29/2012			2/29/2012			2/29/2012		
Lab ID:	L1203620-18			L1203620-11			L1203620-25			L1203620-04			L1203620-13			L1203620-12		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.01	< 0.01	U	0.0099	< 0.0099	U	0.043	< 0.043	U	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Acenaphthene	0.01	< 0.01	U	0.0099	< 0.0099	U	0.043	0.031	J	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Acenaphthylene	0.01	< 0.01	U	0.0099	< 0.0099	U	0.043	< 0.043	U	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Anthracene	0.01	0.0047	J	0.0099	< 0.0099	U	0.043	0.18		0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Benzo(a)anthracene	0.01	0.068		0.0099	0.0062	J	0.043	1.3		0.0077	0.004	J	0.0072	0.0046	J	0.0087	< 0.0087	U
Benzo(a)pyrene	0.01	0.097		0.0099	0.0076	J	0.043	1.3		0.0077	0.004	J	0.0072	0.005	J	0.0087	< 0.0087	U
Benzo(b)fluoranthene	0.01	0.1	J	0.0099	0.018	J	0.043	1.3	J	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Benzo(ghi)perylene	0.01	0.07		0.0099	0.0063	J	0.043	0.69		0.0077	0.0032	J	0.0072	0.0053	J	0.0087	< 0.0087	U
Benzo(k)fluoranthene	0.01	0.094	J	0.0099	< 0.0099	U	0.043	1.1	J	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Chrysene	0.01	0.087		0.0099	0.0095	J	0.043	1.7		0.0077	0.0053	J	0.0072	0.006	J	0.0087	< 0.0087	U
Dibenzo(a,h)anthracene	0.01	0.017		0.0099	< 0.0099	U	0.043	0.22		0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Fluoranthene	0.01	0.16		0.0099	0.012		0.043	2.5		0.0077	0.0079		0.0072	0.008		0.0087	< 0.0087	U
Fluorene	0.01	< 0.01	U	0.0099	< 0.0099	U	0.043	< 0.043	U	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Indeno(1,2,3-cd)pyrene	0.01	0.065		0.0099	0.0054	J	0.043	0.71		0.0077	0.0029	J	0.0072	0.0035	J	0.0087	< 0.0087	U
Naphthalene	0.01	< 0.01	U	0.0099	< 0.0099	U	0.043	0.014	J	0.0077	< 0.0077	U	0.0072	< 0.0072	U	0.0087	< 0.0087	U
Phenanthrene	0.01	0.047		0.0099	0.0041	J	0.043	1.2		0.0077	0.0032	J	0.0072	0.0033	J	0.0087	< 0.0087	U
Pyrene	0.01	0.16		0.0099	0.011		0.043	2.5		0.0077	0.0069	J	0.0072	0.0072		0.0087	< 0.0087	U

Notes:

[1] MS/MSD

[2] Field Duplicate Pair

[3] Field Duplicate Pair

[4] Field Duplicate Pair

[5] Field Duplicate Pair

SS = Surface sample 0-6 inches

SB1 = Subsurface sample 6-12 inches

SB2 = Subsurface sample 12 -18 inches

J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.

U = Undetected at the limit of detection.

Detections < RL and > MDL reported and qualified J per DoD QSM 4.2

Detections above the RL

Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862) (continued)

Field ID:	C-LS-HL-05-SS-900			C-LS-HL-05-SS-901			C-LS-HL-05-SS-902			C-LS-HL-05-SS-903			C-LS-HL-05-SS-904			C-LS-HL-05-SS-905		
Sampling Date:	2/29/2012			2/29/2012			3/2/2012			3/2/2012			3/2/2012			3/2/2012		
Lab ID:	L1203620-07			L1203620-21			L1203792-16			L1203792-21			L1203792-20			L1203792-18		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	< 0.094	U	0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	< 0.014	U
Acenaphthene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	0.027	J	0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	< 0.014	U
Acenaphthylene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	< 0.094	U	0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	< 0.014	U
Anthracene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	0.18		0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	0.013	J
Benzo(a)anthracene	0.072	< 0.072	U	0.0083	0.0051	J	0.094	1		0.0076	0.0029	J	0.28	< 0.28	U	0.014	0.13	
Benzo(a)pyrene	0.072	< 0.072	U	0.0083	0.0055	J	0.094	0.93		0.0076	0.0029	J	0.28	< 0.28	U	0.014	0.14	
Benzo(b)fluoranthene	0.072	< 0.072	U	0.0083	0.014	J	0.094	0.9	J	0.0076	0.011	J	0.28	< 0.28	U	0.014	0.18	J
Benzo(ghi)perylene	0.072	< 0.072	U	0.0083	0.0041	J	0.094	0.48		0.0076	0.0025	J	0.28	< 0.28	U	0.014	0.12	
Benzo(k)fluoranthene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	0.79	J	0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	0.1	J
Chrysene	0.072	< 0.072	U	0.0083	0.0067	J	0.094	1.1		0.0076	0.0035	J	0.28	< 0.28	U	0.014	0.17	
Dibenzo(a,h)anthracene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	0.14		0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	0.029	
Fluoranthene	0.072	< 0.072	U	0.0083	0.0096		0.094	2.2		0.0076	0.0043	J	0.28	< 0.28	U	0.014	0.24	
Fluorene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	< 0.094	U	0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	< 0.014	U
Indeno(1,2,3-cd)pyrene	0.072	< 0.072	U	0.0083	0.0035	J	0.094	0.48		0.0076	0.0023	J	0.28	< 0.28	U	0.014	0.1	
Naphthalene	0.072	< 0.072	U	0.0083	< 0.0083	U	0.094	0.028	J	0.0076	< 0.0076	U	0.28	< 0.28	U	0.014	< 0.014	U
Phenanthrene	0.072	< 0.072	U	0.0083	0.0036	J	0.094	0.99		0.0076	0.0019	J	0.28	< 0.28	U	0.014	0.093	
Pyrene	0.072	< 0.072	U	0.0083	0.0096		0.094	1.8		0.0076	0.0038	J	0.28	< 0.28	U	0.014	0.22	

Notes:

[1] MS/MSD

[2] Field Duplicate Pair

[3] Field Duplicate Pair

[4] Field Duplicate Pair

[5] Field Duplicate Pair

SS = Surface sample 0-6 inches

SB1 = Subsurface sample 6-12 inches

SB2 = Subsurface sample 12 -18 inches

J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.

U = Undetected at the limit of detection.

Detections < RL and > MDL reported and qualified J per DoD QSM 4.2

Detections above the RL

Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862) (continued)

Field ID:	C-LS-HL-05-SS-906			C-LS-HL-05-SS-907			C-LS-HL-05-SS-919[3]			C-LS-HL-05-SS-920[1,3]			C-LS-HL-05-SS-921			C-LS-HL-05-SS-922		
Sampling Date:	3/2/2012			3/2/2012			3/2/2012			3/2/2012			3/2/2012			3/2/2012		
Lab ID:	L1203792-17			L1203792-23			L1203792-03			L1203792-02			L1203792-04			L1203792-13		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.015	< 0.015	U	0.0074	< 0.0074	U	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Acenaphthene	0.015	< 0.015	U	0.0074	< 0.0074	U	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Acenaphthylene	0.015	< 0.015	U	0.0074	< 0.0074	U	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Anthracene	0.015	< 0.015	U	0.0074	< 0.0074	U	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Benzo(a)anthracene	0.015	0.039		0.0074	0.013		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Benzo(a)pyrene	0.015	0.052		0.0074	0.014		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Benzo(b)fluoranthene	0.015	0.071	J	0.0074	0.021	J	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Benzo(ghi)perylene	0.015	0.052		0.0074	0.013		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Benzo(k)fluoranthene	0.015	0.055	J	0.0074	0.014	J	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Chrysene	0.015	0.062		0.0074	0.016		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Dibenzo(a,h)anthracene	0.015	0.011	J	0.0074	0.003	J	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Fluoranthene	0.015	0.08		0.0074	0.026		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	0.0023	J	0.0082	< 0.0082	U
Fluorene	0.015	< 0.015	U	0.0074	< 0.0074	U	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Indeno(1,2,3-cd)pyrene	0.015	0.044		0.0074	0.011		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Naphthalene	0.015	< 0.015	U	0.0074	< 0.0074	U	0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Phenanthrene	0.015	0.021		0.0074	0.0085		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	< 0.0082	U	0.0082	< 0.0082	U
Pyrene	0.015	0.078		0.0074	0.023		0.0084	< 0.0084	U	0.0083	< 0.0083	U	0.0082	0.0021	J	0.0082	< 0.0082	U

Notes:
[1] MS/MSD
[2] Field Duplicate Pair
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
SB2 = Subsurface sample 12 -18 inches
J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862) (continued)

Field ID:	C-LS-HL-05-SS-923			C-LS-HL-05-SS-924[4]			C-LS-HL-05-SS-925[1,4]			C-LS-HL-05-SS-926			C-LS-HL-05-SS-927			C-LS-HL-05-SS-928[5]		
Sampling Date:	3/2/2012			3/2/2012			3/2/2012			3/2/2012			3/2/2012			3/2/2012		
Lab ID:	L1203792-12			L1203792-11			L1203792-05			L1203792-06			L1203792-07			L1203792-08		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.008	< 0.008	U	0.0079	< 0.0079	U	0.0079	< 0.0079	U	0.009	< 0.009	U	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Acenaphthene	0.008	0.004	J	0.0079	0.0018	J	0.0079	0.0028	J	0.009	< 0.009	U	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Acenaphthylene	0.008	< 0.008	U	0.0079	< 0.0079	U	0.0079	< 0.0079	U	0.009	< 0.009	U	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Anthracene	0.008	0.015		0.0079	0.0099		0.0079	0.01		0.009	0.0021	J	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Benzo(a)anthracene	0.008	0.18		0.0079	0.12		0.0079	0.15		0.009	0.011		0.0081	< 0.0081	U	0.0081	< 0.0081	U
Benzo(a)pyrene	0.008	0.22		0.0079	0.16		0.0079	0.2		0.009	0.0098		0.0081	< 0.0081	U	0.0081	< 0.0081	U
Benzo(b)fluoranthene	0.008	0.2	J	0.0079	0.19	J	0.0079	0.2	J	0.009	0.019	J	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Benzo(ghi)perylene	0.008	0.16		0.0079	0.14		0.0079	0.16		0.009	0.0086	J	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Benzo(k)fluoranthene	0.008	0.2	J	0.0079	0.15	J	0.0079	0.17	J	0.009	0.0095	J	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Chrysene	0.008	0.25		0.0079	0.21		0.0079	0.24		0.009	0.013		0.0081	< 0.0081	U	0.0081	< 0.0081	U
Dibenzo(a,h)anthracene	0.008	0.041		0.0079	0.034		0.0079	0.039		0.009	< 0.009	U	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Fluoranthene	0.008	0.32		0.0079	0.3		0.0079	0.31		0.009	0.022		0.0081	0.0028	J	0.0081	< 0.0081	U
Fluorene	0.008	< 0.008	U	0.0079	< 0.0079	U	0.0079	< 0.0079	U	0.009	< 0.009	U	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Indeno(1,2,3-cd)pyrene	0.008	0.15		0.0079	0.13		0.0079	0.15		0.009	0.0069	J	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Naphthalene	0.008	< 0.008	U	0.0079	< 0.0079	U	0.0079	< 0.0079	U	0.009	< 0.009	U	0.0081	< 0.0081	U	0.0081	< 0.0081	U
Phenanthrene	0.008	0.12		0.0079	0.095		0.0079	0.097		0.009	0.011		0.0081	< 0.0081	U	0.0081	< 0.0081	U
Pyrene	0.008	0.34		0.0079	0.28		0.0079	0.31		0.009	0.019		0.0081	0.0024	J	0.0081	< 0.0081	U

Notes:

[1] MS/MSD
[2] Field Duplicate Pair
[3] Field Duplicate Pair
[4] Field Duplicate Pair
[5] Field Duplicate Pair
SS = Surface sample 0-6 inches
SB1 = Subsurface sample 6-12 inches
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J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.
U = Undetected at the limit of detection.
Detections < RL and > MDL reported and qualified J per DoD QSM 4.2
Detections above the RL
Detections above the RL and exceed RSL's

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Table 5-13 PAH Sampling Results, Jeep Target Area Skeet Range (TS862)

Field ID:	~~C-LS-HL-05-SS-929~~[1,4]			C-LS-HL-05-SS-930			C-LS-HL-05-SS-931		
Sampling Date:	3/2/2012			3/2/2012			3/2/2012		
Lab ID:	L1203792-10			L1203792-15			L1203792-09		
Polyaromatic Hydrocarbons (mg/Kg)	RL	Result	Qualifier	RL	Result	Qualifier	RL	Result	Qualifier
2-Methylnaphthalene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Acenaphthene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Acenaphthylene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Anthracene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Benzo(a)anthracene	0.0082	< 0.0082	U	0.008	0.0037	J	0.0081	< 0.0081	U
Benzo(a)pyrene	0.0082	< 0.0082	U	0.008	0.0041	J	0.0081	< 0.0081	U
Benzo(b)fluoranthene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Benzo(ghi)perylene	0.0082	< 0.0082	U	0.008	0.0035	J	0.0081	< 0.0081	U
Benzo(k)fluoranthene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Chrysene	0.0082	< 0.0082	U	0.008	0.0051	J	0.0081	< 0.0081	U
Dibenzo(a,h)anthracene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Fluoranthene	0.0082	< 0.0082	U	0.008	0.0065	J	0.0081	< 0.0081	U
Fluorene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Indeno(1,2,3-cd)pyrene	0.0082	< 0.0082	U	0.008	0.0033	J	0.0081	< 0.0081	U
Naphthalene	0.0082	< 0.0082	U	0.008	< 0.008	U	0.0081	< 0.0081	U
Phenanthrene	0.0082	< 0.0082	U	0.008	0.0023	J	0.0081	< 0.0081	U
Pyrene	0.0082	< 0.0082	U	0.008	0.0062	J	0.0081	< 0.0081	U

Notes:

[1] MS/MSD

[2] Field Duplicate Pair

[3] Field Duplicate Pair

[4] Field Duplicate Pair

[5] Field Duplicate Pair

SS = Surface sample 0-6 inches

SB1 = Subsurface sample 6-12 inches

SB2 = Subsurface sample 12 -18 inches

J = Estimated: The analyte was positively identified; the quantitation is an estimation and / or The quantitation is an estimation due to discrepancies in meeting certain analyte- specific quality control criteria.

U = Undetected at the limit of detection.

Detections < RL and > MDL reported and qualified J per DoD QSM 4.2

Detections above the RL

Detections above the RL and exceed RSL's

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