Addendum to Resource Conservation Recovery Act (RCRA) Facility Investigation Report (RFI), Parcel 21 Solid Waste Management Unit 72 Building 530, Former De-Activation Furnace And Area of Concern 60, Building 522, Ammunition Renovation Building Fort Wingate Depot Activity (FWDA) McKinley County, New Mexico

April 24, 2012

Prepared By:
PIKA International, Inc.
12723 Capricorn Drive, Suite #500
Stafford, TX 77477

Prepared For:

US ARMY CORPS OF ENGINEERS
Fort Worth District, TX
Contracts: W912BV-00-C-0053
and W912G-10-C-0054

Table of Contents

ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AST	Above ground storage tank(s)
BGS	Below Ground Surface
°C	Degrees Centigrade
CESWF	U.S. Army Engineer District, Fort Worth
COC	Chain of Custody
D&D	Decontamination and Demolition
ECM	Earth Covered Magazines
EDD	Electronic Data Delivery
EPA	Environmental Protection Agency
Ft.	Fort
ft	feet
FWDA	Fort Wingate Depot Activity
GPS	Global Positioning System
HWB	Hazardous Waste Bureau
HTWE	High Temperature Water Extraction
IAW	In Accordance With
MIDAS	Munitions Items Disposition Action System
Mg/kg	milligrams per kilogram
NMED	New Mexico Environment Department
PCB	Polychlorinated Biphenyls
PIKA	PIKA International, Inc.
QC	Quality Control
RCRA	Resource Conservation Recovery Act
RFI	RCRA Facility Investigation
RSL	Regional Screening Levels
SAP	Sampling and Analysis Plan
SOW	Scope of Work
SRHI	Summary Report of Historical Information
SSG	Soil Screening Guidance (NMED)
SWMU	Solid Waste Management Unit
SVOC	Semi Volatile Organic Compound
USACE	United States Army Corps of Engineers (Army)
WP	Work Plan

Appendix

1.0 BACKGROUND SWMU 72 (BUILDING 530), FORMER DE-ACTIVATION FURNACE

This report has been written to serve as an *Addendum to the Resource Conservation Recovery Act (RCRA) Facility Investigation Report (RFI), Parcel 21, Ft. Wingate Depot Activity, McKinley County, New Mexico, 14 January, 2011.* The objective of this report is to provide details of the sampling and analysis and other work conducted in Solid Waste Management Unit (SWMU) 72, (Building 530) and Area of Concern (AOC) 60, (Building 522). Authorization for performance is contained in contract numbers W912BV-00-C-0053 and W912G-10-C-0054, issued to PIKA by the U.S. Army Corps of Engineers (USACE) District, Fort (Ft.) Worth (CESWF).
The Army has submitted three documents to the New Mexico Environmental Department (NMED) that pertain to Parcel 21, SWMU 72, (Building 530), and AOC 60, (Building 522):

- *Summary Report of Historical Information (SRHI) Parcel 21, Final, Fort Wingate Depot Activity, McKinley County, New Mexico, June 9, 2008* ; which summarizes the historical site use for Parcel 21 and its buildings.
- *Resource Conservation Recovery Act (RCRA) Facility Investigation Work Plan, Parcel 21, Final, Fort Wingate Depot Activity, McKinley County, New Mexico. Revision – 30 September 2008*, which contains the detailed plans, procedures, and protocols for the investigations of Areas of Concern (AOC) and SWMUs located within Parcel 21.
- *Resource Conservation Recovery Act (RCRA) Facility Investigation Report (RFI), Parcel 21, Ft. Wingate Depot Activity, McKinley County, New Mexico, 14 January 2011* to the New Mexico Environmental Department (NMED). This document contains the results and findings of the RFI.

PIKA was tasked with the demolition, clean up, and collection of post-demolition soil samples from the area beneath the drain trench and two pits adjacent to Building 530 and conduct pre-demolition soil sampling around the perimeter of Building 522.

2.0 SWMU 72 (BUILDING 530), FORMER DE-ACTIVATION FURNACE

2.2 BACKGROUND

SWMU 72 is Building 530 (Former Deactivation Furnace) and the surrounding area. Background details of SWMU 72 (Building 530) are contained in RCRA RFI, Parcel 21, Ft. Wingate Depot Activity, McKinley County, New Mexico, which has been submitted to NMED by the Army. Building 530 location is shown in Figure 1-1.

2.3 CURRENT INVESTIGATION

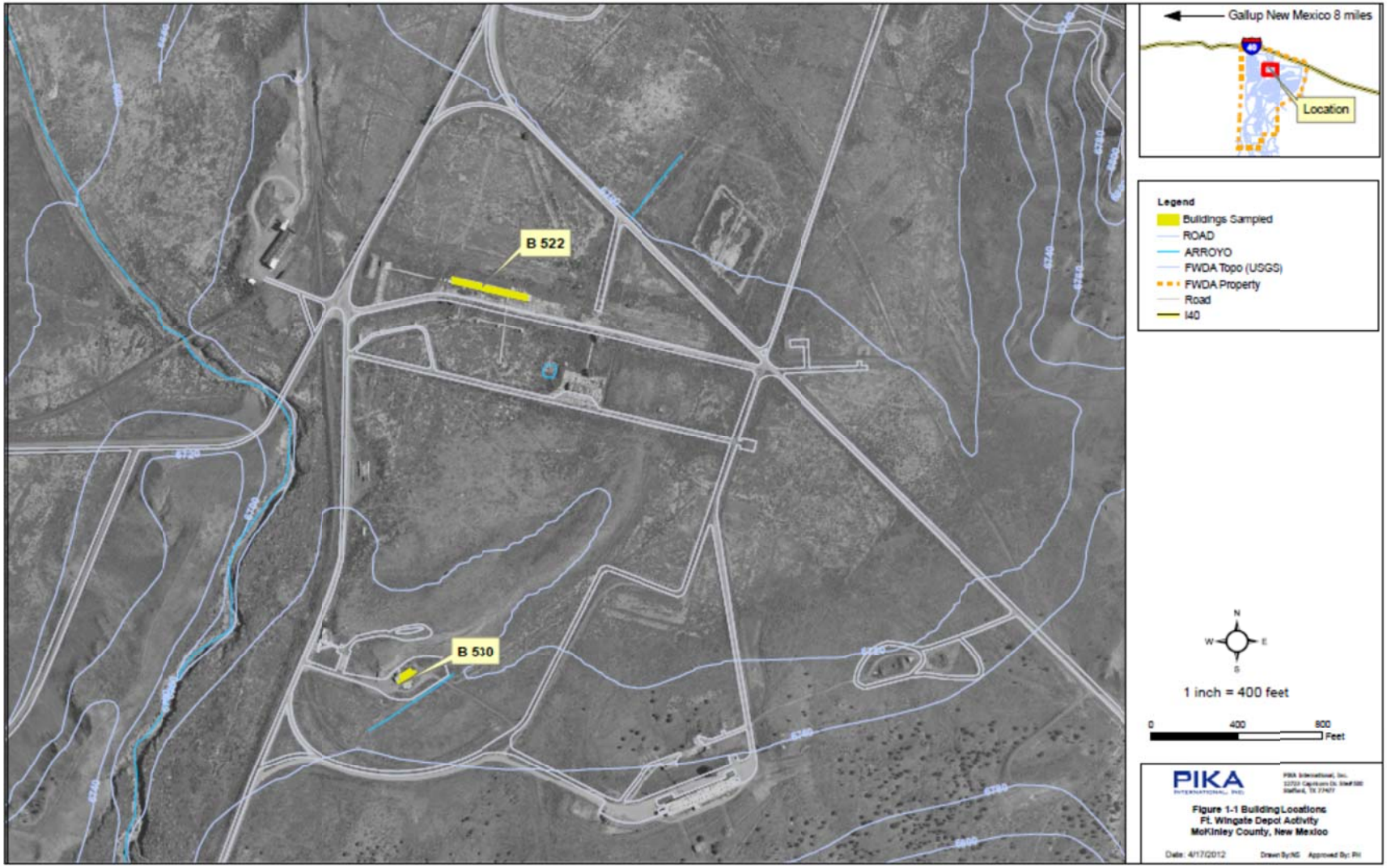
2.3.1 Scope of Activities

PIKA's scope of work (SOW) was to decontaminate and demolish Building 530 and its associated surface and subsurface structures. The pre-demolition condition of Building 530 is shown in Figure 1-2. In addition to the SOW's demolition tasks at Building 530, PIKA was also tasked with the collection of three (3) soil samples from the soil underneath the drain trench inside Building 530, and the collection of four (4) samples two (2) each from the undisturbed soil underneath the pits adjacent to Building 530. Other SOW tasks included:

- Based upon the historical reports suspicions that the pits associated with Building 530 may have had outflow drains, PIKA was tasked to investigate and determine if outflow drains were present/absent as the concrete pit walls and floor were removed; and
- PIKA was also tasked with the cleanup, removal and disposal of construction debris in and around the Building 530 area.

2.3.2 SWMU 72 (Building 530) Soil Investigation

The sample locations for Building 530 are under a central trough that appeared to have been part of the floor drain system and the two (2) pits that were part of the manufacturing process during the building's active use. The intent of these samples is to determine the presence/absence of contaminants, and, if present, provide limited lateral and vertical delineation.


B 522
B 530
Gallup New Mexico 8 miles
Location
Legend
Buildings Sampled
ROAD
ARROYO
FWDA Topo (USGS)
FWDA Property
Road
I40
N
W
E
S
1 inch = 400 feet
0
400
800
Feet
PIKA
Figure 1-1 Building Locations
Ft. Wingate Depot Activity
McKinley County, New Mexico


Legend
Building 530 Footprint
Notes:
B530 Former Deactivation Furnace
N
W
E
S
1 inch = 20 feet
0
20
40
Feet
PIKA
PIKA International, Inc.
12723 Capricorn Dr. Ste#500
Stafford, TX 77477
Figure 1-2 Building 530 Footprint
Sampling Pre-Demolition
Ft. Wingate Depot Activity
McKinley County, New Mexico
Drawn On: 4/17/2012 Drawn By: NS Approved By: PH

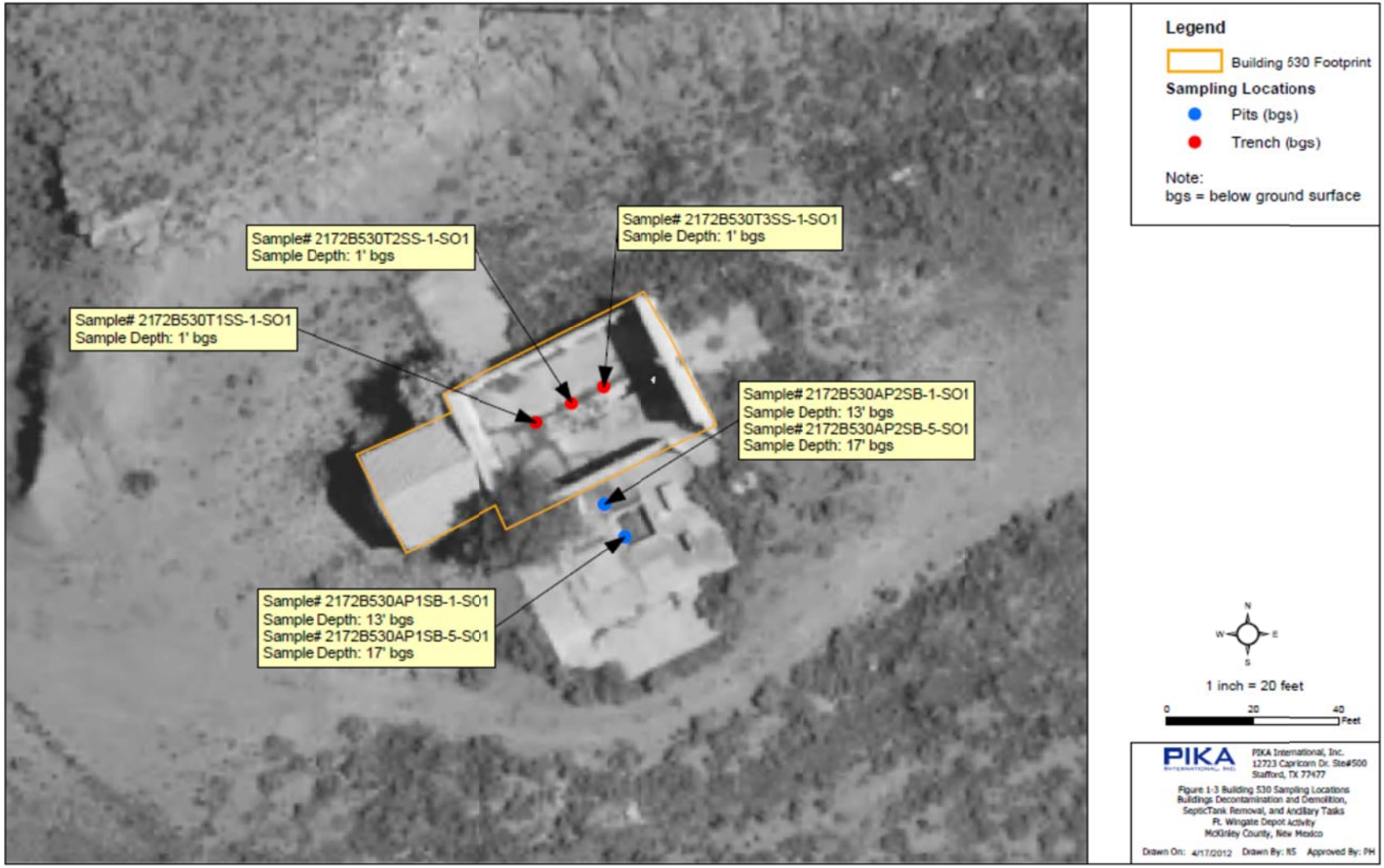
Global Positioning System (GPS) coordinates were taken for the sample locations (trough and pits) prior to building demolition by PIKA and the Army representative so the sampling points could be re-located after the building demolition. The RFI work plan (WP) originally required five (5) samples of the trough; each spaced 15 ft apart. However during the pre-demolition sample location siting it was determined the trough was shorter than previously reported. The RFI work plan had the five samples 15 ft apart; however when the trough was measured it was approximately 26 ft long. Therefore, with Army concurrence, PIKA only collected three (3) samples, each 15 ft apart. One sample was collected from the subsurface soil at the center of the trough and the other two samples of the subsurface soil were collected, one at each end of the trough for complete representation of the trough. Each of these samples was collected from the soil approximately one foot below the bottom of the trough after the trough was removed.

PIKA collected four (4) subsurface soil samples, two (2) samples from the soil directly beneath each pit. Upon completion of the demolition of these pits it was determined that each pit was twelve (12) ft deep. The first subsurface soil sample was collected from one (1) foot below the bottom of each pit and the second subsurface soil sample was collected at approximately five (5) ft below the bottom of each pit. Since the bottom of each pit was 12' the samples were taken at depths of thirteen (13) ft bgs and seventeen (17) ft bgs. Table 2-1 below contains a summary of the samples collected at Building 530. Figure 1-3 provides the building layout and sample locations.

Table 2-1 Sample Summary Table

Sample Number	Sample Location	Sample Depth
2172B530T1SS-1-SO1	West end of floor trench	One foot below ground surface after the slab and trench were removed
2172B530T2SS-1-SO1	Center of floor trench	One foot below ground surface after the slab and trench were removed
2172B530T3SS-1-SO1	East end of floor trench	One foot below ground surface after the slab and trench were removed
2172B530AP2SB-1-SO1	Pit closest to Bld 530	One foot below the bottom of the concrete pit bottom, which were 13 feet bgs.
2172B530AP2SB-5-SO1	Pit closest to Bld 530	Five feet below the bottom of the concrete pit bottom, which were 17 feet bgs.
2172B530AP1SB-1-SO1	Pit farthest from Bld 530	One foot below the bottom of the concrete pit bottom. The bottom of the pit was 12 feet bgs.
2172B530AP1SB-5-SO1	Pit farthest from Bld 530	Five feet below the bottom of the concrete pit bottom. The bottom of the pit was 12 feet bgs.

Due to the historical report's suspicions that these pits were used for contaminated waste in the manufacturing process and that they might have drain systems at the bottom of the pits draining into the adjacent arroyo, PIKA provided constant surveillance of the tank debris being removed and its surrounding soils to identify any pipes or drain materials. There were no signs of drain system materials in the debris or soil excavation. Furthermore, as an additional quality check, PIKA also inspected the banks of the arroyo and did not find anything that would represent a discharge point.


Sample# 2172B530T2SS-1-SO1
Sample Depth: 1' bgs
Sample# 2172B530T3SS-1-SO1
Sample Depth: 1' bgs
Sample# 2172B530T1SS-1-SO1
Sample Depth: 1' bgs
Sample# 2172B530AP2SB-1-SO1
Sample Depth: 13' bgs
Sample# 2172B530AP2SB-5-SO1
Sample Depth: 17' bgs
Sample# 2172B530AP1SB-1-SO1
Sample Depth: 13' bgs
Sample# 2172B530AP1SB-5-SO1
Sample Depth: 17' bgs
Legend
Building 530 Footprint
Sampling Locations
Pits (bgs)
Trench (bgs)
Note:
bgs = below ground surface
N
W
E
S
1 inch = 20 feet
0
20
40
Feet
PIKA International, Inc.
12723 Capricorn Dr. Ste#500
Stafford, TX 77477
Figure 1-3 Building 530 Sampling Locations
Buildings Decontamination and Demolition,
SepticTank Removal, and Ancillary Tasks
Ft. Wingate Depot Activity
McKinley County, New Mexico
Drawn On: 4/17/2012 Drawn By: NS Approved By: PH

2.3.3 Sampling Handling and Analysis

The samples were collected and handled as outlined in the *Resource Conservation Recovery Act (RCRA) Facility Investigation Work Plan, Parcel 21, Final, Fort Wingate Depot Activity, McKinley County, New Mexico. Revision – 30 September 2008*. In summary, the following procedures per the accepted Final Sampling and Analysis Plan (SAP) were followed when collecting these samples:

- GPS coordinates were used to relocate the sampling locations.
- Each sample was collected using a new laboratory supplied disposable sampling tool.
- Each soil sample was placed into a pre-labeled laboratory supplied jar and then placed into zip lock bags.
- A sample identification information was written that listed on a Chain of Custody (COC) form. Appendix A contains the COC for all samples.
- Samples were packaged, cooled, and shipped to the approved laboratory for analysis.

After the samples were collected, PIKA backfilled the pit excavations and the building site was final graded.

2.3.4 Sampling Analysis and Results

The analytical results of the samples collected from the Building 530 area (SWMU 72) were received by PIKA; these data were reviewed and validated. The laboratory electronic data delivery (EDD) package and the data validation EDD, and the Army EDD are in Appendix B and Appendix C contains the data validation reports and raw data EDD. These appendices are located on the compact disc accompanying this report.

The validated data was then compared to the Environmental Protection Agency (EPA) Regional Screening Levels (RSL), November 2010, and the NMED soil screening guidance (SSG) December 2009. The validated data were then compared to the Environmental Protection Agency (EPA) Regional Screening Levels (RSL), November 2010, and the NMED soil screening guidance (SSG) December 2009. None of the analysis of the samples collected exceeded NMED SSGs. Appendix D contains the B530 All Results Table and B530 Summary of Detected Constituents in Soil Table. Appendix D is located on the compact disc accompanying this report.

2.3.5 SWMU 72 (Building 530) Area Cleanup

As part of the building demolition PIKA conducted an inspection and clean-up of the surface debris that was scattered around the SWMU 72 (Building 530) area and the associated arroyo. The debris consisted of historic construction debris such as concrete, broken wood pieces, and other miscellaneous debris. This debris was

collected and disposed of with the construction debris generated during the building demolition and properly disposed in accordance with all Federal, State, local and environmental rules, regulations and laws. Once the building was demolished, samples collected, excavations filled and the site re-graded, the area was inspected and accepted by the Army QC Representative. Appendix E contains the quality control (QC) report for this debris removal and disposal. Appendix F contains photographs of the building and sampling.

2.3.6 Conclusions and Recommendations

Based on the results of this investigation and the investigation reported in the January 2011 RFI Report, the Army concludes no sample constituents exceed the Soil Screening Levels. Therefore, the Army recommends no further action at SWMU 72 and its removal from the Permit.

3.0 AREA OF CONCERN 60 (BUILDING 522), AMMUNITION RENOVATION BUILDING

3.1 BACKGROUND

AOC 60 is Building 522 (Ammunition Renovation Building) and the surrounding area. Background details of AOC 60 are contained in *RCRA RFI, Parcel 21, Ft. Wingate Depot Activity, McKinley County, New Mexico, 14 January 2011* which has been submitted to NMED by the Army. Building 522 location is shown in Figure 1-1.

3.2 CURRENT INVESTIGATION

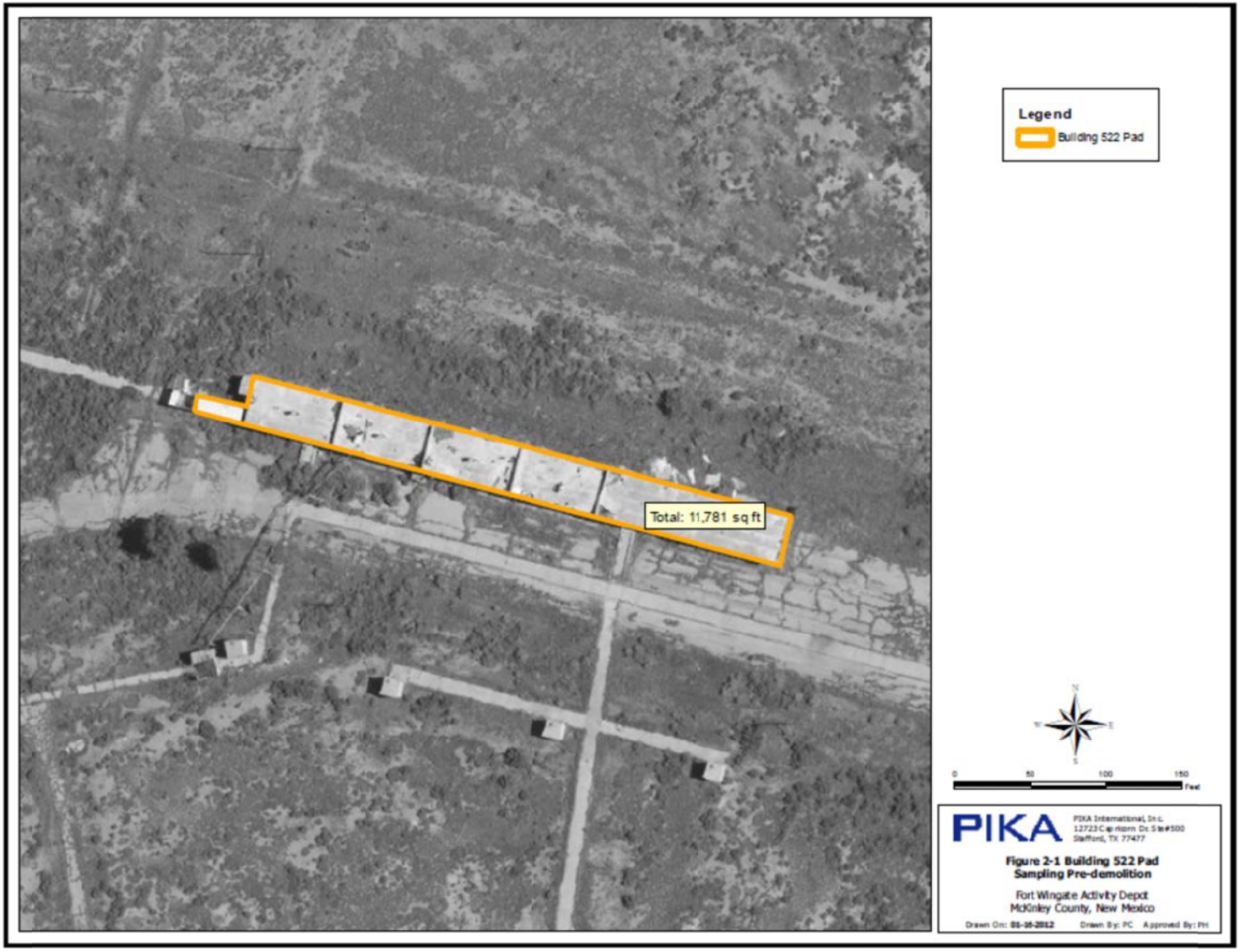
3.2.1 Scope of Activities

PIKA's SOW was to decontaminate and demolish Building 522 and its associated surface and subsurface structures. The pre-demolition condition of Building 522 is shown in Figure 2-1. The Army coordinated with NMED on the sample locations and parameters prior to sampling and obtained NMED's approval via email from Tammy Diaz, dated January 26, 2010. Sample locations were provided to NMED on drawing A-5-202. The email and drawing are provided in Appendix G. In addition to the SOW's demolition tasks at Building 522, PIKA was tasked with the collection of 28 surface soil samples around Building 522 before any demolition activities were initiated. These samples were collected to support the Army's Parcel 21 RFI Investigation data gathering activities at Building 522. The sampling and analysis was conducted to evaluate the presence or potential for release during the building usage.

3.2.2 AOC 60 (Building 522) Soil Investigation

There were two deviations from the Army *Resource Conservation Recovery Act (RCRA) Facility Investigation Work Plan, Parcel 21, Final, Fort Wingate Depot Activity, McKinley County, New Mexico. Revision – 30 September 2008*.

1. The sampling was to take place after the building was demolished; and
2. Seven (7) soil samples were to be collected along the building expansion joints from soil under the building slab.


Legend
Building 522 Pad
Total: 11,781 sq ft
0
50
100
150
Feet
PIKA
PIKA International, Inc.
12723 Cimarron Dr. Ste#500
Stafford, TX 77477
Figure 2-1 Building 522 Pad
Sampling Pre-demolition
Fort Wingate Activity Depot
McKinley County, New Mexico
Drawn On: 01-05-2012
Drawn By: PC
Approved By: PH

During the preliminary building assessment, it was determined that Building 522 would require extensive pre-demolition preparation that included; hazard materials removal, asbestos abatement, and the possible use of explosives to make the building and or equipment safe for demolition. The Army sample plan was to collect samples after the building was demolished. However, to avoid the potential of the building demolition activities impacting the data; it was determined that sampling the soil before the building demolition would provide the most accurate data of the impacts to the area resulting from the building use.

The Army's sample plan called for seven (7) soil samples that were to be collected from the soil under the building slab, once removed, at the expansion joints in the building. However, due to a coordination error between the Army and the contractor these seven samples were taken along the perimeter of the building. Additionally, the sample on the south side of the covered platform was not taken.

Prior to demolition, PIKA and the Army inspected the surface soil areas at the exterior foundation of the expansion joints on both sides of the buildings and select sampling locations from the soil at the foundation that would have most likely contained seeping from the expansions joints into the surrounding soils. Additionally, any discolored or stained soil discovered during demolition would be sampled under the plan. PIKA and the Army conducted constant surveillance for any signs of soil discoloration or staining of the soils under any structure being demolished in the Workshop Area. During the demolition of Building 522 there were no visual indications of soil staining or discoloration, as a result no under slab soil samples were collected. Prior to collecting the samples, PIKA and the Army site representative inspected the building and designated soil sampling locations around the building. The sample collection locations were sited to collect samples from lowest area around the planned sample location, from under driveways after concrete or asphalt was removed, or from areas showing signs of vegetation stress or soil staining, and at the building expansion joints. And at any sampling location if back fill or foundation fill was encountered, the fill material was scraped aside and the sample collected from the under lying soil. During the sampling there were no soil stains or vegetation stress areas identified during the sampling. Once the sample location was identified and accepted by the Army, a pin flag was placed in the ground at the sampling point and the sample was collected.
The soil samples were collected in the following locations:

- One (1) soil sample at each door way (15 total).
- One (1) soil sample at the end of each ramp (2 total).
- Two (2) soil samples from the east end dock (2 total).
- One (1) soil sample along the south side dock.
- One (1) soil sample from the west end of the building, and
- One (1) soil sample adjacent to each expansion wall (7 total).

The soil samples were collected as discussed in Section 3.2.2 above and GPS coordinates were recorded at each sample location. Samples were analyzed for explosives, SVOCs, PCBs, and nitrocellulose using the latest EPA methods. Figure 2-2 shows the sampling locations at Building 522.

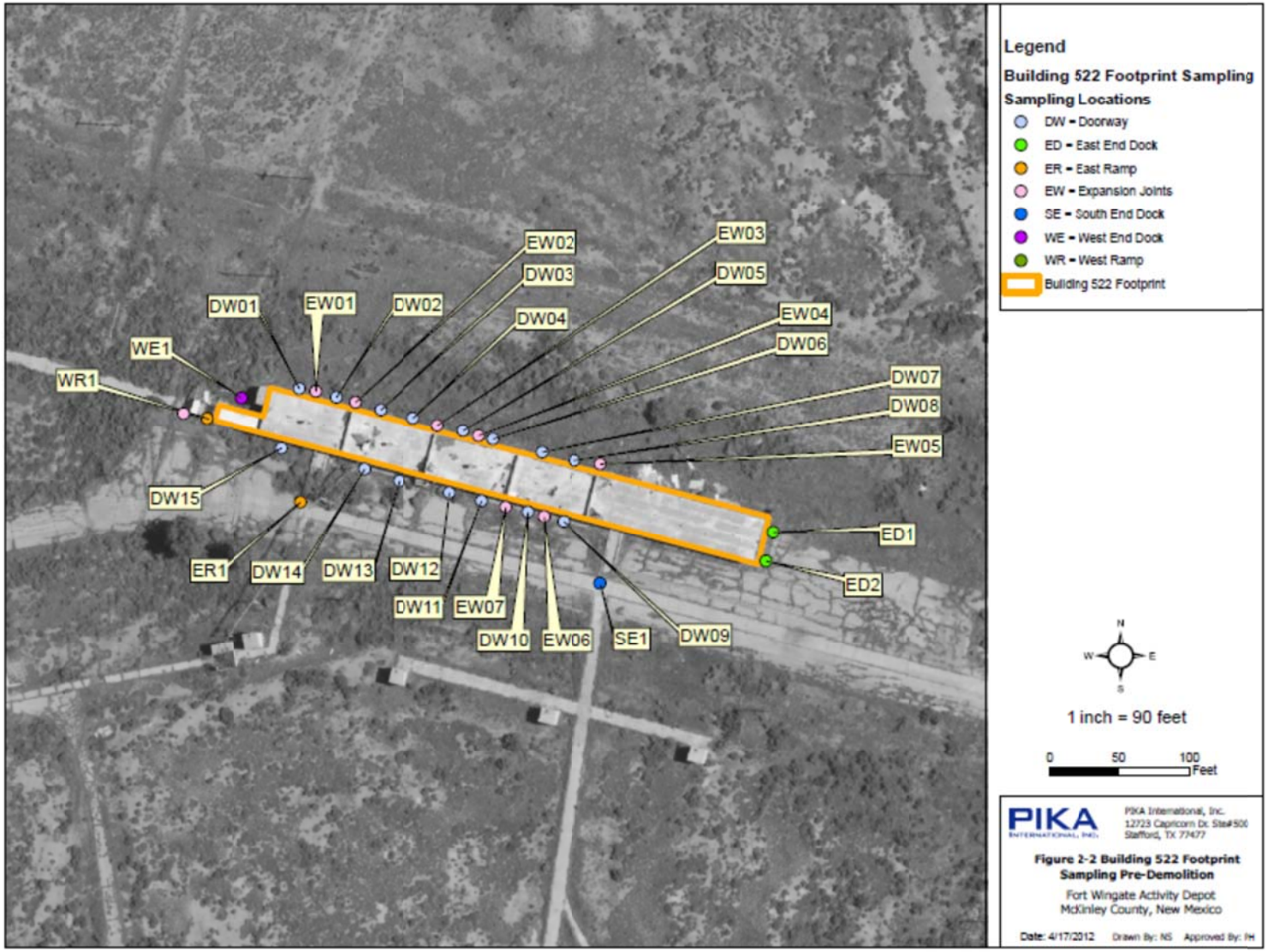
3.2.3 Sampling Handling and Analysis

The samples were collected and handled as outlined in the *Resource Conservation Recovery Act (RCRA) Facility Investigation Work Plan, Parcel 21, Final, Fort Wingate Depot Activity, McKinley County, New Mexico. Revision – 30 September 2008*. In summary, the following procedures per the accepted Final SAP were followed when collecting these samples:

- The samples were collected at the pre-arranged sampling locations;
- Each sample was collected using a new laboratory supplied disposable sampling tool;
- Each soil sample was placed into a pre-labeled laboratory supplied jar and then placed into zip lock bags;
- The samples were listed on a COC form. Appendix A contains the COC for all samples;
- A GPS coordinate was collected at each sampling location; and
- Samples were packaged, cooled, and shipped to the approved laboratory for analysis.

The soil samples were collected and transported to Test America and analyzed in accordance with (IAW) the Army's accepted Final SAP; in addition GPS coordinates were recorded at each sample location.

After the samples were collected the building was demolished. As part of the building demolition PIKA conducted an inspection and clean-up of the surface debris that was scattered around the AOC 60 (Building 522) area. The debris consisted of historic construction debris such as concrete, broken wood pieces, and other miscellaneous debris. This debris was collected and disposed of with the construction debris generated during the building demolition and properly disposed in accordance with all Federal, State, local and environmental rules, regulations and laws. Once the samples were collected, the building was demolished, excavations were filled and the site was re-graded the area was inspected and accepted by the Army QC Representative. Appendix E contains the quality control (QC) report for this debris removal and disposal. Appendix F contains photographs of the building and sampling.


Legend
Building 522 Footprint Sampling
Sampling Locations
DW - Doorway
ED - East End Dock
ER - East Ramp
EW - Expansion Joints
SE - South End Dock
WE - West End Dock
WR - West Ramp
Building 522 Footprint
DW01
EW01
DW02
EW02
DW03
DW04
EW03
DW05
EW04
DW06
DW07
DW08
EW05
WE1
WR1
DW15
ER1
DW14
DW13
DW12
DW11
EW07
DW10
EW06
SE1
DW09
ED1
ED2
N
W
E
S
1 inch = 90 feet
0
50
100
Feet
PIKA
PIKA International, Inc.
12723 Capricorn Dr. Ste#500
Stafford, TX 77477
Figure 2-2 Building 522 Footprint Sampling Pre-Demolition
Fort Wingate Activity Depot
McKinley County, New Mexico
Date: 4/17/2012
Drawn By: NS
Approved By: PH

3.2.4 Sampling Analysis and Results

The analytical results of the samples collected from the AOC 60 (Building 522) area were received by PIKA reviewed, and validated. The laboratory electronic data delivery (EDD) package and the data validation EDD, and the Army EDD are in Appendix B and Appendix C contains the data validation reports and raw data. These appendices are located on the compact disc accompanying this report.

The validated data was then compared to the Environmental Protection Agency (EPA) Regional Screening Levels (RSL), November 2010, and the NMED soil screening guidance (SSG) December 2009. None of the analysis of the samples collected exceeded NMED SSGs. Appendix D contains the B522 All Results Table and B522 Summary of Detected Constituents in Soil Table. Appendix D is located on compact disc accompanying this report.

3.2.5 Conclusions and Recommendations

Based on the results of this investigation thus far, the Army concludes no sample constituents exceed the Soil Screening Levels. However, the seven samples beneath the slab and the one on the south side of the covered platform were not taken. The Army proposes these eight samples be taken at 3 – 6 inches below the surface in a second phase. The locations are shown with a blue oval on Figure A-5-202 in Appendix G.

Appendix A – Chains-of Custody

PIKA INTERNATIONAL, INC.

Pika International,Inc.
12723
Stafford, TX 77477
(281) 340-5525

CHAIN OF CUSTODY

DATE: 16-Sep-10
COC #: 1
PAGE: 1 **OF** 1

Project Manager:	Paul Hanneman	Project Contact:	Paul Hanneman	Bill To: Pika International,Inc.	Disposal Instructions: LAB
Project Name:	Ft Wingate - B530 Sampling	Phone Number:	(303) 770 - 1501	12723 Capricorn Drive, Suite 500	Shipment Method: Shipped via FedEx
Project Number:	09-12-149	Data Delivered to:	phanneman@pikainc.com	Stafford, TX 77477	Airbill Number: 868159420360

Comments: H=Hold Analysis Request X=Analyze

Standard TAT

Preservatives and Containers

Sample Information | **Methods for Analysis** | **RUSH**

No.	LAB Sample ID	Pika Sample ID	Date Sampled	Time Sampled	Matrix	VOC (Encore Samplers)	SVOC	White Phosphoros	RCRA TAL Metals	E xplosives																		QC (MS/MSD)	TOTAL BOTTLES
1		2172B530T1SS-1-SO1	16-Sep-10	0914	S	X	X	X	X	X				MS/MSD														X	19
2		2172B530T1SS-1-SO4	16-Sep-10	0803	A	X	X	X	X	X																			3
3		2172B530T2SS-1-SO1	16-Sep-10	0935	S	X	X	X	X	X																			7
4		2172B350T2SS-1-SO2	16-Sep-10	0945	S	X	X	X	X	X																			7
5		2172B530T3SS-1-SO1	16-Sep-10	0955	S	X	X	X	X	X																			7
6		2172B530AP1SB-1-SO1	16-Sep-10	0811	S	X	X	X	X	X																			7
7		2172B530AP1SB-5-SO1	16-Sep-10	0848	S	X	X	X	X	X																			7
8		2172B530AP2SB-1-SO1	16-Sep-10	0803	S	X	X	X	X	X																			7
9		2172B530AP2SB-5-SO1	16-Sep-10	0840	S	X	X	X	X	X																			7
10																													
11																													
12																													
13																													

Sampler's Signature:	**Date:** 16-Sep-10	**Time:**
Relinquished By:	**Date:** 16-Sep-10	**Time:**
Received By:	**Date:**	**Time:**
Relinquished By:	**Date:**	**Time:**
Received By (LAB):	**Date:**	**Time:**

For Lab Use

Does COC match samples:	Y or N	
Broken Container:	Y or N	
Received within holding time:	Y or N	
COC seal intact:	Y or N	
Other problems:	Y or N	
AMEC contacted:	Y or N	
Date contacted:		
Cooler Temperature at receipt:		C
Volatile Cooler Temperature:		C

SHIP TO:

STL-NORTH CANTON
4101 Shuffel Drive NW
North Canton, OH 44720
ATTN: Ken Kuzior

NUMBER OF COOLERS SENT: 2
VOLATILE COOLER ID:

PIKA INTERNATIONAL, INC.

Pika International,Inc.
12723
Stafford, TX 77477
(281) 340-5525

CHAIN OF CUSTODY

DATE: 13-Jul-10
COC #: 1
PAGE: 1 **OF** 3

Project Manager:	Paul Hanneman	Project Contact:	Paul Hanneman	Bill To:	Pika International,Inc.	Disposal Instructions:	LAB
Project Name:	Ft Wingate - B522 Sampling	Phone Number:	(303) 770 - 1501		12723 Capricorn Drive, Suite 500	Shipment Method:	Shipped via FedEx
Project Number:	09-12-149	Data Delivered to:	phanneman@pikainc.com		Stafford, TX 77477	Airbill Number:	868159602011

Comments: H=Hold Analysis Request X=Analyze

Standard TAT

Preservatives and Containers

Sample Information | **Methods for Analysis** | **RUSH**

No.	LAB Sample ID	Pika Sample ID	Date Sampled	Time Sampled	Matrix	VOC (Encore Samplers)	SVOC	White Phosphoros	Nitrate	TAL Metals	Perchlorate	PCBs	Explosives and Nitrocellulose	QC (MS/MSD)	TOTAL BOTTLES
1		2160B522DW01SS-1-SO1	13-Jul-10	0755	S	X	X						X	X	16
2		2160B522DW01SS-1-SO4	13-Jul-10	0755	A	X	X						X		2
3		2160B522DW02SS-1-SO1	13-Jul-10	0819	S	X	X						X		6
4		2160B522DW03SS-1-SO1	13-Jul-10	0837	S	X	X						X		6
5		2160B522DW03SS-1-SO2	13-Jul-10	0837	S	X	X						X		6
6		2160B522DW04SS-1-SO1	13-Jul-10	0846	S	X	X						X		6
7		2160B522DW05SS-1-SO1	13-Jul-10	0901	S	X	X						X		6
8		2160B522DW06SS-1-SO1	13-Jul-10	0913	S	X	X						X		6
9		2160B522DW07SS-1-SO1	13-Jul-10	0919	S	X	X						X		6
10		2160B522DW08SS-1-SO1	13-Jul-10	0925	S	X	X						X		6
11		2160B522DW09SS-1-SO1	13-Jul-10	1017	S	X	X						X		6
12		2160B522DW09SS-1-SO2	13-Jul-10	1017	S	X	X						X		6
13		2160B522DW10SS-1-SO1	13-Jul-10	1044	S	X	X						X		6

Sampler's Signature: ON FILE	**Date:** 13-Jul-10	**Time:**
Relinquished By: Richard C. Callahan	**Date:** 13-Jul-10	**Time:**
Received By:	**Date:**	**Time:**
Relinquished By:	**Date:**	**Time:**
Received By (LAB):	**Date:**	**Time:**

For Lab Use

Does COC match samples:	Y or N	
Broken Container:	Y or N	
Received within holding time:	Y or N	
COC seal intact:	Y or N	
Other problems:	Y or N	
AMEC contacted:	Y or N	
Date contacted:		
Cooler Temperature at receipt:		C
Volatile Cooler Temperature:		C

SHIP TO:

STL-NORTH CANTON
4101 Shuffel Drive NW
North Canton, OH 44720
ATTN: Ken Kuzior

NUMBER OF COOLERS SENT: 4
VOLATILE COOLER ID:

PIKA INTERNATIONAL, INC.

Pika International,Inc.
12723
Stafford, TX 77477
(281) 340-5525

CHAIN OF CUSTODY

DATE: 13-Jul-10
COC #: 1
PAGE: 2 **OF** 3

Project Manager:	Paul Hanneman	Project Contact:	Paul Hanneman	Bill To:	Pika International,Inc.	Disposal Instructions:	LAB
Project Name:	Ft Wingate - B522 Sampling	Phone Number:	(303) 770 - 1501		12723 Capricorn Drive, Suite 500	Shipment Method:	Shipped via FedEx
Project Number:	09-12-149	Data Delivered to:	phanneman@pikainc.com		Stafford, TX 77477	Airbill Number:	868159602011

Comments: H=Hold Analysis Request X=Analyze

Standard TAT

Preservatives and Containers

Sample Information | **Methods for Analysis** | **RUSH**

No.	LAB Sample ID	Pika Sample ID	Date Sampled	Time Sampled	Matrix	VOC (Encore Samplers)	SVOC	White Phosphoros	Nitrate	TAL Metals	Perchlorate	PCBs	Explosives and Nitrocellulose	QC (MS/MSD)	TOTAL BOTTLES
1		2160B522DW11SS-1-SO1	13-Jul-10	1107	S	X	X						X		6
2		2160B522DW12SS-1-SO1	13-Jul-10	1104	S	X	X						X		6
3		2160B522DW13SS-1-SO1	13-Jul-10	1129	S	X	X						X		6
4		2160B522DW14SS-1-SO1	13-Jul-10	1147	S	X	X						X		6
5		2160B522DW15SS-1-SO1	13-Jul-10	1212	S	X	X						X		6
6		2160B522ER1SS-1-SO1	13-Jul-10	1158	S	X	X						X		6
7		2160B522ER1SS-1-SO2	13-Jul-10	1158	S	X	X						X		6
8		2160B522WR1SS-1-SO1	13-Jul-10	1218	S	X	X						X		6
9		2160B522ED1SS-1-SO1	13-Jul-10	0942	S	X	X						X	X	16
10		2160B522ED2SS-1-SO1	13-Jul-10	0954	S	X	X						X		6
11		2160B522WE1SS-1-SO1	13-Jul-10	0745	S	X	X						X		6
12		2160B522SE1SS-1-SO1	13-Jul-10	1008	S	X	X						X		6
13		2160B522EW1SS-1-SO1	13-Jul-10	0811	S	X	X						X		6

Sampler's Signature: ON FILE	**Date:** 13-Jul-10	**Time:**
Relinquished By: Richard C. Callahan	**Date:** 13-Jul-10	**Time:**
Received By:	**Date:**	**Time:**
Relinquished By:	**Date:**	**Time:**
Received By (LAB):	**Date:**	**Time:**

For Lab Use

Does COC match samples:	Y or N	
Broken Container:	Y or N	
Received within holding time:	Y or N	
COC seal intact:	Y or N	
Other problems:	Y or N	
AMEC contacted:	Y or N	
Date contacted:		
Cooler Temperature at receipt:		C
Volatile Cooler Temperature:		C

SHIP TO:

STL-NORTH CANTON
4101 Shuffel Drive NW
North Canton, OH 44720
ATTN: Ken Kuzior

NUMBER OF COOLERS SENT: 4
VOLATILE COOLER ID:

PIKA INTERNATIONAL, INC.
Pika International,Inc.
12723
Stafford, TX 77477
(281) 340-5525

CHAIN OF CUSTODY

DATE: 13-Jul-10
COC #: 1
PAGE: 3 **OF** 3

Project Manager:	Paul Hanneman	Project Contact:	Paul Hanneman	Bill To: Pika International,Inc.	Disposal Instructions: LAB
Project Name:	Ft Wingate - B522 Sampling	Phone Number:	(303) 770 - 1501	12723 Capricorn Drive, Suite 500	Shipment Method: Shipped via FedEx
Project Number:	09-12-149	Data Delivered to:	phanneman@pikainc.com	Stafford, TX 77477	Airbill Number: 868159602011

Comments: H=Hold Analysis Request X=Analyze

Standard TAT

Preservatives and Containers

Sample Information / **Methods for Analysis** / **RUSH**

No.	LAB Sample ID	Pika Sample ID	Date Sampled	Time Sampled	Matrix	VOC (Encore Samplers)	SVOC	White Phosphoros	Nitrate	TAL Metals	Perchlorate	PCBs	Explosives and Nitrocellulose	QC (MS/MSD)	TOTAL BOTTLES
1		2160B522EW2SS-1-SO1	13-Jul-10	0827	S	X	X						X		6
2		2160B522EW3SS-1-SO1	13-Jul-10	0853	S	X	X						X		6
3		2160B522EW4SS-1-SO1	13-Jul-10	0907	S	X	X						X		6
4		2160B522EW5SS-1-SO1	13-Jul-10	0931	S	X	X						X		6
5		2160B522EW6SS-1-SO1	13-Jul-10	1030	S	X	X						X		6
6		2160B522EW7SS-1-SO1	13-Jul-10	1054	S	X	X						X		6
7		2160B522EW7SS-1-SO4	13-Jul-10	1054	A	X	X						X		
8															
9															
10															
11															
12															
13															

Sampler's Signature: ON FILE **Date:** 13-Jul-10 **Time:**

Relinquished By: Richard C. Callahan **Date:** 13-Jul-10 **Time:**

Received By: **Date:** **Time:**

Relinquished By: **Date:** **Time:**

Received By (LAB): **Date:** **Time:**

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
Received within holding time:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
AMEC contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	C
Volatile Cooler Temperature:	C

SHIP TO:

STL-NORTH CANTON
4101 Shuffel Drive NW
North Canton, OH 44720
ATTN: Ken Kuzior

NUMBER OF COOLERS SENT: 4
VOLATILE COOLER ID:

Appendix B – Electronic Data Deliveries

(Located on the included Compact Disc)

Appendix C – Validated Data Reports

(Located on the included Compact Disc)

DATA VALIDATION REPORT
FOR
FT. WINGATE B522 SAMPLING EVENT
Red Rock, New Mexico

Samples Collected on July 12, 2010

Prepared by:

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Portland, Oregon 97224

1420102001.006

January 2011

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List of Tables

ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
%D	percent difference
%RSD	percent relative standard deviation
AMEC	AMEC Earth & Environmental, Inc.
CCV	continuing calibration verification
CLP	Contact Laboratory Program
COC	chain of custody
EPA	United States Environmental Protection Agency
ICAL	initial calibration
ICV	initial calibration verification
ID	sample identification
IS	internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
MEK	2-butanone
MIBK	4-methyl-2-pentanone
MS	matrix spike
MSD	matrix spike duplicate
QC	quality control
RF	response factor
RL	reporting limit
RPD	relative percent difference
SDG	sample delivery group
SOP	standard operating procedure
SVOCs	semivolatile organic compounds
TestAmerica	TestAmerica Laboratories, Inc.

VOCs	volatile organic compounds

1.0 INTRODUCTION

This data validation report covers 31 soil samples (including three field duplicates) and two aqueous trip blanks from the B522 area of the Fort Wingate site located in Red Rock, New Mexico. Samples were collected on July 13, 2010 and submitted to TestAmerica Laboratories, Inc. (TestAmerica) in North Canton, Ohio, where they were received on July 14, 2010. TestAmerica assigned the samples to sample delivery group (SDG) A0G140567 and analyzed them for volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) SW846 Method 8260B and semivolatile organic compounds (SVOCs) by EPA SW846 Method 8270C. TestAmerica also shipped sample aliquots to the TestAmerica laboratory located in West Sacramento, California, where they were analyzed for nitrocellulose by TestAmerica standard operating procedure (SOP) WS-WC-0050 and nitroaromatics and nitramines by EPA SW846 Method 8330.

A list of these samples by field sample identification (ID) and TestAmerica sample ID is presented in Table 1.

2.0 EXECUTIVE SUMMARY

The data validation completed by AMEC Earth & Environmental, Inc. (AMEC) chemists indicate that the data from this event are generally usable and of acceptable quality with the following exceptions.

During validation, AMEC R qualified and rejected the nondetected 4-chloroaniline, 3,3'-dichlorobenzidine, 3-nitroaniline, and 4-nitroaniline results from sample 2160B522ED1SS-1-SO1 because of extremely low matrix spike (MS) recoveries. (Section 6.2.8)

During validation, AMEC U qualified the detected methylene chloride, bis(2-ethylhexyl)phthalate, and di-n-butyl phthalate results from sample 2160B522ED1SS-1-SO1 because these analytes were detected in the associated laboratory blanks at concentrations greater than 10% the concentrations detected in the sample. (Sections 6.1.5 and 6.2.5)

During validation, AMEC U qualified selected SVOC results because some, if not all, of the major ions were missing, resulting in poor chromatographic resolution. (Section 6.2.10)

The laboratory re-extracted sample 2160B522ED1SS-1-SO1 for the nitrocellulose analysis. The laboratory reported both the initial and the reanalysis data. AMEC evaluated both sets of data, and chose to report the higher concentration. The result considered non-reportable by AMEC was rejected. (Section 6.3.4)

Please note that a number of results, while considered usable, were qualified due to minor quality control (QC) anomalies. Specifically, AMEC qualified portions of the data because of low continuing calibration verification (CCV), laboratory control sample (LCS), MS, and surrogate recoveries; variability in the analytical results; and results reported between the method detection limit (MDL) and reporting limit (RL).

As stated above, these minor QC anomalies did not render the data unusable for use in site characterization or cleanup, but should be considered in the context of a data quality assessment if the data do not fall within expected ranges.

3.0 DATA VALIDATION METHODOLOGY

AMEC performed Level IV validation of 10% of the samples in this sample delivery group. This data validation was performed with reference to the requirements in the EPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review (6/08), the EPA CLP National Functional Guidelines for Superfund Inorganic Methods Data Review (1/10), the analytical methods referenced by the laboratory, and AMEC data validation procedures. Validation includes an assessment of the following:

- Chain of custody (COC) compliance
- Sample receipt
- Holding time compliance
- Reporting limits
- Calibrations
- Method blank results
- Surrogate Recoveries
- LCS/LCS duplicate (LCSD) precision and recoveries
- MS/MS duplicate (MSD) precision and recoveries
- Field QC results
- Internal Standard (IS) recoveries

Data that underwent validation are indicated on Table 1.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

4.0 EXPLANATION OF DATA QUALITY INDICATORS

Summary explanations of the specific data quality indicators reviewed during this data validation are presented in the following table:

Data Quality Indicator	Description
LCS Recoveries	LCSs are aliquots of analyte-free water or clean solid matrix that are spiked with the analytes of interest for an analytical method, or a representative subset of those analytes. The spiked water or solid matrix is then processed through the same extraction, concentration, cleanup, and/or analytical procedures as the samples they accompany. LCS recovery is an indication of a laboratory's ability to successfully perform an analytical method in an interference-free matrix.
MS Recoveries	MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch. MS recovery and precision are an indication of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related.
Surrogate Spike Recoveries	Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process.

Data Quality Indicator	Description
Blank Concentrations	Blank samples are aliquots of analyte free water or clean solid matrix that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results. Laboratory blanks are processed by the laboratory using exactly the same procedures as the field samples. Target analytes should not be found in laboratory blanks. Trip blanks are sample vials of analyte free water that accompany the sample bottles to and from the collection site. The trip blank assesses potential ambient contamination from the site and laboratory. Target analytes should not be found in trip blanks. When target analytes are detected in blanks, analyte concentrations in associated samples greater than the RL but less than five times the concentration detected in the blank, or ten times the concentration detected in the blank for common laboratory contaminants, will be U qualified. Analyte concentrations between the MDL and RL, and less than five times (or again, ten times for common lab contaminants) the concentration detected in the blank will be U qualified at the RL concentration.
Laboratory Duplicates	Laboratory duplicate analysis verifies acceptable method precision by the laboratory at the time of preparation and analysis.
Internal Standards	IS are compounds that are added to a sample or extract after all preparatory steps are completed and before instrumental analysis. These compounds serve as standards for qualitative analysis using relative retention time and quantitative analysis using relative response factors (RFs). Methods that use IS calibration include requirements for changes in response to the IS relative to the initial calibration (ICAL). For EPA Methods 8260B and 8270C, IS response must fall between 50% and 200% of the response in the initial calibration.
Calibration	Instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. Calibration is verified at the beginning of the analytical run and on an ongoing basis.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

All samples were received at TestAmerica in good condition at temperatures less than the EPA-recommended maximum of 6 degrees Celsius.

All analyses were checked on the COCs for samples 2160B522DW01SS-1-SO4 and 2160B552EW7SS-1-SO4; however, TestAmerica only received two 40 milliliter vials of each sample. TestAmerica logged in the samples for VOC analysis only.

6.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH ANALYTICAL METHOD

Sections 6.1 through 6.4 contain narrative descriptions of the data validation findings and data quality limitations. Definitions of data qualifiers added during data validation and summaries of specific qualifiers added to each affected sample as a result of the data validation findings are presented in Table 2.

6.1 Volatile Organic Compounds by EPA Method 8260B

VOC results generated by TestAmerica may be considered usable with the limitations described in Sections 6.1.1 through 6.1.11.

6.1.1 Holding Times

All validated VOC samples were analyzed within The EPA-recommended maximum holding time of 14 days from collection.

6.1.2 Initial Calibration

ICALs met the method-specified criteria of $\leq$ 15% relative standard deviation (%RSD) in response factor between levels, or coefficient of determination or correlation coefficients $\geq$0.990.

6.1.3 Initial Calibration Verification

Initial calibration verification (ICV) standard recoveries were within the 70% to 130% guidance limits for unqualified data.

6.1.4 Continuing Calibration

CCV percent differences (%Ds) outside the method-specified ±20% limits are summarized below:

- %Ds for carbon disulfide and 1,2-dibromo-3-chloropropane were low at 78% and 79%, respectively, in the CCV associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. AMEC UJ qualified the nondetected carbon disulfide and 1,2-dibromo-3-chloropropane results from these samples because of possibly low analytical bias.
- %Ds for acetone (69%), 2-butanone (MEK, 75%), chloromethane (75%), and 4-methyl-2-pentanone (MIBK, 79%) were low in the CCV associated with the analysis of sample 2160B522ED1SS-1-SO1. AMEC UJ qualified the nondetected results for these analytes in the associated sample because of possibly low analytical bias.

6.1.5 Laboratory Blanks

Target analytes were not detected in the laboratory blanks associated with the analysis of these samples, except as described below:

- Acetone was detected at a concentration of 3.4 micrograms per kilogram (µg/kg) in the laboratory blank associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. Acetone was not detected in these samples, and data usability is not adversely affected.
- Trans-1,3-dichloropropene and methylene chloride were detected at concentrations of 0.86 µg/L and 3.4 µg/L, respectively, in the laboratory blank associated with the analysis of sample 2160B522ED1SS-1-SO1. Specific limitations are summarized below:
    - Trans-1,3-dichloropropene was not detected in the associated sample, and data usability is not adversely affected.
    - AMEC U qualified the detected methylene chloride result from sample 2160B522ED1SS-1-SO1 at the RL of 5.5 µg/kg because the concentration detected in the sample was less than the RL and less than ten times the concentration detected in the blank.

6.1.6 Trip Blanks

Target analytes were not detected in the trip blanks associated with these samples.

6.1.7 Laboratory Control Sample Precision and Recovery

Relative percent differences (RPDs) between LCS and LCSD results were less than the maximum-recommended 40% guidance limit for unqualified data. LCS recoveries outside the 80% to 120% guidance limits for unqualified data are described below:

- Bromoform (79%/77%) and carbon disulfide (78%-LCSD) recoveries were low in the LCS and/or LCSD associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. AMEC UJ qualified the nondetected bromoform and carbon disulfide results from these samples because of possibly low analytical bias.
- Acetone (73%/56%), bromodichloromethane (73%-LCSD), bromoform (73%/59%), bromomethane (72%-LCSD), MEK (74%/58%), carbon disulfide (79%/70%), carbon tetrachloride (74%-LCSD), chloroethane (72%), chloroform (79%), chloromethane (69%/58%), 1,2-dibromo-3-chloropropane (63%-LCSD), 1,2-dichlorobenzene(78%-LCSD) ,1,3-dichlorobenzene (78%-LCSD), 1,4-dichlorobenzene (76%-LCSD), dichlorodifluoromethane (67%-LCSD), 1,1-dichloroethane (77%-LCSD), 1,2-dichloroethane (69%-LCSD), 1,2-dichloropropane (79%-LCSD), cis-1,3-dichloropropene (75%-LCSD), trans-1,3-dichloropropene (71%-LCSD), 2-hexanone (63%-LCSD), MIBK (64%-LCSD), 1,2,4-trichlorobenzene (76%-LCSD), 1,1,1-trichloroethane (77%-LCSD), trichloroethene (78%-LCSD), trichlorofluoromethane (73%-LCSD), and vinyl chloride (69%-LCSD) recoveries were low in the LCS and/or LCSD associated with the analysis of sample 2160B522ED1SS-1-SO1. AMEC UJ qualified the nondetected results for these analytes in this sample because of possibly low bias in the analytical results.

6.1.8 Matrix Spike/Matrix Spike Duplicate Precision and Recovery

TestAmerica performed MS on sample 2160B522ED1SS-1-SO1. RPDs between MS and MSD results were less than the maximum-recommended 40% guidance limit for unqualified data. MS recoveries outside the 70% to 130% guidance limits for unqualified data are described below:

Acetone (55%/59%), bromoform (60%/62%), bromomethane (65%-MSD), MEK (66%-MS), carbon disulfide (65%/66%), chloromethane (64%/62%),

1,2-dibromo-3-chloropropane (61%-MS), 2-hexanone (57%/56%), and 1,2,4-trichlorobenzene (57%/49%) recoveries were low in the MS and/or MSD performed on this sample. AMEC UJ qualified the nondetected results for these analytes in sample 2160B522ED1SS-1-SO1 because of possibly low analytical bias.

6.1.9 Surrogate Recoveries

Surrogate recoveries were within the 70% to 130% guidance limits for unqualified data.

6.1.10 Internal Standard Recoveries

IS recoveries were within the method-specified 50% to 200% limits for unqualified data.

6.1.11 Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results in the final data table.

6.2 Semivolatile Organic Compounds by EPA Method 8270

SVOC results generated by TestAmerica may be considered usable with the limitations described in Sections 6.2.1 through 6.2.10.

6.2.1 Holding Times

All validated samples were extracted and analyzed within the EPA-recommended maximum holding time of 14 days from collection until extraction and 40 days from extraction until analysis.

6.2.2 Initial Calibration

ICALs met the method-specified criteria of ≤ 15%RSD in response factor between levels, or coefficient of determination or correlation coefficients ≥0.990.

6.2.3 Initial Calibration Verification

ICV standard recoveries were within the 70% to 130% guidance limits for unqualified data.

6.2.4 Continuing Calibration

CCV %Ds were within the method-specified ±20% limits for unqualified data.

6.2.5 Laboratory Blanks

SVOCs detected in the laboratory blanks associated with these samples are described below:

- Bis(2-ethylhexyl)phthalate was detected at a concentration of 100 µg/kg in the laboratory blank associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. AMEC U qualified the detected bis(2-ethylhexyl)phthalate results from samples 2160B522DW03SS-1-SO1 and 2160B522DW04SS-1-SO1 because the concentrations detected in the samples were less than ten times the concentration detected in the blank. (U-MB)
- Bis(2-ethylhexyl)phthalate and di-n-butyl phthalate were detected at concentrations of 30 µg/kg and 31 µg/kg, respectively, in the laboratory blank associated with the analysis of sample 2160B522ED1SS-1-SO1. Specific limitations are summarized below:
    - AMEC U qualified the detected bis(2-ethylhexyl)phthalate result from sample 2160B522ED1SS-1-SO1 at the RL of 53 µg/kg because the concentration detected in the sample was less than the RL and less than ten times the concentration detected in the blank.
    - AMEC U qualified the detected di-n-butyl phthalate result from sample 2160B522ED1SS-1-SO1 because the concentration detected in the sample was less than ten times the concentration detected in the blank.

6.2.6 Surrogate Recoveries

Surrogate recoveries outside the 70% to 130% guidance limits for unqualified data are described below:

- Samples 2160B522DW03SS-1-SO1 and 2160B522DW03SS-1-SO2 were analyzed at 1:5 dilutions, which made it difficult to fully evaluate matrix effects on surrogate recoveries.
- Recoveries of the surrogate compounds 2-fluorobiphenyl (48%), 2-fluorophenol (50%), phenol-d_5 (59%), 2,4,6-tribromophenol (59%), and nitrobenzene-d_5 (48%)

were low in sample 2160B522DW04SS-1-SO1. AMEC J qualified the detected results and UJ qualified the nondetected results from this sample because of possibly low analytical bias.

- Recoveries of the surrogate compounds 2-fluorobiphenyl (66%), 2-fluorophenol (54%), phenol-d_5 (56%), 2,4,6-tribromophenol (57%), and nitrobenzene-d_5 (52%) were low in sample 2160B522ED1SS-1-SO1. AMEC J qualified the detected results and UJ qualified the nondetected results from this sample because of possibly low analytical bias.
- Recoveries of the surrogate compounds 2-fluorobiphenyl (57%/57%), 2-fluorophenol (52%/54%), phenol-d_5 (53%/57%), 2,4,6-tribromophenol (55%/57%), nitrobenzene-d_5 (47%/50%), and terphenyl-d_{14} (69%-MSD) were low in the MS and/or MSD performed on sample 2160B522ED1SS-1-SO1. AMEC does not qualify data from field samples based on MS surrogate recoveries, and data usability is not adversely affected.
- Recoveries of the surrogate compounds 2-fluorobiphenyl (66%), 2-fluorophenol (66%), phenol-d_5 (65%), 2,4,6-tribromophenol (37%), and nitrobenzene-d_5 (63%) were low in the laboratory blank associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. AMEC does not qualify data from field samples based on surrogate recoveries in laboratory QC samples, and data usability is not adversely affected.
- Recoveries of the surrogate compounds 2-fluorobiphenyl (64%), 2-fluorophenol (65%), 2,4,6-tribromophenol (61%), and nitrobenzene-d_5 (58%) were low in the LCS associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. AMEC does not qualify data from field samples based on surrogate recoveries in laboratory QC samples, and data usability is not adversely affected.
- Recoveries of the surrogate compounds 2-fluorobiphenyl (64%), phenol-d_5 (66%), 2,4,6-tribromophenol (37%), and nitrobenzene-d_5 (59%) were low in the laboratory blank associated with the analysis of sample 2160B522ED1SS-1-SO1. AMEC does not qualify data from field samples based on surrogate recoveries in laboratory QC samples, and data usability is not adversely affected.
- Recoveries of the surrogate compounds 2-fluorobiphenyl (64%), 2-fluorophenol (65%), 2,4,6-tribromophenol (61%), and nitrobenzene-d_5 (58%) were low in the laboratory blank associated with the analysis of sample 2160B522ED1SS-1-

SO1. AMEC does not qualify data from field samples based on surrogate recoveries in laboratory QC samples, and data usability is not adversely affected.

6.2.7 Laboratory Control Sample Recovery

LCS recoveries outside the 70% to 130% guidance limits for unqualified data are described below:

- 4-Chloroaniline (69%), 3,3'-dichlorobenzidine (61%), 4,6-dinitro-2-methylphenol (65%), 2,4-dinitrophenol (48%), hexachlorobutadiene (65%), and hexachloroethane (62%) recoveries were low in the LCS associated with the analysis of samples 2160B522DW03SS-1-SO1, 2160B522DW03SS-1-SO2, and 2160B522DW04SS-1-SO1. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possibly low analytical bias.
- Acenaphthene (59%), acenaphthylene (62%), bis(2-chloroethoxy)methane (58%), bis(2-chloroethyl)ether (57%), 4-chloroaniline (47%), 4-chloro-3-methylphenol (62%), 2-chloronaphthalene (60%), 2-chlorophenol (62%), dibenzofuran (65%), 3,3'-dichlorobenzidine (33%), 2,4-dichlorophenol (58%), 2,4-dimethylphenol (52%), 4,6-dinitro-2-methylphenol (15%), 2,4-dinitrophenol (15%), fluorene (69%), hexachlorobutadiene (53%), hexachloroethane (56%), isophorone (59%), 2-methylnaphthalene (59%), 2-methylphenol (62%), 4-methylphenol (59%), naphthalene (56%), nitrobenzene (59%), 2-nitrophenol (49%), 4-nitrophenol (46%), n-nitrosodi-n-propylamine (61%), pentachlorophenol (37%), phenol (60%), 2,4,5-trichlorophenol (56%), and 2,4,6-trichlorophenol (39%) recoveries were low in the LCS associated with the analysis of sample 2160B522ED1SS-1-SO1. AMEC UJ qualified the nondetected results for these analytes in the associated sample because of possibly low analytical bias.

6.2.8 Matrix Spike/Matrix Spike Duplicate Precision and Recovery

TestAmerica performed MS on sample 2160B522ED1SS-1-SO1. RPDs between MS and MSD results were less than the maximum-recommended 40% guidance limit for unqualified data. MS recoveries outside the 70% to 130% guidance limits for unqualified data are described below:

Acenaphthene (59%/60%), acenaphthylene (59%/60%), anthracene (63%/65%), benzo(ghi)perylene (69%-MS), benzo(a)pyrene (62%-MS), bis(2-chloroethoxy)methane (56%/60%), bis(2-chloroethyl)ether (45%/50%), 4-bromophenyl phenyl ether (69%/68%), carbazole (56%/60%), 4-chloroaniline

(0%/89%), 4-chloro-3-methylphenol (63%/65%), 2-chloronaphthalene (63%/64%), 2-chlorophenol (60%/58%), 4-chlorophenyl phenyl ether (67%/67%), chrysene (68%-MS), dibenz(a,h)anthracene (69%/68%), dibenzofuran (64%/65%), 3,3'-dichlorobenzidine (0%/0%), 2,4-dichlorophenol (63%/66%), diethyl phthalate (66%/65%), 2,4-dimethylphenol (59%/59%), dimethyl phthalate (65%/65%), 4,6-dinitro-2-methylphenol (40%/21%), 2,4-dinitrophenol (39%/27%), 2,4-dinitrotoluene (456%/0%), 2,6-dinitrotoluene (65%-MSD), fluorene (62%/63%), hexachlorobenzene (65%/64%), hexachlorobutadiene (55%/57%), hexachloroethane (40%/31%), indeno(1,2,3-cd)pyrene (67%-MS), isophorone (56%/57%), 2-methylnaphthalene (60%/64%), 2-methylphenol (56%/61%), 4-methylphenol (62%/63%), naphthalene (54%/57%), 2-nitroaniline (65%-MS), 3-nitroaniline (0%/31%), 4-nitroaniline (5.1%/30%), nitrobenzene (58%/55%), 2-nitrophenol (53%/51%), 4-nitrophenol (63%/61%), n-nitroso-di-n-propylamine (55%/61%), n-nitrosodiphenylamine (54%/21%), pentachlorophenol (51%/49%), phenanthrene (65%/64%), phenol (58%/61%), 2,4,5-trichlorophenol (62%/67%), and 2,4,6-trichlorophenol (64%/64%) were outside the guidance limits. Specific limitations are summarized below:

- AMEC R qualified and rejected the nondetected 4-chloroaniline, 3,3'-dichlorobenzidine, 3-nitroaniline, and 4-nitroaniline results from the spiked sample because of the extremely low (less than 10%) MS recoveries.
- The 2,4-dinitrotoluene concentration detected in the unspiked native sample, at 1,600 µg/kg, was greater than the spike concentration of 700 µg/kg, and the effect on data usability cannot be fully evaluated.
- AMEC J qualified the detected benzo(ghi)perylene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd)pyrene, and n-nitrosodiphenylamine results from the spiked sample because of possibly low analytical bias.
- AMEC UJ qualified the nondetected acenaphthene, acenaphthylene, anthracene, bis(2-chloroethoxy)methane, bis(2-chloroethyl)ether, 4-bromophenyl phenyl ether, carbazole, 4-chloro-3-methylphenol, 2-chloronaphthalene, 2-chlorophenol, 4-chlorophenyl phenyl ether, dibenz(a,h)anthracene, dibenzofuran, 2,4-dichlorophenol, diethyl phthalate, 2,4-dimethylphenol, dimethyl phthalate, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, 2,6-dinitrotoluene, fluorene, hexachlorobenzene, hexachlorobutadiene, hexachloroethane, isophorone, 2-methylnaphthalene, 2-methylphenol, 4-methylphenol, naphthalene, 2-nitroaniline, nitrobenzene, 2-nitrophenol, 4-nitrophenol, n-nitroso-di-n-propylamine, pentachlorophenol, phenanthrene, phenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol results from the unspiked sample because of possibly low analytical bias.

6.2.9 Internal Standard Recoveries

IS recoveries were within the method-specified 50% to 200% limits for unqualified data.

6.2.10 Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results in the final data table.

AMEC U qualified the detected: benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene results from sample 2160B522DW03SS-1-SO1, benzo(b)fluoranthene result from sample 2160B522DW03SS-1-SO2, benzo(a)anthracene result from sample 2160B522DW04SS-1-SO1, and benzo(k)fluoranthene result from sample 2160B522ED1SS-1-SO1 because some, if not all, of the major ions were missing, resulting in poor chromatographic resolution.

6.3 Nitrocellulose by TestAmerica SOP WS-WC-0050

Nitrocellulose results generated by TestAmerica may be considered usable with the limitations described in Sections 6.3.1 through Section 6.3.4.

6.3.1 Blanks

Nitrocellulose was not detected at concentrations greater than the RL in the laboratory blanks associated with the analysis of these samples.

6.3.2 Laboratory Control Sample Recovery

LCS recoveries were within the laboratory-established 34% to 115% limits for unqualified data.

6.3.3 Matrix Spike/Matrix Spike Duplicate Samples

TestAmerica perfomed MSs/MSDs on sample 2160B522ED1SS-1-SO1 twice. The initial background concentration in the unspiked native sample was reported as 10.4 milligrams per kilogram (mg/kg). The spike concentrations were 51.9 mg/kg in the MS and 53.1 mg/kg in the MSD. The measured concentration in the MS was 39.0 mg/kg, corresponding to 55% recovery. However, the measured concentration in the MSD was 278 mg/kg, corresponding to 504% recovery. Testamerica re-extracted and

reanalyzed sample 2160B522ED1SS-1-SO1 at a 1:10 dilution and the measured concentration was 205 mg/kg. When a MS and MSD were performed on the diluted sample, with spike concentrations of 53.1 mg/kg and 53.0 mg/kg, respectively, 39.4 mg/kg was detected in the MS and 68.5 mg/kg was detected in the MSD. The lack of reproducibility is likely due to a heterogeneous sample matrix, and AMEC chose not to qualify the data based on MS recoveries.

6.3.4 Data Reporting and Analytical Procedure

TestAmerica reported two nitrocellulose results for sample 2160B522ED1SS-1-SO1. The first reported concentration was 10.4 mg/kg, from an undiluted analysis, and the second reported concentration was 205 mg/kg, from a 1:10 dilution of the re-extracted sample. AMEC chose the higher of the two concentrations as the valid value, but J qualified the result as being estimated because of variability in the analytical results.

6.4 Nitroaromatics and Nitramines by EPA SW-846 Method 8330

Nitroaromatic and nitramine results generated by TestAmerica may be considered usable with the limitations described in Sections 6.4.1 through 6.4.9.

6.4.1 Holding Times

Samples were extracted for nitroaromatics and nitramines within the QAPP-specified maximum holding time of 14 days from collection for soils and analyzed within 40 days of extraction.

6.4.2 Initial Calibration

ICALs met the method-specified criteria of %RSDs ≤15%.

The confirmation column was not calibrated for 4-nitrotoluene. 4-Nitrotoluene was not detected in the field samples, and in AMEC's professional opinion, data usability is not adversely affected.

6.4.3 Initial Calibration Verification

ICV standard recoveries were within the method-specified 85% to 115% acceptance limits for unqualified data.

6.4.4 Continuing Calibration

All CCV standard recoveries were within the method-specified 85% to 115% acceptance limits for unqualified data.

6.4.5 Blanks

Nitroaromatics and nitramines were not detected in the laboratory blank associated with these samples.

6.4.6 Matrix Spike/Matrix Duplicate Recoveries and RPDs

TestAmerica performed MS on sample 2160B522ED1SS-1-SO1. RPDs between MS and MSD results were less than the maximum-recommended 40% guidance limit for unqualified data. MS recoveries outside the 70% to 130% guidance limits for unqualified data are described below:

2,4-Dinitrotoluene was detected at a concentration of 8.8 mg/kg in the unspiked native sample. The spike concentrations were 0.97 mg/kg in the MS and 1.0 mg/kg in the MSD. The measured concentration in the MS was 0.96 mg/kg and the measured concentration in the MSD was 1.2 mg/kg. The lack of reproducibility is likely due to a heterogeneous sample matrix. AMEC J qualified the result as being estimated because of variability in the analytical results.

6.4.7 Laboratory Control Sample Recovery

LCS recoveries were within the 70% to 130% guidance limits for unqualified data.

6.4.8 Surrogate Recoveries

Surrogate recoveries were within the 70% to 130% guidance limits for unqualified data

6.4.9 Data Reporting

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results.

In sample 2160B522DW03SS-1-SO2 there was 40% RPD between the HMX results from the primary and confirmation columns. AMEC N qualified the detected HMX result from this sample as being presumptively identified because of the imprecision between the results from the two columns.

In sample 2160B522DW04SS-1-SO1 there was 61% RPD between the HMX results from the primary and confirmation columns. AMEC N qualified the detected HMX result from this sample as being presumptively identified because of the imprecision between the results from the two columns.

7.0 FIELD DUPLICATES

Samples collected as field duplicates are listed in Table 1. Field duplicate detected results are found in Table 3. The samples were labeled blindly, so the laboratory was not aware which samples were submitted in duplicate. Primary and duplicate results and the RPDs for the field duplicates are summarized in Table 3. With the exceptions listed in Table 3, precision values met the guidance limits for data usability of less than 40% RPD for soil for concentrations greater than five times their RL or ± the RL for sample concentrations less than the RL.

8.0 SUMMARY AND CONCLUSIONS

AMEC's review indicates the data from this event are generally usable. The types of qualifications applied to the dataset include rejected, (R), estimated (J or UJ), presumptively identified (N), and nondetected (U) results.

During validation, AMEC R qualified and rejected the nondetected 4-chloroaniline, 3,3'-dichlorobenzidine, 3-nitroaniline, and 4-nitroaniline results from sample 2160B522ED1SS-1-SO1 because of extremely low matrix spike (MS) recoveries. (Section 6.2.8)

The remainder of the data is usable with the addition of the qualifiers listed in Table 2. Data that were qualified, but not rejected are summarized below.

AMEC J or UJ qualified data, as appropriate, when the associated CCV recoveries were low. (Section 6.1.4)

During validation, AMEC U qualified the detected methylene chloride, bis(2-ethylhexyl)phthalate, and di-n-butyl phthalate results from sample 2160B522ED1SS-1-SO1, and the bis(2-ethylhexyl)phthalate results from samples 21060B522DW03SS-1-SO1 and 2160B522DW04SS-1-SO1 because these analytes were detected in the associated laboratory blanks at concentrations greater than 10% the concentrations detected in the sample. (Sections 6.1.5 and 6.2.5)

During validation, AMEC J or UJ qualified data, as appropriate, when the associated LCS recoveries were low. (Sections 6.1.7 and 6.2.7)

During validation, AMEC J or UJ qualified results from sample 2160B522ED1SS-1-SO1 because of low MS and/or MSD recoveries. (Sections 6.1.8, 6.2.8, and 6.4.6)

During validation, AMEC J qualified results when the concentrations were between the MDL and RL. (Sections 6.1.11, 6.2.10, and 6.4.9)

During validation, AMEC J or UJ qualified, as appropriate, the SVOC results from samples 2160B522DW04SS-1-SO1 and 2160B522ED1SS-1-SO1 because of low surrogate recoveries. (Section 6.2.6)

During validation, AMEC U qualified selected SVOC results because some, if not all, of the major ions were missing, resulting in poor chromatographic resolution. (Section 6.2.10)

The laboratory re-extracted sample 2160B522ED1SS-1-SO1 for the nitrocellulose analysis. The laboratory reported both the initial and the reanalysis data. AMEC evaluated both sets of data, and chose to report the higher concentration. The result considered non-reportable by AMEC was rejected. (Section 6.3.4)

During validation, AMEC N qualified the detected HMX results from samples 2160B522DW03SS-1-SO1 and 2160B522DW04SS-1-SO1 because of imprecision between concentrations from the two analytical columns. (Section 6.4.9)

Data Completeness Assessment. AMEC reviewed 519 data points during the data validation. AMEC J qualified 30 results (5.8%), UJ qualified 155 results (30%), NJ qualified 2 results (0.39%), U qualified 5 results (0.96%), and R qualified and rejected 4 results (0.77%), meeting a 90% records as nondetected; and J or UJ qualified 486 (20%) records as estimated concentrations.

REFERENCES

EPA, 2010. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, OSWER 9240.1-51, EPA 540-R-10-011.

EPA, 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-08-01, June 2008.

EPA, 2007. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 Final Update IV Revision 6, February 2007.

LIMITATIONS

This report was prepared exclusively for the PIKA International, Inc. by AMEC. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Validation/Review Report is intended to be used by the PIKA International, Inc. for the Fort Wingate site in Red Rock, New Mexico only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

DATA VALIDATION REPORT
FOR
FT. WINGATE B530 SAMPLING EVENT
Red Rock, New Mexico

Samples Collected on September 16, 2010

Prepared by:

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1420102001.006

February 2010

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ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
%D	percent difference
%RSD	percent relative standard deviation
ALS	ALS Laboratory Group
AMEC	AMEC Earth & Environmental, Inc.
CCV	continuing calibration verification
COC	chain of custody
DoD	Department of Defense
EPA	United States Environmental Protection Agency
ICAL	initial calibration
ICV	initial calibration verification
ID	sample identification
IS	internal standard
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
MDL	method detection limit
MS/MSD	matrix spike/matrix spike duplicate
PDS	post-digestion spike
QC	quality control
RF	response factor
RL	reporting limit
RPD	relative percent difference
SVOCs	semivolatile organic compounds
TestAmerica	TestAmerica Laboratories, Inc.
VOCs	volatile organic compounds

1.0 INTRODUCTION

This data validation report covers eight soil samples (including one field duplicate) from the Fort Wingate site located in Red Rock, New Mexico. Samples were collected on September 16, 2010 and submitted to TestAmerica Laboratories, Inc. (TestAmerica) in North Canton, Ohio, on September 17, 2010. The samples were assigned sample delivery group number A0I170498 and analyzed for the following:

- Metals by US Environmental Protection Agency (EPA) SW846 Methods 6010B and 7471A;
- Semivolatile Organic Compounds (SVOCs) by EPA SW846 Method 8270C; and
- Volatile Organic Compounds (VOCs) by EPA SW846 Method 8260B.

TestAmerica in West Sacramento, California analyzed the samples for the following:

- Nitrocellulose by TestAmerica Laboratory-Standard Operating Procedure (TAL-SOP) WS-WC-0050 and Nitroaromatics and nitramines by EPA SW846 Method 8330.

The samples were also delivered to ALS Laboratory Group (ALS) in Salt Lake City, Utah where they were analyzed for white phosphorus by EPA SW-846 Method 7580.

A list of these samples by field sample identification (ID) and TestAmerica sample ID is presented in Table 1.

2.0 EXECUTIVE SUMMARY

The data validation completed by AMEC Earth & Environmental, Inc. (AMEC) chemists indicate that the data from this event are generally usable and of acceptable quality with the following exceptions.

The nondetected 2,4-dinitrophenol result from sample 2172B530T1SS-1-SO1was rejected because of a very low matrix spike (MS) recovery.

The methylene chloride results from samples 2172B530T1SS-1-SO1, 2172B530T2SS-1-SO1, 2172B530T3SS-1-SO1, 2172B530AP1SB-1-SO1, 2172B530AP1SB-5-SO1, 2172B530AP2SB-1-SO1, and 2172B530AP2SB-5-SO1and the 1,2,4-trichlorobenzene

result from sample 2172B530T2SS-1-SO1were qualified as nondetected because of apparent contamination.

Please note that a number of results, while considered usable, were qualified due to minor quality control (QC) anomalies. Specifically, portions of the VOC, SVOC, metal, and nitrocellulose data were qualified as estimated because of calibration issues, low laboratory control sample (LCS) recoveries, low and high MS recoveries, low surrogate recoveries, suboptimal interference, field duplicate imprecision, and results reported between the method detection limit (MDL) and reporting limit (RL).

As stated above, these minor QC anomalies did not render the data unusable for use in site characterization or cleanup, but should be considered in the context of a data quality assessment if the data do not fall within expected ranges.

3.0 DATA VALIDATION METHODOLOGY

This data validation was performed by AMEC with reference to the requirements in EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (6/08), EPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review (1/10), the analytical methods referenced by the laboratory, and AMEC data validation procedures. Level III Validation includes an assessment of the following:

- Chain of custody (COC) compliance
- Sample receipt
- Holding time compliance
- Reporting limits
- Calibrations
- Method blank results
- Surrogate Recoveries
- LCS/LCS duplicate (LCSD) recoveries and precision
- MS/matrix spike duplicate (MSD) recoveries and precision
- Field QC results
- Internal Standard (IS) recoveries

Data that underwent data validation are indicated on Table 1.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

4.0 EXPLANATION OF DATA QUALITY INDICATORS

Summary explanations of the specific data quality indicators reviewed during this data validation are presented in the following table:

Data Quality Indicator	Description
LCS Recoveries	LCSs are aliquots of analyte-free water or clean solid matrix that are spiked with the analytes of interest for an analytical method, or a representative subset of those analytes. The spiked water or solid matrix is then processed through the same extraction, concentration, cleanup, and/or analytical procedures as the samples they accompany. LCS recovery is an indication of a laboratory's ability to successfully perform an analytical method in an interference-free matrix.
MS Recoveries	MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch. MS recovery and precision are an indication of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related.
Surrogate Spike Recoveries	Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process.

Data Quality Indicator	Description
Blank Concentrations	Blank samples are aliquots of analyte free water or clean solid matrix that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results. Laboratory blanks are processed by the laboratory using exactly the same procedures as the field samples. Target analytes should not be found in laboratory blanks. When target analytes are detected in blanks, analyte concentrations in associated samples greater than the RL but less than five times the concentration detected in the blank, or ten times the concentration detected in the blank for common laboratory contaminants, will be U qualified. Analyte concentrations between the MDL and RL, and less than five times (or again, ten times for common lab contaminants) the concentration detected in the blank will be U qualified at the RL concentration.
Laboratory Duplicates	Laboratory duplicate analysis verifies acceptable method precision by the laboratory at the time of preparation and analysis.
Internal Standards	IS are compounds that are added to a sample or extract after all preparatory steps are completed and before instrumental analysis. These compounds serve as standards for qualitative analysis using relative retention time and quantitative analysis using relative response factors (RFs). Methods that use IS calibration include requirements for changes in response to the IS relative to the initial calibration (ICAL). For EPA Methods 8260B and 8270C, IS response must fall between 50% and 200% of the response in the initial calibration.
Calibration	Instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. Calibration is verified at the beginning of the analytical run and on an ongoing basis.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

All samples were received at TestAmerica and ALS in good condition at temperatures less than the EPA-recommended 6 degrees Celsius maximum.

Trip Blank 217B530T1SS-1-SO4 was listed on the chain of custody; however, no vials were received at the laboratory. Therefore, the potential effects of contamination from shipping could not be evaluated.

The laboratory misidentified samples 2172B530T1SS-1-SO1, 2172B530T2SS-1-SO1, 2172B350T2SS-1-SO2, and 2172B530T3SS-1-SO1 as "2172B530T1SS-1-S01", "2172B530T2SS-1-S01", "2172B350T2SS-1-S02", and "2172B530T3SS-1-S01" throughout the data package and associated electronic data deliverable.

6.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH ANALYTICAL METHOD

Sections 6.1 through 6.6 contain narrative descriptions of the data validation findings and data quality limitations. Definitions of data qualifiers added during data validation and summaries of specific qualifiers added to each affected sample as a result of the data validation findings are presented in Table 2.

6.1 Volatile Organic Compounds by EPA Method 8260B

VOC results generated by TestAmerica may be considered usable with the limitations described in Sections 6.1.1 through 6.1.10.

6.1.1 Holding Times

All VOC samples were analyzed within the maximum recommended holding time of 14 days from collection for preserved soil samples.

6.1.2 Initial Calibration

Initial calibrations (ICALs) met the method-specified criteria of ≤ 15% relative standard deviation (%RSD) in response factor between levels, or coefficient of determination or correlation coefficients ≥0.990.

6.1.3 Initial Calibration Verification

Initial calibration verification (ICV) standard recoveries were within the 80% to 120% guidance limits for unqualified data.

6.1.4 Continuing Calibration

Continuing calibration verification (CCV) percent differences (%Ds) were outside the method-specified ±20% limits are listed in the following table.

CCV	Analyte	Difference	Effects on Data Usability
UX86587	Dichlorodifluoromethane	37%, bias low	AMEC UJ qualified the nondetected results for these analytes from the following samples because of potential low analytical bias: 2172B530T1SS-1-SO1 2172B530T2SS-1-SO1 2172B530T3SS-1-SO1 2172B530AP1SB-1-SO1 2172B530AP1SB-5-SO1 2172B530AP2SB-1-SO1 2172B530AP2SB-5-SO1
	Chloromethane	27%, bias low	
	Acetone	36%, bias low	
	2-Butanone	34%, bias low	
	1,2-Dichloroethane	23%, bias low	
UX86622	Dichlorodifluoromethane	42%, bias low	AMEC UJ qualified the nondetected results for these analytes from sample 2172B350T2SS-1-SO2 because of potential low analytical bias.
	Chloromethane	26%, bias low	
	Acetone	22%, bias low	
	2-Butanone	22%, bias low	

6.1.5 Laboratory Blanks

VOCs detected at concentrations above the MDL in the laboratory blanks associated with these samples are outlined in the following table:

Blank	Analyte	Concentration (micrograms per kilogram [µg/kg])	Effects on Data Usability
L7N981AA	Methylene chloride	1.4*	AMEC U qualified the detected methylene chloride results from the following samples because the sample concentrations were less than 10 times the method blank concentration indicating possible contamination: 2172B530T1SS-1-SO1 2172B530T2SS-1-SO1 2172B530T3SS-1-SO1 2172B530AP1SB-1-SO1 2172B530AP1SB-5-SO1 2172B530AP2SB-1-SO1 2172B530AP2SB-5-SO1
	1,2,4-Trichlorobenzene	0.68*	AMEC U qualified the detected 1,2,4-trichlorobenzene result from sample 2172B530T2SS-1-SO1 because the sample concentration was less than five times the method blank concentration indicating possible contamination.

Blank	Analyte	Concentration (micrograms per kilogram [µg/kg])	Effects on Data Usability
L7N991AA	1,2,4-Trichlorobenzene	0.67*	This analyte was not detected in the associated sample and data usability is not adversely affected by the potential contamination.

*Concentration is less than the RL.

6.1.6 Laboratory Control Sample Recoveries and RPDs

Relative percent differences (RPDs) between LCS and LCSD results were within the 30% (40% for soils) guidance limits for unqualified data. LCS recoveries outside the 80% to 120% guidance limits for unqualified data are described in the following table:

LCS	Analyte	Recovery	Effects on Data Usability
L7N981AC/D	Acetone	63%/69%	AMEC UJ qualified the nondetected results from the following samples because of potential low analytical bias: 2172B530T1SS-1-SO1 2172B530T2SS-1-SO1 2172B530T3SS-1-SO1 2172B530AP1SB-1-SO1 2172B530AP1SB-5-SO1 2172B530AP2SB-1-SO1 2172B530AP2SB-5-SO1
	2-Butanone	66%/71%	
	Dichlorodifluoromethane	71%/71%	
L7PAA1AC/D	2-Butanone	69%/66%	AMEC UJ qualified the nondetected results for these analytes from sample 2172B350T2SS-1-SO2 because of potential low analytical bias.
	Chloromethane	71%/70%	
	Dichlorodifluoromethane	61%/58%	
	Acetone	63%/63%	

6.1.7 Matrix Spike/Matrix Spike Duplicate Recoveries and RPDs

RPDs between MS/MSD results were less than the 40% (for soil samples) maximum guidance limit for unqualified data. MS/MSD recoveries outside the 70% to 130% guidance limits are described the following table:

Spiked Sample ID	Analyte	Recoveries	Effects on Data Usability
2172B530T1SS-1-S01	Acetone	50%/62%	AMEC UJ qualified the nondetected results for these analytes from the associated sample because of potential low analytical bias.
	2-Butanone	61%MS	
	Chloromethane	63%MS	
	Dichlorodifluoromethane	59%/64%	
	1,2-Dichloroethane	65%MS	

6.1.8 Surrogate Recoveries

Surrogate recoveries were within the 70% to 130% guidance limits for unqualified data.

6.1.9 Internal Standard Recoveries

IS recoveries were within the method-specified 50% to 200% limits for unqualified data.

6.1.10 Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results unless they were U qualified because of associated blank results.

Methylene chloride was detected in sample 2172B350T2SS-1-SO2 at a concentration of 4.8 µg/kg. Methylene chloride was not detected in the associated method blank; however, it was detected in the method blank analyzed during the sequence prior to the sequence this sample was analyzed. The methylene chloride detection is most likely laboratory contamination and the data user should use the result with caution.

6.2 Semivolatile Organic Compounds by EPA Method 8270C

SVOC results generated by TestAmerica may be considered usable with the limitations described in Sections 6.2.1 through 6.2.10.

6.2.1 Holding Times

All samples were extracted within the maximum holding time for soil samples of 14 day from collection to extraction and were analyzed within the maximum holding time of 40 days from extraction to analysis.

6.2.2 Initial Calibration

ICALs met the method-specified criteria of ≤ 15%RSD in response factor between levels, or coefficient of determination or correlation coefficients ≥0.990.

6.2.3 Initial Calibration Verification

ICV standard recoveries were within the 70% to 130% guidance limits for unqualified data.

6.2.4 Continuing Calibration

CCV standard recoveries were within the 80% to 120% guidance limits for unqualified data.

6.2.5 Laboratory Blank

SVOCs were not detected in the laboratory blank associated with these samples.

6.2.6 Surrogate Recoveries

Surrogate recoveries outside the 70% to 130% guidance limits for unqualified data are described in the following table:

Sample	Surrogate	Recovery	Effects on Data Usability
2172B530T1SS-1-SO1	Phenol-d_5	69%	AMEC J qualified detected SVOC results and UJ qualified nondetected SVOC results from these samples because of potential low analytical bias.
	2,4,6-Tribromophenol	58%	
	Nitrobenzene-d_5	65%	
2172B530T2SS-1-SO1	2,4,6-Tribromophenol	61%	
	Nitrobenzene-d_5	67%	
2172B350T2SS-1-SO2	2-Fluorobiphenyl	69%	
	2-Fluorophenol	64%	
	Phenol-d_5	63%	
	2,4,6-Tribromophenol	59%	
	Nitrobenzene-d_5	62%	
2172B530AP1SB-1-SO1	2-Fluorobiphenyl	68%	
	2-Fluorophenol	65%	
	Phenol-d_5	61%	
	2,4,6-Tribromophenol	45%	
	Nitrobenzene-d_5	60%	
2172B530AP1SB-5-SO1	2,4,6-Tribromophenol	54%	
	Nitrobenzene-d_5	66%	
2172B530AP2SB-1-SO1	2,4,6-Tribromophenol	68%	
	Nitrobenzene-d_5	67%	
2172B530AP2SB-5-SO1	2,4,6-Tribromophenol	59%	
	Nitrobenzene-d_5	69%	

6.2.7 Laboratory Control Sample Recoveries and RPDs

All RPDs between LCS and LCSD results were less than the 40% (for soils) maximum guidance limits for unqualified data. LCS recoveries outside the 70% to 130% guidance limits for unqualified data are described in the following table:

LCS	Analyte	Recovery	Effects on Data Usability
L7C311AC	Pentachlorophenol	37%	AMEC UJ qualified the nondetected results for these analytes from all samples because of potential low analytical bias.
	4-Chloroaniline	68%	
	3,3'-Dichlorobenzidine	60%	
	2,4-Dimethylphenol	58%	
	2,4-Dinitrophenol	62%	
	2,4,6-Trichlorophenol	68%	

6.2.8 Matrix Spike/Matrix Spike Duplicate Recoveries and RPDs

RPDs between MS/MSD results were less than the 40% maximum guidance limits for unqualified data. MS/MSD recoveries outside the 70% to 130% guidance limits for the SVOC analysis are described in the following table:

Spiked Sample	Analyte	Recovery	Effects on Data Usability
2172B530T1SS-1-SO1	2,4-Dinitrophenol	0%/0%	AMEC R qualified and rejected the nondetected 2,4-dintrophenol result from this sample because of the very low (<10%) recovery.
	Benzo(k)fluoranthene	61%/61%	AMEC UJ qualified the nondetected results for these analytes from sample 2172B530T1SS-1-SO1 because of possible low analytical bias.
	Bis(2-Chloroethyl)ether	69%MSD	
	4-Chloroaniline	59%/60%	
	3,3'-Dichlorobenzidine	60%/57%	
	4,6-Dinitro-2-methylphenol	65%MS	
	Hexachlorobutadiene	68%/65%	
	Hexachloroethane	68%/68%	
	Isophorone	69%/68%	
	Naphthalene	69%MS	
	4-Nitrophenol	58%/68%	
	2,4,6-Trichlorophenol	64%/65%	
	Pentachlorophenol	25%/30%	

6.2.9 Internal Standard Recoveries

IS recoveries were within the method-specified 50% to 200% limits.

6.2.10 Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results.

Low-level (<RL) concentrations of phthalates were detected in a few samples outlined in the table below. Phthalates are considered common field and laboratory contaminants. The data user should use these results with caution.

Sample	Phthalate	Concentration
2172B530T1SS-1-SO1	Bis(2-Ethylhexyl) phthalate	26 µg/kg
2172B530T2SS-1-SO1	Butylbenzylphthalate	41 µg/kg
2172B350T2SS-1-SO2	Di-n-butyl phthalate	22 µg/kg
2172B530T3SS-1-SO1	Di-n-butyl phthalate	18 µg/kg
2172B530AP1SB-5-SO1	Bis(2-Ethylhexyl) phthalate	22 µg/kg
	Di-n-butyl phthalate	31 µg/kg

6.3 Total Metals by EPA Methods 6010B and 7470A

Metal results generated by TestAmerica may be considered usable with the limitations described in Sections 6.3.1 through 6.3.11.

6.3.1 Holding Times

All samples were analyzed for metals within the technical holding time of 180 days (28 days for mercury).

6.3.2 Initial Calibration

ICALs associated with the analysis of these samples were within the method-specified limits.

6.3.3 Initial and Continuing Calibration Verification

All ICVs and CCVs associated with the analysis of these samples were within the method-specified limits.

6.3.4 Contract Required Quantitation Limit Check Standard

All contract-required quantitation limit check standards associated with the analysis of these samples were within the 50% to 150% guidance limits for unqualified data.

6.3.5 Blanks

Target analytes were not detected at concentrations greater than the RL in laboratory calibration and method blanks associated with the metals analyses.

6.3.6 Inductively Coupled Plasma Interference Check Sample

All interference check samples recoveries were within the 80% to 120% guidance limits for unqualified data.

Non-interferent elements arsenic, cobalt, and manganese were detected above the MDL in the ICSA associated with these samples. Additionally, interferent elements were detected in samples 2172B530T1SS-1-SO1 and 2172B350T2SS-1-SO2 at concentrations greater than the ICSA. Specific limitations include the following:

- AMEC J qualified the detected arsenic results from samples 2172B530T1SS-1-SO1 and 2172B350T2SS-1-SO2 and the detected cobalt result from sample 2172B350T2SS-1-SO2 because of possible high analytical bias due to potential sub-optimal interferences.
- Manganese concentrations in these samples were greater than 10 times the ICSA concentration and data usability is not adversely affected by the potential high analytical bias.

6.3.7 Laboratory Control Sample Recovery

LCS recoveries were within the 80% to 120% guidance limits for unqualified data.

6.3.8 Matrix Spike/Matrix Spike Duplicate Recoveries and RPDs

RPDs between MS/MSD results were within the 20% maximum guidance limit for unqualified data. MS/MSD recoveries outside the 75% to 125% guidance limits are described in the following table:

Sample ID	Analytes	Recovery	Effects on Data Usability
2172B530T1SS-1-SO1	Lead	134%MSD	AMEC J qualified the detected results for
	Cadmium	136%MSD	

Sample ID	Analytes	Recovery	Effects on Data Usability
	Copper	146%/136%	these analytes because of possible high analytical bias.
	Mercury	242%/316%	
	Zinc	127%/124%	
	Antimony	46%/47%	AMEC UJ qualified the nondetected antimony result from this sample because of possible low analytical bias.
	Aluminum	Not reported	The sample concentrations were greater than 4 times the spike concentration added; therefore, data usability could not be fully evaluated. Qualification is not warranted.
	Calcium		
	Iron		
	Magnesium		
	Manganese		

6.3.9 Post-digestion Spikes

Post-digestion spike (PDS) recoveries outside the 75% to 125% guidance limits for unqualified data are described as follows.

Potassium (127%) and silver (65%) recoveries were outside the guidance limits in the PDS of sample 2172B530T1SS-1-SO1. Specific limitations include the following:

- AMEC J qualified the detected potassium results from this sample because of possible high analytical bias.
- AMEC J qualified the detected silver result from this sample because of possible low analytical bias.

6.3.10 ICP Serial Dilution

All analytes met the method-specified criteria of less than 10 percent difference for analytes with concentrations greater than 50-times the MDL.

6.3.11 Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results.

6.4 Nitrocellulose by TestAmerica SOP WS-WC-0050

Nitrocellulose results generated by TestAmerica may be considered usable with the limitations described in Sections 6.6.1 through 6.6.4.

6.4.1 Blanks

Nitrocellulose was not detected at concentrations greater than the RL in laboratory method blanks.

6.4.2 Laboratory Control Sample Recovery

LCS recoveries were within the 34% to 154% laboratory-established limits for unqualified data.

6.4.3 Matrix Spike/Matrix Spike Duplicate Samples

MS/MSD recoveries were within the 34% to 115% laboratory-established limits for unqualified data.

6.4.4 Analytical Procedures

The laboratory B qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results.

6.5 White Phosphorus by EPA SW-846 Method 7580

White Phosphorus results generated by ALS may be considered usable without qualification.

6.5.1 Initial Calibration

ICALs associated with the analysis of these samples were within the method-specified limits.

6.5.2 Initial and Continuing Calibration Verification

All ICVs and CCVs associated with the analysis of these samples were within the method-specified limits.

6.5.3 Blanks

Target analytes were not detected at concentrations greater than the RL in laboratory blanks.

6.5.4 Laboratory Control Sample Recovery

LCS recoveries were within the 75% to 125% guidance limits for unqualified data.

6.5.5 Matrix Spike/Matrix Spike Duplicate Samples

MS/MSD recoveries were within the 75% to 125% guidance limits for unqualified data.

6.6 Nitroaromatics and Nitramines by EPA SW-846 Method 8330

Nitroaromatic and nitramine results generated by TestAmerica may be considered usable without qualification.

6.6.1 Holding Times

Samples were extracted for nitroaromatics and nitramines within the method-specified maximum holding time of 14 days from collection, for soils, and analyzed within 40 days of extraction.

6.6.2 Initial Calibration

ICALs met the method-specified %RSD criteria of ≤15%.

6.6.3 Initial Calibration Verification

ICV standard recoveries were within the method-specified 70% to 130% acceptance limits for unqualified data.

6.6.4 Continuing Calibration

All CCV standard recoveries were within the method-specified 80% to 120% acceptance limits for unqualified data.

6.6.5 Blanks

Nitroaromatics and nitramines were not detected in the laboratory blank associated with these samples.

6.6.6 Matrix Spike/Matrix Duplicate Recoveries and RPDs

RPDs between MS/MSD results were within the 40% guidance limits for unqualified data. MS/MSD recoveries were within the 70% to 130% limits for unqualified data.

6.6.7 Laboratory Control Sample Recovery

LCS recoveries were within the 70% to 130% guidance limits for unqualified data.

6.6.8 Surrogate Recoveries

Surrogate recoveries were within the 70% to 130% guidance limits for unqualified data

7.0 FIELD DUPLICATES

Samples collected as field duplicates are listed in Table 1. Field duplicate detected results are found in Table 3. The samples were labeled blindly, so the laboratory was not aware which samples were submitted in duplicate. Primary and duplicate results and the RPDs for the field duplicates are summarized in Table 3. With the exceptions listed in Table 3, precision values met the guidance limits for data usability of less than 40% RPD for soil for concentrations greater than five times their RL or ± the RL for sample concentrations less than the five times their RL.

8.0 SUMMARY AND CONCLUSIONS

AMEC's review indicates the data from this event are generally usable. The types of qualifications applied to the dataset include rejected, (R), estimated (J or UJ) and nondetected (U) and results. Results that were U qualified were not further qualified due to minor QC outliers.

Rejected Data. The nondetected 2,4-dinitrophenol result from sample 2172B530T1SS-1-SO1was R qualified and rejected because of a very low matrix spike recovery.

Nondetected Data. The methylene chloride results from the majority of samples and the 1,2,4-trichlorobenzene result from sample 2172B530T2SS-1-SO1were U qualified as nondetected because of apparent contamination.

Estimated Data. Portions of the VOC, SVOC, metal, and nitrocellulose data were qualified as estimated because of calibration issues, low LCS recoveries, low and high MS recoveries, low surrogate recoveries, suboptimal interference, field duplicate imprecision, and results reported between the MDL and RL.

Data Completeness Assessment. AMEC reviewed 1,232 data records during the data validation. AMEC U qualified eight (0.6%) records as nondetected; and J or UJ qualified 559 (45%) records as estimated concentrations.

The white phosphorus and nitroaromatics and nitramines data did not require qualification.

One data record (<0.1%) was rejected exceeding a 90% completeness goal which is sufficient for most projects.

REFERENCES

DoD, 2007. DoD Perchlorate Handbook Revision 1 Change 1, August 2007.

EPA, 2010. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, OSWER 9240.1-51, EPA 540-R-10-011.

EPA, 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-08-01, June 2008.

EPA, 2007. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 Final Update IV Revision 6, February 2007.

LIMITATIONS

This report was prepared exclusively for the PIKA International, Inc. by AMEC. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Validation/Review Report is intended to be used by the PIKA International, Inc. for the Fort Wingate site in Red Rock, New Mexico only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

Appendix D– All Detections Tables

(Located on the included Compact Disc)

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW01SS-1-SO1	8330	2,4-Dinitrotoluene	0.11	mg/kg	J	1.6	15.7	0.26	RL	0.02		
2160B522DW01SS-1-SO1	8260B	Methylene chloride	0.0015	mg/kg	J	11	199	5.5	RL	1.4		
2160B522DW01SS-1-SO1	8260B	Toluene	0.00084	mg/kg	J	5000	5570	5.5	RL	0.32		
2160B522DW01SS-1-SO1	8270C	Anthracene	0.051	mg/kg	J	17000	17200	70	RL	35		
2160B522DW01SS-1-SO1	8270C	Fluoranthene	0.18	mg/kg		2300	2290	70	RL	35		
2160B522DW01SS-1-SO1	8270C	2-Methylnaphthalene	0.35	mg/kg		310		70	RL	35		
2160B522DW01SS-1-SO1	8270C	Naphthalene	0.13	mg/kg		3.6	45	70	RL	35		
2160B522DW01SS-1-SO1	8270C	Benzo(a)anthracene	0.096	mg/kg		0.15	6.21	70	RL	35		
2160B522DW01SS-1-SO1	8270C	Benzo(b)fluoranthene	0.16	mg/kg		0.15	6.21	70	RL	35		
2160B522DW01SS-1-SO1	8270C	Phenanthrene	0.27	mg/kg			1830	70	RL	35		
2160B522DW01SS-1-SO1	8270C	Pyrene	0.18	mg/kg		1700	1720	70	RL	35		
2160B522DW01SS-1-SO1	8270C	Chrysene	0.13	mg/kg		15	621	70	RL	12		
2160B522DW01SS-1-SO1	8270C	Dibenzofuran	0.12	mg/kg	J	78		530	RL	35		
2160B522DW01SS-1-SO1	8270C	Di-n-butyl phthalate	0.34	mg/kg	J	6100	6110	530	RL	160		
2160B522DW01SS-1-SO1	160.3 MOD	Percent Solids	95.2	%				10	RL	10		
2160B522DW01SS-1-SO1	MS-WC-005(	Nitrocellulose	22.9	mg/kg		180000000		5.3	RL	0.82		
2160B522DW01SS-1-SO1	160.3 MOD	Percent Solids	95	%				10	RL	10		
2160B522DW02SS-1-SO1	8330	2,4-Dinitrotoluene	0.76	mg/kg		1.6	15.7	0.24	RL	0.02		
2160B522DW02SS-1-SO1	8270C	2,4-Dinitrotoluene	1.3	mg/kg		1.6	15.7	420	RL	57		
2160B522DW02SS-1-SO1	8270C	Fluoranthene	0.027	mg/kg		2300	2290	14	RL	7		
2160B522DW02SS-1-SO1	8270C	2-Methylnaphthalene	0.022	mg/kg		310		14	RL	7		
2160B522DW02SS-1-SO1	8270C	Naphthalene	0.016	mg/kg		3.6	45	14	RL	7		
2160B522DW02SS-1-SO1	8270C	Benzo(a)anthracene	0.039	mg/kg		0.15	6.21	14	RL	7		
2160B522DW02SS-1-SO1	8270C	N-Nitrosodiphenylamine	0.13	mg/kg		99	993	110	RL	44		
2160B522DW02SS-1-SO1	8270C	Benzo(b)fluoranthene	0.038	mg/kg		0.15	6.21	14	RL	7		
2160B522DW02SS-1-SO1	8270C	Benzo(ghi)perylene	0.023	mg/kg				14	RL	7		
2160B522DW02SS-1-SO1	8270C	Phenanthrene	0.032	mg/kg			1830	14	RL	7		
2160B522DW02SS-1-SO1	8270C	Pyrene	0.025	mg/kg		1700	1720	14	RL	7		
2160B522DW02SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.1	mg/kg	J B	35	347	110	RL	40		
2160B522DW02SS-1-SO1	8270C	Chrysene	0.03	mg/kg		15	621	14	RL	2.3		
2160B522DW02SS-1-SO1	8270C	Di-n-butyl phthalate	1.9	mg/kg		6100	6110	110	RL	32		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW02SS-1-SO1	160.3 MOD	Percent Solids	94.9	%				10	RL	10		
2160B522DW02SS-1-SO1	WS-WC-0050	Nitrocellulose	39.1	mg/kg		180000000		5.3	RL	0.82		
2160B522DW03SS-1-SO1	8330	2,4-Dinitrotoluene	0.34	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522DW03SS-1-SO1	8330	4-Amino-2,6-dinitrotoluene	0.086	mg/kg	J	150		0.25	RL	0.02	J	DL
2160B522DW03SS-1-SO1	8260B	Toluene	0.00078	mg/kg	J	5000	5570	5.2	RL	0.3	J	DL
2160B522DW03SS-1-SO1	8270C	2,4-Dinitrotoluene	0.2	mg/kg	J	1.6	15.7	1000	RL	140	J	DL
2160B522DW03SS-1-SO1	8270C	Fluoranthene	0.047	mg/kg		2300	2290	35	RL	17		
2160B522DW03SS-1-SO1	8270C	Indeno(1,2,3-cd)pyrene	0.037	mg/kg		0.15	6.21	35	RL	17	U	BC
2160B522DW03SS-1-SO1	8270C	2-Methylnaphthalene	0.051	mg/kg		310		35	RL	17		
2160B522DW03SS-1-SO1	8270C	Benzo(b)fluoranthene	0.096	mg/kg		0.15	6.21	35	RL	17	U	BC
2160B522DW03SS-1-SO1	8270C	Benzo(ghi)perylene	0.039	mg/kg				35	RL	17		
2160B522DW03SS-1-SO1	8270C	Benzo(a)pyrene	0.044	mg/kg		0.015	0.621	35	RL	17		
2160B522DW03SS-1-SO1	8270C	Phenanthrene	0.05	mg/kg			1830	35	RL	17		
2160B522DW03SS-1-SO1	8270C	Pyrene	0.049	mg/kg		1700	1720	35	RL	17		
2160B522DW03SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.11	mg/kg	J B	35	347	260	RL	99	U	MB
2160B522DW03SS-1-SO1	8270C	Butyl benzyl phthalate	0.14	mg/kg	J	260		260	RL	52	J	DL
2160B522DW03SS-1-SO1	8270C	Chrysene	0.06	mg/kg		15	621	35	RL	5.7		
2160B522DW03SS-1-SO1	8270C	Di-n-butyl phthalate	0.69	mg/kg		6100	6110	260	RL	78		
2160B522DW03SS-1-SO1	160.3 MOD	Percent Solids	95.9	%				10	RL	10		
2160B522DW03SS-1-SO1	WS-WC-0050	Nitrocellulose	25.8	mg/kg		180000000		5.2	RL	0.81		
2160B522DW03SS-1-SO2	8330	2,4-Dinitrotoluene	0.48	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522DW03SS-1-SO2	8260B	Toluene	0.00037	mg/kg	J	5000	5570	5.5	RL	0.32	J	DL
2160B522DW03SS-1-SO2	8270C	2,4-Dinitrotoluene	0.43	mg/kg	J	1.6	15.7	1000	RL	140	J	DL
2160B522DW03SS-1-SO2	8270C	Fluoranthene	0.043	mg/kg		2300	2290	35	RL	17		
2160B522DW03SS-1-SO2	8270C	2-Methylnaphthalene	0.04	mg/kg		310		35	RL	17		
2160B522DW03SS-1-SO2	8270C	Benzo(b)fluoranthene	0.055	mg/kg		0.15	6.21	35	RL	17	U	BC
2160B522DW03SS-1-SO2	8270C	Phenanthrene	0.044	mg/kg			1830	35	RL	17		
2160B522DW03SS-1-SO2	8270C	Pyrene	0.04	mg/kg		1700	1720	35	RL	17		
2160B522DW03SS-1-SO2	8270C	Chrysene	0.046	mg/kg		15	621	35	RL	5.7		
2160B522DW03SS-1-SO2	8270C	Di-n-butyl phthalate	0.83	mg/kg		6100	6110	260	RL	78		
2160B522DW03SS-1-SO2	160.3 MOD	Percent Solids	96.4	%				10	RL	10		
2160B522DW03SS-1-SO2	WS-WC-0050	Nitrocellulose	21.5	mg/kg		180000000		5.2	RL	0.81		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW04SS-1-SO1	8330	2,4-Dinitrotoluene	0.66	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522DW04SS-1-SO1	8330	1,3,5-Trinitrobenzene	0.18	mg/kg	J	2200		0.25	RL	0.02	J	DL
2160B522DW04SS-1-SO1	8330	2,4,6-Trinitrotoluene	0.87	mg/kg		19	35.9	0.25	RL	0.02		
2160B522DW04SS-1-SO1	8330	RDX	0.075	mg/kg	J	5.5	44.2	0.25	RL	0.04	J	DL
2160B522DW04SS-1-SO1	8330	4-Amino-2,6-dinitrotoluene	1.1	mg/kg		150		0.25	RL	0.02		
2160B522DW04SS-1-SO1	8330	2-Amino-4,6-dinitrotoluene	0.95	mg/kg		150		0.3	RL	0.099		
2160B522DW04SS-1-SO1	8270C	2,4-Dinitrotoluene	0.43	mg/kg	J	1.6	15.7	850	RL	110	J	DL, LS
2160B522DW04SS-1-SO1	8270C	Fluoranthene	0.058	mg/kg		2300	2290	28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	2-Methylnaphthalene	0.061	mg/kg		310		28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	Benzo(a)anthracene	0.044	mg/kg		0.15	6.21	28	RL	14	UJ	BC, LS
2160B522DW04SS-1-SO1	8270C	N-Nitrosodiphenylamine	0.43	mg/kg		99	993	210	RL	89	J	LS
2160B522DW04SS-1-SO1	8270C	Benzo(b)fluoranthene	0.062	mg/kg		0.15	6.21	28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	Benzo(ghi)perylene	0.034	mg/kg				28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	Benzo(a)pyrene	0.03	mg/kg		0.015	0.621	28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	Phenanthrene	0.082	mg/kg			1830	28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	Pyrene	0.059	mg/kg		1700	1720	28	RL	14	J	LS
2160B522DW04SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.18	mg/kg	J B	35	347	210	RL	81	UJ	MB, LS
2160B522DW04SS-1-SO1	8270C	Chrysene	0.046	mg/kg		15	621	28	RL	4.7	J	LS
2160B522DW04SS-1-SO1	8270C	Di-n-butyl phthalate	3.3	mg/kg		6100	6110	210	RL	64	J	LS
2160B522DW04SS-1-SO1	160.3 MOD	Percent Solids	94.2	%				10	RL	10		
2160B522DW04SS-1-SO1	NS-WC-005(	Nitrocellulose	49.2	mg/kg		180000000		5.3	RL	0.83		
2160B522DW05SS-1-SO1	8330	2,4-Dinitrotoluene	1.5	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522DW05SS-1-SO1	8330	4-Amino-2,6-dinitrotoluene	0.16	mg/kg	J	150		0.25	RL	0.02		
2160B522DW05SS-1-SO1	8330	2-Amino-4,6-dinitrotoluene	0.17	mg/kg	J	150		0.3	RL	0.099		
2160B522DW05SS-1-SO1	8270C	2,4-Dinitrotoluene	0.65	mg/kg	J	1.6	15.7	1100	RL	140		
2160B522DW05SS-1-SO1	8270C	Fluoranthene	0.063	mg/kg		2300	2290	36	RL	18		
2160B522DW05SS-1-SO1	8270C	2-Methylnaphthalene	0.07	mg/kg		310		36	RL	18		
2160B522DW05SS-1-SO1	8270C	Benzo(a)anthracene	0.036	mg/kg		0.15	6.21	36	RL	18		
2160B522DW05SS-1-SO1	8270C	Benzo(b)fluoranthene	0.069	mg/kg		0.15	6.21	36	RL	18		
2160B522DW05SS-1-SO1	8270C	Benzo(ghi)perylene	0.094	mg/kg				36	RL	18		
2160B522DW05SS-1-SO1	8270C	Benzo(a)pyrene	0.046	mg/kg		0.015	0.621	36	RL	18		
2160B522DW05SS-1-SO1	8270C	Phenanthrene	0.094	mg/kg			1830	36	RL	18		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW05SS-1-SO1	8270C	Pyrene	0.06	mg/kg		1700	1720	36	RL	18		
2160B522DW05SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.11	mg/kg	J B	35	347	270	RL	100		
2160B522DW05SS-1-SO1	8270C	Chrysene	0.059	mg/kg		15	621	36	RL	5.9		
2160B522DW05SS-1-SO1	8270C	Di-n-butyl phthalate	2.1	mg/kg		6100	6110	270	RL	80		
2160B522DW05SS-1-SO1	160.3 MOD	Percent Solids	93.3	%				10	RL	10		
2160B522DW05SS-1-SO1	MS-WC-005(	Nitrocellulose	62.1	mg/kg		180000000		5.4	RL	0.84		
2160B522DW06SS-1-SO1	8330	2,4-Dinitrotoluene	0.25	mg/kg		1.6	15.7	0.24	RL	0.02		
2160B522DW06SS-1-SO1	8330	4-Amino-2,6-dinitrotoluene	0.06	mg/kg	J	150		0.24	RL	0.02		
2160B522DW06SS-1-SO1	8260B	Methylene chloride	0.0027	mg/kg	J	11	199	8.2	RL	2.1		
2160B522DW06SS-1-SO1	8270C	Fluoranthene	0.073	mg/kg		2300	2290	29	RL	14		
2160B522DW06SS-1-SO1	8270C	2-Methylnaphthalene	0.12	mg/kg		310		29	RL	14		
2160B522DW06SS-1-SO1	8270C	Naphthalene	0.053	mg/kg		3.6	45	29	RL	14		
2160B522DW06SS-1-SO1	8270C	Benzo(a)anthracene	0.032	mg/kg		0.15	6.21	29	RL	14		
2160B522DW06SS-1-SO1	8270C	Benzo(b)fluoranthene	0.061	mg/kg		0.15	6.21	29	RL	14		
2160B522DW06SS-1-SO1	8270C	Phenanthrene	0.1	mg/kg			1830	29	RL	14		
2160B522DW06SS-1-SO1	8270C	Pyrene	0.063	mg/kg		1700	1720	29	RL	14		
2160B522DW06SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.083	mg/kg	J B	35	347	210	RL	82		
2160B522DW06SS-1-SO1	8270C	Chrysene	0.053	mg/kg		15	621	29	RL	4.7		
2160B522DW06SS-1-SO1	8270C	Dibenzofuran	0.04	mg/kg	J	78		210	RL	14		
2160B522DW06SS-1-SO1	8270C	Di-n-butyl phthalate	0.44	mg/kg		6100	6110	210	RL	64		
2160B522DW06SS-1-SO1	160.3 MOD	Percent Solids	93.2	%				10	RL	10		
2160B522DW06SS-1-SO1	MS-WC-005(	Nitrocellulose	30.2	mg/kg		180000000		5.4	RL	0.84		
2160B522DW07SS-1-SO1	8330	2,4-Dinitrotoluene	0.85	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522DW07SS-1-SO1	8330	HMX	0.076	mg/kg	J	3800	3060	0.25	RL	0.03		
2160B522DW07SS-1-SO1	8330	RDX	0.22	mg/kg	J	5.5	44.2	0.25	RL	0.04		
2160B522DW07SS-1-SO1	8330	4-Amino-2,6-dinitrotoluene	0.17	mg/kg	J	150		0.25	RL	0.02		
2160B522DW07SS-1-SO1	8330	2-Amino-4,6-dinitrotoluene	0.16	mg/kg	J	150		0.3	RL	0.1		
2160B522DW07SS-1-SO1	8260B	Methylene chloride	0.0035	mg/kg	J	11	199	6.3	RL	1.6		
2160B522DW07SS-1-SO1	8260B	Toluene	0.0015	mg/kg	J	5000	5570	6.3	RL	0.36		
2160B522DW07SS-1-SO1	8270C	2,4-Dinitrotoluene	0.58	mg/kg		1.6	15.7	560	RL	76		
2160B522DW07SS-1-SO1	8270C	Fluoranthene	0.067	mg/kg		2300	2290	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	2-Methylnaphthalene	0.084	mg/kg		310		19	RL	9.3		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW07SS-1-SO1	8270C	Naphthalene	0.045	mg/kg		3.6	45	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	Benzo(a)anthracene	0.033	mg/kg		0.15	6.21	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	N-Nitrosodiphenylamine	0.088	mg/kg	J	99	993	140	RL	59		
2160B522DW07SS-1-SO1	8270C	Benzo(b)fluoranthene	0.073	mg/kg		0.15	6.21	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	Benzo(a)pyrene	0.03	mg/kg		0.015	0.621	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	Phenanthrene	0.071	mg/kg			1830	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	Pyrene	0.063	mg/kg		1700	1720	19	RL	9.3		
2160B522DW07SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.13	mg/kg	J B	35	347	140	RL	54		
2160B522DW07SS-1-SO1	8270C	Benzaldehyde	0.1	mg/kg	J	7800		280	RL	34		
2160B522DW07SS-1-SO1	8270C	4-Chloroaniline	0.16	mg/kg	J	2.4		420	RL	48		
2160B522DW07SS-1-SO1	8270C	Chrysene	0.056	mg/kg		15	621	19	RL	3.1		
2160B522DW07SS-1-SO1	8270C	Dibenzofuran	0.0033	mg/kg	J	78		140	RL	9.3		
2160B522DW07SS-1-SO1	8270C	Di-n-butyl phthalate	1.1	mg/kg		6100	6110	140	RL	42		
2160B522DW07SS-1-SO1	160.3 MOD	Percent Solids	88.5	%				10	RL	10		
2160B522DW07SS-1-SO1	NS-WC-005(	Nitrocellulose	36.1	mg/kg		180000000		5.6	RL	0.88		
2160B522DW08SS-1-SO1	8330	2,4-Dinitrotoluene	2.4	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522DW08SS-1-SO1	8330	2,6-Dinitrotoluene	0.13	mg/kg	J	61	61.2	0.25	RL	0.03		
2160B522DW08SS-1-SO1	8260B	Methylene chloride	0.0017	mg/kg	J	11	199	5.1	RL	1.3		
2160B522DW08SS-1-SO1	8260B	Toluene	0.00035	mg/kg	J	5000	5570	5.1	RL	0.3		
2160B522DW08SS-1-SO1	8270C	2,4-Dinitrotoluene	4.5	mg/kg		1.6	15.7	840	RL	110		
2160B522DW08SS-1-SO1	8270C	2,6-Dinitrotoluene	0.22	mg/kg	J	61	61.2	840	RL	88		
2160B522DW08SS-1-SO1	8270C	N-Nitrosodiphenylamine	0.31	mg/kg		99	993	210	RL	88		
2160B522DW08SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.47	mg/kg	B	35	347	210	RL	80		
2160B522DW08SS-1-SO1	8270C	Di-n-butyl phthalate	2.8	mg/kg		6100	6110	210	RL	63		
2160B522DW08SS-1-SO1	160.3 MOD	Percent Solids	95.2	%				10	RL	10		
2160B522DW08SS-1-SO1	NS-WC-005(	Nitrocellulose	83.5	mg/kg		180000000		10.5	RL	1.6		
2160B522DW09SS-1-SO1	8260B	Toluene	0.34	mg/kg	J	5000	5570	4.7	RL	0.27		
2160B522DW09SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.072	mg/kg	J B	35	347	120	RL	44		
2160B522DW09SS-1-SO1	8270C	Di-n-butyl phthalate	0.069	mg/kg	J	6100	6110	120	RL	35		
2160B522DW09SS-1-SO1	160.3 MOD	Percent Solids	85.8	%				10	RL	10		
2160B522DW09SS-1-SO1	NS-WC-005(	Nitrocellulose	1.1	mg/kg	B	180000000		5.8	RL	0.91		
2160B522DW09SS-1-SO2	8260B	Methylene chloride	0.0013	mg/kg	J	11	199	5.1	RL	1.3		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW09SS-1-SO2	8260B	Toluene	0.00036	mg/kg	J	5000	5570	5.1	RL	0.3		
2160B522DW09SS-1-SO2	160.3 MOD	Percent Solids	85.7	%				10	RL	10		
2160B522DW09SS-1-SO2	NS-WC-005(	Nitrocellulose	1.1	mg/kg	B	180000000		5.8	RL	0.91		
2160B522DW09SS-1-SO2 DUP	160.3 MOD	Percent Solids	87.1	%				10	RL	10		
2160B522DW10SS-1-SO1	8260B	Methylene chloride	0.0018	mg/kg	J	11	199	5.1	RL	1.3		
2160B522DW10SS-1-SO1	8260B	Toluene	0.0029	mg/kg	J	5000	5570	5.1	RL	0.29		
2160B522DW10SS-1-SO1	160.3 MOD	Percent Solids	90.9	%				10	RL	10		
2160B522DW10SS-1-SO1	NS-WC-005(	Nitrocellulose	0.0011	mg/kg	B	180000000		5.5	RL	0.86		
2160B522DW11SS-1-SO1	8260B	Methylene chloride	0.0018	mg/kg	J	11	199	4.4	RL	1.2		
2160B522DW11SS-1-SO1	8260B	Toluene	0.0012	mg/kg	J	5000	5570	4.4	RL	0.26		
2160B522DW11SS-1-SO1	8270C	Di-n-butyl phthalate	0.074	mg/kg	J	6100	6110	220	RL	67		
2160B522DW11SS-1-SO1	160.3 MOD	Percent Solids	89	%				10	RL	10		
2160B522DW11SS-1-SO1	NS-WC-005(	Nitrocellulose	0.95	mg/kg	B	180000000		5.6	RL	0.88		
2160B522DW11SS-1-SO1 DUP	160.3 MOD	Percent Solids	88	%				10	RL	10		
2160B522DW12SS-1-SO1	8330	2,4-Dinitrotoluene	0.042	mg/kg	J	1.6	15.7	0.24	RL	0.019		
2160B522DW12SS-1-SO1	8260B	Methylene chloride	0.0022	mg/kg	J B	11	199	5.1	RL	1.3		
2160B522DW12SS-1-SO1	8260B	Toluene	0.00051	mg/kg	J	5000	5570	5.1	RL	0.29		
2160B522DW12SS-1-SO1	160.3 MOD	Percent Solids	93.8	%				10	RL	10		
2160B522DW12SS-1-SO1	NS-WC-005(	Nitrocellulose	13.6	mg/kg		180000000		5.3	RL	0.83		
2160B522DW13SS-1-SO1	160.3 MOD	Percent Solids	94	%				10	RL	10		
2160B522DW13SS-1-SO1	NS-WC-005(	Nitrocellulose	1.7	mg/kg	B	180000000		5.3	RL	0.83		
2160B522DW14SS-1-SO1	8330	2,4-Dinitrotoluene	0.024	mg/kg	J	1.6	15.7	0.25	RL	0.02		
2160B522DW14SS-1-SO1	8260B	Methylene chloride	0.0014	mg/kg	J B	11	199	4.2	RL	1.1		
2160B522DW14SS-1-SO1	8260B	Toluene	0.00027	mg/kg	J	5000	5570	4.2	RL	0.25		
2160B522DW14SS-1-SO1	8270C	2,4-Dinitrotoluene	1.1	mg/kg		1.6	15.7	850	RL	110		
2160B522DW14SS-1-SO1	8270C	N-Nitrosodiphenylamine	0.00009	mg/kg	J	99	993	210	RL	89		
2160B522DW14SS-1-SO1	8270C	Di-n-butyl phthalate	0.0027	mg/kg		6100	6110	210	RL	64		
2160B522DW14SS-1-SO1	160.3 MOD	Percent Solids	94.3	%				10	RL	10		
2160B522DW14SS-1-SO1	NS-WC-005(	Nitrocellulose	27.5	mg/kg		180000000		5.3	RL	0.83		
2160B522DW15SS-1-SO1	8330	2,4-Dinitrotoluene	0.62	mg/kg		1.6	15.7	0.24	RL	0.019		
2160B522DW15SS-1-SO1	8330	HMX	0.036	mg/kg	J	3800	3060	0.24	RL	0.029		
2160B522DW15SS-1-SO1	8330	RDX	0.092	mg/kg	J	5.5	44.2	0.24	RL	0.038		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522DW15SS-1-SO1	8260B	Toluene	0.0018	mg/kg	J	5000	5570	5	RL	0.29		
2160B522DW15SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.084	mg/kg	J B	35	347	200	RL	78		
2160B522DW15SS-1-SO1	8270C	Di-n-butyl phthalate	0.68	mg/kg		6100	6110	200	RL	61		
2160B522DW15SS-1-SO1	160.3 MOD	Percent Solids	98	%				10	RL	10		
2160B522DW15SS-1-SO1	NS-WC-005(	Nitrocellulose	40.3	mg/kg		180000000		5.1	RL	0.8		
2160B522ER1SS-1-SO1	8260B	Toluene	0.0031	mg/kg	J	5000	5570	4.3	RL	0.25		
2160B522ER1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.046	mg/kg	J B	35	347	56	RL	21		
2160B522ER1SS-1-SO1	8270C	Caprolactam	0.052	mg/kg	J	31000		370	RL	41		
2160B522ER1SS-1-SO1	8270C	Di-n-butyl phthalate	0.096	mg/kg		6100	6110	56	RL	17		
2160B522ER1SS-1-SO1	160.3 MOD	Percent Solids	89.2	%				10	RL	10		
2160B522ER1SS-1-SO1	NS-WC-005(	Nitrocellulose	1.4	mg/kg	B	180000000		5.6	RL	0.87		
2160B522ER1SS-1-SO2	8260B	Methylene chloride	0.0014	mg/kg	J B	11	199	4.5	RL	1.2		
2160B522ER1SS-1-SO2	8260B	Toluene	0.0034	mg/kg	J	5000	5570	4.5	RL	0.26		
2160B522ER1SS-1-SO2	8270C	bis(2-Ethylhexyl) phthalate	0.045	mg/kg	J B	35	347	58	RL	22		
2160B522ER1SS-1-SO2	8270C	Di-n-butyl phthalate	0.064	mg/kg		6100	6110	58	RL	17		
2160B522ER1SS-1-SO2	160.3 MOD	Percent Solids	86.9	%				10	RL	10		
2160B522ER1SS-1-SO2	WS-WC-0050	Nitrocellulose	1.3	mg/kg	B	180000000		5.8	RL	0.9		
2160B522WR1SS-1-SO1	8260B	Methylene chloride	0.0016	mg/kg	J B	11	199	4.5	RL	1.2		
2160B522WR1SS-1-SO1	8260B	Toluene	0.00031	mg/kg	J	5000	5570	4.5	RL	0.26		
2160B522WR1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.047	mg/kg	J B	35	347	55	RL	21		
2160B522WR1SS-1-SO1	8270C	Di-n-butyl phthalate	0.083	mg/kg		6100	6110	55	RL	17		
2160B522WR1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.026	mg/kg	J	35	347	55	RL	21		
2160B522WR1SS-1-SO1	8270C	Di-n-butyl phthalate	0.04	mg/kg	J B	6100	6110	55	RL	17		
2160B522WR1SS-1-SO1	160.3 MOD	Percent Solids	90.8	%				10	RL	10		
2160B522ED1SS-1-SO1	8330	2,4-Dinitrotoluene	8.8	mg/kg		1.6	15.7	0.25	RL	0.02	J	HD
2160B522ED1SS-1-SO1	8330	2,6-Dinitrotoluene	0.64	mg/kg		61	61.2	0.25	RL	0.03		
2160B522ED1SS-1-SO1	8260B	Methylene chloride	0.0024	mg/kg	J B	11	199	5.5	RL	1.4	U	MB
2160B522ED1SS-1-SO1	8260B	Toluene	0.00047	mg/kg	J	5000	5570	5.5	RL	0.32	J	DL
2160B522ED1SS-1-SO1	8270C	2,4-Dinitrotoluene	1.6	mg/kg		1.6	15.7	210	RL	28	J	LS
2160B522ED1SS-1-SO1	8270C	Fluoranthene	0.035	mg/kg		2300	2290	7	RL	3.5	J	LS
2160B522ED1SS-1-SO1	8270C	Indeno(1,2,3-cd)pyrene	0.024	mg/kg		0.15	6.21	7	RL	3.5	J	LM, LS
2160B522ED1SS-1-SO1	8270C	Benzo(a)anthracene	0.33	mg/kg		0.15	6.21	7	RL	3.5	J	LS

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522ED1SS-1-SO1	8270C	N-Nitrosodiphenylamine	0.31	mg/kg		99	993	53	RL	22	J	LM, LS
2160B522ED1SS-1-SO1	8270C	Benzo(b)fluoranthene	0.044	mg/kg		0.15	6.21	7	RL	3.5	J	LS
2160B522ED1SS-1-SO1	8270C	Benzo(k)fluoranthene	0.017	mg/kg		1.5	62.1	7	RL	3.5	UJ	BC, LS
2160B522ED1SS-1-SO1	8270C	Benzo(ghi)perylene	0.031	mg/kg				7	RL	3.5	J	LM, LS
2160B522ED1SS-1-SO1	8270C	Benzo(a)pyrene	0.03	mg/kg		0.015	0.621	7	RL	3.5	J	LM, LS
2160B522ED1SS-1-SO1	8270C	Pyrene	0.038	mg/kg		1700	1720	7	RL	3.5	J	LS
2160B522ED1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.028	mg/kg	J B	35	347	53	RL	20	UJ	MB, LS
2160B522ED1SS-1-SO1	8270C	Chrysene	0.034	mg/kg		15	621	7	RL	1.2	J	LM, LS
2160B522ED1SS-1-SO1	8270C	Di-n-butyl phthalate	0.064	mg/kg	B	6100	6110	53	RL	16	UJ	MB, LS
2160B522ED1SS-1-SO1	160.3 MOD	Percent Solids	95	%				10	RL	10		
2160B522ED1SS-1-SO1	WS-WC-0050	Nitrocellulose	10.4	mg/kg		180000000		5.3	RL	0.82	R	SE
2160B522ED1SS-1-SO1	WS-WC-0050	Nitrocellulose	205	mg/kg		180000000		52.6	RL	8.2		
2160B522ED1SS-1-SO1	160.3 MOD	Percent Solids	95.8	%				10	RL	10		
2160B522ED2SS-1-SO1	8330	2,4-Dinitrotoluene	0.065	mg/kg	J	1.6	15.7	0.24	RL	0.02		
2160B522ED2SS-1-SO1	8260B	Toluene	0.00028	mg/kg	J	5000	5570	4.4	RL	0.25		
2160B522ED2SS-1-SO1	8270C	Caprolactam	0.067	mg/kg	J	31000		350	RL	40		
2160B522ED2SS-1-SO1	8270C	Di-n-butyl phthalate	0.11	mg/kg	B	6100	6110	53	RL	16		
2160B522ED2SS-1-SO1	160.3 MOD	Percent Solids	93.7	%				10	RL	10		
2160B522ED2SS-1-SO1	WS-WC-0050	Nitrocellulose	10.8	mg/kg		180000000		5.3	RL	0.83		
2160B522WE1SS-1-SO1	8260B	Toluene	0.00033	mg/kg	J	5000	5570	5.1	RL	0.29		
2160B522WE1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.00036	mg/kg	J B	35	347	55	RL	21		
2160B522WE1SS-1-SO1	8270C	Di-n-butyl phthalate	0.067	mg/kg	B	6100	6110	55	RL	17		
2160B522WE1SS-1-SO1	160.3 MOD	Percent Solids	90.7	%				10	RL	10		
2160B522WE1SS-1-SO1	WS-WC-0050	Nitrocellulose	2.9	mg/kg	B	180000000		5.5	RL	0.86		
2160B522SE1SS-1-SO1	8270C	2,4-Dinitrotoluene	0.1	mg/kg	J	1.6	15.7	210	RL	28		
2160B522SE1SS-1-SO1	8270C	Fluoranthene	0.013	mg/kg		2300	2290	7	RL	3.5		
2160B522SE1SS-1-SO1	8270C	Naphthalene	0.017	mg/kg		3.6	45	7	RL	3.5		
2160B522SE1SS-1-SO1	8270C	Phenanthrene	0.012	mg/kg			1830	7	RL	3.5		
2160B522SE1SS-1-SO1	8270C	Pyrene	0.013	mg/kg		1700	1720	7	RL	3.5		
2160B522SE1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.07	mg/kg	B	35	347	53	RL	20		
2160B522SE1SS-1-SO1	8270C	Di-n-butyl phthalate	0.23	mg/kg	B	6100	6110	53	RL	16		
2160B522SE1SS-1-SO1	160.3 MOD	Percent Solids	94.9	%				10	RL	10		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522SE1SS-1-SO1	MS-WC-005(	Nitrocellulose	46.3	mg/kg		180000000		5.3	RL	0.82		
2160B522EW1SS-1-SO1	8330	2,4-Dinitrotoluene	0.15	mg/kg	J	1.6	15.7	0.23	RL	0.019		
2160B522EW1SS-1-SO1	8260B	Toluene	0.44	mg/kg	J	5000	5570	7.5	RL	0.43		
2160B522EW1SS-1-SO1	8270C	2,4-Dinitrotoluene	0.25	mg/kg	J	1.6	15.7	850	RL	110		
2160B522EW1SS-1-SO1	8270C	Fluoranthene	0.07	mg/kg		2300	2290	28	RL	14		
2160B522EW1SS-1-SO1	8270C	2-Methylnaphthalene	0.044	mg/kg		310		28	RL	14		
2160B522EW1SS-1-SO1	8270C	Naphthalene	0.031	mg/kg		3.6	45	28	RL	14		
2160B522EW1SS-1-SO1	8270C	Benzo(a)pyrene	0.045	mg/kg		0.015	0.621	28	RL	14		
2160B522EW1SS-1-SO1	8270C	Phenanthrene	0.057	mg/kg			1830	28	RL	14		
2160B522EW1SS-1-SO1	8270C	Pyrene	0.065	mg/kg		1700	1720	28	RL	14		
2160B522EW1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.13	mg/kg	J B	35	347	210	RL	80		
2160B522EW1SS-1-SO1	8270C	Chrysene	0.067	mg/kg		15	621	28	RL	4.7		
2160B522EW1SS-1-SO1	8270C	Di-n-butyl phthalate	0.31	mg/kg	B	6100	6110	210	RL	64		
2160B522EW1SS-1-SO1	160.3 MOD	Percent Solids	94.5	%				10	RL	10		
2160B522EW1SS-1-SO1	WS-WC-0050	Nitrocellulose	8.7	mg/kg		180000000		5.3	RL	0.83		
2160B522EW2SS-1-SO1	8330	2,4-Dinitrotoluene	0.23	mg/kg	J	1.6	15.7	0.25	RL	0.02		
2160B522EW2SS-1-SO1	8260B	Methylene chloride	1.6	mg/kg	J B	11	199	5.7	RL	1.5		
2160B522EW2SS-1-SO1	8270C	2,4-Dinitrotoluene	0.14	mg/kg	J	1.6	15.7	210	RL	28		
2160B522EW2SS-1-SO1	8270C	Anthracene	0.007	mg/kg		17000	17200	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Fluoranthene	0.037	mg/kg		2300	2290	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Indeno(1,2,3-cd)pyrene	0.026	mg/kg		0.15	6.21	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	2-Methylnaphthalene	0.031	mg/kg		310		7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Naphthalene	0.02	mg/kg		3.6	45	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Benzo(b)fluoranthene	0.071	mg/kg		0.15	6.21	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Benzo(k)fluoranthene	0.034	mg/kg		1.5	62.1	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Phenanthrene	0.04	mg/kg			1830	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Pyrene	0.031	mg/kg		1700	1720	7	RL	3.5		
2160B522EW2SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.041	mg/kg	J B	35	347	52	RL	20		
2160B522EW2SS-1-SO1	8270C	Dibenzofuran	0.015	mg/kg	J	78		52	RL	3.5		
2160B522EW2SS-1-SO1	8270C	Di-n-butyl phthalate	0.39	mg/kg	B	6100	6110	52	RL	16		
2160B522EW2SS-1-SO1	160.3 MOD	Percent Solids	95.6	%				10	RL	10		
2160B522EW2SS-1-SO1	WS-WC-0050	Nitrocellulose	20.4	mg/kg		180000000		5.2	RL	0.82		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522EW3SS-1-SO1	8330	2,4-Dinitrotoluene	0.4	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522EW3SS-1-SO1	8330	4-Amino-2,6-dinitrotoluene	0.086	mg/kg	J	150		0.25	RL	0.02		
2160B522EW3SS-1-SO1	8260B	Toluene	0.00036	mg/kg	J	5000	5570	5.7	RL	0.33		
2160B522EW3SS-1-SO1	8270C	2,4-Dinitrotoluene	0.13	mg/kg	J	1.6	15.7	840	RL	110		
2160B522EW3SS-1-SO1	8270C	Fluoranthene	0.052	mg/kg		2300	2290	28	RL	14		
2160B522EW3SS-1-SO1	8270C	2-Methylnaphthalene	0.069	mg/kg		310		28	RL	14		
2160B522EW3SS-1-SO1	8270C	Naphthalene	0.03	mg/kg		3.6	45	28	RL	14		
2160B522EW3SS-1-SO1	8270C	Phenanthrene	0.081	mg/kg			1830	28	RL	14		
2160B522EW3SS-1-SO1	8270C	Pyrene	0.049	mg/kg		1700	1720	28	RL	14		
2160B522EW3SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.081	mg/kg	J B	35	347	210	RL	79		
2160B522EW3SS-1-SO1	8270C	Di-n-butyl phthalate	0.48	mg/kg	B	6100	6110	210	RL	63		
2160B522EW3SS-1-SO1	WS-WC-0050	Nitrocellulose	21.3	mg/kg		180000000		5.2	RL	0.82		
2160B522EW4SS-1-SO1	8330	2,4-Dinitrotoluene	0.45	mg/kg		1.6	15.7	0.24	RL	0.019		
2160B522EW4SS-1-SO1	8260B	Methylene chloride	0.0042	mg/kg	J B	11	199	7.3	RL	1.9		
2160B522EW4SS-1-SO1	8270C	2,4-Dinitrotoluene	0.61	mg/kg	J	1.6	15.7	950	RL	130		
2160B522EW4SS-1-SO1	8270C	Fluoranthene	0.033	mg/kg		2300	2290	32	RL	16		
2160B522EW4SS-1-SO1	8270C	2-Methylnaphthalene	0.059	mg/kg		310		32	RL	16		
2160B522EW4SS-1-SO1	8270C	Phenanthrene	0.072	mg/kg			1830	32	RL	16		
2160B522EW4SS-1-SO1	8270C	Pyrene	0.034	mg/kg		1700	1720	32	RL	16		
2160B522EW4SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.12	mg/kg	J B	35	347	240	RL	90		
2160B522EW4SS-1-SO1	8270C	Di-n-butyl phthalate	0.88	mg/kg	B	6100	6110	240	RL	71		
2160B522EW4SS-1-SO1	160.3 MOD	Percent Solids	84.2	%				10	RL	10		
2160B522EW4SS-1-SO1	WS-WC-0050	Nitrocellulose	28.8	mg/kg		180000000		5.9	RL	0.93		
2160B522EW5SS-1-SO1	8260B	Toluene	0.0003	mg/kg	J	5000	5570	5	RL	0.29		
2160B522EW5SS-1-SO1	8270C	Anthracene	0.025	mg/kg		17000	17200	6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	Fluoranthene	0.011	mg/kg		2300	2290	6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	Indeno(1,2,3-cd)pyrene	0.031	mg/kg		0.15	6.21	6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	Benzo(ghi)perylene	0.045	mg/kg				6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	Benzo(a)pyrene	0.028	mg/kg		0.015	0.621	6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	Phenanthrene	0.01	mg/kg			1830	6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	Pyrene	0.011	mg/kg		1700	1720	6.9	RL	3.4		
2160B522EW5SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.048	mg/kg	J B	35	347	52	RL	20		

Building 522 Summary of Detected Constituents in Soil

Ft. Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	Flag	EPA RSL (mg/kg)	NMED SSG (mg/kg)	RL High Limit	High Limit Type	Low Limit (MDL)	Validation qualifier	Reason code
2160B522EW5SS-1-SO1	8270C	Butyl benzyl phthalate	0.017	mg/kg	J	260		52	RL	10		
2160B522EW5SS-1-SO1	8270C	Di-n-butyl phthalate	0.069	mg/kg	B	6100	6110	52	RL	16		
2160B522EW5SS-1-SO1	160.3 MOD	Percent Solids	96.5	%				10	RL	10		
2160B522EW5SS-1-SO1	WS-WC-0050	Nitrocellulose	4.4	mg/kg	B	180000000		5.2	RL	0.81		
2160B522EW6SS-1-SO1	8330	2,4-Dinitrotoluene	0.09	mg/kg	J	1.6	15.7	0.26	RL	0.02		
2160B522EW6SS-1-SO1	8260B	Toluene	0.00063	mg/kg	J	5000	5570	5.4	RL	0.31		
2160B522EW6SS-1-SO1	8270C	Di-n-butyl phthalate	0.15	mg/kg	J B	6100	6110	260	RL	77		
2160B522EW6SS-1-SO1	160.3 MOD	Percent Solids	78.3	%				10	RL	10		
2160B522EW6SS-1-SO1	WS-WC-0050	Nitrocellulose	335	mg/kg	q	180000000		63.9	RL	10		
2160B522EW7SS-1-SO1	8330	2,4-Dinitrotoluene	0.41	mg/kg		1.6	15.7	0.25	RL	0.02		
2160B522EW7SS-1-SO1	8260B	Methylene chloride	0.0017	mg/kg	J	11	199	5	RL	1.3		
2160B522EW7SS-1-SO1	8260B	Toluene	0.00038	mg/kg	J	5000	5570	5	RL	0.29		
2160B522EW7SS-1-SO1	8270C	Di-n-butyl phthalate	0.64	mg/kg	B	6100	6110	540	RL	160		
2160B522EW7SS-1-SO1	160.3 MOD	Percent Solids	93.4	%				10	RL	10		
2160B522EW7SS-1-SO1	WS-WC-0050	Nitrocellulose	26.5	mg/kg		180000000		5.4	RL	0.83		

Legend

Sample Number Nomenclature:

2160B522EW7SS-1-SO1

21 - Parcel

60 - AOC

B522 - Building 522

Sample Location

SS - subsurface soil, SB - soil boring

1- depth of sample

Laboratory Qualifier Codes

Validation Qualifiers:

J = The associated result is quantitatively uncertain.

U = The associated analyte is considered not detected.

B = Blank, Samples that contained concentrations of target analytes at a reportable level in the Method Blank were flagged with B

q = elevated reporting limit in Nitrocellulose analysis

Reason Codes

DL - result reported between method detection limit and reporting limit

FD - field duplicate imprecision

Building 530 All Results Table
Fort Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	EPA RSL (mg/kg)	NMED SSG (mg/kg)	FWDA BKG	Flag	RL High Limit	High Limit Type	MDL Low Limit	Data Validation Qualifiers	Reason Codes
2172B530T1SS-1-SO1	7471A	Mercury	0.1	mg/kg	5.6	7.71	0.03	J	0.11	RL	0.016	J	HM, DL
2172B530T1SS-1-SO1	8260B	Methylene chloride	0.005	mg/kg	11	199		J B	5	RL	1.3	U	MB
2172B530T1SS-1-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.026	mg/kg	35	347		J	56	RL	21	J	LS, DL
2172B530T1SS-1-SO1	6010B	Arsenic	2.4	mg/kg	0.39	3.9	3.69		2.2	RL	0.42	J	II
2172B530T1SS-1-SO1	6010B	Lead	30.3	mg/kg	400	400	12.4		1.1	RL	0.26	J	HM
2172B530T1SS-1-SO1	6010B	Iron	7340	mg/kg	55000	54800	22600		56.2	RL	12.4		
2172B530T1SS-1-SO1	6010B	Magnesium	66200	mg/kg			1058		562	RL	10.6		
2172B530T1SS-1-SO1	6010B	Manganese	518	mg/kg	1800	10700			1.7	RL	0.31		
2172B530T1SS-1-SO1	6010B	Barium	201	mg/kg	15000	15600	482		22.5	RL	0.43		
2172B530T1SS-1-SO1	6010B	Nickel	10.8	mg/kg	1500	1560	19.5		4.5	RL	0.37		
2172B530T1SS-1-SO1	6010B	Potassium	1070	mg/kg			3950		562	RL	30.4	J	HM
2172B530T1SS-1-SO1	6010B	Beryllium	0.39	mg/kg	160	156	1.49	J	0.56	RL	0.057	J	DL
2172B530T1SS-1-SO1	6010B	Silver	0.39	mg/kg	390	391	0.13	J	1.1	RL	0.17	J	LM, DL
2172B530T1SS-1-SO1	6010B	Sodium	311	mg/kg			2526	J	562	RL	95.6	J	DL
2172B530T1SS-1-SO1	6010B	Zinc	88.7	mg/kg	23000	23500	49.2		5.6	RL	1.7	J	HM
2172B530T1SS-1-SO1	6010B	Chromium	12.2	mg/kg		113000	18.1		1.1	RL	0.25		
2172B530T1SS-1-SO1	6010B	Cadmium	7.7	mg/kg	70	77.9	0.224		0.56	RL	0.033	J	HM
2172B530T1SS-1-SO1	6010B	Cobalt	5	mg/kg	23		6.82		1.1	RL	0.12		
2172B530T1SS-1-SO1	6010B	Copper	37.2	mg/kg	3100	3130	18.4		2.8	RL	0.51	J	HM
2172B530T1SS-1-SO1	6010B	Aluminum	3490	mg/kg	77000	78100	23340		33.7	RL	7.9		
2172B530T1SS-1-SO1	6010B	Vanadium	15.3	mg/kg	5.5	391	27.2		1.1	RL	0.13		
2172B530T1SS-1-SO1	6010B	Calcium	135000	mg/kg			91760		2810	RL	276		
2172B530T1SS-1-SO1	160.3 MOD	Percent Solids	88.9	%					10	RL	10		
2172B530T1SS-1-SO1	WS-WC-0050	Nitrocellulose	1.1	mg/kg	1.8E+08			B	5.6	RL	0.88	J	DL
2172B530T2SS-1-SO1	7471A	Mercury	0.72	mg/kg	5.6	7.71	0.03		0.11	RL	0.015		
2172B530T2SS-1-SO1	8260B	Methylene chloride	0.0044	mg/kg	11	199		J B	4.4	RL	1.1	U	MB
2172B530T2SS-1-SO1	8260B	1,2,4-Trichlorobenzene	0.0044	mg/kg	22	143		J B	4.4	RL	0.28	U	MB
2172B530T2SS-1-SO1	8270C	Fluoranthene	0.023	mg/kg	2300	2290			7.3	RL	3.6	J	LS, FD
2172B530T2SS-1-SO1	8270C	Indeno(1,2,3-cd)pyrene	0.0088	mg/kg	0.15				7.3	RL	3.6	J	LS
2172B530T2SS-1-SO1	8270C	Benzo(a)anthracene	0.013	mg/kg	0.15	6.21			7.3	RL	3.6	J	LS
2172B530T2SS-1-SO1	8270C	Benzo(b)fluoranthene	0.02	mg/kg	0.15	6.21			7.3	RL	3.6	J	LS
2172B530T2SS-1-SO1	8270C	Benzo(ghi)perylene	0.011	mg/kg					7.3	RL	3.6	J	LS
2172B530T2SS-1-SO1	8270C	Benzo(a)pyrene	0.012	mg/kg	0.015	0.621			7.3	RL	3.6	J	LS
2172B530T2SS-1-SO1	8270C	Phenanthrene	0.013	mg/kg		1830			7.3	RL	3.6	J	LS
2172B530T2SS-1-SO1	8270C	Pyrene	0.021	mg/kg	1700	1720			7.3	RL	3.6	J	LS, FD

Building 530 All Results Table
Fort Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	EPA RSL (mg/kg)	NMED SSG (mg/kg)	FWDA BKG	Flag	RL High Limit	High Limit Type	MDL Low Limit	Data Validation Qualifiers	Reason Codes
2172B530T2SS-1-SO1	8270C	Butyl benzyl phthalate	0.041	mg/kg	260			J	55	RL	11	J	LS, DL
2172B530T2SS-1-SO1	8270C	Chrysene	0.012	mg/kg	15	621			7.3	RL	1.2	J	LS
2172B530T2SS-1-SO1	6010B	Arsenic	1.5	mg/kg	0.39	3.9	3.69	J	2.2	RL	0.4	J	DL
2172B530T2SS-1-SO1	6010B	Lead	18.3	mg/kg	400	400	12.4		1.1	RL	0.25	J	FD
2172B530T2SS-1-SO1	6010B	Thallium	0.98	mg/kg		5.16	0.213	J	3.3	RL	0.83	J	DL
2172B530T2SS-1-SO1	6010B	Iron	12500	mg/kg	55000	54800	22600		54.6	RL	12		
2172B530T2SS-1-SO1	6010B	Magnesium	7250	mg/kg			1058		546	RL	10.3	J	FD
2172B530T2SS-1-SO1	6010B	Manganese	550	mg/kg	1800	10700			1.6	RL	0.31		
2172B530T2SS-1-SO1	6010B	Barium	568	mg/kg	15000	15600	482		21.8	RL	0.41		
2172B530T2SS-1-SO1	6010B	Nickel	13	mg/kg	1500	1560	19.5		4.4	RL	0.36		
2172B530T2SS-1-SO1	6010B	Potassium	2640	mg/kg			3950		546	RL	29.5	J	FD
2172B530T2SS-1-SO1	6010B	Beryllium	0.55	mg/kg	160	156	1.49		0.55	RL	0.056		
2172B530T2SS-1-SO1	6010B	Sodium	375	mg/kg			2526	J	546	RL	92.8	J	DL
2172B530T2SS-1-SO1	6010B	Zinc	30.7	mg/kg	23000	23500	49.2		5.5	RL	1.6		
2172B530T2SS-1-SO1	6010B	Chromium	11.6	mg/kg		113000	18.1		1.1	RL	0.24		
2172B530T2SS-1-SO1	6010B	Cadmium	0.63	mg/kg	70	77.9	0.224		0.55	RL	0.032	J	FD
2172B530T2SS-1-SO1	6010B	Calcium	35500	mg/kg			91760		546	RL	53.5	J	FD
2172B530T2SS-1-SO1	6010B	Cobalt	4.8	mg/kg	23		6.82		1.1	RL	0.12		
2172B530T2SS-1-SO1	6010B	Copper	7	mg/kg	3100	3130	18.4		2.7	RL	0.49	J	FD
2172B530T2SS-1-SO1	6010B	Aluminum	14900	mg/kg	77000	78100	23340		32.8	RL	7.7	J	FD
2172B530T2SS-1-SO1	6010B	Vanadium	19.7	mg/kg	5.5	391	27.2		1.1	RL	0.13		
2172B530T2SS-1-SO1	160.3 MOD	Percent Solids	91.6	%					10	RL	10		
2172B350T2SS-1-SO2	7471A	Mercury	0.76	mg/kg	5.6	7.71	0.03		0.11	RL	0.016		
2172B350T2SS-1-SO2	8260B	Methylene chloride	0.0049	mg/kg	11	199			4.8	RL	1.2		
2172B350T2SS-1-SO2	8260B	Toluene-d8 (surr)	0.047	mg/kg									
2172B350T2SS-1-SO2	8270C	Acenaphthene	0.0077	mg/kg	3400	3440			7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Anthracene	0.0079	mg/kg	17000	17200			7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Fluoranthene	0.011	mg/kg	2300	2290			7.5	RL	3.7	J	LS, FD
2172B350T2SS-1-SO2	8270C	Indeno(1,2,3-cd)pyrene	0.0097	mg/kg	0.15				7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	2-Methylnaphthalene	0.01	mg/kg	310				7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Benzo(a)anthracene	0.011	mg/kg	0.15	6.21			7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Benzo(b)fluoranthene	0.013	mg/kg	0.15	6.21			7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Benzo(ghi)perylene	0.012	mg/kg					7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Benzo(a)pyrene	0.0082	mg/kg	0.015	0.621			7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Phenanthrene	0.013	mg/kg		1830			7.5	RL	3.7	J	LS
2172B350T2SS-1-SO2	8270C	Pyrene	0.01	mg/kg	1700	1720			7.5	RL	3.7	J	LS, FD

Building 530 All Results Table
Fort Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	EPA RSL (mg/kg)	NMED SSG (mg/kg)	FWDA BKG	Flag	RL High Limit	High Limit Type	MDL Low Limit	Data Validation Qualifiers	Reason Codes
2172B350T2SS-1-SO2	8270C	Chrysene	0.01	mg/kg	15	621			7.5	RL	1.2	J	LS
2172B350T2SS-1-SO2	8270C	Di-n-butyl phthalate	0.022	mg/kg	6100	6110		J	56	RL	17	J	LS, DL
2172B350T2SS-1-SO2	6010B	Arsenic	2.1	mg/kg	0.39	3.9	3.69	J	2.3	RL	0.42	J	II, DL
2172B350T2SS-1-SO2	6010B	Lead	11.6	mg/kg	400	400	12.4		1.1	RL	0.26	J	FD
2172B350T2SS-1-SO2	6010B	Iron	8620	mg/kg	55000	54800	22600		56.4	RL	12.4		
2172B350T2SS-1-SO2	6010B	Magnesium	19100	mg/kg			1058		564	RL	10.6	J	FD
2172B350T2SS-1-SO2	6010B	Manganese	499	mg/kg	1800	10700			1.7	RL	0.32		
2172B350T2SS-1-SO2	6010B	Barium	516	mg/kg	15000	15600	482		22.5	RL	0.43		
2172B350T2SS-1-SO2	6010B	Nickel	9.1	mg/kg	1500	1560	19.5		4.5	RL	0.37		
2172B350T2SS-1-SO2	6010B	Potassium	1480	mg/kg			3950		564	RL	30.4	J	FD
2172B350T2SS-1-SO2	6010B	Beryllium	0.46	mg/kg	160	156	1.49	J	0.56	RL	0.057	J	DL
2172B350T2SS-1-SO2	6010B	Sodium	394	mg/kg			2526	J	564	RL	95.8	J	DL
2172B350T2SS-1-SO2	6010B	Zinc	41.3	mg/kg	23000	23500	49.2		5.6	RL	1.7		
2172B350T2SS-1-SO2	6010B	Chromium	8.5	mg/kg		113000	18.1		1.1	RL	0.25		
2172B350T2SS-1-SO2	6010B	Cadmium	1.9	mg/kg	70	77.9	0.224		0.56	RL	0.033	J	FD
2172B350T2SS-1-SO2	6010B	Cobalt	3.4	mg/kg	23		6.82		1.1	RL	0.12	J	II
2172B350T2SS-1-SO2	6010B	Copper	14.5	mg/kg	3100	3130	18.4		2.8	RL	0.51	J	FD
2172B350T2SS-1-SO2	6010B	Aluminum	5940	mg/kg	77000	78100	23340		33.8	RL	7.9	J	FD
2172B350T2SS-1-SO2	6010B	Vanadium	16.4	mg/kg	5.5	391	27.2		1.1	RL	0.14		
2172B350T2SS-1-SO2	6010B	Calcium	69200	mg/kg			91760		2820	RL	276	J	FD
2172B350T2SS-1-SO2	160.3 MOD	Percent Solids	88.7	%					10	RL	10		
2172B350T2SS-1-SO2	WS-WC-0050	Nitrocellulose	1	mg/kg	1.8E+08			B	5.6	RL	0.88	J	DL
2172B530T3SS-1-SO1	8260B	Methylene chloride	0.0047	mg/kg	11	199		J B	4.7	RL	1.2	U	MB
2172B530T3SS-1-SO1	8270C	Di-n-butyl phthalate	0.018	mg/kg	6100	6110		J	57	RL	17	J	DL
2172B530T3SS-1-SO1	6010B	Arsenic	1.8	mg/kg	0.39	3.9	3.69	J	2.3	RL	0.42	J	DL
2172B530T3SS-1-SO1	6010B	Lead	6.7	mg/kg	400	400	12.4		1.1	RL	0.26		
2172B530T3SS-1-SO1	6010B	Iron	7930	mg/kg	55000	54800	22600		56.9	RL	12.5		
2172B530T3SS-1-SO1	6010B	Magnesium	6290	mg/kg			1058		569	RL	10.7		
2172B530T3SS-1-SO1	6010B	Manganese	330	mg/kg	1800	10700			1.7	RL	0.32		
2172B530T3SS-1-SO1	6010B	Barium	399	mg/kg	15000	15600	482		22.8	RL	0.43		
2172B530T3SS-1-SO1	6010B	Nickel	6	mg/kg	1500	1560	19.5		4.6	RL	0.38		
2172B530T3SS-1-SO1	6010B	Potassium	1220	mg/kg			3950		569	RL	30.7		
2172B530T3SS-1-SO1	6010B	Beryllium	0.42	mg/kg	160	156	1.49	J	0.57	RL	0.058	J	DL
2172B530T3SS-1-SO1	6010B	Sodium	132	mg/kg			2526	J	569	RL	96.8	J	DL
2172B530T3SS-1-SO1	6010B	Zinc	39.2	mg/kg	23000	23500	49.2		5.7	RL	1.7		
2172B530T3SS-1-SO1	6010B	Chromium	5.7	mg/kg		113000	18.1		1.1	RL	0.25		

Building 530 All Results Table
Fort Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	EPA RSL (mg/kg)	NMED SSG (mg/kg)	FWDA BKG	Flag	RL High Limit	High Limit Type	MDL Low Limit	Data Validation Qualifiers	Reason Codes
2172B530T3SS-1-SO1	6010B	Cadmium	0.17	mg/kg	70	77.9	0.224	J	0.57	RL	0.033	J	DL
2172B530T3SS-1-SO1	6010B	Calcium	25100	mg/kg			91760		569	RL	55.8		
2172B530T3SS-1-SO1	6010B	Cobalt	2.7	mg/kg	23		6.82		1.1	RL	0.13		
2172B530T3SS-1-SO1	6010B	Copper	4.9	mg/kg	3100	3130	18.4		2.8	RL	0.51		
2172B530T3SS-1-SO1	6010B	Aluminum	6080	mg/kg	77000	78100	23340		34.2	RL	8		
2172B530T3SS-1-SO1	6010B	Vanadium	14.4	mg/kg	5.5	391	27.2		1.1	RL	0.14		
2172B530T3SS-1-SO1	160.3 MOD	Percent Solids	87.8	%					10	RL	10		
2172B530AP1SB-1-SO1	7471A	Mercury	0.46	mg/kg	5.6	7.71	0.03		0.13	RL	0.018		
2172B530AP1SB-1-SO1	8260B	Methylene chloride	0.009	mg/kg	11	199		B	5.8	RL	1.5	U	MB
2172B530AP1SB-1-SO1	6010B	Arsenic	1.7	mg/kg	0.39	3.9	3.69	J	2.5	RL	0.46	J	DL
2172B530AP1SB-1-SO1	6010B	Lead	15	mg/kg	400	400	12.4		1.3	RL	0.29		
2172B530AP1SB-1-SO1	6010B	Iron	10500	mg/kg	55000	54800	22600		62.8	RL	13.8		
2172B530AP1SB-1-SO1	6010B	Magnesium	6240	mg/kg			1058		628	RL	11.8		
2172B530AP1SB-1-SO1	6010B	Manganese	341	mg/kg	1800	10700			1.9	RL	0.35		
2172B530AP1SB-1-SO1	6010B	Barium	324	mg/kg	15000	15600	482		25.1	RL	0.48		
2172B530AP1SB-1-SO1	6010B	Nickel	8.7	mg/kg	1500	1560	19.5		5	RL	0.41		
2172B530AP1SB-1-SO1	6010B	Potassium	1610	mg/kg			3950		628	RL	33.9		
2172B530AP1SB-1-SO1	6010B	Beryllium	0.52	mg/kg	160	156	1.49	J	0.63	RL	0.064	J	DL
2172B530AP1SB-1-SO1	6010B	Sodium	4280	mg/kg			2526		628	RL	107		
2172B530AP1SB-1-SO1	6010B	Zinc	40.9	mg/kg	23000	23500	49.2		6.3	RL	1.9		
2172B530AP1SB-1-SO1	6010B	Chromium	8.7	mg/kg		113000	18.1		1.3	RL	0.28		
2172B530AP1SB-1-SO1	6010B	Cadmium	1.8	mg/kg	70	77.9	0.224		0.63	RL	0.036		
2172B530AP1SB-1-SO1	6010B	Calcium	26400	mg/kg			91760		628	RL	61.5		
2172B530AP1SB-1-SO1	6010B	Cobalt	4.2	mg/kg	23		6.82		1.3	RL	0.14		
2172B530AP1SB-1-SO1	6010B	Copper	13.6	mg/kg	3100	3130	18.4		3.1	RL	0.56		
2172B530AP1SB-1-SO1	6010B	Aluminum	9430	mg/kg	77000	78100	23340		37.7	RL	8.9		
2172B530AP1SB-1-SO1	6010B	Vanadium	16.1	mg/kg	5.5	391	27.2		1.3	RL	0.15		
2172B530AP1SB-1-SO1	160.3 MOD	Percent Solids	79.7	%					10	RL	10		
2172B530AP1SB-5-SO1	8260B	Methylene chloride	0.0052	mg/kg	11	199		J B	5.2	RL	1.4	U	MB
2172B530AP1SB-5-SO1	8270C	bis(2-Ethylhexyl) phthalate	0.022	mg/kg	35	347		J	55	RL	21	J	LS, DL
2172B530AP1SB-5-SO1	8270C	Di-n-butyl phthalate	0.031	mg/kg	6100	6110		J	55	RL	16	J	LS, DL
2172B530AP1SB-5-SO1	6010B	Arsenic	0.66	mg/kg	0.39	3.9	3.69	J	2.2	RL	0.4	J	DL
2172B530AP1SB-5-SO1	6010B	Lead	5.3	mg/kg	400	400	12.4		1.1	RL	0.25		
2172B530AP1SB-5-SO1	6010B	Iron	7300	mg/kg	55000	54800	22600		54.6	RL	12		
2172B530AP1SB-5-SO1	6010B	Magnesium	3410	mg/kg			1058		546	RL	10.3		
2172B530AP1SB-5-SO1	6010B	Manganese	201	mg/kg	1800	10700			1.6	RL	0.31		

Building 530 All Results Table
Fort Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	EPA RSL (mg/kg)	NMED SSG (mg/kg)	FWDA BKG	Flag	RL High Limit	High Limit Type	MDL Low Limit	Data Validation Qualifiers	Reason Codes
2172B530AP1SB-5-SO1	6010B	Barium	51.6	mg/kg	15000	15600	482		21.8	RL	0.42		
2172B530AP1SB-5-SO1	6010B	Nickel	7.2	mg/kg	1500	1560	19.5		4.4	RL	0.36		
2172B530AP1SB-5-SO1	6010B	Potassium	816	mg/kg			3950		546	RL	29.5		
2172B530AP1SB-5-SO1	6010B	Beryllium	0.53	mg/kg	160	156	1.49	J	0.55	RL	0.056	J	DL
2172B530AP1SB-5-SO1	6010B	Sodium	3850	mg/kg			2526		546	RL	92.8		
2172B530AP1SB-5-SO1	6010B	Zinc	11.5	mg/kg	23000	23500	49.2		5.5	RL	1.6		
2172B530AP1SB-5-SO1	6010B	Chromium	5.3	mg/kg		113000	18.1		1.1	RL	0.24		
2172B530AP1SB-5-SO1	6010B	Calcium	9330	mg/kg			91760		546	RL	53.5		
2172B530AP1SB-5-SO1	6010B	Cobalt	3.2	mg/kg	23		6.82		1.1	RL	0.12		
2172B530AP1SB-5-SO1	6010B	Copper	1.4	mg/kg	3100	3130	18.4	J	2.7	RL	0.49	J	DL
2172B530AP1SB-5-SO1	6010B	Aluminum	9320	mg/kg	77000	78100	23340		32.8	RL	7.7		
2172B530AP1SB-5-SO1	6010B	Vanadium	7.3	mg/kg	5.5	391	27.2		1.1	RL	0.13		
2172B530AP1SB-5-SO1	160.3 MOD	Percent Solids	91.6	%					10	RL	10		
2172B530AP2SB-1-SO1	7471A	Mercury	0.018	mg/kg	5.6	7.71	0.03	J	0.12	RL	0.016	J	DL
2172B530AP2SB-1-SO1	8260B	Methylene chloride	0.0066	mg/kg	11	199		B	5.2	RL	1.4	U	MB
2172B530AP2SB-1-SO1	6010B	Arsenic	1.7	mg/kg	0.39	3.9	3.69	J	2.3	RL	0.43	J	DL
2172B530AP2SB-1-SO1	6010B	Lead	6.9	mg/kg	400	400	12.4		1.2	RL	0.27		
2172B530AP2SB-1-SO1	6010B	Iron	10600	mg/kg	55000	54800	22600		57.9	RL	12.7		
2172B530AP2SB-1-SO1	6010B	Magnesium	3750	mg/kg			1058		579	RL	10.9		
2172B530AP2SB-1-SO1	6010B	Manganese	298	mg/kg	1800	10700			1.7	RL	0.32		
2172B530AP2SB-1-SO1	6010B	Barium	222	mg/kg	15000	15600	482		23.2	RL	0.44		
2172B530AP2SB-1-SO1	6010B	Nickel	8.3	mg/kg	1500	1560	19.5		4.6	RL	0.38		
2172B530AP2SB-1-SO1	6010B	Potassium	1290	mg/kg			3950		579	RL	31.3		
2172B530AP2SB-1-SO1	6010B	Beryllium	0.47	mg/kg	160	156	1.49	J	0.58	RL	0.059	J	DL
2172B530AP2SB-1-SO1	6010B	Sodium	3370	mg/kg			2526		579	RL	98.5		
2172B530AP2SB-1-SO1	6010B	Zinc	22	mg/kg	23000	23500	49.2		5.8	RL	1.7		
2172B530AP2SB-1-SO1	6010B	Chromium	7.7	mg/kg		113000	18.1		1.2	RL	0.25		
2172B530AP2SB-1-SO1	6010B	Cadmium	0.074	mg/kg	70	77.9	0.224	J	0.58	RL	0.034	J	DL
2172B530AP2SB-1-SO1	6010B	Calcium	15200	mg/kg			91760		579	RL	56.8		
2172B530AP2SB-1-SO1	6010B	Cobalt	4.3	mg/kg	23		6.82		1.2	RL	0.13		
2172B530AP2SB-1-SO1	6010B	Copper	4.2	mg/kg	3100	3130	18.4		2.9	RL	0.52		
2172B530AP2SB-1-SO1	6010B	Aluminum	10200	mg/kg	77000	78100	23340		34.8	RL	8.2		
2172B530AP2SB-1-SO1	6010B	Vanadium	14.5	mg/kg	5.5	391	27.2		1.2	RL	0.14		
2172B530AP2SB-1-SO1	160.3 MOD	Percent Solids	86.3	%					10	RL	10		
2172B530AP2SB-5-SO1	8260B	Methylene chloride	0.0067	mg/kg	11	199		B	5.6	RL	1.5	U	MB
2172B530AP2SB-5-SO1	6010B	Arsenic	0.52	mg/kg	0.39	3.9	3.69	J	2.2	RL	0.41	J	DL

Building 530 All Results Table
Fort Wingate Depot Activity

Client Sample Id	Analysis Method	Analyte	Result	Unit	EPA RSL (mg/kg)	NMED SSG (mg/kg)	FWDA BKG	Flag	RL High Limit	High Limit Type	MDL Low Limit	Data Validation Qualifiers	Reason Codes
2172B530AP2SB-5-SO1	6010B	Lead	3.4	mg/kg	400	400	12.4		1.1	RL	0.25		
2172B530AP2SB-5-SO1	6010B	Iron	3540	mg/kg	55000	54800	22600		55.3	RL	12.2		
2172B530AP2SB-5-SO1	6010B	Magnesium	3230	mg/kg			1058		553	RL	10.4		
2172B530AP2SB-5-SO1	6010B	Manganese	375	mg/kg	1800	10700			1.7	RL	0.31		
2172B530AP2SB-5-SO1	6010B	Barium	62.3	mg/kg	15000	15600	482		22.1	RL	0.42		
2172B530AP2SB-5-SO1	6010B	Nickel	3.9	mg/kg	1500	1560	19.5	J	4.4	RL	0.37	J	DL
2172B530AP2SB-5-SO1	6010B	Potassium	560	mg/kg			3950		553	RL	29.9		
2172B530AP2SB-5-SO1	6010B	Beryllium	0.32	mg/kg	160	156	1.49	J	0.55	RL	0.056	J	DL
2172B530AP2SB-5-SO1	6010B	Sodium	2270	mg/kg			2526		553	RL	94		
2172B530AP2SB-5-SO1	6010B	Zinc	9.6	mg/kg	23000	23500	49.2		5.5	RL	1.6		
2172B530AP2SB-5-SO1	6010B	Chromium	6.3	mg/kg		113000	18.1		1.1	RL	0.24		
2172B530AP2SB-5-SO1	6010B	Cadmium	0.18	mg/kg	70	77.9	0.224	J	0.55	RL	0.032	J	DL
2172B530AP2SB-5-SO1	6010B	Cobalt	1.7	mg/kg	23		6.82		1.1	RL	0.12		
2172B530AP2SB-5-SO1	6010B	Copper	1.8	mg/kg	3100	3130	18.4	J	2.8	RL	0.5	J	DL
2172B530AP2SB-5-SO1	6010B	Aluminum	5340	mg/kg	77000	78100	23340		33.2	RL	7.8		
2172B530AP2SB-5-SO1	6010B	Vanadium	16.7	mg/kg	5.5	391	27.2		1.1	RL	0.13		
2172B530AP2SB-5-SO1	6010B	Calcium	174000	mg/kg			91760		2770	RL	271		
Legend													
		Laboratory Qualifier Codes											
		Validation Qualifiers:											
Sample Number Nomenclature:		J = The associated result is quantitatively uncertain.											
2172B530T3SS-1-SO1		U = The associated analyte is considered not detected.											
21 - Parcel													
72 - SWMU		**Reason Codes**											
B530 - Building 530		DL - result reported between method detection limit											
T - Trench, AP - Acid Pit		and reporting limit											
SS - subsurface soil, SB - soil boring		FD - field duplicate imprecision											
1- depth of sample													

Appendix E – Quality Control Reports

Quality Control Report

PIKA INTERNATIONAL, INC.

Date:	June 24, 2010	**Contract Number:**	W912G-10-C-0054
Report Number:	10-12-149	**Job Site**	Parcel 21
Project Location:	Ft. Wingate Depot Activity, NM	**Job Location or Details**	Building 530

Type of Inspection Performed: ☐ **Preparatory** ☐ **Initial** ☑ **Follow On**

Area or Task inspected: Removal of debris around building 530.

Operation Inspected:

☑	Mobilization/Setup	☑	Safety	☑	Quality
☐	Building Renovation	☐	Excavation	☐	Survey
☐	Construction	☐	Hammermill	☐	Demolition
☐	Explosives	☑	Scrap	☑	Demobilization/Closure
☐	List Other Operation:				

Quality Inspection Results: MOB/SETUP/DEMOB: The Contractor mobilized promptly, with equipment in good operating condition and returned the site to original look. SAFETY: The Contractor conducted this operation in a safe, orderly, and expeditious way. WORK: The work involved the clean-up of debris around building 530. The contractor used a backhoe/excavator and dump truck to haul the debris. The debris was segregated between concrete, asphalt, and other debris. The concrete and asphalt were taken to recyclers and the other debris to the landfill. QUALITY: The task involved removing debris from around building 530. The Contractor accomplished these tasks as designed and stated in the Scope of Work.

Follow Up Action(s) Required:

Follow Up Action(s) ~~Varified~~:

Remarks:

I certify that this report is complete and correct and that I, or my authorized representative's, have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with plans and specification except as noted herein.

James L King, Jr. Digitally signed by James L King, Jr. DN: cn=James L King, Jr., o=PIKA International, ou, email=jking@pikainc.com, c=US Date: 2010.06.29 11:53:30 -06'00'

James L King, Site Manager **Date**

SCOVILLE.MICHAEL.G.1231021988 Digitally signed by SCOVILLE.MICHAEL.G.1231021988 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=SCOVILLE.MICHAEL.G.1231021988 Date: 2010.06.29 13:15:18 -05'00'

Michael G. Scoville, COE Site Representative **Date**

PIKA INTERNATIONAL, INC.

Quality Control Report

Date:	October 21, 2010	**Contract Number:**	W9126G-09-C-0053
Report Number:	09-12-149	**Job Site**	FWDA - Phase 7
Project Location:	Ft. Wingate Depot Activity, NM	**Building Numbers**	507,508,509,510,511,512 513,514,515,516,522,526 540

Type of Inspection Performed: ☐ **Preparatory** ☐ **Initial** ☑ **Follow On**

Area or Task inspected: Demolition operations.

Demolitions Operation Inspected:

- ☑ Bld Demo complete
- ☑ Foundations removed
- ☑ Appurtenances removed
- ☑ Graded
- ☐ List Other Operation: _____
- ☑ 100' area cleared
- ☑ Site Cleared
- ☐ Other
- ☐

Quality Inspection Results: Need to police the area for minor items. Found pieces of concrete/asphalt and metal around 507, 508, and 511. There is a pile of dirt/asphalt by 515 to be removed. Found pieces of concrete, wood, wire, and tires around 522. Found concrete, wood, and wiring around 516.

Follow Up Action(s) Required: Independence/Bohunk will police the area and dispose of these items.

Follow Up Action(s) Varified: Walked area with Martin Carpenter (USACE) on Saturday, October 23. Everything looks good and ready for seeding.

JAMES KING JR — 10/25/10
PIKA Representative (print and sign) — **Date**

MARTIN S. CARPENTER — 10/25/10
COE Site Representative (print and sign) — **Date**

Site Closure Inspected:

- ☑ Final Grade
- ☑ Seeding
- ☑ Cover applied
- ☑ Site Cleared
- ☑ Quality
- ☐ Survey

JAMES KING JR — 10/28/10
PIKA Representative (print and sign) — **Date**

MARTIN S. CARPENTER — 10/28/10
COE Site Representative (print and sign) — **Date**

Appendix F – Photographs

Sampling at Ft. Wingate

Sampling Workshop Area

Sampling around building 522

Taking GPS locations at 522

Sampling at building 522

Sampling at building 522

Removing concrete for sampling building 522

Sampling at Ft. Wingate

Decontamination after building sampling

Pit sampling at building 530

Appendix G – US Army Correspondences

Kirwan, Eric SWF

From: Diaz, Tammy, NMENV [Tammy.Diaz@state.nm.us]
Sent: Tuesday, January 26, 2010 4:22 PM
To: Smith, Steve W SWF; Kirwan, Eric SWF; Patterson, Mark C Mr CIV USA OSA
Cc: Cobrain, Dave, NMENV
Subject: RE: Parcel 21 Bldg demo work plan

Steve,
Based on our phone call on January 26, 2010 to discuss sampling at Building 522 following demolition. NMED concurs with the proposed sampling and for clarification purposes, the Permittee must collect surface soil samples from the proposed locations (shown in the A-5-202
drawing) and soil samples will be analyzed for explosives, nitrocellulose, polychlorinated biphenyls, and semi volitile organic compounds.

Additionally, and as discussed during the phone call, the Permittee has requested that XRF sampling be used to resample all igloo drain outfalls where lead in soils exceeded 200ppm. Soil confirmation samples will be sent to the lab at 20% of the XRF locations. NMED concurs with this approach.

All changes discussed above must be documented in RFI Report submittals for each applicable Parcel.

If you have any questions please feel free to contact me.

Tammy

Tammy Diaz-Martinez
Environmental Specialist
RCRA Permits Management Program
Hazardous Waste Bureau
2905 Rodeo Park Dr. E/Bldg 1
Santa Fe, NM 87505
Phone: 505-476-6056
Main: 505-476-6000
Fax: 505-476-6030

-----Original Message-----
From: Smith, Steve W SWF [mailto:Steve.W.Smith@usace.army.mil]
Sent: Friday, January 22, 2010 1:53 PM
To: Diaz, Tammy, NMENV; Patterson, Mark C Mr CIV USA OSA; Kirwan, Eric SWF
Cc: Scoville, Michael G SWF
Subject: RE: Parcel 21 Bldg demo work plan

Tammy,

I'd like to add another topic to our Tuesday call regarding XRF sampling.

In the parcel 22 RFI work plan we proposed XRF sampling around some of the buildings at the 528 area (SWMU 27). Also, per your comment 3 on the parcel
4 letter we are allowed to use the XRF for confirmation samples when we remove soil (plus 20% soil confirmation samples sent to a lab).

Comment 1 under parcel 4 calls for resampling for the 8 RCRA metals at the drains. Resampling is also needed at D-block in parcel 22 and A block in parcel 24.

Can we use XRF samples to re-sample at all the igloo drain outfalls (each drain) where we exceeded 200 mg/kg of lead instead of soil sampling?
The
XRF will test for the 8 RCRA metals. We will include soil confirmation samples to the lab at 20% of the XRF locations. This will reduce lab costs but still provide acceptable results in our opinion.

Can we use the XRF, with the 20% lab confirmation, on future igloo drain samples?

Are you ok with this?

Steve

-----Original Message-----
From: Smith, Steve W SWF
Sent: Thursday, January 21, 2010 7:31 AM
To: Diaz, Tammy, NMENV; 'Patterson, Mark C Mr CIV USA OSA'; Kirwan, Eric SWF
Cc: Scoville, Michael G SWF
Subject: RE: Parcel 21 Bldg demo work plan

All,

How about a call Tuesday at 1:30MT, 2:30CT, 3:30ET?

-----Original Message-----
From: Diaz, Tammy, NMENV [mailto:Tammy.Diaz@state.nm.us]
Sent: Wednesday, January 20, 2010 5:00 PM
To: Smith, Steve W SWF
Subject: RE: Parcel 21 Bldg demo work plan

Steve, lets talk about this, we are available Monday morning or Tuesday afternoon.

Tammy Diaz-Martinez
Environmental Specialist
RCRA Permits Management Program
Hazardous Waste Bureau
2905 Rodeo Park Dr. E/Bldg 1
Santa Fe, NM 87505
Phone: 505-476-6056
Main: 505-476-6000
Fax: 505-476-6030

From: Smith, Steve W SWF [mailto:Steve.W.Smith@usace.army.mil]
Sent: Wednesday, January 20, 2010 2:40 PM
To: Diaz, Tammy, NMENV
Cc: Patterson, Mark C Mr CIV USA OSA; Esler, Christy L Ms ARMY GUEST USA OSA USA; Kirwan, Eric SWF; Scoville, Michael G SWF
Subject: Parcel 21 Bldg demo work plan

Tammy,

We now have a building demo contract awarded and are preparing a work plan.
Section 8.3 of the parcel 21 RFI work plan calls for us to submit a demo work plan to the tribes and state and a sampling plan at the bldg 522 site after demo is complete. The work plan we have will be of minimal use for NMED because it's mainly a contractual document. So we want to get you something brief but useful. We are hoping since it will be brief we can get a 30 day concurrent review by NMED and tribes, so we can begin work in March or so.

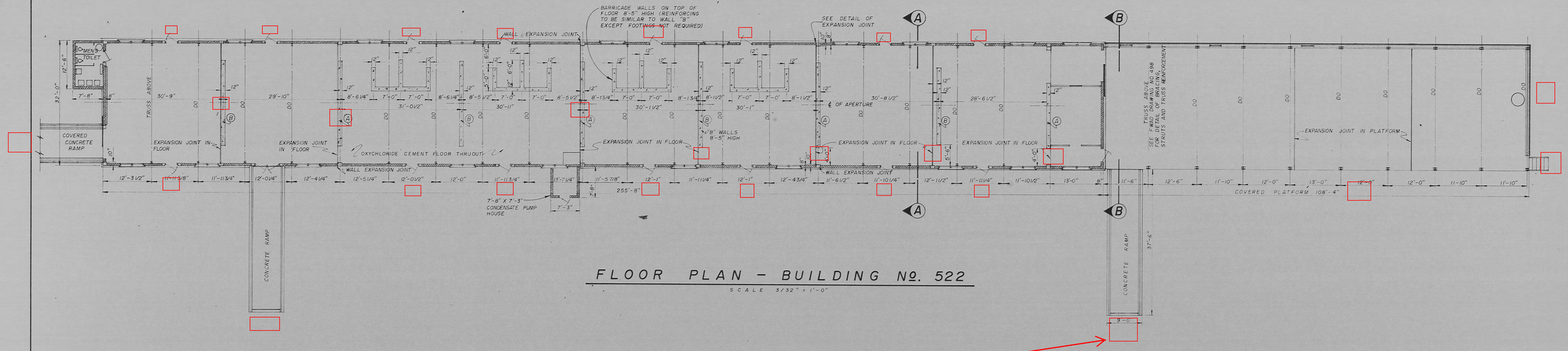
Eric is scoping a contract for the sampling around Bldg 522 and we are thinking of the following approach.

Provide a map and table showing sample locations around Bldg 522 including parameters, brief summary of the work to be done.

Propellant grains in parcel 21 will be removed under the demo contract.

Are you available Friday, Monday afternoon, or Tuesday afternoon?

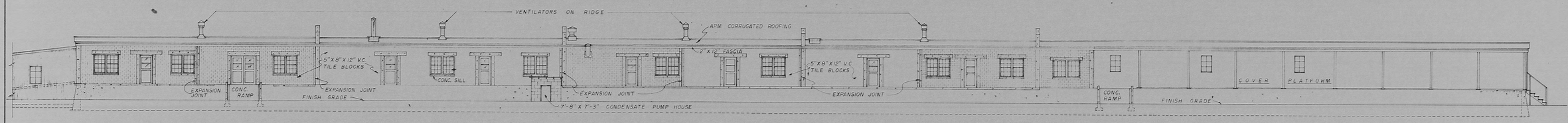
Steven W. Smith P.E.
USACE Fort Wingate Program Manager
817/886-1879



FLOOR PLAN - BUILDING Nº. 522

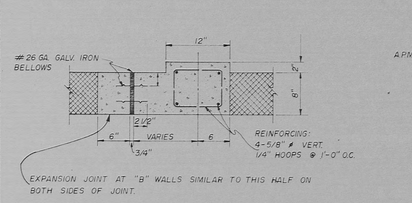
SCALE 3/32" = 1'-0"

NMED APPROVED (1/26/10) SAMPLING LOCATION AFTER BLDG IS DEMOLISHED. TYPICAL.



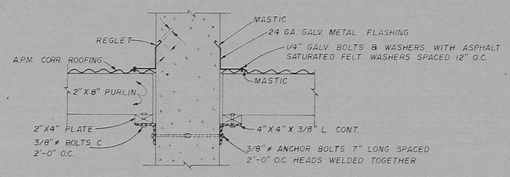
SOUTH ELEVATION - BUILDING Nº. 522

SCALE 3/32" = 1'-0"



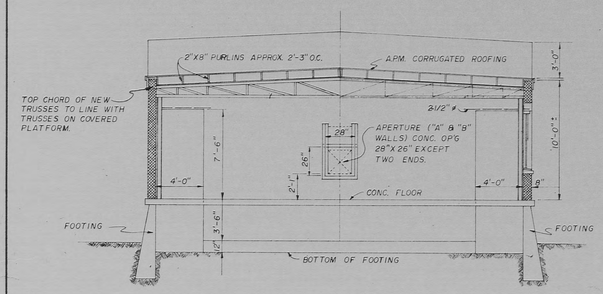
DETAIL OF EXPANSION JOINT IN WALL

SCALE 1" = 1'-0"



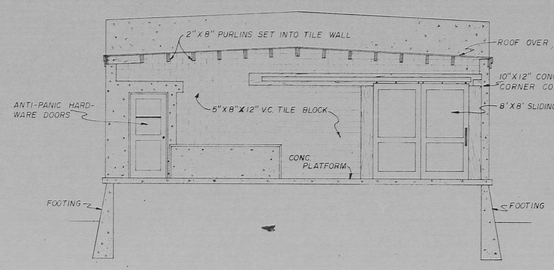
DETAIL OF ROOF AT WALL "A"

SCALE 1" = 1'-0"



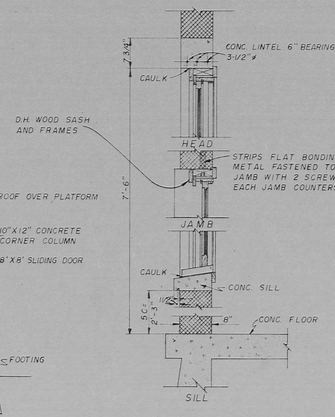
SECTION "A-A"

SCALE 3/16"=1'-0"



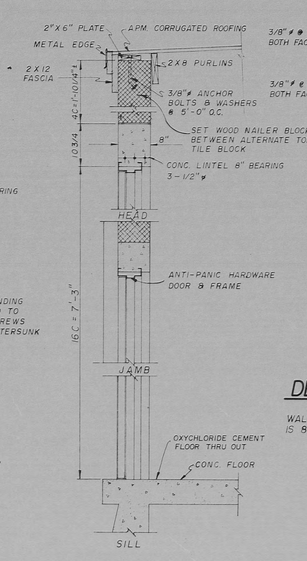
SECTION "B-B"

SCALE 3/16"= 1'-0"



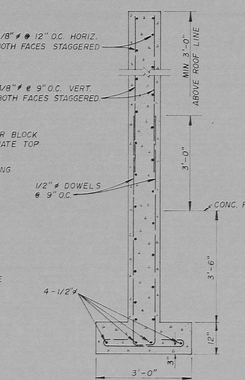
TYPICAL - SECTION THRU - WINDOW

SCALE 3/4" = 1'-0"



TYPICAL SIDE WALL SECTION THRU DOORS

SCALE 3/4" = 1'-0"



DETAIL OF WALL "A"

SCALE 1/2" = 1'-0"

WALL "B" SIMILAR EXCEPT HEIGHT WHICH IS 8'-5" FROM CONCRETE FLOOR.

SUBSTITUTIONS OF ITEMS OF EQUAL QUALITY & EQUAL DIMENSIONS ARE PERMISSIBLE

REVISIONS

NO.	DATE	DESCRIPTION	MADE BY
1	26 JAN 1968	FLOOR PLAN ELEVATION, SECTION & DETAIL	CO. LEE

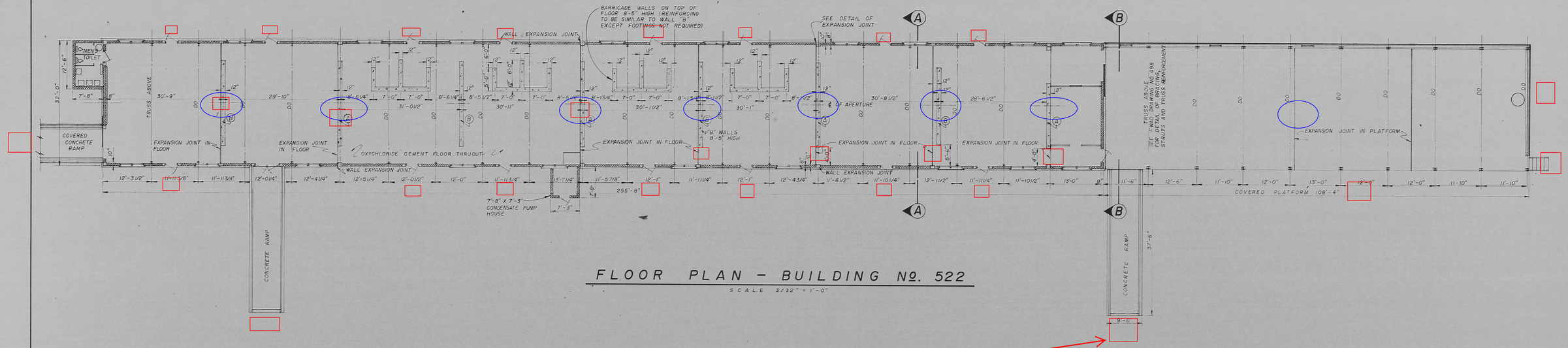
FLOOR PLAN, ELEVATION, SECTION & DETAIL OF BLDG. Nº. 522

FORT WINGATE ARMY DEPOT

DESIGNED BY	REFERENCE DWGS.
DRAWN BY CO. LEE	FWAD DWG. NO. 496
CHECKED BY	FWAD DWG. NO. 546
SUBMITTED BY JOHN M. SIPE POST ENGINEER	FWAD DWG. NO. 661
APPROVED BY WILLIAM C. ONC, COLONEL ORD. COMMANDER	FWAD DWG. NO. 701
COMANDING OFFICER	FTWIAD. DWG. NO. 834
SCALE: AS NOTED	
DATE: 26 JAN. 1968	

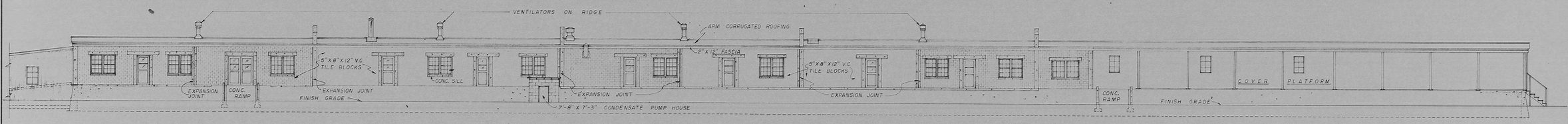
FILE NO W-4-96 Bldg 522

A-5-202



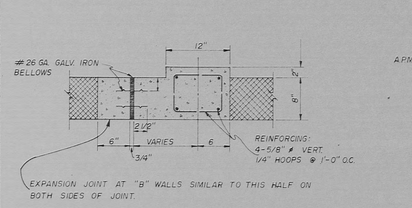
FLOOR PLAN - BUILDING Nº. 522

SCALE 3/32" = 1'-0"



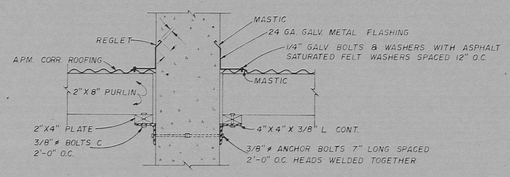
SOUTH ELEVATION - BUILDING Nº. 522

SCALE 3/32" = 1'-0"



DETAIL OF EXPANSION JOINT IN WALL

SCALE 1" = 1'-0"



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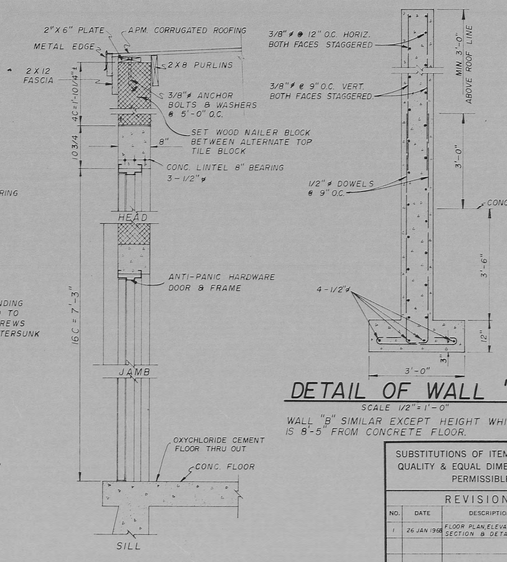

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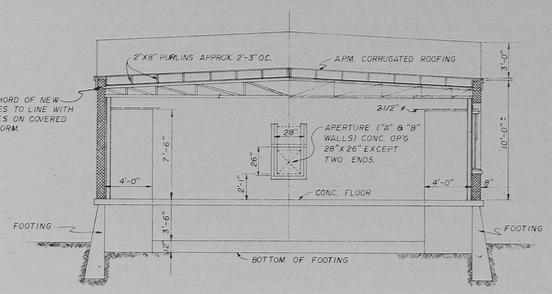
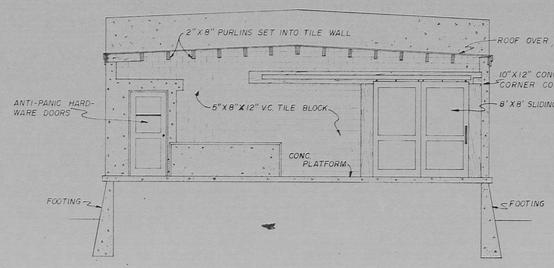


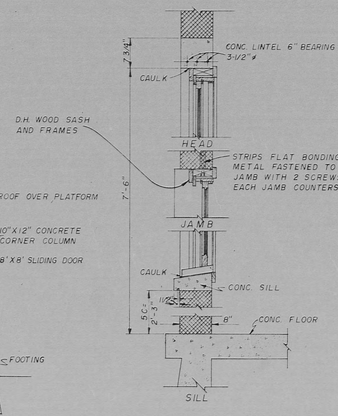
SECTION "A-A"

SCALE 3/16"=1'-0"



SECTION "B-B"

SCALE 3/16"= 1'-0"



TYPICAL - SECTION THRU - WINDOW

SCALE 3/4" = 1'-0"

TYPICAL SIDE WALL SECTION THRU DOORS

SCALE 3/4" = 1'-0"

SUBSTITUTIONS OF ITEMS OF EQUAL QUALITY & EQUAL DIMENSIONS ARE PERMISSIBLE

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APPROVED BY WILLIAM C. ONC, COLONEL ORD. COMMANDER	FWAD DWG. NO. 701
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FILE NO W-4-96 Bldg 522

A-5-202