

Lockheed Martin Corporation

Airdock Soil Excavation

Project Report
Akron, Ohio

October 14, 2008

ARCADIS



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Airdock Soil Excavation

Akron, Ohio

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1. Introduction and Background	1
2. Scope of Work	2
3. Utility Locating Activities	2
4. Excavation Activities	3
5. Sampling and Analysis	3
6. Backfilling and Site Restoration	4
7. References	4

Tables

Table 1	Summary of Soil Sample Results
Table 2	Summary of Backfill Soil Sample Analytical Results

Attachments

Attachment 1	URS Figure 6 Excavation Areas and Verification Sampling Plan
Attachment 2	Utility Location Survey Report
Attachment 3	Photo Log
Attachment 4	Sample Location Map

1. Introduction and Background

The objective of this project was to remove soils containing PCBs at concentrations greater than 25 mg/kg at two locations. The two excavation areas were defined as the Southeast Area and SC8, a small area (approximately 5-feet long by 5-feet wide) located on the east and west side of the Airdock, respectively. The location of the two excavation areas are illustrated in Attachment 1 – *URS Figure 6 Excavation Areas and Verification Sampling Plan*.

Prior to the initiation of excavation activities, a *Soil Excavation Plan*⁽¹⁾ (April 18, 2008) was developed and submitted to Lockheed Martin for review and approval. The purpose of the Soil Excavation Plan was to outline the remediation approach to the excavation, sampling, and appropriate off-site disposal of impacted soil by Polychlorinated biphenyls (PCBs). The Soil Excavation Plan is consistent with the risk-based soil remediation application previously submitted to the U.S. Environmental Protection Agency, Region 5 in August 2007⁽²⁾.

Based on the results of previous sampling (Weston Solutions, Inc. 2004⁽³⁾, BBL 2006⁽⁴⁾, URS 2008⁽⁵⁾), two areas were identified as containing PCBs above 25 ppm; the Southeast Area and SC8. The Southeast Area (a narrow strip of unpaved ground located southeast of the Airdock) contained concentrations of total PCBs in the upper 6 inches of soil ranging from 41 to 460 parts per million (ppm). One sample location was reported with concentrations of 30 ppm total PCBs at a depth of 2 feet. The dimensions of the Southeast Area soil excavation measured approximately 225 feet long, up to 25 feet wide, and 0.5 feet deep, except for the vicinity of one sample location, which was to be excavated to a depth of 2 feet. The SC8 excavation area small area is located on the northwest section of the Airdock and measured approximately 5-feet long by 5-feet wide. Total PCBs at this location ranged from 25 to 30 ppm in the upper 2 feet of soil beneath pavement.

All soil and debris excavated from these areas was managed as TSCA-regulated waste, as if it contains total PCB greater than 50 ppm.

Lockheed Martin currently leases the Akron Airdock (Plant A) and 19 acres of fenced in area immediately surrounding Plant A. Summit County Port Authority is the current owner of the property.

2. Scope of Work

Remedial construction activities were conducted between June 6 and June 13, 2008. The scope of work included the following tasks:

- Utility Locating Activities
- Excavation Activities
- Sampling and Analysis
- Backfilling
- Site Restoration
- Sample Location Survey

These tasks are described on the following sections.

3. Utility Locating Activities

Prior to initiating remedial construction activities, ARCADIS reviewed existing site utility drawings. The site utility drawings along with a utility mark-out, were utilized to confirm locations of utilities prior to initiating excavation activities in an area. The utility mark-out was conducted on June 6, 2008 by GPRS, Inc. located in Sylvania, Ohio (Attachment 2). GPRS used a 400 MHz GPR antenna, as well as an RD-4000 utility locator to sweep the entire area for live power signals.

The results of the utility mark-out conducted by GPRS indicated the following structures with location references shown in Attachment 1. None of the identified objects interfered with the soil excavation project.

- The RD-4000 located a power signal (approximately 4 to 6 feet below ground surface (bgs)) running southwest from the Airdock and intersecting with a line running parallel with the building (north and south). This power signal was not strong, which led GPRS to believe that this line is a low voltage buried electrical line or possibly a tracer tone on a water line.
- A structure was located which appeared to be buried concrete and was thought to be the top of a duct bank or a utility corridor or tunnel (located approximately 6 to 8 feet from the Airdock in Areas A and B). The top of this buried concrete was approximately 1 foot bgs and power was not detected in this area.

- A buried concrete structure measuring approximately 3 feet square and approximately 1 foot bgs was indicated 16.8 feet from the Airdock in Area B-2. An excavation was made to evaluate this structure revealing a cover over a pipe.
- At approximately 4.5 feet bgs a structure resembling an underground storage tank and measuring approximately 10 feet in width was located approximately 3 feet away from the Airdock (Area C-1). Additional excavation was made at this area to uncover the structure and it was determined to be a water pipe.

4. Excavation Activities

Soil excavation activities were conducted from June 9, 2008 until June 12, 2008 and photos of the project are provided in Attachment 3. Work activities were initiated on the northern section of the Southeast Area and progressed to the southern section of the Southeast Area. As soil was excavated, it was directly loaded into 20 and 30 yard roll-off dumpsters provided by Lockheed Martin. Transportation and disposal of the roll-off dumpsters was arranged by Lockheed Martin. As a result of the soil excavation activities, a total of eighteen (18) dumpsters (301 tons) were generated. During soil excavation activities, soils were not excavated from beneath roads, parking lots, parking areas, or sidewalks. Excavation next to sidewalks and curbs were completed in a manner that minimized potential damage to curbs and adjacent roadways.

At the SC8 area, approximately 6-inches of concrete pavement covering the excavation area was removed. Following the concrete removal, soil was removed to a depth of two feet BGS and confirmation sampling was conducted from the bottom of the excavation as described in the following section.

Soil removed from the excavation was transported and disposed as TSCA waste at Wayne Disposal Inc. Site 2 Landfill in Belleville Michigan.

5. Sampling and Analysis

The Southeast Area excavation was divided into three separate excavation and sampling areas, designated A, B, and C as outlined in Attachment 1. The SC8 Area was designated as excavation and sampling area D. Areas A, B, and C were further subdivided into sub-areas for verification sampling purposes as A1, A2, A3, B1, B2, C1, C2, and C3. Using dedicated plastic scoops, samples were collected from the center of three five foot grid squares identified by a random number generator as representative of each sub-area. Attachment 4 illustrates the sub-grid sample locations identified using purple shading.

All verification samples were submitted to Test America located in North Canton, Ohio (VAP-certified laboratory for analysis of total PCBs including Aroclor 1268) for analysis. Quality assurance/quality control

(QA/QC) samples were collected as required. The sample analysis was performed on a 24-hour turn-around-time frame.

To demonstrate compliance with the target cleanup level of 25 ppm, all individual sample results from the verification samples collected from the base of the excavation were required to be less than 25 ppm before backfilling could begin.

A summary of the soil sample analytical results and survey coordinates are presented in Table 1. All sample locations were surveyed by GPD Group on June 12, 2008. The sample location grids are illustrated in Attachment 4.

6. Backfilling and Site Restoration

Backfill consisted of locally available vegetative soil. A composite sample of the backfill material was collected for Toxic Characteristic Leaching Procedure analysis and total PCBs. The sample results were provided to Lockheed Martin for review and approval to use the backfill prior to delivery to the site. The analysis of off-site fill material was compared to relevant RCRA standards to confirm that the material was clean. A summary of backfill soil sample analytical results is presented in Table 2.

Following receipt of acceptable post-excavation confirmation sample results of less than 25 ppm, the excavated areas were backfilled to the pre-existing grades to re-establish the pre-existing grade. Soil backfill was provided by R.C. Materials L.L.C. located in Wadsworth, Ohio. Backfilling activities were conducted from June 11, 2008 until June 12, 2008 and resulted in a total of 272 tons of backfill soil being utilized. Backfill soil was placed in the excavation area and compacted using the excavation equipment.

At the conclusion of backfilling activities, the area was hydro-seeded by Pro Tree Landscape Company located in Cuyahoga Falls, Ohio on June 13, 2008.

7. References

- 1) Soil Excavation Plan, Lockheed Martin, April 18, 2007.
- 2) Application for 40 CFR §761.61(c) Risk-Based Cleanup of Soil, Lockheed Martin, August 29, 2007.
- 3) Phase II Exterior Soil Sampling and Analysis Report, Weston Solutions, Inc., July 27, 2004.
- 4) Subsurface Soil Characterization Results, BBL Environmental Services, November 21, 2006.
- 5) VAP Certified Laboratory Sampling Results, URS, April 18, 2008.

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Tables

Table 1 – Summary of Soil Sample Results

Sample ID	Date Collected	Depth (inches)	Total PCB's (mg/kg)	Coordinate Point	X Coordinate	Y Coordinate
LMC-A1-3	6/9/2008	6	0.37	153	2252574.955	498871.282
LMC-A1-13	6/9/2008	6	0.074	152	2252583.833	498866.1998
LMC-DUP-1	6/9/2008	6	0.099	152	2252583.833	498866.1998
LMC-A1-25	6/9/2008	6	0.24	151	2252597.277	498869.9978
LMC-A2-16	6/9/2008	6	0.25	155	2252570.482	498833.3379
LMC-A2-17	6/9/2008	6	0.40	154	2252573.73	498837.9502
LMC-A2-21	6/9/2008	6	1.2	158	2252574.912	498830.7304
LMC-A3-6	6/9/2008	6	0.79	159	2252548.762	498816.8978
LMC-A3-19	6/9/2008	6	0.13	156	2252566.53	498825.6711
LMC-A3-25	6/9/2008	6	0.20	157	2252572.633	498826.8364
LMC-B1-4	6/9/2008	6	2.1	161	2252534.118	498802.1371
LMC-B1-18	6/9/2008	6	0.034	162	2252544.848	498789.5365
LMC-B1-25	6/9/2008	6	0.6	160	2252553.304	498795.7308
LMC-B2-9	6/9/2008	6	0.17	164	2252523.315	498773.332
LMC-B2-15	6/9/2008	6	0.60	163	2252530.253	498774.9081
LMC-B2-23	6/9/2008	6	0.1	165	2252533.391	498761.6139
LMC-C1-3	6/9/2008	24	1.5	168	2252502.965	498727.544
LMC-C1-10	6/9/2008	24	0.99	166	2252512.457	498734.0745
LMC-C1-13	6/9/2008	24	<0.036	167	2252511.774	498722.8672
LMC-C2-2	6/9/2008	6	60	171	2252490.25	498706.4599
LMC-C2-2R	6/11/2008	12	210	171	2252490.25	498706.4599
LMC-C2-2R2	6/12/2008	54	0.42	171	2252490.25	498706.4599
LMC-C2-7	6/9/2008	6	23	170	2252497.762	498708.033
LMC-C2-11	6/9/2008	6	2.9	169	2252501.955	49875.6204
LMC-C3-6	6/9/2008	6	2.0	174	2252489.368	498683.7589
LMC-C3-12	6/9/2008	6	2.2	172	2252498.396	498690.0754
LMC-DUP-2	6/9/2008	6	2.1	172	2252498.396	498690.0754
LMC-C3-19	6/9/2008	6	0.25	173	2252504.62	498683.7589
LMC-D1-1	6/10/2008	24	5.9	178	2252508.281	499470.225

**Table 2
Summary of Backfill Soil Sample Analytical Results**

Location ID: Date Collected:	RCRA Regulatory Levels	Units	RC MATERIALS FILL 04/16/08
PCBs			
Aroclor-1016	--	ug/kg	38 U
Aroclor-1221	--	ug/kg	38 U
Aroclor-1232	--	ug/kg	38 U
Aroclor-1242	--	ug/kg	38 U
Aroclor-1248	--	ug/kg	38 U
Aroclor-1254	--	ug/kg	38 U
Aroclor-1260	--	ug/kg	38 U
Aroclor-1268	--	ug/kg	38 U
Total PCBs	50	ug/kg	ND
VOCs - TCLP			
1,1-Dichloroethene	0.7	mg/L	0.070 U
1,2-Dichloroethane	0.5	mg/L	0.025 U
2-Butanone	200	mg/L	0.25 U
Benzene	0.5	mg/L	0.025 U
Carbon Tetrachloride	0.5	mg/L	0.025 U
Chlorobenzene	100	mg/L	0.025 U
Chloroform	6	mg/L	0.012 JB
Tetrachloroethene	0.7	mg/L	0.070 U
Trichloroethene	0.5	mg/L	0.050 U
Vinyl Chloride	0.2	mg/L	0.025 U
SVOCs - TCLP			
1,4-Dichlorobenzene	7.5	mg/L	0.0040 U
2,4,5-Trichlorophenol	400	mg/L	0.020 U
2,4,6-Trichlorophenol	2	mg/L	0.020 U
2,4-Dinitrotoluene	0.13	mg/L	0.020 U
2-Methylphenol	200	mg/L	0.0040 U
Hexachlorobenzene	0.13	mg/L	0.020 U
Hexachlorobutadiene	0.5	mg/L	0.020 U
Hexachloroethane	3	mg/L	0.020 U
m-Cresol & p-Cresol	200	mg/L	0.040 U
Nitrobenzene	2	mg/L	0.0040 U
Pentachlorophenol	100	mg/L	0.040 U
Pyridine	5	mg/L	0.020 U

Notes:

B - Method blank contamination. The associated method blank contains the target analyte at a reportable level.

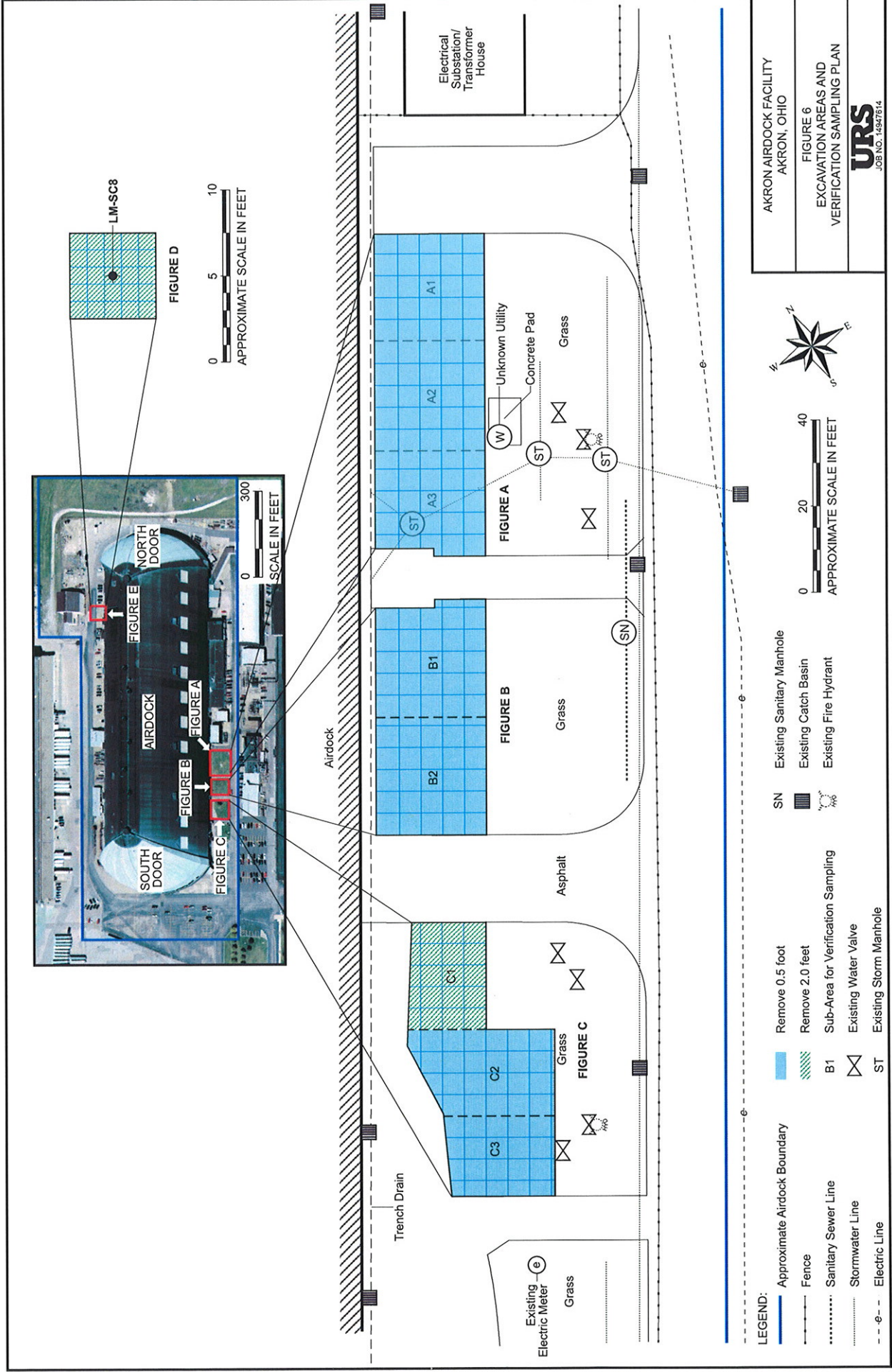
J - Estimated result. Result is less than RL.

ND - None detected.

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

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Attachments



AKRON AIRDOCK FACILITY
AKRON, OHIO

FIGURE 6
EXCAVATION AREAS AND
VERIFICATION SAMPLING PLAN

URS
JOB NO. 14947614

Attachment 1 – URS Figure 6 Excavation Area and Verification Sampling Plan

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Attachment 2

Utility Location Survey Report



June 5th, 2008

For: Arcadis
600 Waterfront Dr.
Pittsburgh, PA

Site: Akron Airdock

Re: GPR Survey to Locate Underground Utilities

We appreciate the opportunity to work with you and your company on your project in Akron, OH on June 5th, 2008.

Ground penetrating radar was used to survey an area approximately 225x25 feet along the airdock building. We used a 400 MHz GPR antenna to scan the area. This antenna can penetrate to depths of up to 6 or 7 feet depending on soil conditions. We also used an RD-4000 utility locator to sweep the entire area for live power signals. The RD-4000 located a power signal coming out of the building and meeting with a line running parallel with the building. This power signal was not strong, it could have been a low voltage buried electrical line or possibly a tracer tone on a water line. Readings from the RD-4000 gave an approximate depth of 4-6 feet. The radar was not able to locate these lines probably due to their depth. Near to and parallel with the building, the radar found what appeared to be buried concrete which could be the top of a duct bank or utility corridor/tunnel. The top of this concrete was only about 1 foot below the surface. No power was detected in this area as the power was thought to have been cut off. Other findings include a 3 foot square that appeared to be buried concrete only 1 foot deep along with one of what seemed to be an underground storage tank 4.5' deep. Exact locations and further description of these findings can be found on the following pages.

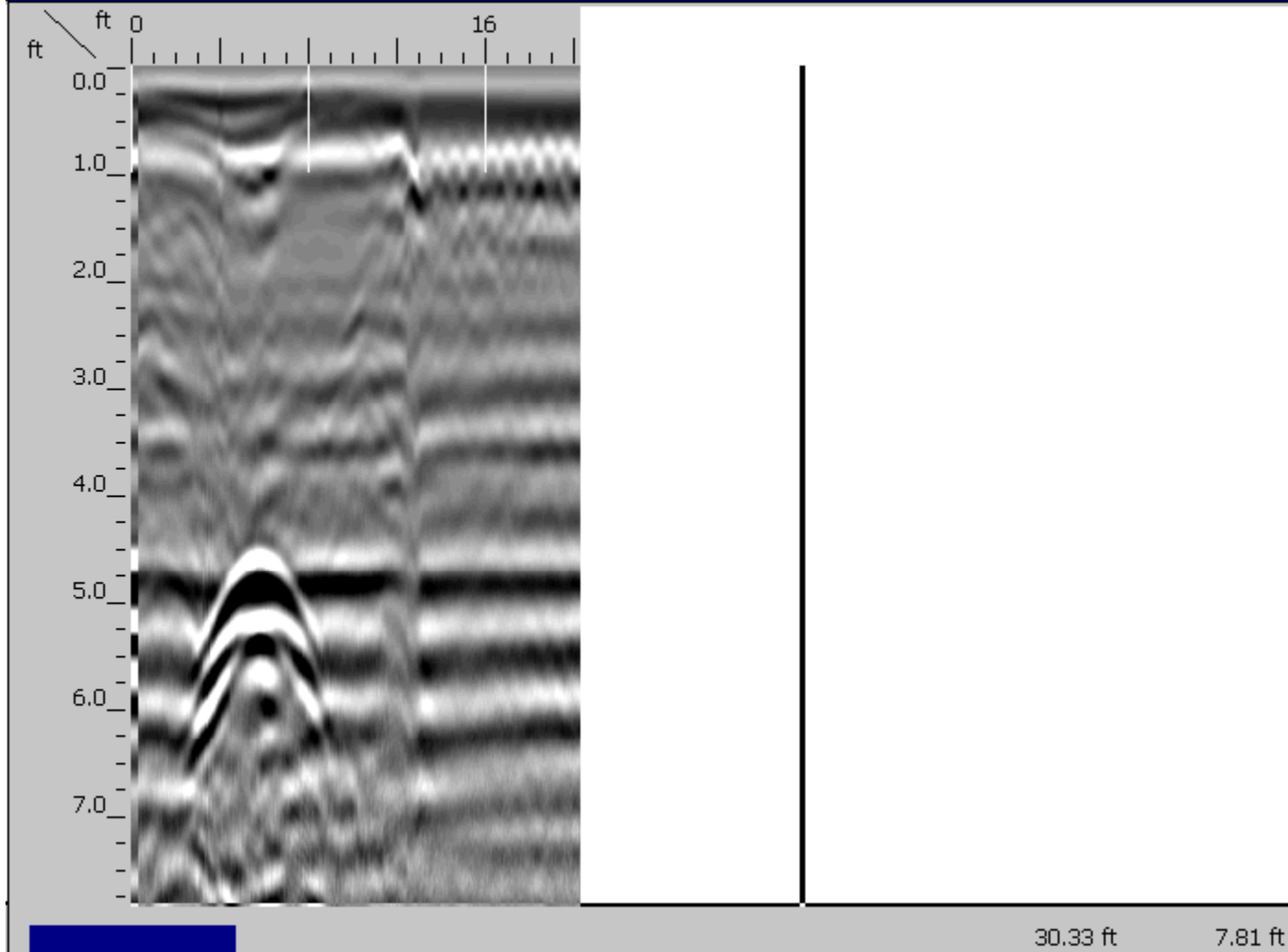
Thanks again for the opportunity and feel free to contact me with any further questions you may have.

Regards,

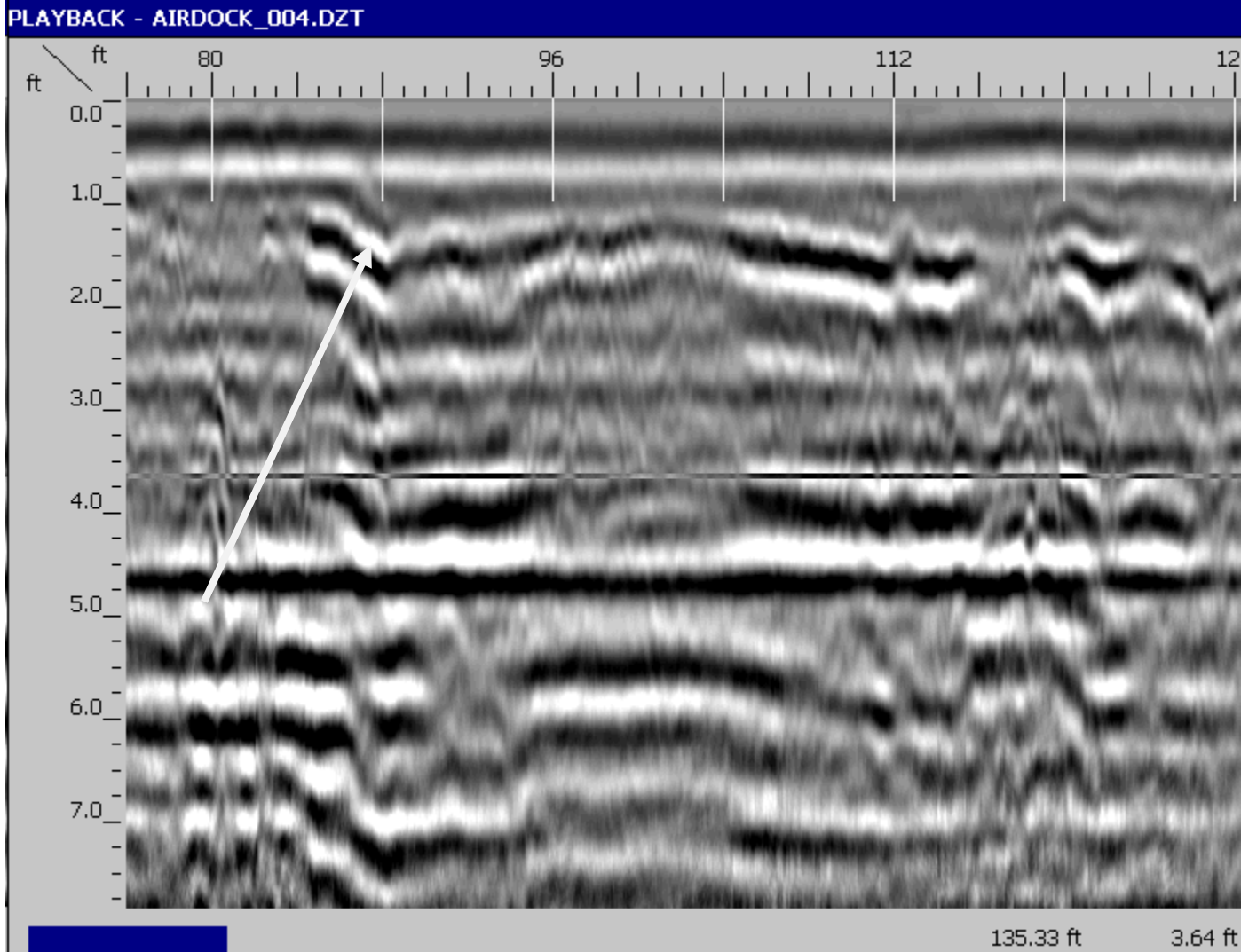
Jamie Althaus—Ground Penetrating Radar Technician
Regional Director—Eastern Ohio and Pennsylvania
GPRS, Inc.
(330.352.0145)
jamie.althaus@gp-radar.com
www.gp-radar.com

Terms and Conditions

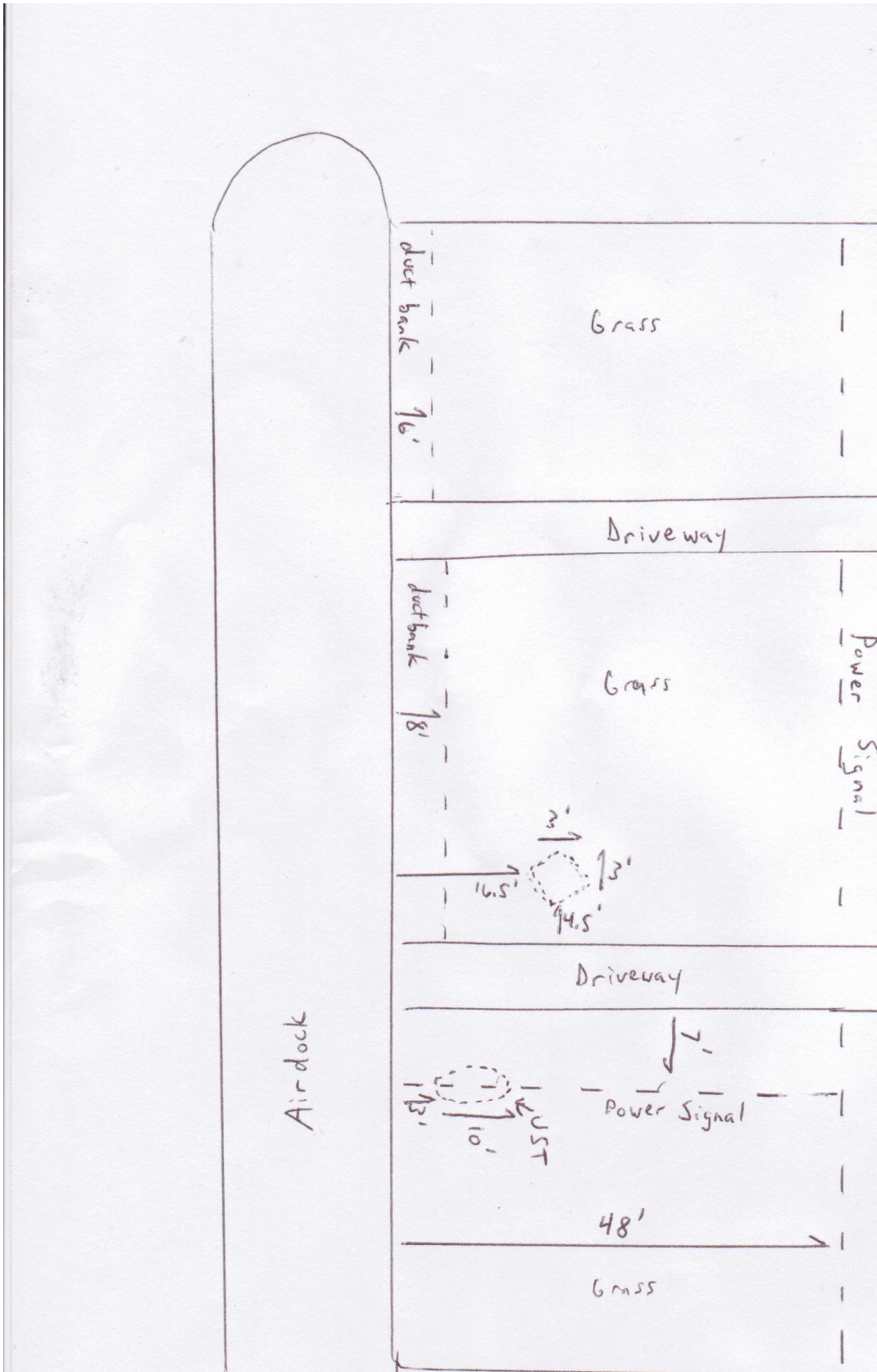
1. Our goal is to provide you with answers to questions regarding what lies below the surface and where it is located. Our customers must understand that our findings are an interpretation of what we believe lies below the surface. These findings require use of the latest technology the industry has to offer.
2. In the event our interpretation is inaccurate, we cannot accept liability for damages. The decision to proceed with cutting, drilling, or excavation is left entirely up to the customer.



The above data shows the UST that was found onsite at a depth of 4.5'.



The above data is a scan over the top of the possible duct bank. The arrow is pointing to the horizontal band at approximately 1' deep that represents what is thought to be buried concrete.



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Attachment 3

Photo Log

Attachment 3
Excavation Project Photos
Lockheed Martin



Photo # 1: Facing south the photo depicts excavation activities continuing from the northern section to the southern section.



Photo # 2: Facing south-Continuation of excavation activities in the Southeast Area.

Project Name: LockHeed Martin
Project Location: Akron, OH
Date: 6/9/08
Project No: B0038060

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Attachment 3
Excavation Project Photos
Lockheed Martin



Photo # 3: Facing north, excavation covered awaiting sample results.



Photo # 4: Photo on northwest side of Airdock depicts the SC8 Area.

Project Name: LockHeed Martin
Project Location: Akron, OH
Date: 6/9/08
Project No: B0038060

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**Attachment 3
Excavation Project Photos
Lockheed Martin**



Photo # 5: Backfill in the Southeast area is being spread and compacted.



Photo # 6: Southeast area after grass established, September, 2008.

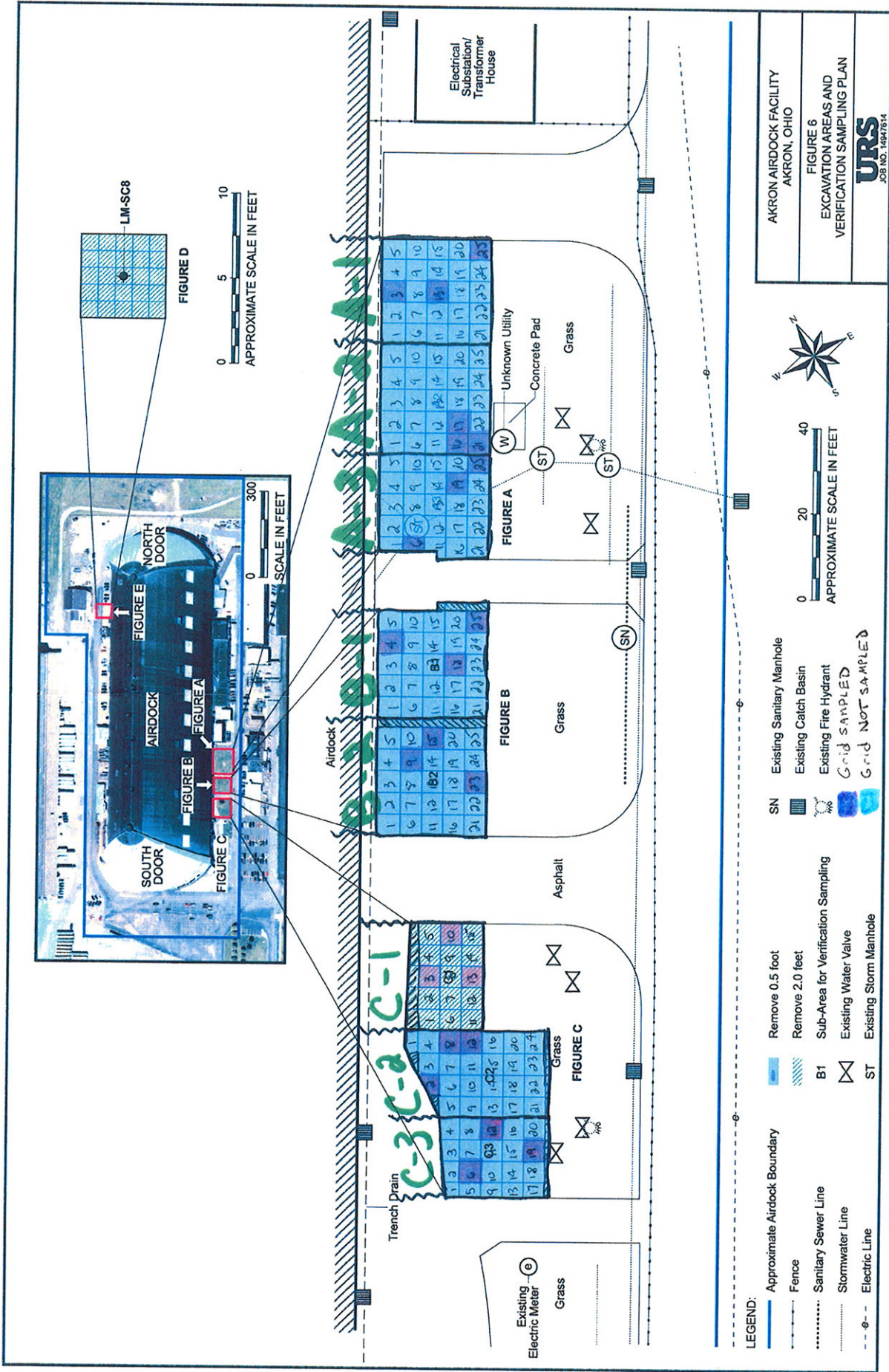
Project Name: LockHeed Martin
Project Location: Akron, OH
Date: 6/9/08
Project No: B0038060

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Attachment 4

Sample Location Map



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AKRON, OHIO

FIGURE 6
EXCAVATION AREAS AND
VERIFICATION SAMPLING PLAN

URS
JOB NO. 14047014