1250161

[0064691 H]

WCH Washington Closure Hanford

Interoffice Memorandum

142327

TO: R. A. Carlson X2-07

DATE: November 24, 2008

COPIES: See Below

FROM: M. L. Proctor
Sample Design & Cleanup Verification Lead
H4-23/372-9227

SUBJECT: **100-H-3 REMAINING SITE FOR REMEDIAL ACTION**

This interoffice memorandum is to advise you that the 100-H-3 waste site will require remedial action. The attached *100-H-3, 1716-H Garage Fuel Tanks Site Remove, Treat, and Dispose Report* documents the basis for remediation and other relevant information for use by Field Remediation Engineering in preparing the remedial design for this site.

If you have any questions concerning the information, please call me at 372-9227.

MLP:lrs

Attachment: *100-H-3, 1716-H Garage Fuel Tanks Site Remove, Treat, and Dispose Report*

Copies: w/a
T. M. Blakley X2-07
M. A. Buckmaster X9-07
S. W. Callison X2-07
J. R. Davidson H4-23
L. A. Dietz H4-22
M. T. Hughes H4-23
M. L. Proctor H4-23
L. S. Shelp H4-22
D. N. Strom X9-10
Records and Document Control H4-11

RECEIVED
SEP 24 2018
EDMC

Approved for Public Release;
Further Dissemination Unlimited

24

100-H-3, 1716-H GARAGE FUEL TANKS SITE REMOVE, TREAT, AND DISPOSE REPORT

1.0 RECOMMENDATIONS

Confirmatory investigation and sampling of the 100-H-3 waste site revealed that potential underground storage tanks (USTs) had been previously removed. However, debris was backfilled at the former tank location and sampling revealed that five analytes exceeded direct exposure remedial action goals (RAGs) for soil. Based on these results, the 100-H-3 waste site is recommended for remediation.

2.0 PURPOSE

The purpose of this remove, treat, and dispose (RTD) report is to provide documentation to support the remedial action decision for the 100-H-3 waste site as required by the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (Remaining Sites ROD) (EPA 1999).

3.0 GENERAL SITE INFORMATION AND BACKGROUND

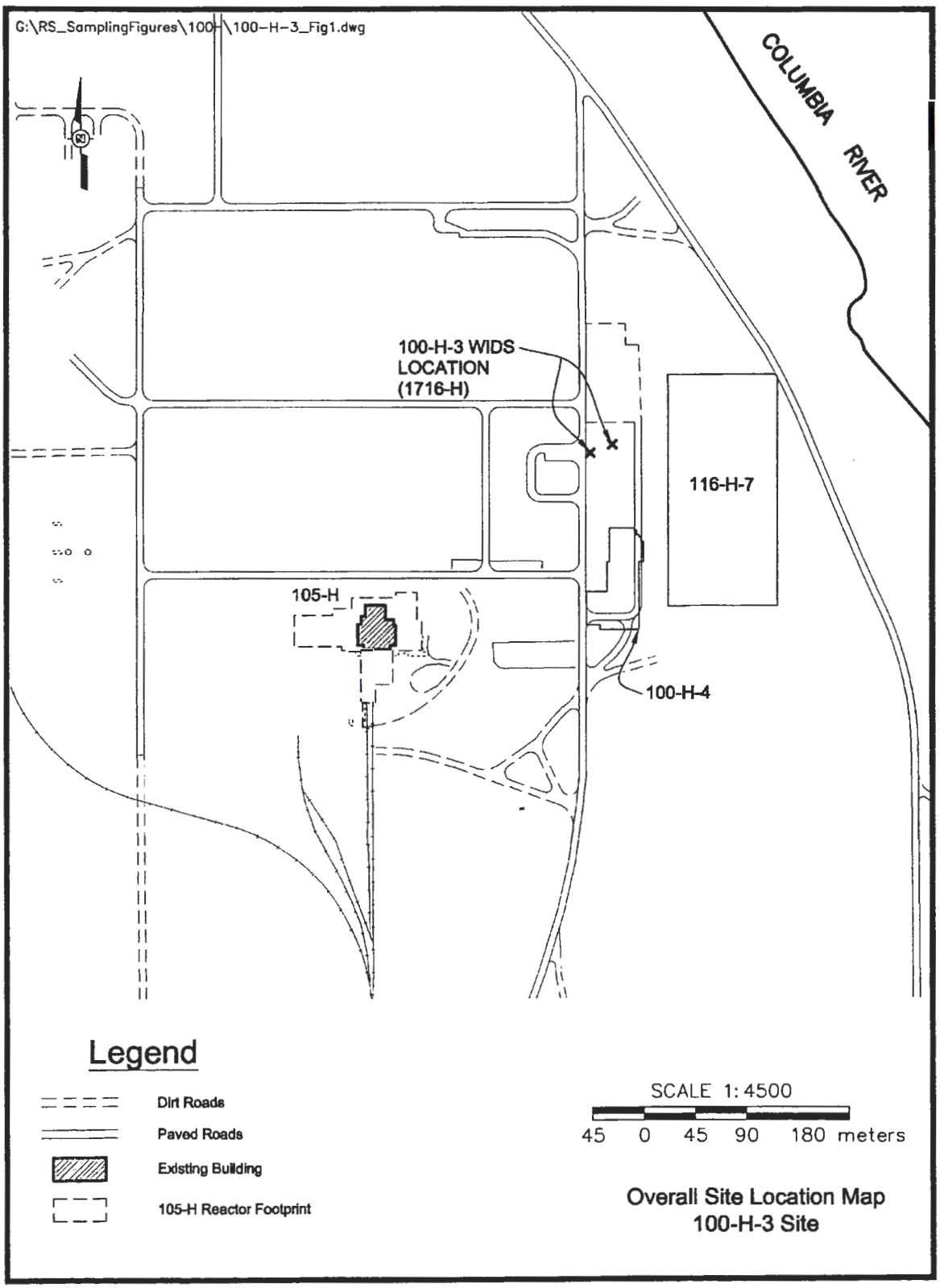
3.1 Site Description

The 100-H-3 waste site, part of the 100-HR-1 Operable Unit, is related to underground storage tanks (USTs) associated with the 1716-H maintenance garage building located in the 100-H Area. According to the Waste Information Data System (WIDS) (Appendix A), the site previously contained one or more USTs. The 1716-H garage building was documented in an interview with a retired Hanford Site employee (Richardson 1990) as including gas pumps with associated USTs and a possible oil pit (BHI 1995). Building details and the location of a concrete slab containing a "pump island" are shown on Drawings P-1897, P-3485, and P-4273 (GE 1948a, 1949a, 1948b). Drawing P-4273 (GE 1948b) indicates that two pumps may have existed on the pump island. The presence of a pump island and gasoline pumps would suggest that this site had an associated underground fuel tank(s).

3.1 Location

The 1716-H garage building was located immediately west of the 116-H-7 waste site (107-H Retention Basin) and north of the 100-H-4 waste site (1717-H combined shops) in the 100-H Area (Figure 1). According to Drawing P-3485 (GE 1949a), the pump island sat approximately 7 m (23 ft) from the 1716-H garage building at Washington State Plane coordinates E 577970, N 152683. The location of USTs is indicated as being south of the 1716-H garage building in Drawing P-1435 (GE 1963). The center of this UST location is at coordinates E 577987, N 152670.

Figure 1. 100-H-3, 1716-H Garage Fuel Tank Waste Site Location Map.



3.2 History

The 1716-H garage building operated from 1949 through 1965 as an automotive service station and repair facility. At an unspecified date, one-half of the 1716-H garage building was converted to shops for the maintenance, calibration, and repair of electrical and electronic instruments. The facility has been described as a steel frame structure with corrugated transite siding, a concrete floor and foundation, and a flat wooden roof with a built-up tar and gravel surface (AEC-GE 1964). The building was 28.3 m (93 ft) long, 23.3 m (76.5 ft) wide, and 6 m (20 ft) high, and provided 44.6 m^2 (480 ft^2) of office space, 430 m^2 (4,630 ft^2) of work area space, 55.7 m^2 (600 ft^2) of storage space, and 138.4 m^2 (1,490 ft^2) of "common" space (AEC-GE 1964). The entire maintenance garage structure has been demolished. Figure 2 is a photograph dated March 18, 1999, showing the area of the former 1716-H garage building. Drawing P-3132 (GE 1949b) identifies an aboveground, 560-L (150-gal) Prestone® tank associated with the 1716-H garage building (visible in the right corner of Figure 2). This tank was used for storage of antifreeze rather than fuel and was removed (Drawing P-3132 [GE 1949b]).

3.3 Ecological and Cultural

An ecological and cultural resources review for confirmatory sampling of the 100-H-3 waste site was performed (Teel 2008). It was determined that no significant impacts to ecological resources or archaeological sites were anticipated during sampling at this site. This review was explicitly for sampling only and did not cover remedial activities.

Figure 2. Location of the Former 1716-H Garage Building, March 18, 1999.

® Prestone is a registered trademark of Honeywell International Inc., Morristown, New Jersey.

5.0 GEOPHYSICAL SURVEY RESULTS

Two geophysical surveys were performed for the 100-H-3 waste site to provide comprehensive coverage of the 1716-H garage building footprint and surrounding vicinity.

Ground-penetrating radar and EM-61 electromagnetic induction surveys were performed to establish the presence of any underground fuel tank(s) that may have been associated with the 1716-H garage building. Data collected from the surveys are interpreted as shown in Figure 3. The footprint of the former 1716-H garage building is also shown in Figure 3. The geophysical data do not indicate the presence of USTs at this site.

The first geophysical survey was performed in August 2004. This survey displayed significant buried rubble at the waste site, presumably from the demolished 1716-H garage building. According to Bergstrom and Mitchell (2004), two anomalous areas were identified in the geophysical investigation that have significant amounts of metal associated with them. Both of these areas have characteristics more typical of reinforced concrete than of USTs. Based on the coordinates and distances provided in Drawings P-3485 and P-4273 (GE 1949a, 1948b), the larger concrete anomaly (positioned between N194 and N198) is presumed to be the concrete slab that housed the pump island and gas pumps. This concrete anomaly is located at the coordinates given in WIDS for the 100-H-3 waste site.

The second survey was performed on January 6, 2006[1], as an extension of the original geophysical investigation (Bergstrom and Mitchell 2006). A large anomalous area was identified during the geophysical investigation that has significant amounts of metal associated with it. The anomalous area is located along a water pipeline, underneath a roadway, suggesting that the anomaly is a concrete encased pipe and not a UST. None of the other anomalous features identified by the geophysical survey are indicative of a UST. Assuming that a UST was once present at this site, it appears from the geophysical investigations that it may have been removed.

6.0 CONFIRMATORY SAMPLING ACTIVITIES

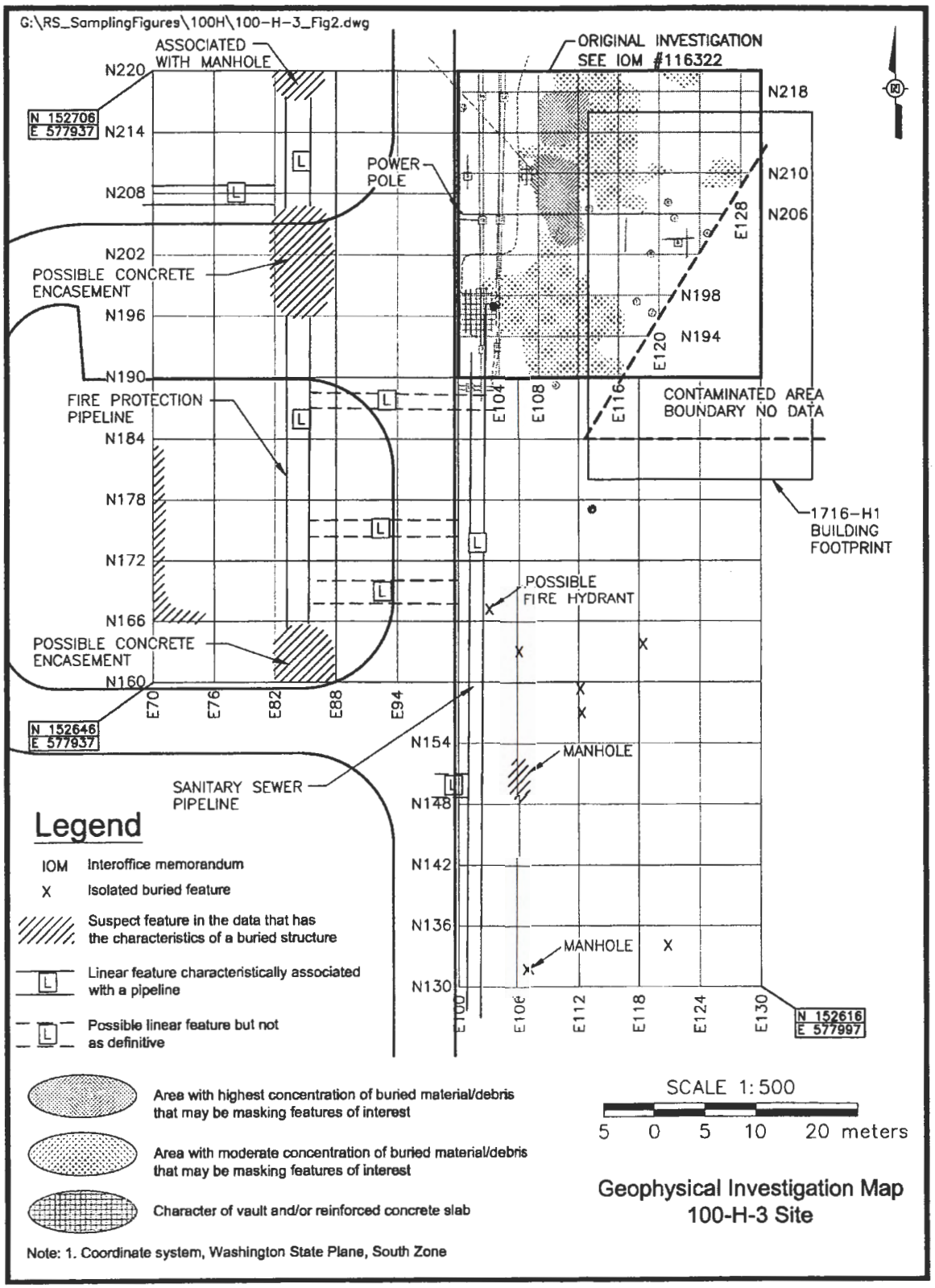
Confirmatory sampling was performed in accordance with the *Work Instruction for Confirmatory Sampling of the 100-H-3, 1716-H Garage Fuel Tank Site* (WCH 2006) with modifications as discussed in Section 6.2 below.

6.1 Contaminants of Potential Concern

The contaminants of potential concern (COPC) for the 100-H-3 waste site were identified in the work instruction as semivolatile organic compounds (SVOCs), total petroleum hydrocarbons, volatile organic compounds (VOC), arsenic, barium, cadmium, total chromium, lead, selenium, silver, and polychlorinated biphenyls (PCBs). The expanded inductively coupled plasma (ICP) metals list of antimony, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel,

[1] The work instruction (WCH 2006) incorrectly lists this date as January 6, 2005, instead of January 6, 2006, and the associated Bergstrom and Mitchell reference date as 2005 instead of 2006.

Figure 3. 100-H-3 Geophysical Interpretation Map.



vanadium, and zinc was also included. Mercury was also a COPC for this site. Since suspect asbestos-containing materials were found at the site, samples were also analyzed for asbestos.

Radionuclides were not listed as COPCs for this site. However, the possible presence of radiological contaminants was evaluated using field radiological survey instrumentation (capable of detecting alpha, beta, and gamma radiation) during sampling. Since radiological activity was not detected in the field above background levels, samples were not analyzed for radionuclides.

6.2 Confirmatory Sample Design

A focused sampling approach was used to characterize the 100-H-3 waste site. The objectives of sampling at the 100-H-3 waste site were as follows:

- Determine the presence or absence of any USTs and environmental contaminants, as provided for in the Remaining Sites ROD (EPA 1999) and *Washington Administrative Code* (WAC) 173-360.

- Determine the nature and estimate the extent of potential contamination, as provided for in the Remaining Sites ROD (EPA 1999) and WAC 173-360.

The confirmatory sample design specified in the work instruction was based on using exploratory trenching to find fuel pipelines and following the pipelines to the tanks. The original confirmatory sample design to find unknown tank locations is described in detail in WCH 2006 and will not be further described here. After the work instruction was written, the location of the USTs was found on Drawing P-1435 (GE 1963). Therefore, the confirmatory sampling design was modified to focus the trenching and sampling on the identified tank locations. The two originally specified trench locations referenced in Figure 4 as Trench 1 and Trench 2 were not excavated. Instead, Trench 3 was excavated at the location indicated on Drawing P-1435 (GE 1963) and Trench 4 was excavated to explore for potential fuel pipes going from the UST location to the pump island.

6.3 Summary of Confirmatory Sampling Activities

Confirmatory sampling was performed at the site on August 28, 2008, and September 2, 2008, as described in the field logbook (WCH 2008). A summary of confirmatory samples taken at this site is provided in Table 1. A discussion of field activities follows.

Confirmatory sampling activities began on August 28, 2008, with the excavation of Trench 3 (Figure 4). This trench was excavated to native soil at a depth of approximately 3 m (10 ft). Tar and tar paper-like material was found, as well as asphalt and concrete debris (Figure 5). Apparently, the debris originated in conjunction with the UST removal operation. No tanks were found. Three samples of suspect asbestos material were collected from Trench 3 (Figure 6).

A second trench, Trench 4 in Figure 4, was excavated to approximately 0.9 m (3 ft) to explore for fuel pipes going from the USTs to the pump island. No fuel pipes were found.

Figure 4. 100-H-3 Trench and Sample Locations.

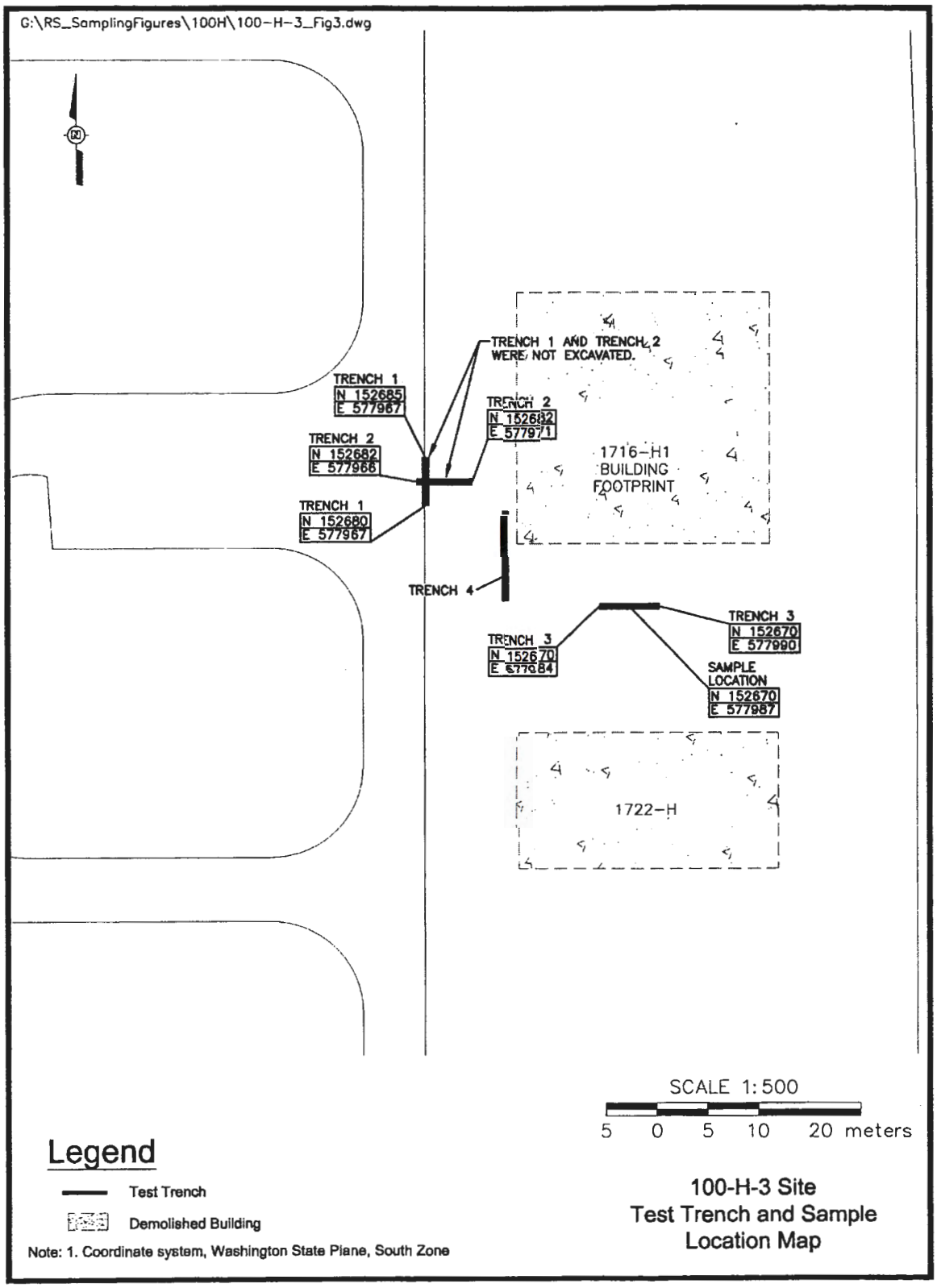


Table 1. Confirmatory Sample Summary Table.

Sample Location	Sample Media	Sample Number	Coordinate Location	Depth	Sample Analysis
Test Trench 3	Tar with suspect felt backing	J17FP5	N 152670 E 577987	Trench depth is ~3 m bgs	Bulk asbestos
Test Trench 3	Plaster with white coating	J17FP6	N 152670 E 577987	Trench depth is ~3 m bgs	Bulk asbestos
Test Trench 3	Tar - brown felt paper layers	J17FP7	N 152670 E 577987	Trench depth is ~3 m bgs	Bulk asbestos
Test Trench 3	Native soil	J17FV6	N 152670 E 577987	Trench depth is ~3 m bgs	ICP metals,[a] mercury, TPH, SVOA, PCB, VOA
Test Trench 3	Duplicate soil	J17FV7	N 152670 E 577987	Trench depth is ~3 m bgs	ICP metals,[a] mercury, TPH, SVOA, PCB, VOA
Test Trench 3	Soil in contact with debris	J17FV8	N 152670 E 577987	Trench depth is ~3 m bgs	ICP metals,[a] mercury, TPH, SVOA, PCB, VOA
Trip blank	Deionized water	J178X1	NA	NA	VOA
Equipment blank	Associated with J17FV6, J17FV7, J17FV8	J17FV5	NA	NA	ICP metals,[a] mercury, SVOA, VOA

[a] The expanded list of ICP metals includes antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, lead, manganese, molybdenum, nickel, silver, selenium, vanadium, and zinc.

bgs = below ground surface
ICP = inductively coupled plasma
NA = not applicable
PCB = polychlorinated biphenyl
SVOA = semivolatile organic analysis
TPH = total petroleum hydrocarbons
VOA = volatile organic analysis

Figure 5. 100-H-3 Site Trench 3 Debris.

Figure 6. Suspect Asbestos Material.

On September 2, 2008, a native soil sample was collected at the bottom of Trench 3 along with a soil duplicate. A soil sample in contact with debris was also collected. In addition, an equipment blank was obtained.

VOCs were not detected by field screening and radiological readings were not elevated above background during confirmatory sampling activities at 100-H-3. Analytical data for all samples are presented in Appendix B.

7.0 CONFIRMATORY SAMPLE RESULTS

All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency (DOE-RL 2005a). The laboratory-reported data results for all constituents are stored in the Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database and are summarized in Appendix B.

A comparison of the maximum results against soil cleanup levels identified in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005b) or WAC 173-340 (Ecology 1996) was performed. This comparison indicated that the 100-H-3 site fails the direct exposure RAGs for five analytes. A summary table for these five analytes is presented in Table 2. Based on these results, the 100-H-3 waste site is recommended for remediation.

Table 2. Analytes Exceeding Direct Exposure RAGs.

COC/COPC	Maximum Result (mg/kg)	Direct Exposure RAG (mg/kg)[a]	Does the Maximum Result Exceed the RAG?
Benzo(a)anthracene	3.8	0.33[b]	Yes
Benzo(a)pyrene	3.7	0.33[b]	Yes
Benzo(b)fluoranthene	3.2	0.33[b]	Yes
Dibenz[a,h]anthracene	0.99	0.33[b]	Yes
Indeno(1,2,3-cd)pyrene	2.2	1.37	Yes

[a] RAGs obtained from the 100 Area RDR/RAWP (DOE-RL 2005b) or calculated per WAC 173-340-720, WAC 173-340-730, or WAC 173-340-740, Method B (Ecology 1996).

[b] Where cleanup levels are less than RDLs, cleanup levels default to RDLs per WAC 173-340-700[4][d] (Ecology 1996).

COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RDLs = required detection limits
RDR/RAWP = Remedial Design Report/ Remedial action Work Plan for the 100 Area

8.0 DATA QUALITY ASSESSMENT

A data quality assessment (DQA) review was not performed to compare the confirmatory sampling approach and resulting analytical data with the sampling and data requirements specified by the project objectives and performance specifications. The primary reason for not performing a DQA was that this site exceeds direct exposure cleanup criteria for five analytes. The site is recommended to undergo remedial action and the confirmatory sampling data will not likely represent the final waste site conditions. Therefore, the value of a DQA is minimal at this time. A DQA will be performed on verification sample data after remediation of the site.

An informal assessment of the data finds they are sufficient to support the recommendation for remediation of the 100-H-3 waste site.

9.0 REFERENCES

AEC-GE, 1964, *Catalog of Hanford Buildings and Facilities, 100 Areas: A Report by the AEC-GE Study Group for the Economic Development of Richland*, U.S. Atomic Energy Commission-General Electric, Richland, Washington.

Bergstrom, K. A. and T. H. Mitchell, 2004, *Results of Geophysical Investigation at 100 H Area Remaining Sites 100-H-3, 100-H-4, 116-H-5, 126-H-2, 128-H-1, 128-H-2, 128-H-3, 600-151, 600-152, 1607-H-1, and 100 D Area Remaining Sites 100-D-24, 100-D-45, 132-D-1, 132-D-2, 132-D-3,* Interoffice Memorandum to R. A. Carlson, CCN 116322, dated November 8, 2004, Bechtel Hanford, Inc., Richland, Washington.

Bergstrom, K. A. and T. H. Mitchell, 2006, *Results of Geophysical Investigation at 100 H Area Remaining Sites 100-H-3 Extension and 1607-H3,* Interoffice Memorandum to R. A. Carlson and L. M. Dittmer, CCN 124804, dated January 6, 2006, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1995, *100-H Area Technical Baseline Report,* BHI-00127, Rev. 0A, Bechtel Hanford, Inc., Richland, Washington.

DOE-RL, 2005a, *100 Area Remedial Action Sampling and Analysis Plan,* DOE/RL-96-22, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE-RL, 2005b, *Remedial Design Report/Remedial Action Work Plan for the 100 Area,* DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, 1996, "Model Toxics Control Act—Cleanup," *Washington Administrative Code (WAC),* 173-340, Washington State Department of Ecology, Olympia, Washington.

EPA, 1999, *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington,* U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

GE, 1948a, *Elevations, Roof Plan, Section and Details*, Drawing P-1897, U.S. Atomic Energy Commission, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.

GE, 1948b, *Foundation Plan and Details*, Drawing P-4273, U.S. Atomic Energy Commission, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.

GE, 1949a, *1716-H Building Gas Pump Concrete Slab Details*, Drawing P-3485, U.S. Atomic Energy Commission, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.

GE, 1949b, *Prestone Tank, 150 Gallon Capacity,* Drawing P-3132, U.S. Atomic Energy Commission, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.

GE, 1963, *Bldg. 1716-H Plumbing*, Drawing P-1435, U.S. Atomic Energy Commission, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.

Richardson, V. R., 1990, *Interview Conducted with V. R. Richardson, Retired Hanford Employee, on March 12, 1990,* Conducted by R. D. Evans, Advanced Sciences, Inc., Richland, Washington.

Teel, D. D., 2008, *Ecological and Cultural Resources Reviews for Confirmatory Sampling of the 100-H-3, 100-H-4, 100-H-8, 100-H-28:(1-7), 128-H2, and 128-H-3 Waste Sites (08-ER-024)*, CCN 139168, Washington Closure Hanford, Richland, Washington.

WAC 173-360, "Underground Storage Tank Regulations," *Washington Administrative Code*, as amended.

WCH, 2006, *Work Instruction for Confirmatory Sampling of the 100-H-3,1716-H Garage Fuel Tank Site*, 0100H-WI-G0006, Rev. 0, Washington Closure Hanford, Richland, Washington.

WCH, 2008, *Miscellaneous Sampling,* Logbook EL-1601-2, pp. 65 to 67, 69 to 70,Washington Closure Hanford, Richland, Washington.

APPENDIX A

WASTE INFORMATION DATA SYSTEM GENERAL SUMMARY REPORT

Waste Information Data System
General Summary Report

10/20/2008

Site Code: 100-H-3 **Site Classification:** Accepted **Page** 1

Site Names:	100-H-3, 1716-H Garage Fuel Tank Site		
Site Type:	Storage Tank	**Start Date:**	1949
Status:	Inactive	**End Date:**	
Hanford Area:	100H	**Pipe Type:**	
OU/WMA:	100-HR-1		
Closure Zone:			

Site Description: The site may contain one or more underground storage tanks (USTs) from the 1716-H Garage. The garage has been demolished. Some disturbance of the concrete pavement is visible at the site.

Location Description: The 1716-H Garage was located west of the 107-H Retention Basin (116-H-7) and north of the 1717-H Combined Shops.

Associated Structures: The tanks supported the 1716-H Garage.

Site Comment: The 1716-H Garage facility operated from 1949 to 1965. The automotive service area included gasoline pumps with associated underground tanks and probably an oil pit. The buildings have been demolished. No records have been located to determine if the tanks had been removed. It is likely that the facility had two underground storage tanks since similar facilities at 100D and 100K each had two tanks, one for gasoline and one for waste oil. Based on the concrete pavement disturbance visible at the site, it has been suggested that one of the two tanks was removed.

References:

1. R. D. Evans, 3/12/90 Interview of V. R. (Bob) Richards by R. D. Evans.
2. R. D. Evans and Mark Morton, 8/29/90 Underground Storage Tanks at the 100-H Area, ASI 0012215.
3. D.H. Deford, M.W. Einan, 2/1/95 100-H Area Technical Baseline Report, BHI-00127, Rev 00.
4. General Electric Co. - Giffels & Vallet Inc., Engineers, 9/24/48 UNDERGROUND SERVICES - SEWER & WATER SECTION 10, P-1220, Rev 17.
5. Shearer, Jeffrey P. with Mark Morton, 8/6/97 Questions about 1990 GPR Survey at 1716-H.

Field Work:

Type:	Geophysical Survey		
BeginDate:	01/01/1990		
End Date:	01/01/1990		
Purpose:	Locate tank		
Comment:	A Ground Penetrating Radar (GPR) survey was performed by Pacific Northwest Laboratory (PNL) in 1990. The results were inconclusive due to a great deal of background noise that might possibly have been masking the tank. One potential explanation was that the noise may have been the result of the tank having been removed at some time in the past and reburied along with demolition rubble. The GPR indicated that metal objects were present, but none had the typical signature of an underground storage tank (UST). According to a 1990 telecon, Pacific Northwest Laboratory (PNL) was going to attempt to filter out the noise, but one of the participants in the telecon has stated that the attempts were unsuccessful.		
Type:	Site Walkdown		
BeginDate:	03/17/1999	**FieldCrew:**	CR Webb
End Date:	03/17/1999		
Purpose:	verification		
Comment:	The road to the 1716-H Garage are present, but there are no building foundations left. There is no visual evidence of any underground tanks or tank removal.		
Site Cover:	Moderate Vegetation		

Site Accessible:	Yes	Site Found:	No
Soil Discoloration:	No	Debris Visible:	No
Vegetation Type:	Rabbitbrush		
References:	1. C. R. Webb, 1/2/97 Field Logbook assigned to Christine Webb, EL-1255 and EL-1255-1.		
Type:	Site Walkdown		
BeginDate:	03/17/1999	FieldCrew:	WL Osborne
End Date:	03/17/1999		
Purpose:	RARA		

Regulatory Information:

Programmatic Responsibility

DOE Program:		Confirmed By Program:	Yes
DOE Division:			
Responsible Contractor/Subcontractor:	WCH	Washington Closure Hanford	
Reclassifying Contractor/Subcontractor:			
ResponsibleProject:			

Site Evaluation

Solid Waste Management Unit:	Yes
TPA Waste Management Unit Type:	Other Storage Area

Permitting

RCRA Part B Permit:	No	TSD Number:	
RCRA Part A Permit:	No	Closure Plan:	No
RCRA PermitStatus:			
Septic Permit:	No	216/218 Permit:	None
Inert LandFill:	No	NPDES:	No
Air Operating Permit:	No	State Waste Discharge Permit:	No

Tri-Party Agreement

Lead Regulatory Agency:	Ecology
Unit Category:	CERCLA Past Practice (CPP)
TPA Appendix:	C

Remediation and Closure

Decision Document:	Interim Action Record of Decision, 100 Area Remaining Sites (1999)		
Decision Document Status:	Final		
Remediation Design Group:	Group 5		
Closure Document:			
Closure Type:			
Post Closure Requirements:		ResidualWaste:	

Images:

Pathname: DateTaken: 03/18/1999

Description: Photo shows where the 1716-H Garage was located.

Pathname: DateTaken: 03/18/1999

Description: Photo shows an area of soil disturbance that may be where the underground tanks had been located.

APPENDIX B

CONFIRMATORY SAMPLE DATA RESULTS

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Sample Location	HEIS Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium			Boron		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Equipment Blank	J17FV5	9/2/2008	84.6		3.1	0.24	U	0.24	0.39	U	0.39	1.4	C	0.08	0.04	U	0.04	0.39	U	0.39
Trench 3 Soil	J17FV6	9/2/2008	8680		10.1	0.75	U	0.75	3.6		1.3	74.7	C	0.25	0.27		0.13	1.3	U	1.3
Trench 3 Soil, Duplicate of J17FV6	J17FV7	9/2/2008	8970		9.2	0.69	U	0.69	3.4		1.1	76.4	C	0.23	0.28		0.11	1.7		1.1
Trench 3 Soil in contact with debris	J17FV8	9/2/2008	8120		9.8	0.73	U	0.73	3.9		1.2	84.5	C	0.24	0.22		0.12	2.4		1.2

Sample Location	HEIS Number	Sample Date	Cadmium			Calcium			Chromium			Cobalt			Copper			Iron		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Equipment Blank	J17FV5	9/2/2008	0.04	U	0.04	42	C	3.1	0.24	C	0.16	0.16	U	0.16	0.33		0.16	222	C	3.5
Trench 3 Soil	J17FV6	9/2/2008	0.13	U	0.13	5850	C	10.1	20.0	C	0.50	6.6		0.50	13.7		0.50	18600	C	11.3
Trench 3 Soil, Duplicate of J17FV6	J17FV7	9/2/2008	0.11	U	0.11	6170	C	9.2	20.1	C	0.46	6.6		0.46	13.8		0.46	18800	C	10.3
Trench 3 Soil in contact with debris	J17FV8	9/2/2008	0.12	U	0.12	9360	C	9.8	18.4	C	0.49	6.7		0.49	15.1		0.49	19200	C	11.0

Sample Location	HEIS Number	Sample Date	Lead			Magnesium			Manganese			Mercury			Molybdenum			Nickel		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Equipment Blank	J17FV5	9/2/2008	0.24	U	0.24	31.6	C	2.0	4.1	C	0.03	0.007	U	0.007	0.24	U	0.24	0.20		0.16
Trench 3 Soil	J17FV6	9/2/2008	5.7		0.75	5690	C	6.3	248	C	0.10	0.01		0.01	0.75	U	0.75	17.8		0.50
Trench 3 Soil, Duplicate of J17FV6	J17FV7	9/2/2008	4.9		0.69	5740	C	5.7	256	C	0.09	0.01	U	0.01	0.69	U	0.69	17.4		0.46
Trench 3 Soil in contact with debris	J17FV8	9/2/2008	19.1		0.73	5080	C	6.1	285	C	0.1	0.1		0.01	0.73	U	0.73	18.4		0.49

Note below and definitions apply to all tables in this appendix.

Note: Data qualified with B, C, D, and/or J, are considered acceptable values.

B = blank contamination (organic constituents)

C = blank contamination (inorganic constituents)

D = dilution

J = estimate

PQL = practical quantitation limit

Q = qualifier

U = undetected

X = interference

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Sample Location	HEIS Number	Sample Date	Potassium			Selenium			Silicon			Silver			Sodium			Vanadium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Equipment Blank	J17FV5	9/2/2008	45.0		38.8	0.47	U	0.47	64.4		3.1	0.08	U	0.08	15	C	1.6	0.27		0.11
Trench 3 Soil	J17FV6	9/2/2008	1200		124	1.5	U	1.5	481		10.1	0.25	U	0.25	193	C	5.0	37.3		0.35
Trench 3 Soil, Duplicate of J17FV6	J17FV7	9/2/2008	1290		113	1.4	U	1.4	424		9.2	0.23	U	0.23	199	C	4.6	38.0		0.32
Trench 3 Soil in contact with debris	J17FV8	9/2/2008	1280		120	1.5	U	1.5	667		9.8	0.24	U	0.24	236	C	4.9	48.2		0.34

Sample Location	HEIS Number	Sample Date	Zinc			TPH-D			TPH-OIL		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Equipment Blank	J17FV5	9/2/2008	1.0		0.47						
Trench 3 Soil	J17FV6	9/2/2008	46.0		1.4	17.0		3.33	21.0		10.0
Trench 3 Soil, Duplicate of J17FV6	J17FV7	9/2/2008	46.0		1.4	25.0		3.33	33.0		10.0
Trench 3 Soil in contact with debris	J17FV8	9/2/2008	76.3		1.5	1300.0	D	33.3	4900.0	D	100.0

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Constituent	J17FV6 Trench 3 Soil Sample Date 09/02/08			J17FV7 Duplicate of J17FV6 Sample Date 09/02/08			J17FV8 Trench 3 Soil Contact w/ Debris Sample Date 09/02/08			J17FV5 Equipment Blank Sample Date 09/02/08		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	14	U	14	14	U	14	14	U	14			
Aroclor-1221	14	U	14	14	U	14	14	U	14			
Aroclor-1232	14	U	14	14	U	14	14	U	14			
Aroclor-1242	14	U	14	14	U	14	14	U	14			
Aroclor-1248	14	U	14	14	U	14	14	U	14			
Aroclor-1254	14	U	14	14	U	14	54		14			
Aroclor-1260	14	U	14	14	U	14	54		14			
Pesticides												
Aldrin	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
alpha-BHC	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
alpha-Chlordane	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
beta-BHC	1.4	UD	1.4	1.4	UD	1.4	10	XD	1.4			
delta-BHC	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Dichlorodiphenyldichloroethane	1.4	UD	1.4	1.4	UD	1.4	5.8	JD	1.4			
Dichlorodiphenyldichloroethylene	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Dichlorodiphenyltrichloroethane	1.4	UD	1.4	1.4	UD	1.4	15	D	1.4			
Dieldrin	1.4	UD	1.4	1.4	UD	1.4	120	D	1.4			
Endosulfan I	1.4	UD	1.4	1.4	UD	1.4	2.6	JD	1.4			
Endosulfan II	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Endosulfan sulfate	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Endrin	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Endrin aldehyde	1.4	UD	1.4	1.4	UD	1.4	15	D	1.4			
Endrin ketone	1.4	UD	1.4	1.4	UD	1.4	22	D	1.4			
gamma-BHC (Lindane)	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
gamma-Chlordane	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Heptachlor	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Heptachlor epoxide	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Methoxychlor	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4			
Toxaphene	14	UD	14	14	UD	14	14	UD	14			
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	340	U	340	340	U	340	7200	U	7200	330	U	330
1,2-Dichlorobenzene	340	U	340	340	U	340	7200	U	7200	330	U	330
1,3-Dichlorobenzene	340	U	340	340	U	340	7200	U	7200	330	U	330
1,4-Dichlorobenzene	340	U	340	340	U	340	7200	U	7200	330	U	330
2,4,5-Trichlorophenol	860	U	860	860	U	860	18000	U	18000	830	U	830
2,4,6-Trichlorophenol	340	U	340	340	U	340	7200	U	7200	330	U	330
2,4-Dichlorophenol	340	U	340	340	U	340	7200	U	7200	330	U	330
2,4-Dimethylphenol	340	U	340	340	U	340	7200	U	7200	330	U	330
2,4-Dinitrophenol	860	U	860	860	U	860	18000	U	18000	830	U	830
2,4-Dinitrotoluene	340	U	340	340	U	340	7200	U	7200	330	U	330
2,6-Dinitrotoluene	340	U	340	340	U	340	7200	U	7200	330	U	330
2-Chloronaphthalene	340	U	340	340	U	340	7200	U	7200	330	U	330
2-Chlorophenol	340	U	340	340	U	340	7200	U	7200	330	U	330
2-Methylnaphthalene	340	U	340	340	U	340	7200	U	7200	330	U	330
2-Methylphenol (cresol, o-)	340	U	340	340	U	340	7200	U	7200	330	U	330
2-Nitroaniline	860	U	860	860	U	860	18000	U	18000	830	U	830
2-Nitrophenol	340	U	340	340	U	340	7200	U	7200	330	U	330
3+4 Methylphenol (cresol, m+p)	340	U	340	340	U	340	7200	U	7200	330	U	330
3,3'-Dichlorobenzidine	340	U	340	340	U	340	7200	U	7200	330	U	330
3-Nitroaniline	860	U	860	860	U	860	18000	U	18000	830	U	830
4,6-Dinitro-2-methylphenol	860	U	860	860	U	860	18000	U	18000	830	U	830
4-Bromophenylphenyl ether	340	U	340	340	U	340	7200	U	7200	330	U	330
4-Chloro-3-methylphenol	340	U	340	340	U	340	7200	U	7200	330	U	330

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Constituent	J17FV6 Trench 3 Soil Sample Date 09/02/08			J17FV7 Duplicate of J17FV6 Sample Date 09/02/08			J17FV8 Trench 3 Soil Sample Date 09/02/08			J17FV5 Equipment Blank Sample Date 09/02/08		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
4-Chloroaniline	340	U	340	340	U	340	7200	U	7200	330	U	330
4-Chlorophenylphenyl ether	340	U	340	340	U	340	7200	U	7200	330	U	330
4-Nitroaniline	860	U	860	860	U	860	18000	U	18000	830	U	830
4-Nitrophenol	860	U	860	860	U	860	18000	U	18000	830	U	830
Acenaphthene	340	U	340	340	U	340	520	J	7200	330	U	330
Acenaphthylene	340	U	340	340	U	340	7200	U	7200	330	U	330
Anthracene	340	U	340	340	U	340	1500	J	7200	330	U	330
Benzo(a)anthracene	340	U	340	340	U	340	3800	J	7200	330	U	330
Benzo(a)pyrene	340	U	340	340	U	340	3700	J	7200	330	U	330
Benzo(b)fluoranthene	340	U	340	340	U	340	3200	J	7200	330	U	330
Benzo(ghi)perylene	340	U	340	340	U	340	2500	J	7200	330	U	330
Benzo(k)fluoranthene	340	U	340	340	U	340	3600	J	7200	330	U	330
Bis(2-chloro-1-methylethyl)ether	340	U	340	340	U	340	7200	U	7200	330	U	330
Bis(2-Chloroethoxy)methane	340	U	340	340	U	340	7200	U	7200	330	U	330
Bis(2-chloroethyl) ether	340	U	340	340	U	340	7200	U	7200	330	U	330
Bis(2-ethylhexyl) phthalate	86	JB	340	70	JB	340	7200	U	7200	100	JB	330
Butylbenzylphthalate	340	U	340	340	U	340	7200	U	7200	330	U	330
Carbazole	340	U	340	340	U	340	940	J	7200	330	U	330
Chrysene	340	U	340	340	U	340	4300	J	7200	330	U	330
Di-n-butylphthalate	340	U	340	340	U	340	7200	U	7200	24	J	330
Di-n-octylphthalate	340	U	340	340	U	340	7200	U	7200	330	U	330
Dibenz[a,h]anthracene	340	U	340	340	U	340	990	J	7200	330	U	330
Dibenzofuran	340	U	340	340	U	340	7200	U	7200	330	U	330
Diethylphthalate	340	U	340	340	U	340	7200	U	7200	330	U	330
Dimethyl phthalate	340	U	340	340	U	340	7200	U	7200	330	U	330
Fluoranthene	340	U	340	340	U	340	5700	J	5700	330	U	330
Fluorene	340	U	340	340	U	340	7200	U	7200	330	U	330
Hexachlorobenzene	340	U	340	340	U	340	7200	U	7200	330	U	330
Hexachlorobutadiene	340	U	340	340	U	340	7200	U	7200	330	U	330
Hexachlorocyclopentadiene	340	U	340	340	U	340	7200	U	7200	330	U	330
Hexachloroethane	340	U	340	340	U	340	7200	U	7200	330	U	330
Indeno(1,2,3-cd)pyrene	340	U	340	340	U	340	2200	J	7200	330	U	330
Isophorone	340	U	340	340	U	340	7200	U	7200	330	U	330
N-Nitroso-di-n-dipropylamine	340	U	340	340	U	340	7200	U	7200	330	U	330
N-Nitrosodiphenylamine	340	U	340	340	U	340	7200	U	7200	330	U	330
Naphthalene	340	U	340	340	U	340	7200	U	7200	330	U	330
Nitrobenzene	340	U	340	340	U	340	7200	U	7200	330	U	330
Pentachlorophenol	860	U	860	860	U	860	5600	J	18000	830	U	830
Phenanthrene	340	U	340	340	U	340	4600	J	7200	330	U	330
Phenol	340	U	340	340	U	340	7200	U	7200	330	U	330
Pyrene	340	U	340	340	U	340	5500	J	7200	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	6	U	6	4	U	4
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	6	U	6	4	U	4
1,1,2-Trichloroethane	5	U	5	5	U	5	6	U	6	4	U	4
1,1-Dichloroethane	5	U	5	5	U	5	6	U	6	4	U	4
1,1-Dichloroethene	5	U	5	5	U	5	6	U	6	4	U	4
1,2-Dichloroethane	5	U	5	5	U	5	6	U	6	4	U	4
1,2-Dichloroethene(Total)	5	U	5	5	U	5	6	U	6	4	U	4
1,2-Dichloropropane	5	U	5	5	U	5	6	U	6	4	U	4
2-Butanone	10	U	10	9	U	9	11	U	11	9	U	9
2-Hexanone	10	U	10	9	U	9	11	U	11	9	U	9
4-Methyl-2-Pentanone	10	U	10	9	U	9	11	U	11	9	U	9
Acetone	10	U	10	9	U	9	11	U	11	9	U	9

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Constituent	J17FV6 Trench 3 Soil Sample Date 09/02/08			J17FV7 Duplicate of J17FV6 Sample Date 09/02/08			J17FV8 Trench 3 Soil Sample Date 09/02/08			J17FV5 Equipment Blank Sample Date 09/02/08		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Volatile Organic Compounds (continued)												
Benzene	5	U	5	5	U	5	6	U	6	4	U	4
Bromodichloromethane	5	U	5	5	U	5	6	U	6	4	U	4
Bromoform	5	U	5	5	U	5	6	U	6	4	U	4
Bromomethane	10	U	10	9	U	9	11	U	11	9	U	9
Carbon disulfide	5	U	5	5	U	5	6	U	6	4	U	4
Carbon tetrachloride	5	U	5	5	U	5	6	U	6	4	U	4
Chlorobenzene	5	U	5	5	U	5	6	U	6	4	U	4
Chloroethane	10	U	10	9	U	9	11	U	11	9	U	9
Chloroform	5	U	5	5	U	5	6	U	6	4	U	4
Chloromethane	10	U	10	9	U	9	11	U	11	9	U	9
cis-1,2-Dichloroethylene	5	U	5	5	U	5	6	U	6	4	U	4
cis-1,3-Dichloropropene	5	U	5	5	U	5	6	U	6	4	U	4
Dibromochloromethane	5	U	5	5	U	5	6	U	6	4	U	4
Ethylbenzene	5	U	5	5	U	5	6	U	6	4	U	4
Methylenechloride	8	B	5	5	B	5	6	B	6	7	B	4
Styrene	5	U	5	5	U	5	6	U	6	4	U	4
Tetrachloroethene	5	U	5	5	U	5	6	U	6	4	U	4
Toluene	5	U	5	5	U	5	6	U	6	4	U	4
trans-1,2-Dichloroethylene	5	U	5	5	U	5	6	U	6	4	U	4
trans-1,3-Dichloropropene	5	U	5	5	U	5	6	U	6	4	U	4
Trichloroethene	5	U	5	5	U	5	6	U	6	4	U	4
Vinyl chloride	10	U	10	9	U	9	11	U	11	9	U	9
Xylenes (total)	5	U	5	5	U	5	6	U	6	4	U	4

Constituent	J178X1 Trip Blank Sample Date 08/28/08		
	µg/kg	Q	PQL
Volatile Organic Compounds			
1,1,1-Trichloroethane	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5
1,1,2-Trichloroethane	5	U	5
1,1-Dichloroethane	5	U	5
1,1-Dichloroethene	5	U	5
1,2-Dichloroethane	5	U	5
1,2-Dichloroethene(Total)	5	U	5
1,2-Dichloropropane	5	U	5
2-Butanone	10	U	10
2-Hexanone	10	U	10
4-Methyl-2-Pentanone	10	U	10
Acetone	10	U	10
Benzene	5	U	5
Bromodichloromethane	5	U	5
Bromoform	5	U	5
Bromomethane	10	U	10
Carbon disulfide	5	U	5
Carbon tetrachloride	5	U	5
Chlorobenzene	5	U	5
Chloroethane	10	U	10
Chloroform	5	U	5
Chloromethane	10	U	10
cis-1,2-Dichloroethylene	5	U	5
cis-1,3-Dichloropropene	5	U	5

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Constituent	J178X1		
	Trip Blank		
	Sample Date 08/28/08		
	µg/kg	Q	PQL
Volatile Organic Compounds			
Dibromochloromethane	5	U	5
Ethylbenzene	5	U	5
Methylenechloride	1	J	5
Styrene	5	U	5
Tetrachloroethene	5	U	5
Toluene	5	U	5
trans-1,2-Dichloroethylene	5	U	5
trans-1,3-Dichloropropene	5	U	5
Trichloroethene	5	U	5
Vinyl chloride	10	U	10
Xylenes (total)	5	U	5

Table B-1. 100-H-3 Confirmatory Data Results. (6 Pages)

Sample Location	HEIS Number	Sample Date	Asbestos Result
Test Trench 3, Tar with suspect felt backing	J17FP5	8/28/08	None detected
Test Trench 3, Plaster with white coating	J17FP6	8/28/08	None detected
Test Trench 3, Tar- brown felt paper layers	J17FP7	8/28/08	None detected