Waste Site Reclassification Form

<u>Date Submitted:</u> 9/30/05 <u>Originator:</u> R. A. Carlson <u>Phone:</u> 373-1440	<u>Operable Unit(s):</u> 100-BC-1 <u>Waste Site ID:</u> 128-B-2 <u>Type of Reclassification Action:</u> <div style="display: flex; justify-content: space-between;"> <div> Rejected Closed Out Interim Closed Out No Action </div> <div style="text-align: center;"> ☐ ☐ ☒ ☐ </div> </div>	<u>Control Number:</u> 2005-038 <u>Lead Agency:</u> EPA
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This form documents agreement among the parties listed below authorizing classification of the subject unit as rejected, closed out, interim closed out, or no action and authorizing backfill of the site, if appropriate. Final removal from the National Priorities List of no action, interim closed out, or closed-out sites will occur at a future date.

Description of current waste site condition:

The 128-B-2 waste site was a burn pit historically used for the disposal of combustible and noncombustible wastes, including paint and solvents, office waste, concrete debris, and metallic debris. This site has been remediated by removing approximately 5,627 bank cubic meters of debris, ash, and contaminated soil to the Environmental Restoration Disposal Facility. Confirmatory sampling, remediation, and verification sampling of this site have been performed in accordance with remedial action objectives and goals established 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), U.S. Environmental Protection Agency, Region 10, Seattle, Washington. The selected action involved (1) sampling the site, (2) remediating the site, (3) demonstrating through verification sampling that cleanup goals have been met, and (4) proposing the site for classification as interim closed out.

Basis for reclassification:

The 128-B-2 Burn Pit has been remediated to meet the remedial action objectives specified in the Remaining Sites ROD. The results of verification sampling demonstrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also showed that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required. The basis for reclassification is described in detail in the *Remaining Sites Verification Package for the 128-B-2, 100-B Burn Pit #2 Waste Site* (attached).

D. C. Smith
DOE-RL Project Manager

NA
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Signature

Date

Signature

Date

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Date

**REMAINING SITES VERIFICATION PACKAGE FOR
THE 128-B-2, 100-B BURN PIT #2 WASTE SITE**

Attachment to Waste Site Reclassification Form 2005-038

October 2005

REMAINING SITES VERIFICATION PACKAGE FOR THE 128-B-2, 100-B BURN PIT #2 WASTE SITE

EXECUTIVE SUMMARY

The 128-B-2 Burn Pit, which is part of the 100-BC-1 Operable Unit, was historically used for the disposal of combustible and noncombustible wastes, including office wastes, paint, chemicals, solvents, and concrete and metallic debris. The site is located east of the northeast corner of the 100-B Area, north of Route 1.

The 128-B-2 Burn Pit waste site was evaluated during March 2003 confirmatory sampling efforts to make a decision as to whether remedial action would be required at the site. The results of a geophysical survey were used to divide the site into three areas. Three test trenches and three test pits were excavated to evaluate the presence of suspect hazardous materials and the extent of impacted soils. A total of 20 focused samples and 4 duplicate samples were collected from suspect hazardous materials and soils and analyzed for contaminants of potential concern.

Multiple contaminants of potential concern were detected at concentrations exceeding direct exposure remedial action goals in samples from trenches 1 and 2, including aroclor-1254, arsenic, lead, uranium-233/234, uranium-238, and radium-226. Asbestos was also identified in samples from all three areas. Based on these results and field observations, it was determined that the 128-B-2 site required remedial action. This action was performed from November 2004 to April 2005 and consisted of the removal and disposal at the Environmental Restoration Disposal Facility of approximately 5,627 bank cubic meters (7,360 bank cubic yards) of material. Remedial actions were performed so as to not preclude any future uses (as bounded by the rural-residential scenario) and to allow unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep).

Following remediation, verification sampling of the excavation and of the footprint of the waste staging area was conducted on June 8, 2005. The results indicated that the waste removal action achieved compliance with the remedial action objectives for the 128-B-2 site. A summary of the cleanup evaluation for the soil results against the applicable criteria is presented in Table ES-1. The results of the verification sampling are used to make reclassification decisions for the 128-B-2 site in accordance with the TPA-MP-14 (DOE-RL 1998) procedure.

In accordance with this evaluation, the verification sampling results support a reclassification of this site to interim closed out. The current site conditions achieve the remedial action objectives and the corresponding remedial action goals established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005b) and 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* (EPA 1999). The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Table ES-1. Summary of Remedial Action Goals for the 128-B-2 Site. (2 Pages)

Regulatory Requirement	Remedial Action Goals	Results	Remedial Action Objectives Attained?
Direct Exposure – Radionuclides	Attain 15 mrem/yr dose rate above background over 1,000 years.	Residual concentrations of radionuclide COCs were detected below statistical background levels.	Yes
Direct Exposure – Nonradionuclides	Attain individual COC/COPC RAGs.	All individual COC/COPC concentrations are below the direct exposure criteria.	Yes
Risk Requirements – Nonradionuclides	Attain a hazard quotient of <1 for all individual noncarcinogens.	All individual hazard quotients are less than 1.	Yes
	Attain a cumulative hazard quotient of <1 for noncarcinogens.	The cumulative hazard quotients for both sampling areas (5.1×10^{-2} and 3.2×10^{-1}) are less than 1.	
	Attain an excess cancer risk of $<1 \times 10^{-6}$ for individual carcinogens.	The excess cancer risk values for individual carcinogens are less than 1×10^{-6} .	
	Attain a cumulative excess cancer risk of $<1 \times 10^{-5}$ for carcinogens.	The total excess cancer risk values for both sampling areas (5.3×10^{-8} and 7.3×10^{-7}) are less than 1×10^{-5} .	
Groundwater/River Protection – Radionuclides	Attain single-COC/COPC groundwater and river protection RAGs.	Residual concentrations of radionuclide COCs were detected below statistical background levels.	Yes
	Attain national primary drinking water standards: 4 mrem/yr (beta/gamma) dose rate to target receptor/organs. ^a		
	Meet drinking water standards for alpha emitters: the most stringent of 15 pCi/L MCL or 1/25th of the derived concentration guides from DOE Order 5400.5. ^b		
	Meet total uranium standard of 30 µg/L (21.2 pCi/L ^c).		

Table ES-1. Summary of Remedial Action Goals for the 128-B-2 Site. (2 Pages)

Regulatory Requirement	Remedial Action Goals	Results	Remedial Action Objectives Attained?
Groundwater/River Protection – Nonradionuclides	Attain individual nonradionuclide groundwater and river cleanup requirements.	Statistical results for chromium, lead, aroclor-1254, 4,4'-DDE, endrin aldehyde, and gamma-chlordane are above groundwater and/or river protection RAGs. However, results of the <i>100 Area Analogous Sites RESRAD Calculations</i> (BHI 2005a) indicate that these constituents will not reach groundwater (and therefore the Columbia River) within 1,000 years. Therefore, their residual concentrations achieve the RAOs for groundwater and river protection.	Yes

^a“National Primary Drinking Water Regulations” (40 *Code of Federal Regulations* 141).

^b*Radiation Protection of the Public and the Environment* (DOE Order 5400.5).

^cBased on the isotopic distribution of uranium in the 100 Areas, the 30 µg/L MCL corresponds to 21.2 pCi/L. Concentration-to-activity calculations are documented in *Calculation of Total Uranium Activity Corresponding to a Maximum Contaminant Level for Total Uranium of 30 Micrograms per Liter in Groundwater* (BHI 2001).

COC = contaminant of concern

COPC = contaminant of potential concern

DDE = dichlorodiphenyldichloroethylene

MCL = maximum contaminant level (drinking water standard)

RAG = remedial action goal

RAO = remedial action objective

RESRAD = RESidual RADioactivity (dose model)

REMAINING SITES VERIFICATION PACKAGE FOR THE 128-B-2, 100-B BURN PIT #2 WASTE SITE

STATEMENT OF PROTECTIVENESS

This report demonstrates that the 128-B-2 Burn Pit waste site meets the objectives for interim closure as established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (RDR/RAWP) (DOE-RL 2005b) and 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). The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

GENERAL SITE INFORMATION AND BACKGROUND

The 128-B-2 Burn Pit, also referred to as 100-B Burn Pit #2, is part of the 100-BC-1 Operable Unit and was historically used for the disposal of combustible and noncombustible waste. The operational use of the 128-B-2 Burn Pit is not completely known, but according to the Waste Information Data System (BHI 2005d), the site is known to have been used from 1948 to 1968 as a burn pit for office and paint wastes, chemicals, and solvents. Landfilled noncombustible material, including concrete and metallic debris, was also discovered during remediation of the site. The presence of garnet sand also suggests that sandblasting activities may have been performed at this site.

The site is located east of the northeast corner of the 100-B Area (Figure 1), at the intersection of two historic road beds north of Route 1. The location of the 128-B-2 site is also indicated on a historic aerial photograph of the 100-B Area that is provided in Appendix A.

CONFIRMATORY SAMPLING ACTIVITIES

The 128-B-2 Burn Pit was evaluated during March 2003 confirmatory sampling efforts to make a decision as to whether remedial action would be required at the site. Based on site visit observations, the geophysical survey information, and the results of confirmatory sampling, a decision was made that remedial action at the site was necessary (BHI 2003b). The following subsections provide additional discussion of the information used to develop the confirmatory sampling design. The results of confirmatory sampling are also summarized to provide support for development of the remedial action strategy and verification sample design.

Figure 1. Location of the 128-B-2 Burn Pit.

Contaminants of Potential Concern for Confirmatory Sampling

The contaminants of potential concern (COPCs) for the 128-B-2 site were identified based on existing historical information for the site. The COPC list identified in the *100 Area Remedial Action Sampling and Analysis Plan* (SAP) (DOE-RL 2005a) includes polychlorinated biphenyls, pesticides, semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPHs), volatile organic compounds (VOCs), asbestos, silver, barium, cadmium, chromium (total), hexavalent chromium, mercury, lead, and selenium. As a result of further evaluation of the site history, arsenic and asbestos were also included as COPCs. Gross alpha, gross beta, and gamma energy analyses were also performed on samples to evaluate the potential presence of radionuclide contaminants.

Confirmatory Sample Design

The geophysical survey results, historical photographs, and site visit information were used to develop a confirmatory sampling design with focused sampling of soil, ash, and debris at the 128-B-2 site. The site was divided into three areas for evaluation, and a total of three test trenches and three test pits were excavated. The trench and test pit locations are shown with the interpreted results of the geophysical survey in Figure 2. Confirmatory sampling was performed on March 26 through 28, 2003, as described in the *Waste Site Evaluation for 128-B-2 Burn Pit* (BHI 2003b) and documented by the sampler in the field logbook (BHI 2003a). A summary of the field observations and confirmatory sampling activities for each of the three areas follows.

Area 1 – was identified using historical photographs and geophysical survey data as the most probable location of the former burn pit. Surface material in this area included a very fine sand-like purple material with chunks of rusty material up to 0.003 m (0.125 in.) in diameter. One trench was excavated in area 1, as shown in Figure 2, to a depth of approximately 1.5 m (5 ft) below ground surface (bgs), where native soil consisting of caliche-coated gravel cobbles with basaltic sand was encountered. Excavation at this location encountered ash, an approximately 110-L (30-gal) corrugated garbage can, a 19-L (5-gal) bucket of suspect tar, transite, and miscellaneous debris, as well as partially burned asbestos-containing pipe insulation material, tar paper, and wood. Radiation levels above background were detected in a sandy material with a graphite appearance that was also encountered during excavation. No elevated levels of VOCs were detected by an organic vapor monitor during field activities, and samples were therefore not submitted for volatile organic analysis. A summary of the sample types collected from area 1 and laboratory analyses performed is provided in Table 1.

Figure 2. Interpreted Pre-Remediation Geophysical Survey Results and Confirmatory Sample Locations for the 128-B-2 Burn Pit.

Table 1. Confirmatory Sampling Summary for the 128-B-2 Burn Pit. (2 Pages)

Location	Sample Type	Sample No.	Depth ^a	Sample Analyses
Area 1				
Trench 1	Ash	J00K63	0.15 m (6 in.)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta
		J00K67	0.15 m (6 in.)	Asbestos
	Ash; duplicate of J00K63	J00K64	0.15 m (6 in.)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta
	Ash; duplicate of J00K67	J00K68	0.15 m (6 in.)	Asbestos
	Native soil	J00K58	1.4 to 1.5 m (4.5 to 5 ft)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, hexavalent chromium, GEA, gross alpha, gross beta
		J00K46	1.4 to 1.5 m (4.5 to 5 ft)	Asbestos
Equipment blank	Silica sand; linked to J00K58	J00K62	N/A	SVOA, ICP metals, mercury, GEA
Trench 1	Soil; graphite-type sandy material	J00K95	0.20 m (8 in.)	SVOA, pesticides, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta, IC anions
		J00K75	0.20 m (8 in.)	Asbestos
	Light purple sand with chunks of rusty material	J00K94	Surface	ICP metals, mercury, metals (TCLP), mercury (TCLP), pesticides, PCB, SVOA, IC anions
Area 2				
Trench 2	Ash	J00K65	0.46 m (1.5 ft)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta
		J00K69	0.46 m (1.5 ft)	Asbestos
	Ash; duplicate of J00K65	J00K66	0.46 m (1.5 ft)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta
	Ash; duplicate of J00K69	J00K70	0.46 m (1.5 ft)	Asbestos
	Native soil	J00K59	1.8 to 3 m (6 to 10 ft)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, hexavalent chromium, GEA, gross alpha, gross beta
		J00K47	1.8 to 3 m (6 to 10 ft)	Asbestos

Table 1. Confirmatory Sampling Summary for the 128-B-2 Burn Pit. (2 Pages)

Location	Sample Type	Sample No.	Depth ^a	Sample Analyses
Trench 2 (cont.)	Soil; reddish-brown sand material	J00K96	0.9 to 1.2 m (3 to 4 ft)	SVOA, pesticides, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta, IC anions
		J00K76	0.9 to 1.2 m (3 to 4 ft)	Asbestos
Trench 3	Native soil	J00K60	1.8 to 2.1 m (6 to 7 ft)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, hexavalent chromium, GEA, gross alpha, gross beta
		J00K48	1.8 to 2.1 m (6 to 7 ft)	Asbestos
Area 3				
Test pit 1	Soil	J00K97	0.05 to 0.10 m (2 to 4 in.)	SVOA, pesticides, PCB, ICP metals, mercury, metals (TCLP), mercury (TCLP), GEA, gross alpha, gross beta, IC anions
		J00K77	0.05 to 0.10 m (2 to 4 in.)	Asbestos
	Native soil	J00K61	3.4 to 3.7 m (11 to 12 ft)	SVOA, pesticides, TPH, PCB, ICP metals, mercury, hexavalent chromium, GEA, gross alpha, gross beta
		J00K49	3.4 to 3.7 m (11 to 12 ft)	Asbestos

^a Field estimate of depth below grade.

GEA = gamma energy analysis

IC = ion chromatography

ICP = inductively coupled plasma

N/A = not applicable

PCB = polychlorinated biphenyl

SVOA = semivolatile organic analysis

TCLP = toxicity characteristic leaching procedure

TPH = total petroleum hydrocarbon

Area 2 – was identified using historical photographs and geophysical survey data as the southern area of debris at the 128-B-2 site. As shown in Figure 2, two trenches were excavated in area 2 to investigate subsurface geophysical anomalies. Test trench 2 was excavated to native soil along its length, encountered from 1.8 to 3 m (6 to 10 ft) bgs. Native soils consisting of gravel pebbles and cobbles with silty sands were encountered at the shallower part of the stated range at the eastern end of the trench. The center portion of the trench was excavated to a depth of 3 m (10 ft), where predominantly silty native soils were encountered. Native soils were identified at more shallow depths in the final lateral 4.6 m (15 ft) at the western end of the trench, consisting of cobbles with coarse basaltic sands. Foreign material encountered during excavation consisted of a 0.025- to 0.3-m (1- to 12-in.)-thick shallow ash layer, miscellaneous unburned debris, copper wire, tin foil, plastic pipe, reddish-brown-stained sandy soil, very fine purple/pink sand-like material, plastic bags, cyclone fencing, barbed wire, transite, suspect communication wiring, buckets, a corrugated garbage can, metal debris, concrete debris, and a concrete slab.

Radiation levels slightly above background were detected by field instruments in the ash layer, but not in the remainder of the excavation. Test trench 3 was excavated, as shown in Figure 2, to 1.8 to 2 m (6 to 7 ft) bgs, where native soils consisting of cobbles with sandy silt were encountered. Excavation at this location encountered a thin (0.025- to 0.04-m [1- to 1.5-in.]-thick) layer of ash, very fine purple sand-like material, metal pipe, and rotted wood. Radiation levels slightly above background were detected by field instruments in the purple sand-like material. No elevated levels of VOCs were detected by an organic vapor monitor during field activities in area 2, and samples were therefore not submitted for volatile organic analysis. A summary of the sample types collected from area 2 and laboratory analyses performed is provided in Table 1.

Area 3 – was identified as the portion of the 128-B-2 site not encompassed by the other two areas. The geophysical survey identified only isolated, sparse debris in this area, and three test pits were excavated to confirm this. Test pit 1, located as shown in Figure 2, was excavated at an area of formerly identified surface subsidence. At the time of sampling, stressed vegetation was also identified at the location. Excavation at this location uncovered a roll of woven wire, rotted wood, metallic debris, and asbestos-containing pipe insulation. Native cobbles with silt were encountered at approximately 3.7 m (12 ft) bgs. Due to the presence of stressed vegetation, a sample of near-surface soil was collected for analysis. Test pit 2, located as shown in Figure 2, was excavated at an area of isolated geophysical anomalies. This test pit was excavated to 2.4 m (8 ft) bgs, but no foreign material was discovered and no samples were collected. Test pit 3, located as shown in Figure 2, was excavated at an area of isolated geophysical anomalies. Excavation at this location encountered red tile bricks, broken red tile pipe, a metal fence post, barbed wire, and concrete debris before reaching native soil at 2.4 m (8 ft) bgs. No samples were collected from this excavation. No elevated levels of radiation or VOCs were detected during excavations in area 3. A summary of the samples collected from area 3 and laboratory analyses performed is provided in Table 1.

Confirmatory Sample Results

Confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency (DOE-RL 2005a), and the results were compared against the cleanup criteria specified in the RDR/RAWP (DOE-RL 2005b). The laboratory results are stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System and are shown in Appendix B, including laboratory results for additional waste characterization analyses.

Multiple COPCs exceeding direct exposure remedial action goals (RAGs) or lookup values were identified in samples from trenches 1 and 2, with maximum detections for aroclor-1254 (2.8 mg/kg), arsenic (120 mg/kg), lead (2,980 mg/kg), uranium-233/234 (2.5 pCi/g), uranium-238 (2.53 pCi/g), and radium-226 (1.88 mg/kg). Barium, cadmium, chromium, mercury, selenium, TPH, and the pesticides dieldrin, 4,4'-dichlorodiphenyldichloroethylene (DDE), and 4,4'-dichlorodiphenyltrichloroethane (DDT) were also detected in samples at concentrations exceeding the RAGs for protection of groundwater and the Columbia River. However, based on the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005a), these contaminants are not predicted to reach groundwater (and therefore the Columbia River) within a 1,000-year time frame, with the exception of TPH. Asbestos was also identified in samples from all three areas.

Based on these results and field observations, it was determined that the 128-B-2 site required remedial action, with aroclor-1254, arsenic, lead, uranium-233/234, uranium-238, radium-226, asbestos, and TPH retained as contaminants of concern (COCs) for the site.

REMEDIAL ACTION SUMMARY

Remedial action of the 128-B-2 site was initiated in November 2004 and continued through April 2005, with 5,627 bank cubic meters (7,360 bank cubic yards) of material excavated and disposed at the Environmental Restoration Disposal Facility (ERDF). Scrap metal, wood debris, tar paper, copper wire, plastic pipe, colored sand (believed to be garnet or other sandblasting abrasive), concrete rubble, cyclone fencing, barbed wire, bricks, vitrified clay pipe tiles, fence posts, potentially contaminated soil, and other miscellaneous materials were removed. Excavated materials were sorted and segregated based on visual inspection and site location and staged onsite for transport to the ERDF.

The site was excavated to a maximum depth of 3.5 m (11.5 ft) at areas of buried foreign material. Surficial soils surrounding the primary excavations were also removed to a depth of 0.30 to 0.45 m (1 to 1.5 ft) due to the presence of visible surficial foreign material. The pre-excavation topographic survey for the 128-B-2 site is provided in Figure 3. Figure 4 shows the post-excavation topographic waste site survey, including the footprints of waste staging piles.

During the remedial action, in-process samples of soil and suspect waste materials were collected as needed to support waste characterization and evaluation of the waste profile for disposal of excavated material. Media sampled included a light tan greasy paste in an approximately 11-L (3-gal) metal can (packaged in drum # 128B-04-0010), a dark brown semi-elastic substance in a deteriorated 19-L (5-gal) container (packaged in drum # 128B-04-0006), suspect dried paint (packaged in drums # 128B-04-0015 and # 128B-04-0009), oil-soaked material in an approximately 4-L (1-gal) metal can (packaged in drum # 128B-04-0011), suspect axle grease in a 19-L (5-gal) metal can (packaged in drum # 128B-04-0014), and suspect tar in a 19-L (5-gal) metal can (packaged in drum # 128B-04-0007). The analytical results for waste characterization samples are provided in Appendix B.

VERIFICATION SAMPLING ACTIVITIES

Verification sampling for the 128-B-2 site was performed on June 8, 2005, to collect data to make a decision as to whether the remedial action objectives have been reached. Based on statistical evaluation of the resulting data, the residual contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP (DOE-RL 2005b) and the Remaining Sites ROD (EPA 1999). The following subsections provide additional discussion of the information used to develop the verification sampling design. The results of verification sampling are also summarized to support interim closure of the site.

Figure 3. Pre-Excavation Civil Survey of the 128-B-2 Site.

Figure 4. Post-Excavation Civil Survey of the 128-B-2 Site.

Contaminants of Concern and Contaminants of Potential Concern

The results of confirmatory and waste characterization sampling were used to determine the COCs and COPCs for verification sampling. The COCs, listed in Table 2, include the constituents that were detected above direct exposure RAGs or dose-equivalence lookup values or above RAGs for the protection of groundwater and the Columbia River and that have the potential to migrate to groundwater (and therefore the Columbia River) within a 1,000-year time frame based on the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005a).

Table 2. Contaminants of Concern and Contaminants of Potential Concern for Verification Sampling at the 128-B-2 Site.

Contaminants of Concern	Contaminants of Potential Concern
Aroclor-1254	Pesticides
Arsenic	PCBs
Asbestos	ICP metals
Lead	Mercury
Radium-226	SVOCs
Total petroleum hydrocarbons	VOCs
Uranium-233/234	
Uranium-238	

ICP = inductively coupled plasma

PCB = polychlorinated biphenyl

SVOC = semivolatile organic compound

VOC = volatile organic compound

Those metals and pesticides that were detected above groundwater and/or river protection RAGs during confirmatory sampling, but which are not predicted to migrate to groundwater based on the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005a), were carried forward as COPCs for verification sampling. Further, because the inductively coupled plasma metals analysis results for confirmatory samples reported results only for arsenic, barium, cadmium, chromium, lead, selenium, and silver, the additional metals from the expanded list of inductively coupled plasma metals analyses (antimony, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, vanadium, and zinc) were also considered as COPCs. Pesticides and SVOCs were identified as COPCs due to practical quantitation limits for multiple undetected target SVOCs being elevated above applicable RAGs in confirmatory sampling. Two VOCs (toluene and 1,1,2,2-tetrachloroethane) were also tentatively identified during semivolatile organic analysis of confirmatory samples. Because of the carcinogenic risk associated with 1,1,2,2-tetrachloroethane, VOCs were also added to the COPC list for verification sampling.

Verification Sampling Design

Based on the *Work Instruction for Verification Sampling of the 128-B-2 Burn Pit, 100-B Burn Pit #2* (BHI 2005d), statistical sampling was required for this site because the spatial distribution of potential residual soil contamination over the study area (site) was uncertain. The decision rule for demonstrating compliance with the cleanup criteria requires comparison of the true population mean of COCs/COPCs, as estimated by the upper 95% confidence limit on the sample mean, with the cleanup level. The Washington State Department of Ecology publication *Guidance on Sampling and Data Analysis Methods* (Ecology 1995) recommends that systematic sampling with sample locations distributed over the entire study area be used. Therefore, sampling locations were distributed over the entire remediation footprint on a grid basis in an effort to determine the residual presence of contamination.

Visual Sampling Plan¹ (VSP) was used as a tool to develop the statistical sampling design for the 128-B-2 site. The post-excavation topographic survey drawing (Figure 4) was used to divide the 128-B-2 site into two sampling areas for purposes of verification sampling. Area 2 was delineated based on the surveyed limits of material removal, and area 1 comprises the remaining portion of the waste staging area as shown in Figure 5. These two areas were delineated in VSP and used as the basis for location of a systematic grid for verification soil sample collection. A total of 22 soil samples (11 per area) were collected on random-start triangular grids. Additional details concerning the use of VSP to develop the statistical sampling design are provided in the 128-B-2 waste site work instruction (BHI 2005d).

Figure 5 provides a map of the 22 soil sample locations that were determined for verification sampling. The soil sample locations were surveyed and staked prior to sample collection (BHI 2005c). All sampling was performed in accordance with BHI-EE-01, *Environmental Investigations Procedures*. One soil sample was collected at each location by collecting 25 aliquots of soil from within approximately 1 m (3.3 ft) of the staked location and combining the aliquots into 1 sample. Field quality control (QC) samples consisted of 2 duplicate samples, 1 equipment blank, and 1 trip blank. Duplicate soil samples were collected at locations 6 and 12, one equipment blank sample consisting of clean silica sand was collected, and one trip blank consisting of deionized water accompanied samples. A summary of the samples collected during verification sampling and the analyses performed is presented in Table 3. All samples were requested for full protocol laboratory analysis.

¹ Visual Sampling Plan is a site map-based user-interface program that may be downloaded at <http://dgo.pnl.gov>.

Figure 5. Verification Sampling Areas and Locations for the 128-B-2 Site.

Table 3. Verification Sample Summary Table for the 128-B-2 Burn Pit. (2 Pages)

Sample Location	Sample Media	Sample Coordinates	Depth	HEIS Number	Sample Analysis
1	Soil	N 145149.4 E 566623.3	Surface	J03CC9	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03C94	Soil asbestos
2	Soil	N 145145.1 E 566590.6	Surface	J03CD0	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03C95	Soil asbestos
3	Soil	N 145175.5 E 566603.3	Surface	J03CD1	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03C96	Soil asbestos
4	Soil	N 145205.9 E 566615.9	Surface	J03CD2	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03C97	Soil asbestos
5	Soil	N 145236.4 E 566628.5	Surface	J03CD3	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03C98	Soil asbestos
6	Soil	N 145140.9 E 566558.0	Surface	J03CD4	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03C99	Soil asbestos
7	Soil	N 145171.3 E 566570.6	Surface	J03CD5	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB0	Soil asbestos
8	Soil	N 145201.7 E 566583.2	Surface	J03CD6	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB1	Soil asbestos
9	Soil	N 145232.1 E 566595.9	Surface	J03CD7	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB2	Soil asbestos
10	Soil	N 145197.4 E 566550.6	Surface	J03CD8	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB3	Soil asbestos
11	Soil	N 145227.8 E 566563.2	Surface	J03CD9	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB4	Soil asbestos
12	Soil	N 145141.7 E 566676.8	Surface	J03CF0	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB5	Soil asbestos
13	Soil	N 145156.8 E 566657.5	Surface	J03CF1	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB6	Soil asbestos
14	Soil	N 145166.0 E 566680.2	Surface	J03CF2	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium

Table 3. Verification Sample Summary Table for the 128-B-2 Burn Pit. (2 Pages)

Sample Location	Sample Media	Sample Coordinates	Depth	HEIS Number	Sample Analysis
				J03CB7	Soil asbestos
15	Soil	N 145172.0 E 566638.1	Surface	J03CF3	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB8	Soil asbestos
16	Soil	N 145181.2 E 566660.9	Surface	J03CF4	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CB9	Soil asbestos
17	Soil	N 145190.4 E 566683.7	Surface	J03CF5	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC0	Soil asbestos
18	Soil	N 145196.3 E 566641.5	Surface	J03CF6	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC1	Soil asbestos
19	Soil	N 145205.5 E 566664.3	Surface	J03CF7	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC2	Soil asbestos
20	Soil	N 145214.7 E 566687.1	Surface	J03CF8	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC3	Soil asbestos
21	Soil	N 145220.7 E 566645.0	Surface	J03CF9	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC4	Soil asbestos
22	Soil	N 145229.8 E 566667.7	Surface	J03CH0	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC5	Soil asbestos
Duplicate at location 6	Soil	N 145140.9 E 566558.0	Surface	J03CH1	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC6	Soil asbestos
Duplicate at location 12	Soil	N 145141.7 E 566676.8	Surface	J03CH2	ICP metals, mercury, PCB, pesticides, TPH, SVOA, VOA, GEA, and isotopic uranium
				J03CC7	Soil asbestos
Equipment blank	Silica sand	NA	NA	J03CC8	ICP metals, mercury, SVOA
Trip blank	DI Water	NA	NA	J03CK0	VOA

Source: *Remaining Site Field Sampling*, Logbook EL-1173-5 (BHI 2005c).

DI = deionized

GEA = gamma energy analysis

HEIS = Hanford Environmental Information System

ICP = inductively coupled plasma

NA = not applicable

PCB = polychlorinated biphenyl

SVOA = semivolatile organic analysis

TPH = total petroleum hydrocarbon

VOA = volatile organic analysis

Verification Sampling Results

Verification samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The 95% upper confidence limit on the true population mean for residual concentrations of COCs and COPCs was calculated as specified by the RDR/RAWP (DOE-RL 2005b), with calculations provided in Appendix C. When a COC or COPC was detected in fewer than 50% of the verification samples collected, the maximum detected value was used for comparison against RAGs. Comparisons of the statistical results for COCs and COPCs and the site RAGs for the excavation and the waste staging areas are summarized in Tables 4a and 4b, respectively. Contaminants that were not detected by laboratory analysis are excluded from these tables. Potassium-40, radium-228, thorium-228, and thorium-232 were detected in verification samples, but are not considered within Table 4a or 4b. These isotopes are naturally occurring and were detected at levels below statistical background activities (based on an assumption of secular equilibrium, the background activities for radium-228 and thorium-228 are equal to the statistical background activity of 1.32 pCi/g for thorium-232 provided in DOE-RL [1996]). The laboratory-reported data results for all constituents are stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System and are presented in Appendix C.

Table 4a. Comparison of 95% UCL and Maximum Soil Values to Action Levels at the 128-B-2 Site, Excavated Area. (2 Pages)

COC	Result (pCi/g)		Generic Site Lookup Values (pCi/g)			Does the Result Exceed RAGs?	Does the Result Pass RESRAD Modeling?
	95% UCL ^a	Maximum	Shallow Zone Lookup Values ^b	Groundwater Protection Lookup Values	River Protection Lookup Values		
Radium-226	0.461 (<BG)	--	1.04	NV	NV	No	--
Uranium-233/234	0.658 (<BG)	--	1.1 ^c	1.1 ^c	1.1 ^c	No	--
Uranium-238	0.792 (<BG)	--	1.1 ^c	1.1 ^c	1.1 ^c	No	--
COC/COPC	Result (mg/kg)		Remedial Action Goals (mg/kg)			Does the Result Exceed RAGs?	Does the Result Pass RESRAD Modeling?
	95% UCL ^a	Maximum	Direct Exposure	Soil Concentration for Groundwater Protection	Soil Concentration for River Protection		
Arsenic	--	3.1 (<BG)	20 ^d	20 ^d	20 ^d	No	--
Barium	59.9 (<BG)	--	5,600 ^e	132 ^f	400 ^g	No	--
Beryllium	1.11 (<BG)	--	10.4 ^h	1.51 ^f	1.51 ^f	No	--
Boron ⁱ	--	4.9	16,000 ^e	320	-- ^j	No	--
Chromium	10.7 (<BG)	--	120,000 ^e	18.5 ^f	18.5 ^f	No	--
Cobalt	8.9 (<BG)	--	1,600 ^e	32	-- ^j	No	--

Table 4a. Comparison of 95% UCL and Maximum Soil Values to Action Levels at the 128-B-2 Site, Excavated Area. (2 Pages)

COC/COPC	Result (mg/kg)		Remedial Action Goals (mg/kg)			Does the Result Exceed RAGs?	Does the Result Pass RESRAD Modeling ?
	95% UCL ^a	Maximum	Direct Exposure	Soil Concentration for Groundwater Protection	Soil Concentration for River Protection		
Copper	16.6 (<BG)	--	2,960 ^e	59.2	22 ^f	No	--
Lead	11.3	--	353 ^k	10.2 ^f	10.2 ^f	Yes	Yes ^l
Manganese	362 (<BG)	--	11,200 ^e	512 ^f	-- ^j	No	--
Molybdenum ⁱ	--	1.7	400 ^e	8	-- ^j	No	--
Nickel	12.2 (<BG)	--	1,600 ^e	19.1 ^f	27.4	No	--
Vanadium	52.9 (<BG)	--	560 ^e	85.1 ^f	-- ^j	No	--
Zinc	47.4 (<BG)	--	24,000 ^e	480	67.8 ^f	No	--
Aroclor-1254	--	0.022	0.5 ^m	0.017 ⁿ	0.017 ⁿ	Yes	Yes ^l
Bis(2-ethylhexyl) phthalate	--	0.62	71.4 ^m	0.6	0.36	Yes	Yes ^l
Di-n-butylphthalate	--	0.018	8,000 ^e	160	540	No	--
Toluene	--	0.004	16,000 ^e	100	200	No	--

^a As determined by the 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations (BHI 2005b).

^b Activity corresponding to a single-radionuclide 15 mrem/yr exposure as calculated using a generic RESRAD model (DOE-RL 2005b).

^c The calculated RAG is below the Hanford Site-specific soil background concentration. The value presented is the Hanford Site-specific soil background concentration.

^d The cleanup value of 20 mg/kg has been agreed to by Tri-Party project managers. The basis for 20 mg/kg is provided in Section 2.1.2.1 of the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2005b).

^e Noncarcinogenic cleanup level calculated from WAC 173-340-740(3), Method B, 1996.

^f Where cleanup levels are less than background, cleanup levels default to background (WAC 173-340-700[4][d], 1996).

^g Value based on 100 times MCL times 2 (groundwater to river DAF).

^h Carcinogenic cleanup level calculated based on the inhalation exposure pathway (WAC 173-340-750[3], 1996).

ⁱ No Hanford Site-specific or Washington State background value available.

^j No cleanup level is available from the Ecology Cleanup Levels and Risk Calculations tables, and no toxicity values are available to calculate cleanup levels (Ecology 2001).

^k A WAC 173-340-740(3) (1996) value for lead is not available. This value is based on the Guidance Manual for the Integrated Exposure Update Biokinetic Model for Lead in Children (EPA 1994).

^l Based on the 100 Area Analogous Sites RESRAD Calculations (BHI 2005a), with the groundwater table elevation of 120 m and a clean zone extending from groundwater to an elevation of 141 m.

^m Carcinogenic cleanup level calculated per WAC 173-340-740(3), Method B, 1996.

ⁿ Where cleanup levels are less than RDL, cleanup levels default to the RDL (WAC 173-340-707[2], 1996).

-- = not applicable

BG = background

COC = contaminant of concern

COPC = contaminant of potential concern

DAF = dilution attenuation factor

MCL = maximum contaminant level

NV = no value

RAG = remedial action goal

RDL = required detection limit

RESRAD = RESidual RADioactivity (dose model)

UCL = upper confidence limit

WAC = Washington Administrative Code

Table 4b. Comparison of 95% UCL and Maximum Soil Values to Action Levels at the 128-B-2 Site, Staging Area. (2 Pages)

COC	Result (pCi/g)		Generic Site Lookup Values (pCi/g)			Does the Result Exceed RAGs?	Does the Result Pass RESRAD Modeling?
	95% UCL ^a	Maximum	Shallow Zone Lookup Values ^b	Groundwater Protection Lookup Values	River Protection Lookup Values		
Cesium-137	0.14	--	6.2	1,465	1,465	No	--
Radium-226	0.603 (<BG)	--	1.04	NV	NV	No	--
Uranium-233/234	0.753 (<BG)	--	1.1 ^c	1.1 ^c	1.1 ^c	No	--
Uranium-238	0.562 (<BG)	--	1.1 ^c	1.1 ^c	1.1 ^c	No	--
COC/COPC	Result (mg/kg)		Remedial Action Goals (mg/kg)			Does the Result Exceed RAGs?	Does the Result Pass RESRAD Modeling?
	95% UCL ^a	Maximum	Direct Exposure	Soil Concentration for Groundwater Protection	Soil Concentration for River Protection		
Arsenic	--	4.3 (<BG)	20 ^d	20 ^d	20 ^d	No	--
Barium	80.7 (<BG)	--	5,600 ^e	132 ^f	400 ^g	No	--
Beryllium	0.74 (<BG)	--	10.4 ^h	1.51 ^f	1.51 ^f	No	--
Boron ⁱ	2.9	--	16,000 ^e	320	-- ^j	No	--
Cadmium ^k		0.19 (<BG)	13.9 ^h	0.81 ^f	0.81 ^f	No	--
Chromium	18.9	--	120,000 ^e	18.5 ^f	18.5 ^f	Yes	Yes ^l
Cobalt	7.6 (<BG)	--	1,600 ^e	32	-- ^j	No	--
Copper	11.9 (<BG)	--	2,960 ^e	59.2	22 ^f	No	--
Lead	33.5	--	353 ^m	10.2 ^f	10.2 ^f	Yes	Yes ^l
Manganese	367 (<BG)	--	11,200 ^e	512 ^f	-- ^j	No	--
Mercury		0.03 (<BG)	24 ^e	0.33 ^f	0.33 ^f	No	--
Molybdenum ⁱ	--	1.3	400 ^e	8	-- ^j	No	--
Nickel	10.9 (<BG)	--	1,600 ^e	19.1 ^f	27.4	No	--
Vanadium	39.1 (<BG)	--	560 ^e	85.1 ^f	-- ^j	No	--
Zinc	44.5 (<BG)	--	24,000 ^e	480	67.8 ^f	No	--
Aroclor-1254	--	0.36	0.5 ⁿ	0.017 ^o	0.017 ^o	Yes	Yes ^l
Butylbenzylphthalate	--	0.017	16,000 ^e	320	250	No	--
Fluoranthene	--	0.022	3,200 ^e	64	18.0	No	--
Phenol	--	0.023	24,000 ^e	960	4,200	No	--
Pyrene	--	0.031	2,400 ^e	48	192	No	--
4,4'-DDE	--	0.016	2.94 ⁿ	0.0257	0.005 ^o	Yes	Yes ^l

Table 4b. Comparison of 95% UCL and Maximum Soil Values to Action Levels at the 128-B-2 Site, Staging Area. (2 Pages)

COC/COPC	Result (mg/kg)		Remedial Action Goals (mg/kg)			Does the Result Exceed RAGs?	Does the Result Pass RESRAD Modeling ?
	95% UCL ^a	Maximum	Direct Exposure	Soil Concentration for Groundwater Protection	Soil Concentration for River Protection		
Endrin aldehyde	--	0.007	24 ^e	0.2	0.003 ^o	Yes	Yes ^l
Gamma-chlordane	--	0.024	2.86 ⁿ	0.02 ^o	0.02 ^o	Yes	Yes ^l
Toluene	--	0.003	16,000 ^e	100	200	No	--

^a As determined by the *128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations* (BHI 2005b).

^b Activity corresponding to a single-radionuclide 15 mrem/yr exposure as calculated using a generic RESRAD model (DOE-RL 2005b).

^c The calculated RAG is below the Hanford Site-specific soil background concentration. The value presented is the Hanford Site-specific soil background concentration.

^d The cleanup value of 20 mg/kg has been agreed to by Tri-Party project managers. The basis for 20 mg/kg is provided in Section 2.1.2.1 of the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005b).

^e Noncarcinogenic cleanup level calculated from WAC 173-340-740(3), Method B, 1996.

^f Where cleanup levels are less than background, cleanup levels default to background (WAC 173-340-700[4][d], 1996).

^g Value based on 100 times MCL times 2 (groundwater to river DAF).

^h Carcinogenic cleanup level calculated based on the inhalation exposure pathway (WAC 173-340-750[3], 1996).

ⁱ No Hanford Site-specific or Washington State background value available.

^j No cleanup level is available from the Ecology Cleanup Levels and Risk Calculations tables, and no toxicity values are available to calculate cleanup levels (Ecology 2001).

^k Hanford Site-specific background is not available; not evaluated during background study. Value used is from *Natural Background Soil Metals Concentrations in Washington State* (Ecology 1994).

^l Based on the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005a), with the groundwater table elevation of 120 m and a clean zone extending from groundwater to an elevation of 141 m.

^m A WAC 173-340-740(3) (1996) value for lead is not available. This value is based on the *Guidance Manual for the Integrated Exposure Update Biokinetic Model for Lead in Children* (EPA 1994).

ⁿ Carcinogenic cleanup level calculated per WAC 173-340-740(3), Method B, 1996.

^o Where cleanup levels are less than the RDL, cleanup levels default to the RDL (WAC 173-340-707[2], 1996).

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DDE = 4,4'-dichlorodiphenyldichloroethylene

MCL = maximum contaminant level

NV = no value

RAG = remedial action goal

RDL = required detection limit

RESRAD = RESidual RADioactivity (dose model)

UCL = upper confidence limit

WAC = *Washington Administrative Code*

DATA EVALUATION

Chromium, lead, aroclor-1254, DDE, endrin aldehyde, gamma-chlordane, and bis(2-ethylhexyl)phthalate were quantified at levels exceeding applicable RAGs for the protection of groundwater and/or the Columbia River. However, results of the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005a) indicate that none of these contaminants will reach groundwater (and therefore the Columbia River) within 1,000 years. Asbestos was not detected above trace levels in verification samples (Appendix C).

Nonradionuclide risk requirements for the 128-B-2 site include an individual hazard quotient of less than 1.0, a cumulative hazard quotient of less than 1.0, an individual contaminant carcinogenic risk of less than 1×10^{-6} , and a cumulative carcinogenic risk of less than 1×10^{-5} . These risk values were not calculated for constituents that were either not detected or were detected at concentrations below Hanford Site or Washington State background values. All individual hazard quotients for noncarcinogenic constituents were less than 1.0 (Appendix D). The cumulative hazard quotients for those noncarcinogenic constituents above background or detection levels are 5.1×10^{-2} for the excavation area and 3.2×10^{-1} for the waste staging area. The individual carcinogenic risk values for carcinogenic constituents above background or detection levels are all below 1×10^{-6} . The cumulative carcinogenic risk values for the site are 5.3×10^{-8} for the excavation area and 7.3×10^{-7} for the waste staging area, both of which are below 1×10^{-5} .

When using a statistical sampling approach, a requirement for nonradionuclides is the *Washington Administrative Code* 173-340-740(7)(e) three-part test. All COCs for the 128-B-2 site pass the three-part test in comparison against direct exposure RAGs. Residual concentrations of chromium in the waste staging area and lead in both areas were found to fail one or more parts when compared against groundwater and/or river protection RAGs (BHI 2005b). However, results of the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005a) indicate that neither of these contaminants will reach groundwater (and therefore the Columbia River) within 1,000 years.

DATA QUALITY ASSESSMENT

A data quality assessment (DQA) review was performed to compare the verification sampling approach and analytical and field logbook data with the sampling and data requirements specified by the project objectives. This review involves evaluation of the data to determine if they are of the right type, quality, and quantity to support the intended use (i.e., closeout decisions [EPA 2000]). The assessment review completes the data life cycle (i.e., planning, implementation, and assessment) that was initiated by the data process.

This DQA review was performed in accordance with BHI-EE-01, *Environmental Investigations Procedures*. Specific data quality objectives for the site are found in the SAP (DOE-RL 2005a). To ensure quality data sets, the SAP data quality assurance requirements as well as the data validation procedures for chemical analyses (BHI 2000a) and radiochemical analyses (BHI 2000b) are followed, where appropriate. The verification data set, with the exception of the asbestos sample delivery groups, were validated to Level C by third-party validation.

All samples were collected and analyzed per the sampling design (BHI 2005c, 2005d), with the exception of the hexavalent chromium analyses. The 128-B-2 verification sampling work instruction (BHI 2005d) identified hexavalent chromium as a COPC, but hexavalent chromium analysis was inadvertently excluded from the laboratory analyses performed on the verification samples. The 128-B-2 Burn Pit was a remote site used for the disposal of dry solid waste and is not associated with any reactor cooling water supply or effluent sources. Further, hexavalent chromium analysis was performed on the confirmatory samples taken from underlying soils at the site; no hexavalent chromium was detected in these samples (samples J00K58, J00K59, J00K60, and J00K61 [Appendix B]).

In the SVOC analysis, the common laboratory contaminant bis(2-ethylhexyl)phthalate was seen in all samples and the method blank. Except for sample J03CH2, the results were below the required quantitation limit (RQL) and are attributed to laboratory contamination. Third-party validation qualified all bis(2-ethylhexyl)phthalate results as nondetected and raised the sample results to the RQL, except for sample J03CH2. Similarly, results for the common laboratory contaminant di-n-butylphthalate in samples J03CC9, J03CD0, J03CD1, J03CD2, J03CD3, J03CD4, J03CD5, J03CD6, and J03CD7 were also qualified as nondetected at the RQL. Hexachloroethane, nitrobenzene, isophorone, 2-nitrophenol, 1,2,4-trichlorobenzene, 2-methylnaphthalene, 2,4-dinitrophenol, 2,4-dimethylphenol, acenaphthylene, 4-nitroaniline, n-nitrosodiphenylamine, carbazole, and indeno(1,2,3-cd)pyrene results in samples J03CC9, J03CD0, J03CD1, J03CD2, J03CD3, J03CD4, J03CD5, J03CD6, and J03CD7 were qualified as estimates due to matrix spike (MS)/matrix spike duplicate (MSD) and/or laboratory control spike recoveries below QC limits. Hexachlorocyclopentadiene results in samples J03CC8, J03CF9, J03CH0, J03CH1, and J03CH2 were qualified as estimates due to MS/MSD recoveries below QC limits. Isophorone, 2,4-dimethylphenol, 1,2,4-trichlorobenzene, 4-chloro-3-methylphenol, 2-methylnaphthalene, and 2,4-dinitrophenol results in samples J03CC8, J03CD8, J03CD9, J03CF0, J03CF1, J03CF2, J03CF3, J03CF4, J03CF5, J03CF6, J03CF7, J03CF8, J03CF9, J03CH0, J03CH1, and J03CH2 were qualified as estimates due to laboratory control spike recoveries below QC limits. Hexachlorocyclopentadiene results in samples J03CC8, J03CD8, J03CD9, J03CF0, J03CF1, J03CF2, J03CF3, J03CF4, J03CF5, J03CF6, J03CF7, J03CF8, J03CF9, J03CH0, J03CH1, and J03CH2 and 2,4-dinitrophenol results in samples J03CC9, J03CD0, J03CD1, J03CD2, J03CD3, J03CD4, J03CD5, J03CD6, and J03CD7 were qualified as estimates due to elevated relative percent differences (RPDs) between MSDs beyond QC limits. Under the Bechtel Hanford, Inc. (BHI) validation statement of work, data that have been qualified as estimated are useable for decision-making purposes. Nondetected analytes that have been qualified as estimated are still treated as nondetected for decision-making purposes. While undetected in all samples, the method detection limits (MDLs) for 3-nitroaniline, 4-nitroaniline, 4,6-dinitro-2-methylphenol, and pentachlorophenol were above soil RAGs for groundwater and/or river protection. However, the MDLs reported by the laboratory are as much as an order of magnitude above the instrument detection limits (IDLs). Analytes that are detected below the MDLs and above the IDLs are regularly reported with "J" qualifiers. In the case of nondetected analytes, where dilutions or other factors have increased the MDLs to as much as five times the applicable RAGs, it is assumed that the analytes were not present at the RAG concentrations. If the analytes had been present below the MDLs and above the RAG concentrations, they would have been detected and reported with "J" qualifiers.

The metals analysis had MS recoveries out of the QC range for antimony, chromium, vanadium, and zinc. Post-digestion spikes and serial dilutions were performed, bringing those results within criteria. Third-party validation qualified all antimony results and chromium, vanadium, and zinc results in all samples except J03CC8, J03CF9, J03CH0, J03CH1, and J03CH2 as estimates due to low MS recoveries. Boron results for all samples except J03CC9, J03CF9, J03CH0, J03CH1, and J03CH2 and chromium, molybdenum, and lead results for samples J03CC9, J03CF9, J03CH0, J03CH1, and J03CH2 were qualified as estimates due to RPDs between MSDs outside of QC limits. Under the BHI validation statement of work, data that have been qualified as estimated are useable for decision-making purposes. Nondetected analytes that have been qualified as estimated are still treated as nondetected for decision-making purposes.

In the VOC analysis, the common laboratory contaminant methylene chloride was seen in all samples and the method blank. Third-party validation qualified all methylene chloride results as nondetected. Initial VOC analysis did not include MS/MSD analysis. All samples were reprepared and reanalyzed, and the results of the reanalysis used for data evaluation. Due to the lack of MS/MSD analysis for the associated analytical batch, third-party validation qualified all VOC results for sample J03CH1 as estimates. Under the BHI validation statement of work, data that have been qualified as estimated are useable for decision-making purposes. Nondetected analytes that have been qualified as estimated are still treated as nondetected for decision-making purposes.

In the pesticide and polychlorinated biphenyl analysis, the surrogate recoveries for samples J03CD1 and J03CD2 were elevated above QC limits. Elevated recoveries suggest a high bias to the associated sample results, and third-party validation qualified detections of aroclor-1254 in these samples as estimates. Due to the lack of MS/MSD and laboratory control spike analysis for toxaphene, third-party validation qualified all toxaphene results as estimates. Under the BHI validation statement of work, data that have been qualified as estimated are useable for decision-making purposes. Nondetected analytes that have been qualified as estimated are still treated as nondetected for decision-making purposes. While undetected in all samples, the MDLs for endrin were slightly above soil RAGs for river protection. A ten-fold dilution of sample J03CD2 also elevated MDLs for multiple pesticides above soil RAGs for groundwater and/or river protection. However, the MDLs reported by the laboratory exceed the IDLs. Analytes that are detected below the MDLs and above the IDLs are reported with “J” qualifiers to indicate uncertainty at those lower concentrations outside of the normal calibration range. In the case of nondetected analytes, where dilutions or other factors have increased the MDLs to exceed RAGs, it is assumed that the analytes were not present at the RAG concentrations. If the analytes had been present below the MDLs and above the RAG concentrations, they would have been detected and reported with “J” qualifiers.

No significant deficiencies were identified for the TPH or radiochemical analyses, and no modifications were made to the data by third-party validation.

Comparison of the analytical results for the field duplicates shows good agreement with the associated primary sample. The calculated RPDs between the primary samples and their associated duplicates were below the QC threshold of 30% for all analytes.

The DQA review for the 128-B-2 verification data found the results to be accurate within the standard errors associated with the methods, including sampling and sample handling. Detection limits, precision, accuracy, and sampling data group completeness were assessed and determined to be sufficient to support the data for decision-making purposes. Third-party validation found no major deficiencies in the data. The DQA review concludes that the data are of the right type, quality, and quantity to support their intended use.

SUMMARY FOR INTERIM CLOSURE

The 128-B-2 Burn Pit waste site has been evaluated and remediated in accordance with the Remaining Sites ROD (EPA 1999) and the RDR/RAWP (DOE-RL 2005b). Because of the presence of aroclor-1254, arsenic, lead, uranium-233/234, uranium-238, radium-226, asbestos, and TPH at concentrations exceeding RAGs and visual observations of debris during confirmatory sampling, 5,627 bank cubic meters (7,360 bank cubic yards) of material were removed for disposal at ERDF. Statistical sampling to verify the completeness of remediation was performed, and analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the verification sampling results support a reclassification of the 128-B-2 site to interim closed out. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

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APPENDIX A
HISTORICAL PHOTOGRAPHY
(1 Page)

Photograph 1. Historical Aerial Photograph of the 100-B/C Area.

APPENDIX B
CONFIRMATORY AND WASTE CHARACTERIZATION
SAMPLING RESULTS
(19 Pages)

Note: This appendix contains the sample results for the 128-B-2 site that led to a decision that remediation was necessary. Verification sampling results, to support site closeout, are provided in Appendix C.

Table B-1. 128-B-2 Radionuclide and Asbestos Confirmatory Data Results. (11 Pages)

Sample Location	HEIS Number	Sample Date	Americium-241			Americium-241 GEA			Cesium-137			Cobalt-60			Europium-152			Europium-154		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
Area 1, Trench 1	J00K63	03/27/03				0.085	U	0.085	0.208		0.045	0.039	U	0.039	0.094	U	0.094	0.1	U	0.1
Duplicate of J00K63	J00K64	03/27/03				0.042	U	0.042	0.26		0.019	0.02	U	0.02	0.063		0.049	0.06	U	0.06
Area 1, Trench 1	J00K58	03/27/03				0.075	U	0.075	0.074	U	0.074	0.088	U	0.088	0.18	U	0.18	0.27	U	0.27
Equipment Blank	J00K62	03/27/03				0.084	U	0.084	0.023	U	0.023	0.022	U	0.022	0.056	U	0.056	0.079	U	0.079
Area 1, Trench 1	J00K95	03/27/03	0.045	U	0.35	0.14	U	0.14	0.035	U	0.035	0.034	U	0.034	0.09	U	0.09	0.097	U	0.097
Area 1, Trench 1	J00K94	03/26/03				0.11	U	0.11	0.034	U	0.034	0.025	U	0.025	0.079	U	0.079	0.07	U	0.07
Area 2, Trench 2	J00K65	03/27/03				0.17	U	0.17	0.178		0.029	0.06	U	0.06	0.07	U	0.07	0.083	U	0.083
Duplicate of J00K65	J00K66	03/27/03				0.046	U	0.046	0.171		0.043	0.04	U	0.04	0.087	U	0.087	0.11	U	0.11
Area 2, Trench 2	J00K59	03/27/03				0.21	U	0.21	0.092	U	0.092	0.1	U	0.1	0.2	U	0.2	0.3	U	0.3
Area 2, Trench 2	J00K96	03/27/03	0.06	U	0.23	0.15	U	0.15	0.058	U	0.058	0.043	U	0.043	0.11	U	0.11	0.12	U	0.12
Area 2, Trench 3	J00K60	03/28/03				0.11	U	0.11	0.053	U	0.053	0.064	U	0.064	0.12	U	0.12	0.18	U	0.18
Area 3, Test Pit 1	J00K97	03/28/03				0.17	U	0.17	0.05	U	0.05	0.027	U	0.027	0.057	U	0.057	0.076	U	0.076
Area 3, Test Pit 1	J00K61	03/28/03				0.1	U	0.1	0.404		0.12	0.11	U	0.11	0.32	U	0.32	0.33	U	0.33

Sample Location	HEIS Number	Sample Date	Europium-155			Gross alpha			Gross beta			Nickel-63			Plutonium-238			Plutonium-239/240		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
Area 1, Trench 1	J00K63	03/27/03	0.077	U	0.077	6.87		4.4	10.4		6.7									
Duplicate of J00K63	J00K64	03/27/03	0.044	U	0.044	3.52	U	4.6	14.4		5.8									
Area 1, Trench 1	J00K58	03/27/03	0.15	U	0.15	2.44	U	5.2	12.9		5.8									
Equipment Blank	J00K62	03/27/03	0.059	U	0.059	0.162	U	4.2	8.34		6.7									
Area 1, Trench 1	J00K95	03/27/03	0.11	U	0.11	12.4		4.2	11.5		8.2	65		2.1	0.075	U	0.36	-0.038	U	0.29
Area 1, Trench 1	J00K94	03/26/03	0.1	U	0.1	7.48		6.3	2.72	U	8.5									
Area 2, Trench 2	J00K65	03/27/03	0.091	U	0.091	1.9	U	5.1	7.36		7									
Duplicate of J00K65	J00K66	03/27/03	0.073	U	0.073	0.744	U	4	8.6		6									
Area 2, Trench 2	J00K59	03/27/03	0.19	U	0.19	7.62		6.5	15.1		7.2									
Area 2, Trench 2	J00K96	03/27/03	0.11	U	0.11	4.04		3.4	5.67		5.3	68.7		2.1	0.188	U	0.42	0.038	U	0.29
Area 2, Trench 3	J00K60	03/28/03	0.12	U	0.12	6.96		4.9	13.5		6.1									
Area 3, Test Pit 1	J00K97	03/28/03	0.14	U	0.14	2.7	U	4.4	15.8		5.8									
Area 3, Test Pit 1	J00K61	03/28/03	0.2	U	0.2	5.62		5.4	19.1		8.3									

Table B-1. 128-B-2 Radionuclide and Asbestos Confirmatory Data Results. (11 Pages)

Sample Location	HEIS Number	Sample Date	Potassium-40			Radium-226			Radium-228			Technetium-99			Thorium-228 GEA			Thorium-232 GEA		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
Area 1, Trench 1	J00K63	03/27/03	4.99		0.39	0.308		0.072	0.364		0.16				0.307		0.039	0.364		0.16
Duplicate of J00K63	J00K64	03/27/03	5.57		0.18	0.28		0.036	0.368		0.074				0.322		0.021	0.368		0.074
Area 1, Trench 1	J00K58	03/27/03	7.54		0.74	0.417		0.14	0.553		0.32				0.425		0.095	0.553		0.32
Equipment Blank	J00K62	03/27/03	4.62		0.25	0.175		0.048	0.191		0.11				0.164		0.027	0.191		0.11
Area 1, Trench 1	J00K95	03/27/03	4.51		0.34	1.88		0.069	1.48		0.15	0.04	U	0.38	1.16		0.046	1.48		0.15
Area 1, Trench 1	J00K94	03/26/03	1.28		0.27	0.78		0.056	0.782		0.13				0.733		0.036	0.782		0.13
Area 2, Trench 2	J00K65	03/27/03	7.66		0.24	0.38		0.046	0.579		0.11				0.452		0.033	0.579		0.11
Duplicate of J00K65	J00K66	03/27/03	8.3		0.32	0.404		0.072	0.616		0.14				0.552		0.041	0.616		0.14
Area 2, Trench 2	J00K59	03/27/03	8.72		1.2	0.402		0.15	0.761		0.36				0.276		0.15	0.761		0.36
Area 2, Trench 2	J00K96	03/27/03	2.95		0.45	0.676		0.075	0.893		0.18	0.076	U	0.36	0.727		0.043	0.893		0.18
Area 2, Trench 3	J00K60	03/28/03	8.81		0.47	0.37		0.083	0.68		0.23				0.516		0.051	0.68		0.23
Area 3, Test Pit 1	J00K97	03/28/03	12.3		0.25	0.529		0.052	0.807		0.11				0.625		0.029	0.807		0.11
Area 3, Test Pit 1	J00K61	03/28/03	13		0.81	0.513		0.22	0.718		0.42				0.755		0.19	0.718		0.42

Sample Location	HEIS Number	Sample Date	Total beta radiostrontium			Uranium-233/234			Uranium-235			Uranium-235 GEA			Uranium-238			Uranium-238 GEA		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
Area 1, Trench 1	J00K63	03/27/03										0.13	U	0.13				3.8	U	3.8
Duplicate of J00K63	J00K64	03/27/03										0.057	U	0.057				2.5	U	2.5
Area 1, Trench 1	J00K58	03/27/03										0.26	U	0.26				9.2	U	9.2
Equipment Blank	J00K62	03/27/03										0.096	U	0.096				3.2	U	3.2
Area 1, Trench 1	J00K95	03/27/03	0.073	U	0.31	2.5		0.2	0.032	U	0.24	0.19	U	0.19	2.53		0.2	5.8	U	5.8
Area 1, Trench 1	J00K94	03/26/03										0.17	U	0.17				3.5	U	3.5
Area 2, Trench 2	J00K65	03/27/03										0.12	U	0.12				3.1	U	3.1
Duplicate of J00K65	J00K66	03/27/03										0.12	U	0.12				4.3	U	4.3
Area 2, Trench 2	J00K59	03/27/03										0.31	U	0.31				11	U	11
Area 2, Trench 2	J00K96	03/27/03	0.085	U	0.3	0.664		0.15	0.024	U	0.19	0.18	U	0.18	0.664		0.15	4.9	U	4.9
Area 2, Trench 3	J00K60	03/28/03										0.16	U	0.16				6.5	U	6.5
Area 3, Test Pit 1	J00K97	03/28/03										0.12	U	0.12				2.6	U	2.6
Area 3, Test Pit 1	J00K61	03/28/03										0.35	U	0.35				13	U	13

Table B-1. 128-B-2 Asbestos Confirmatory Data Results. (11 Pages)

Sample Location	HEIS Number	Sample Date	Asbestos
Area 1, Trench 1	J00K67	03/27/03	chrysotile: 20-40%, amosite: 5-15%
Duplicate of J00K67	J00K68	03/27/03	chrysotile: 10-20%, amosite: 15-25%
Area 1, Trench 1	J00K46	03/27/03	none detected
Area 1, Trench 1	J00K75	03/27/03	none detected
Area 2, Trench 2	J00K69	03/27/03	amosite: obvious, chrysotile: obvious
Duplicate of J00K69	J00K70	03/27/03	amosite: trace, chrysotile: trace
Area 2, Trench 2	J00K47	03/27/03	amosite: obvious
Area 2, Trench 2	J00K76	03/27/03	chrysotile: trace
Area 2, Trench 3	J00K48	03/28/03	amosite: trace, chrysotile: trace
Area 3, Test Pit 1	J00K77	03/28/03	none detected
Area 3, Test Pit 1	J00K49	03/28/03	none detected

Acronyms and notes apply to all of the tables in this appendix.

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

AOC = area of contamination

B = blank contamination (organic constituents)

C = blank contamination (inorganic constituents)

D = diluted

GEA = gamma energy analysis

HEIS = Hanford Environmental Information System

J = estimate

MDA = minimum detectable activity

PQL = practical quantitation limit

Q = qualifier

TPH = total petroleum hydrocarbon

U = undetected

Table B-1. 128-B-2 Inorganic and TPH Data Results. (11 Pages)

Sample Location	HEIS Number	Sample Date	Arsenic			Barium			Cadmium			Chromium			Hexavalent Chromium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Area 1, Trench 1	J00K63	03/27/03	6.8		0.4	126		0.01	0.34		0.05	58.2		0.07			
Duplicate of J00K63	J00K64	03/27/03	8.6		0.52	116		0.01	0.35		0.06	52.4		0.09			
Area 1, Trench 1	J00K58	03/27/03	2.8		0.35	48.8		0.01	0.103		0.04	9.5		0.06	0.423	U	0.423
Equipment Blank	J00K62	03/27/03	0.34	U	0.34	1.1		0.01	0.039	U	0.04	0.29		0.06			
Area 1, Trench 1	J00K95	03/27/03	120		0.3	304		0.01	1		0.03	557		0.05			
Area 1, Trench 1	J00K94	03/26/03	15.3		0.3	39.4		0.01	0.34		0.03	414		0.05			
Area 2, Trench 2	J00K65	03/27/03	4.2		0.37	285		0.01	0.21		0.04	35		0.06			
Duplicate of J00K65	J00K66	03/27/03	4.2		0.39	336		0.01	0.25		0.04	39		0.07			
Area 2, Trench 2	J00K59	03/27/03	4.1		0.35	45.1		0.01	0.088		0.04	47.4		0.06	0.416	U	0.416
Area 2, Trench 2	J00K96	03/27/03	6.6		0.34	44.7		0.01	0.79		0.04	3720		0.06			
Area 2, Trench 3	J00K60	03/28/03	3		0.4	52.4		0.01	0.045	U	0.05	9.3		0.07	0.462	U	0.462
Area 3, Test Pit 1	J00K97	03/28/03	4.5		0.35	89.7		0.01	0.04	U	0.04	11.6		0.06			
Area 3, Test Pit 1	J00K61	03/28/03	4		0.28	129		0.01	0.338		0.03	24.6		0.05	4.19	U	4.19

Sample Location	HEIS Number	Sample Date	Lead			Mercury			Selenium			Silver			Total petroleum hydrocarbons		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Area 1, Trench 1	J00K63	03/27/03	169		0.3	0.06		0.02	0.53		0.41	0.09	U	0.09	173		4.3
Duplicate of J00K63	J00K64	03/27/03	179		0.39	0.17		0.03	0.55	U	0.53	0.12	U	0.12	63.5		5.1
Area 1, Trench 1	J00K58	03/27/03	9.7		0.26	0.016	U	0.02	0.359	U	0.36	0.08	U	0.08	7.78		3.5
Equipment Blank	J00K62	03/27/03	0.253	U	0.25	0.015	U	0.02	0.35	U	0.35	0.078	U	0.078			
Area 1, Trench 1	J00K95	03/27/03	2980		0.23	0.39		0.02	1.3		0.31	2.1		0.07			
Area 1, Trench 1	J00K94	03/26/03	871		0.22	0.07		0.01	0.31	U	0.31	0.22		0.07			
Area 2, Trench 2	J00K65	03/27/03	146		0.28	0.89		0.02	1		0.38	0.09	U	0.09	884		94.3
Duplicate of J00K65	J00K66	03/27/03	194		0.29	0.68		0.02	1.1		0.4	0.09	U	0.09	900		94.8
Area 2, Trench 2	J00K59	03/27/03	80.7		0.26	0.056		0.02	0.364	U	0.36	0.081	U	0.081	33.9		3.5
Area 2, Trench 2	J00K96	03/27/03	2820		0.25	0.92		0.02	0.67		0.35	0.11		0.08			
Area 2, Trench 3	J00K60	03/28/03	16.9		0.29	0.019	U	0.02	0.408	U	0.41	0.091	U	0.091	8.52		3.9
Area 3, Test Pit 1	J00K97	03/28/03	5.3		0.26	0.02	U	0.02	0.36	U	0.36	0.08	U	0.08	7.3		3.5
Area 3, Test Pit 1	J00K61	03/28/03	80.1		0.21	0.017		0.02	0.383		0.29	0.065	U	0.065	29.7		3.5

Table B-1. 128-B-2 Organic Confirmatory Data Results.* (11 Pages)

Constituent	J00K63 Area 1, Trench 1 Sample Date 03/27/03			J00K64 Duplicate of J00K63 Sample Date 03/27/03			J00K58 Area 1, Trench 1 Sample Date 3/27/03			J00K62 Equipment Blank Sample Date 03/27/03		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls (PCBs)												
Aroclor-1016	200	U	200	520	U	520	35	U	35			
Aroclor-1221	430	U	430	1000	U	1000	70	U	70			
Aroclor-1232	220	U	220	520	U	520	35	U	35			
Aroclor-1242	220	U	220	520	U	520	35	U	35			
Aroclor-1248	220	U	220	520	U	520	35	U	35			
Aroclor-1254	400		220	2800		520	35	U	35			
Aroclor-1260	220	U	220	520	U	520	35	U	35			
Pesticides												
Aldrin	11	U	11	52	U	52	1.8	U	1.8			
Alpha-BHC	11	U	11	52	U	52	1.8	U	1.8			
alpha-Chlordane	11	U	11	52	U	52	1.8	U	1.8			
beta-1,2,3,4,5,6-Hexachlorocyclohexane	11	U	11	52	U	52	1.8	U	1.8			
Delta-BHC	11	U	11	52	U	52	1.8	U	1.8			
Dichlorodiphenyldichloroethane	22	U	22	100	U	100	3.5	U	3.5			
Dichlorodiphenyldichloroethylene	22	U	22	100	U	100	3.5	U	3.5			
Dichlorodiphenyltrichloroethane	47		22	200		100	3.5	U	3.5			
Dieldrin	22		22	100	U	100	3.5	U	3.5			
Endosulfan I	11	U	11	52	U	52	1.8	U	1.8			
Endosulfan II	22	U	22	100	U	100	3.5	U	3.5			
Endosulfan sulfate	22	U	22	100	U	100	3.5	U	3.5			
Endrin	22	U	22	100	U	100	3.5	U	3.5			
Endrin aldehyde	22	U	22	100	U	100	3.5	U	3.5			
Endrin ketone	22	U	22	100	U	100	3.5	U	3.5			
Gamma-BHC (Lindane)	11	U	11	52	U	52	1.8	U	1.8			
gamma-Chlordane	11	U	11	52	U	52	1.8	U	1.8			
Heptachlor	11	U	11	52	U	52	1.8	U	1.8			
Heptachlor epoxide	11	U	11	52	U	52	1.8	U	1.8			
Methoxychlor	110	U	110	520	U	520	18	U	18			
Toxaphene	1100	U	1100	5200	U	5200	180	U	180			
Semivolatile Organic Analytes (SVOAs)												
1,2,4-Trichlorobenzene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
1,2-Dichlorobenzene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
1,3-Dichlorobenzene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
1,4-Dichlorobenzene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2,4,5-Trichlorophenol	11000	U	11000	13000	U	13000	880	U	880	840	U	840
2,4,6-Trichlorophenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2,4-Dichlorophenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2,4-Dimethylphenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2,4-Dinitrophenol	11000	U	11000	13000	U	13000	880	U	880	840	U	840
2,4-Dinitrotoluene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2,6-Dinitrotoluene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2-Chloronaphthalene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2-Chlorophenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2-Methylnaphthalene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2-Methylphenol (cresol, o-)	4300	U	4300	5200	U	5200	350	U	350	330	U	330
2-Nitroaniline	11000	U	11000	13000	U	13000	880	U	880	840	U	840
2-Nitrophenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
3+4 Methylphenol (cresol, m+p)	4300	U	4300	5200	U	5200	350	U	350	330	U	330
3,3'-Dichlorobenzidine	4300	U	4300	5200	U	5200	350	U	350	330	U	330

Table B-1. 128-B-2 Organic Confirmatory Data Results. (11 Pages)

Constituent	J00K63 Area 1, Trench 1 Sample Date 03/27/03			J00K64 Duplicate of J00K63 Sample Date 03/27/03			J00K58 Area 1, Trench 1 Sample Date 3/27/03			J00K62 Equipment Blank Sample Date 03/27/03		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
3-Nitroaniline	11000	U	11000	13000	U	13000	880	U	880	840	U	840
4,6-Dinitro-2-methylphenol	11000	U	11000	13000	U	13000	880	U	880	840	U	840
4-Bromophenylphenyl ether	4300	U	4300	5200	U	5200	350	U	350	330	U	330
4-Chloro-3-methylphenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
4-Chloroaniline	4300	U	4300	5200	U	5200	350	U	350	330	U	330
4-Chlorophenylphenyl ether	4300	U	4300	5200	U	5200	350	U	350	330	U	330
4-Nitroaniline	11000	U	11000	13000	U	13000	880	U	880	840	U	840
4-Nitrophenol	11000	U	11000	13000	U	13000	880	U	880	840	U	840
Acenaphthene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Acenaphthylene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Anthracene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Benzo(a)anthracene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Benzo(a)pyrene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Benzo(b)fluoranthene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Benzo(ghi)perylene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Benzo(k)fluoranthene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Bis(2-chloro-1-methylethyl)ether	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Bis(2-Chloroethoxy)methane	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Bis(2-chloroethyl) ether	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Bis(2-ethylhexyl) phthalate	4300	U	4300	5200	U	5200	21.014	JB	350	18	JB	330
Butylbenzylphthalate	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Carbazole	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Chrysene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Di-n-butylphthalate	4300	U	4300	690	J	5200	350	U	350	204	JB	330
Di-n-octylphthalate	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Dibenz[a,h]anthracene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Dibenzofuran	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Diethylphthalate	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Dimethyl phthalate	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Fluoranthene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Fluorene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Hexachlorobenzene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Hexachlorobutadiene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Hexachlorocyclopentadiene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Hexachloroethane	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Indeno(1,2,3-cd)pyrene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Isophorone	4300	U	4300	5200	U	5200	350	U	350	330	U	330
N-Nitroso-di-n-dipropylamine	4300	U	4300	5200	U	5200	350	U	350	330	U	330
N-Nitrosodiphenylamine	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Naphthalene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Nitrobenzene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Pentachlorophenol	11000	U	11000	13000	U	13000	880	U	880	840	U	840
Phenanthrene	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Phenol	4300	U	4300	5200	U	5200	350	U	350	330	U	330
Pyrene	4300	U	4300	5200	U	5200	350	U	350	330	U	330

Table B-1. 128-B-2 Organic Confirmatory Data Results. (11 Pages)

Constituent	J00K95 Area 1, Trench 1 Sample Date 03/27/03			J00K94 Area 1, Trench 1 Sample Date 03/26/03			J00K65 Area 2, Trench 2 Sample Date 3/27/03			J00K66 Duplicate of J00K65 Sample Date 03/27/03		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	35	U	35	33	U	33	38	U	38	76	U	76
Aroclor-1221	69	U	69	67	U	67	76	U	76	150	U	150
Aroclor-1232	35	U	35	33	U	33	38	U	38	76	U	76
Aroclor-1242	35	U	35	33	U	33	38	U	38	76	U	76
Aroclor-1248	35	U	35	33	U	33	38	U	38	76	U	76
Aroclor-1254	63		35	33	U	33	150		38	220		76
Aroclor-1260	35	U	35	33	U	33	38	U	38	76	U	76
Pesticides												
Aldrin	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Alpha-BHC	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
alpha-Chlordane	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Delta-BHC	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Dichlorodiphenyldichloroethane	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Dichlorodiphenyldichloroethylene	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Dichlorodiphenyltrichloroethane	6.2		3.5	3.3	U	3.3	19		19	24		19
Dieldrin	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Endosulfan I	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Endosulfan II	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Endosulfan sulfate	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Endrin	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Endrin aldehyde	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Endrin ketone	3.5	U	3.5	3.3	U	3.3	19	U	19	19	U	19
Gamma-BHC (Lindane)	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
gamma-Chlordane	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Heptachlor	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Heptachlor epoxide	1.7	U	1.7	1.7	U	1.7	9.4	U	9.4	9.5	U	9.5
Methoxychlor	17	U	17	17	U	17	94	U	94	95	U	95
Toxaphene	170	U	170	170	U	170	940	U	940	950	U	950
SVOAs												
1,2,4-Trichlorobenzene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
1,2-Dichlorobenzene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
1,3-Dichlorobenzene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
1,4-Dichlorobenzene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2,4,5-Trichlorophenol	860	U	860	840	U	840	120000	U	120000	95000	U	95000
2,4,6-Trichlorophenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2,4-Dichlorophenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2,4-Dimethylphenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2,4-Dinitrophenol	860	U	860	840	U	840	120000	U	120000	95000	U	95000
2,4-Dinitrotoluene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2,6-Dinitrotoluene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2-Chloronaphthalene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2-Chlorophenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2-Methylnaphthalene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2-Methylphenol (cresol, o-)	350	U	350	330	U	330	47000	U	47000	38000	U	38000
2-Nitroaniline	860	U	860	840	U	840	120000	U	120000	95000	U	95000
2-Nitrophenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
3+4 Methylphenol (cresol, m+p)	350	U	350	330	U	330	47000	U	47000	38000	U	38000
3,3'-Dichlorobenzidine	350	U	350	330	U	330	47000	U	47000	38000	U	38000

Table B-1. 128-B-2 Organic Confirmatory Data Results. (11 Pages)

Constituent	J00K95			J00K94			J00K65			J00K66		
	Area 1, Trench 1			Area 1, Trench 1			Area 2, Trench 2			Duplicate of J00K65		
	Sample Date 03/27/03			Sample Date 03/26/03			Sample Date 3/27/03			Sample Date 03/27/03		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
3-Nitroaniline	860	U	860	840	U	840	120000	U	120000	95000	U	95000
4,6-Dinitro-2-methylphenol	860	U	860	840	U	840	120000	U	120000	95000	U	95000
4-Bromophenylphenyl ether	350	U	350	330	U	330	47000	U	47000	38000	U	38000
4-Chloro-3-methylphenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
4-Chloroaniline	350	U	350	330	U	330	47000	U	47000	38000	U	38000
4-Chlorophenylphenyl ether	350	U	350	330	U	330	47000	U	47000	38000	U	38000
4-Nitroaniline	860	U	860	840	U	840	120000	U	120000	95000	U	95000
4-Nitrophenol	860	U	860	840	U	840	120000	U	120000	95000	U	95000
Acenaphthene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Acenaphthylene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Anthracene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Benzo(a)anthracene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Benzo(a)pyrene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Benzo(b)fluoranthene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Benzo(ghi)perylene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Benzo(k)fluoranthene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Bis(2-chloro-1-methylethyl)ether	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Bis(2-Chloroethoxy)methane	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Bis(2-chloroethyl) ether	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Bis(2-ethylhexyl) phthalate	24	J	350	330	U	330	47000	U	47000	38000	U	38000
Butylbenzylphthalate	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Carbazole	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Chrysene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Di-n-butylphthalate	19	J	350	330	U	330	47000	U	47000	38000	U	38000
Di-n-octylphthalate	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Dibenz[a,h]anthracene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Dibenzofuran	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Diethylphthalate	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Dimethyl phthalate	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Fluoranthene	22	J	350	330	U	330	47000	U	47000	38000	U	38000
Fluorene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Hexachlorobenzene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Hexachlorobutadiene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Hexachlorocyclopentadiene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Hexachloroethane	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Indeno(1,2,3-cd)pyrene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Isophorone	22	J	350	330	U	330	47000	U	47000	38000	U	38000
N-Nitroso-di-n-dipropylamine	350	U	350	330	U	330	47000	U	47000	38000	U	38000
N-Nitrosodiphenylamine	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Naphthalene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Nitrobenzene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Pentachlorophenol	860	U	860	840	U	840	120000	U	120000	95000	U	95000
Phenanthrene	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Phenol	350	U	350	330	U	330	47000	U	47000	38000	U	38000
Pyrene	28	J	350	330	U	330	47000	U	47000	38000	U	38000

Table B-1. 128-B-2 Organic Confirmatory Data Results. (11 Pages)

Constituent	J00K59 Area 2, Trench 2 Sample Date 03/27/03			J00K96 Area 2, Trench 2 Sample Date 03/27/03			J00K60 Area 2, Trench 3 Sample Date 3/28/03			J00K97 Area 3, Test Pit 1 Sample Date 03/28/03		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
	PCBs											
Aroclor-1016	35	U	35	360	U	360	39	U	39	35	U	35
Aroclor-1221	69	U	69	710	U	710	77	U	77	70	U	70
Aroclor-1232	35	U	35	360	U	360	39	U	39	35	U	35
Aroclor-1242	35	U	35	360	U	360	39	U	39	35	U	35
Aroclor-1248	35	U	35	360	U	360	39	U	39	35	U	35
Aroclor-1254	35	U	35	1200		360	100		39	35	U	35
Aroclor-1260	35	U	35	360	U	360	39	U	39	35	U	35
Pesticides												
Aldrin	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
Alpha-BHC	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
alpha-Chlordane	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
Delta-BHC	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
Dichlorodiphenyldichloroethane	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Dichlorodiphenyldichloroethylene	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Dichlorodiphenyltrichloroethane	3.5	U	3.5	86	D	3.6	6.163		3.9	3.5	U	3.5
Dieldrin	3.5	U	3.5	7.1		3.6	3.9	U	3.9	3.5	U	3.5
Endosulfan I	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
Endosulfan II	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Endosulfan sulfate	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Endrin	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Endrin aldehyde	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Endrin ketone	3.5	U	3.5	3.6	U	3.6	3.9	U	3.9	3.5	U	3.5
Gamma-BHC (Lindane)	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
gamma-Chlordane	1.7	U	1.7	4.6		1.8	1.9	U	1.9	1.7	U	1.7
Heptachlor	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
Heptachlor epoxide	1.7	U	1.7	1.8	U	1.8	1.9	U	1.9	1.7	U	1.7
Methoxychlor	17	U	17	18	U	18	19	U	19	17	U	17
Toxaphene	170	U	170	180	U	180	190	U	190	170	U	170
SVOAs												
1,2,4-Trichlorobenzene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
1,2-Dichlorobenzene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
1,3-Dichlorobenzene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
1,4-Dichlorobenzene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2,4,5-Trichlorophenol	4300	U	4300	8900	U	8900	960	U	960	870	U	870
2,4,6-Trichlorophenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2,4-Dichlorophenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2,4-Dimethylphenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2,4-Dinitrophenol	4300	U	4300	8900	U	8900	960	U	960	870	U	870
2,4-Dinitrotoluene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2,6-Dinitrotoluene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2-Chloronaphthalene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2-Chlorophenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2-Methylnaphthalene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2-Methylphenol (cresol, o-)	1700	U	1700	3600	U	3600	390	U	390	350	U	350
2-Nitroaniline	4300	U	4300	8900	U	8900	960	U	960	870	U	870
2-Nitrophenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
3+4 Methylphenol (cresol, m+p)	1700	U	1700	3600	U	3600	390	U	390	350	U	350
3,3'-Dichlorobenzidine	1700	U	1700	3600	U	3600	390	U	390	350	U	350

Table B-1. 128-B-2 Organic Confirmatory Data Results. (11 Pages)

Constituent	J00K59 Area 2, Trench 2 Sample Date 03/27/03			J00K96 Area 2, Trench 2 Sample Date 03/27/03			J00K60 Area 2, Trench 3 Sample Date 3/28/03			J00K97 Area 3, Test Pit 1 Sample Date 03/28/03		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
	SVOAs (continued)											
3-Nitroaniline	4300	U	4300	8900	U	8900	960	U	960	870	U	870
4,6-Dinitro-2-methylphenol	4300	U	4300	8900	U	8900	960	U	960	870	U	870
4-Bromophenylphenyl ether	1700	U	1700	3600	U	3600	390	U	390	350	U	350
4-Chloro-3-methylphenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
4-Chloroaniline	1700	U	1700	3600	U	3600	390	U	390	350	U	350
4-Chlorophenylphenyl ether	1700	U	1700	3600	U	3600	390	U	390	350	U	350
4-Nitroaniline	4300	U	4300	8900	U	8900	960	U	960	870	U	870
4-Nitrophenol	4300	U	4300	8900	U	8900	960	U	960	870	U	870
Acenaphthene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Acenaphthylene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Anthracene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Benzo(a)anthracene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Benzo(a)pyrene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Benzo(b)fluoranthene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Benzo(ghi)perylene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Benzo(k)fluoranthene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Bis(2-chloro-1-methylethyl)ether	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Bis(2-Chloroethoxy)methane	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Bis(2-chloroethyl) ether	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Bis(2-ethylhexyl) phthalate	1700	U	1700	3600	U	3600	19.421	JB	390	350	U	350
Butylbenzylphthalate	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Carbazole	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Chrysene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Di-n-butylphthalate	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Di-n-octylphthalate	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Dibenz[a,h]anthracene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Dibenzofuran	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Diethylphthalate	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Dimethyl phthalate	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Fluoranthene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Fluorene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Hexachlorobenzene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Hexachlorobutadiene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Hexachlorocyclopentadiene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Hexachloroethane	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Indeno(1,2,3-cd)pyrene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Isophorone	1700	U	1700	3600	U	3600	390	U	390	350	U	350
N-Nitroso-di-n-dipropylamine	1700	U	1700	3600	U	3600	390	U	390	350	U	350
N-Nitrosodiphenylamine	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Naphthalene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Nitrobenzene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Pentachlorophenol	4300	U	4300	8900	U	8900	960	U	960	870	U	870
Phenanthrene	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Phenol	1700	U	1700	3600	U	3600	390	U	390	350	U	350
Pyrene	1700	U	1700	3600	U	3600	390	U	390	350	U	350

Table B-1. 128-B-2 Organic Confirmatory Data Results. (11 Pages)

Constituent	J00K61 Area 3, Test Pit 1 Sample Date 03/28/03		
	µg/kg	Q	PQL
PCBs			
Aroclor-1016	35	U	35
Aroclor-1221	70	U	70
Aroclor-1232	35	U	35
Aroclor-1242	35	U	35
Aroclor-1248	35	U	35
Aroclor-1254	100		35
Aroclor-1260	35	U	35
Pesticides			
Aldrin	1.7	U	1.7
Alpha-BHC	1.7	U	1.7
alpha-Chlordane	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.7	U	1.7
Delta-BHC	1.7	U	1.7
Dichlorodiphenyldichloroethane	3.5	U	3.5
Dichlorodiphenyldichloroethylene	5.238		3.5
Dichlorodiphenyltrichloroethane	9.079		3.5
Dieldrin	3.5	U	3.5
Endosulfan I	1.7	U	1.7
Endosulfan II	3.5	U	3.5
Endosulfan sulfate	3.5	U	3.5
Endrin	3.5	U	3.5
Endrin aldehyde	3.5	U	3.5
Endrin ketone	3.5	U	3.5
Gamma-BHC (Lindane)	1.7	U	1.7
gamma-Chlordane	1.7	U	1.7
Heptachlor	1.7	U	1.7
Heptachlor epoxide	1.7	U	1.7
Methoxychlor	17	U	17
Toxaphene	170	U	170
SVOAs			
1,2,4-Trichlorobenzene	1800	U	1800
1,2-Dichlorobenzene	1800	U	1800
1,3-Dichlorobenzene	1800	U	1800
1,4-Dichlorobenzene	1800	U	1800
2,4,5-Trichlorophenol	4400	U	4400
2,4,6-Trichlorophenol	1800	U	1800
2,4-Dichlorophenol	1800	U	1800
2,4-Dimethylphenol	1800	U	1800
2,4-Dinitrophenol	4400	U	4400
2,4-Dinitrotoluene	1800	U	1800
2,6-Dinitrotoluene	1800	U	1800
2-Chloronaphthalene	1800	U	1800
2-Chlorophenol	1800	U	1800
2-Methylnaphthalene	1800	U	1800
2-Methylphenol (cresol, o-)	1800	U	1800
2-Nitroaniline	4400	U	4400
2-Nitrophenol	1800	U	1800
3+4 Methylphenol (cresol, m+p)	1800	U	1800
3,3'-Dichlorobenzidine	1800	U	1800

Constituent	J00K61 Area 3, Test Pit 1 Sample Date 03/28/03		
	µg/kg	Q	PQL
SVOAs (continued)			
3-Nitroaniline	4400	U	4400
4,6-Dinitro-2-methylphenol	4400	U	4400
4-Bromophenylphenyl ether	1800	U	1800
4-Chloro-3-methylphenol	1800	U	1800
4-Chloroaniline	1800	U	1800
4-Chlorophenylphenyl ether	1800	U	1800
4-Nitroaniline	4400	U	4400
4-Nitrophenol	4400	U	4400
Acenaphthene	1800	U	1800
Acenaphthylene	1800	U	1800
Anthracene	1800	U	1800
Benzo(a)anthracene	118.738	J	1800
Benzo(a)pyrene	1800	U	1800
Benzo(b)fluoranthene	90.213	J	1800
Benzo(ghi)perylene	1800	U	1800
Benzo(k)fluoranthene	107.887	J	1800
Bis(2-chloro-1-methylethyl)ether	1800	U	1800
Bis(2-Chloroethoxy)methane	1800	U	1800
Bis(2-chloroethyl) ether	1800	U	1800
Bis(2-ethylhexyl) phthalate	1800	U	1800
Butylbenzylphthalate	1800	U	1800
Carbazole	1800	U	1800
Chrysene	107.887	J	1800
Di-n-butylphthalate	1800	U	1800
Di-n-octylphthalate	1800	U	1800
Dibenz[a,h]anthracene	1800	U	1800
Dibenzofuran	1800	U	1800
Diethylphthalate	1800	U	1800
Dimethyl phthalate	1800	U	1800
Fluoranthene	235.987	J	1800
Fluorene	1800	U	1800
Hexachlorobenzene	1800	U	1800
Hexachlorobutadiene	1800	U	1800
Hexachlorocyclopentadiene	1800	U	1800
Hexachloroethane	1800	U	1800
Indeno(1,2,3-cd)pyrene	1800	U	1800
Isophorone	1800	U	1800
N-Nitroso-di-n-dipropylamine	1800	U	1800
N-Nitrosodiphenylamine	1800	U	1800
Naphthalene	1800	U	1800
Nitrobenzene	1800	U	1800
Pentachlorophenol	4400	U	4400
Phenanthrene	1800	U	1800
Phenol	1800	U	1800
Pyrene	221.025	J	1800

*TPH data is located with the inorganic data.

Table B-2. 128-B-2 Confirmatory Data--Additional Waste Characterization (TCLP Metals and Anions).

Sample Location	HEIS Number	Sample Date	Arsenic			Barium			Cadmium			Chromium			Lead		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Area 1, Trench 1	J00K63	03/27/03	54.1		39.1	770		3.7	4.8	U	4.8	140		5.3	159		34.9
Duplicate of J00K63	J00K64	03/27/03	71.5		39.1	522		3.7	4.8	U	4.8	15.1		5.3	900		34.9
Area 1, Trench 1	J00K95	03/27/03	82		39.1	792		3.7	4.8	U	4.8	46.4		5.3	10200		34.9
Area 1, Trench 1	J00K94	03/26/03	55.5		39.1	359		3.7	4.8	U	4.8	190		5.3	4870		34.9
Area 2, Trench 2	J00K65	03/27/03	39.1	U	39.1	255		3.7	4.8	U	4.8	5.3		5.3	34.9	U	34.9
Duplicate of J00K65	J00K66	03/27/03	44.4		39.1	252		3.7	4.8	U	4.8	5.3	U	5.3	34.9	U	34.9
Area 2, Trench 2	J00K96	03/27/03	39.1	U	39.1	262		3.7	4.8	U	4.8	28.9		5.3	8600		34.9
Area 3, Test Pit 1	J00K97	03/28/03	59.2		39.1	384		3.7	4.8	U	4.8	5.3	U	5.3	724		34.9

Sample Location	HEIS Number	Sample Date	Mercury			Selenium			Silver		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Area 1, Trench 1	J00K63	03/27/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Duplicate of J00K63	J00K64	03/27/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Area 1, Trench 1	J00K95	03/27/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Area 1, Trench 1	J00K94	03/26/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Area 2, Trench 2	J00K65	03/27/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Duplicate of J00K65	J00K66	03/27/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Area 2, Trench 2	J00K96	03/27/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3
Area 3, Test Pit 1	J00K97	03/28/03	0.1	U	0.1	70.3	U	70.3	3.3	U	3.3

Sample Location	HEIS Number	Sample Date	Bromide			Chloride			Fluoride			Nitrate			Nitrite		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Area 1, Trench 1	J00K95	03/27/03	6.5	U	6.5	12.3		6.5	6.5	U	6.5	6.48	U	6.48	6.48	U	6.48
Area 1, Trench 1	J00K94	03/26/03	1.3	U	1.3	1.7		1.3	1.3	U	1.3	5.13		1.25	1.25	U	1.25
Area 2, Trench 2	J00K96	03/27/03	6.7	U	6.7	12.1		6.7	6.7	U	6.7	6.66	U	6.66	6.66	U	6.66
Area 3, Test Pit 1	J00K97	03/28/03	1.3	U	1.3	1.4		1.3	1.3	U	1.3	1.31	U	1.31	1.31	U	1.31

Sample Location	HEIS Number	Sample Date	Phosphate			Sulfate		
			mg/kg	Q	PQL	mg/kg	Q	PQL
Area 1, Trench 1	J00K95	03/27/03	6.5	U	6.5	753		25.9
Area 1, Trench 1	J00K94	03/26/03	1.3	U	1.3	15.5		1.3
Area 2, Trench 2	J00K96	03/27/03	6.7	U	6.7	409		26.6
Area 3, Test Pit 1	J00K97	03/28/03	1.3	U	1.3	1.6		1.3

Table B-3. 128-B-2 Waste Characterization Data From Samples Collected During Excavation. (7 Pages)

Sample Location	HEIS Number	Sample Date	Arsenic			Barium			Cadmium			Chromium			Lead		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Suspect paint area	J023C3	11/23/04	2.2		0.26	31.1		0.04	0.22	C	0.03	7.1	C	0.08	6.1		0.22
Graphite area (suspect lead)	J023C1	11/23/04	2.3		0.26	46.4		0.04	0.22	C	0.03	22.6	C	0.08	20.2		0.22
Dark reddish-brown material (suspect lead)	J023C2	11/23/04	2.4		0.25	43.4		0.04	0.23	C	0.03	7.9	C	0.08	7		0.21
Unknown liquid/oil spill area	J023C4	11/23/04	3.1		0.25	53.3		0.04	0.22	C	0.03	7.9	C	0.08	4.3		0.21
Ash stockpile	J023C0	11/23/04	3.6		0.28	172		0.04	0.67	C	0.03	16.5	C	0.09	14.5		0.24
Tawny brown material near AOC	J022F5	11/11/04	5.3		0.19	3.5		0.03	0.89		0.02	554	C	0.06	4560		0.16
50 increment samples from pile 41	J03032	03/10/05	6.4		0.3	65.9		0.02	0.04	U	0.04	272		0.04	657		0.2
30 increment samples from pile 31	J03030	03/10/05	17.6		0.27	92.7		0.02	0.07		0.04	851		0.04	844		0.18
Drum #128B-04-0009	J030B3	03/18/05	2.3		1.8	34.2		0.12	9.2		0.25	21.4		0.25	866500		1.2

Sample Location	HEIS Number	Sample Date	Mercury			Selenium			Silver		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Suspect paint area	J023C3	11/23/04	0.01	U	0.01	0.89		0.38	0.1	U	0.1
Graphite area (suspect lead)	J023C1	11/23/04	0.02	U	0.02	0.69		0.37	0.1	U	0.1
Dark reddish-brown material (suspect lead)	J023C2	11/23/04	0.01	U	0.01	0.67		0.35	0.09	U	0.09
Unknown liquid/oil spill area	J023C4	11/23/04	0.01	U	0.01	0.74		0.35	0.1	U	0.1
Ash stockpile	J023C0	11/23/04	0.02	U	0.02	0.86		0.4	0.11	U	0.11
Tawny brown material near AOC	J022F5	11/11/04	0.55		0.01	0.63		0.27	0.08		0.07
50 increment samples from pile 41	J03032	03/10/05				0.41	U	0.41	0.05	U	0.05
30 increment samples from pile 31	J03030	03/10/05				0.38	U	0.38	0.14		0.05
Drum #128B-04-0009	J030B3	03/18/05				2.5	U	2.5	1.7		0.31

Table B-3. 128-B-2 Waste Characterization Data From Samples Collected During Excavation. (7 Pages)

Constituent	J02H97 Drum #128B-04-0011 Sample Date 02/03/05			J030B3 Drum #128B-04-0009 Sample Date 03/18/05			J023C0 Ash stockpile Sample Date 11/23/04			J023C3 Suspect paint area Sample Date 11/23/04		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls (PCBs)												
Aroclor-1016	510	U	510	35	U	35	15	U	15	14	U	14
Aroclor-1221	510	U	510	35	U	35	15	U	15	14	U	14
Aroclor-1232	510	U	510	35	U	35	15	U	15	14	U	14
Aroclor-1242	510	U	510	35	U	35	15	U	15	14	U	14
Aroclor-1248	510	U	510	35	U	35	15	U	15	14	U	14
Aroclor-1254	510	U	510	170		35	15	U	15	64		14
Aroclor-1260	510	U	510	35	U	35	15	U	15	14	U	14

Constituent	J023C4 Unknown liquid/oil spill area Sample Date 11/23/04			J02H93 Drum #128B-04-0010 Sample Date 02/03/05			J02H94 Drum #128B-04-0006 Sample Date 02/03/05			J02H95 Drum #128B-04-0007 Sample Date 02/03/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	14	U	14	1100	U	1100	1200	U	1200	22000	UD	22000
Aroclor-1221	74	U	74	1100	U	1100	1200	U	1200	22000	UD	22000
Aroclor-1232	14	U	14	1100	U	1100	1200	U	1200	22000	UD	22000
Aroclor-1242	14	U	14	1100	U	1100	1200	U	1200	20000	UD	20000
Aroclor-1248	14	U	14	1100	U	1100	1200	U	1200	20000	UD	20000
Aroclor-1254	14	U	14	1100	U	1100	1800		1200	20000	UD	20000
Aroclor-1260	14	U	14	1100	U	1100	1200	U	1200	20000	UD	20000

Constituent	J02H96 Drum #128B-04-0015 Sample Date 02/03/05			J02H98 Drum #128B-04-0014 Sample Date 02/03/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs						
Aroclor-1016	10000000	UD	10000000	1000	U	1000
Aroclor-1221	10000000	UD	10000000	1000	U	1000
Aroclor-1232	10000000	UD	10000000	1000	U	1000
Aroclor-1242	10000000	UD	10000000	950		1000
Aroclor-1248	10000000	UD	10000000	1000	U	1000
Aroclor-1254	64000000	D	10000000	1000	U	1000
Aroclor-1260	10000000	UD	10000000	1000	U	1000

**Table B-3. 128-B-2 Waste Characterization Data From Samples
Collected During Excavation. (7 Pages)**

Constituent	J02H97 Drum #128B-04-0011 Sample Date 02/03/05			J030B3 Drum #128B-04-0009 Sample Date 03/18/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Analytes (SVOAs)						
1,2,4-Trichlorobenzene	34000	UD	34000	350	U	350
1,2-Dichlorobenzene	34000	UD	34000	350	U	350
1,3-Dichlorobenzene	34000	UD	34000	350	U	350
1,4-Dichlorobenzene	34000	UD	34000	350	U	350
2,4,5-Trichlorophenol	86000	UD	86000	880	U	880
2,4,6-Trichlorophenol	34000	UD	34000	350	U	350
2,4-Dichlorophenol	34000	UD	34000	350	U	350
2,4-Dimethylphenol	34000	UD	34000	350	U	350
2,4-Dinitrophenol	86000	UD	86000	880	U	880
2,4-Dinitrotoluene	34000	UD	34000	350	U	350
2,6-Dinitrotoluene	34000	UD	34000	350	U	350
2-Chloronaphthalene	34000	UD	34000	350	U	350
2-Chlorophenol	34000	UD	34000	350	U	350
2-Methylnaphthalene	34000	UD	34000	350	U	350
2-Methylphenol (cresol, o-)	34000	UD	34000	350	U	350
2-Nitroaniline	86000	UD	86000	350	U	350
2-Nitrophenol	34000	UD	34000	300	J	880
3+4 Methylphenol (cresol, m+p)	34000	UD	34000	1500		350
3,3'-Dichlorobenzidine	34000	UD	34000	350	U	350
3-Nitroaniline	86000	UD	86000	880	U	880
4,6-Dinitro-2-methylphenol	86000	UD	86000	880	U	880
4-Bromophenylphenyl ether	34000	UD	34000	350	U	350
4-Chloro-3-methylphenol	34000	UD	34000	350	U	350
4-Chloroaniline	34000	UD	34000	350	U	350
4-Chlorophenylphenyl ether	34000	UD	34000	350	U	350
4-Nitroaniline	86000	UD	86000	880	U	880
4-Nitrophenol	86000	UD	86000	880	U	880
Acenaphthene	34000	UD	34000	350	U	350
Acenaphthylene	34000	UD	34000	350	U	350
Anthracene	34000	UD	34000	350	U	350
Benzo(a)anthracene	34000	UD	34000	350	U	350
Benzo(a)pyrene	34000	UD	34000	350	U	350
Benzo(b)fluoranthene	34000	UD	34000	350	U	350
Benzo(ghi)perylene	34000	UD	34000	350	U	350
Benzo(k)fluoranthene	34000	UD	34000	350	U	350
Bis(2-chloro-1-methylethyl)ether	34000	UD	34000	350	U	350
Bis(2-Chloroethoxy)methane	34000	UD	34000	350	U	350
Bis(2-chloroethyl) ether	34000	UD	34000	350	U	350
Bis(2-ethylhexyl) phthalate	34000	UD	34000	81	J	350
Butylbenzylphthalate	34000	UD	34000	350	U	350
Carbazole	34000	UD	34000	350	U	350
Chrysene	34000	UD	34000	350	U	350
Di-n-butylphthalate	34000	UD	34000	350	U	350
Di-n-octylphthalate	34000	UD	34000	350	U	350
Dibenz[a,h]anthracene	34000	UD	34000	350	U	350
Dibenzofuran	34000	UD	34000	350	U	350
Diethylphthalate	34000	UD	34000	350	U	350
Dimethyl phthalate	34000	UD	34000	350	U	350
Fluoranthene	34000	UD	34000	350	U	350

**Table B-3. 128-B-2 Waste Characterization Data From Samples
Collected During Excavation. (7 Pages)**

Constituent	J02H97 Drum #128B-04-0011 Sample Date 02/03/05			J030B3 Drum #128B-04-0009 Sample Date 03/18/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)						
Fluorene	34000	UD	34000	350	U	350
Hexachlorobenzene	34000	UD	34000	53	J	350
Hexachlorobutadiene	34000	UD	34000	350	U	350
Hexachlorocyclopentadiene	34000	UD	34000	350	U	350
Hexachloroethane	34000	UD	34000	350	U	350
Indeno(1,2,3-cd)pyrene	34000	UD	34000	350	U	350
Isophorone	34000	UD	34000	350	U	350
N-Nitroso-di-n-dipropylamine	34000	UD	34000	350	U	350
N-Nitrosodiphenylamine	34000	UD	34000	350	U	350
Naphthalene	34000	UD	34000	350	U	350
Nitrobenzene	34000	UD	34000	250	J	880
Pentachlorophenol	86000	UD	86000	350	U	350
Phenanthrene	34000	UD	34000	350	U	350
Phenol	34000	UD	34000	350	U	350
Pyrene	34000	UD	34000	58	J	350
Volatile Organic Analytes (VOAs)						
1,1,1-Trichloroethane	6	UD	6			
1,1,2,2-Tetrachloroethane	6	UD	6			
1,1,2-Trichloroethane	6	UD	6			
1,1-Dichloroethane	6	UD	6			
1,1-Dichloroethene	6	UD	6			
1,2-Dichloroethane	6	UD	6			
1,2-Dichloroethene(Total)	6	UD	6			
1,2-Dichloropropane	6	UD	6			
2-Butanone	3	JD	6			
2-Hexanone	4	JD	6			
4-Methyl-2-Pentanone	12	D	6			
Acetone	20	D	11			
Benzene	6	UD	6			
Bromodichloromethane	6	UD	6			
Bromoform	6	UD	6			
Bromomethane	11	UD	11			
Carbon disulfide	6	UD	6			
Carbon tetrachloride	6	UD	6			
Chlorobenzene	1	JD	6			
Chloroethane	11	UD	11			
Chloroform	6	UD	6			
Chloromethane	11	UD	11			
cis-1,3-Dichloropropene	6	UD	6			
Dibromochloromethane	6	UD	6			
Ethylbenzene	6	UD	6			
Methylenechloride	17	BD	6			
Styrene	6	UD	6			
Tetrachloroethene	6	UD	6			
Toluene	18	D	6			
trans-1,3-Dichloropropene	6	UD	6			
Trichloroethene	6	UD	6			
Vinyl chloride	11	UD	11			
Xylenes (total)	6	UD	6			

Table B-3. 128-B-2 Waste Characterization Data From Samples Collected During Excavation. (7 Pages)

Sample Location	HEIS Number	Sample Date	1,1-Dichloroethene			1,2-Dichloroethane			1,4-Dichlorobenzene			2,4,5-Trichlorophenol			2,4,6-Trichlorophenol		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Tawny brown material near AOC	J022F5	11/11/04							0.05	U	0.05	0.004	J	0.12	0.004	J	0.05
Ash stockpile	J023C0	11/23/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Suspect paint area	J023C3	11/23/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Unknown liquid/oil spill area	J023C4	11/23/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
50 increment samples from pile 4I	J03030	03/10/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
30 increment samples from pile 3I	J03032	03/10/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0009	J030B3	03/18/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0010	J02H93	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0006	J02H94	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0007	J02H95	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0015	J02H96	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0011	J02H97	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Drum #128B-04-0014	J02H98	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05

Sample Location	HEIS Number	Sample Date	2,4-Dinitrotoluene			2-Butanone			2-Methylphenol (cresol, o-)			3+4 Methylphenol (cresol, m+p)			Benzene		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Tawny brown material near AOC	J022F5	11/11/04	0.05	U	0.05				0.005	J	0.05	0.004	J	0.05			
Ash stockpile	J023C0	11/23/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Suspect paint area	J023C3	11/23/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Unknown liquid/oil spill area	J023C4	11/23/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
50 increment samples from pile 4I	J03030	03/10/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
30 increment samples from pile 3I	J03032	03/10/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Drum #128B-04-0009	J030B3	03/18/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Drum #128B-04-0010	J02H93	02/03/05	0.05	U	0.05	0.05	UD	0.05	0.05	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0006	J02H94	02/03/05	0.05	U	0.05	0.023	JD	0.05	0.12		0.05	0.18		0.05	0.025	UD	0.025
Drum #128B-04-0007	J02H95	02/03/05	0.05	U	0.05	0.05	UD	0.05	0.2		0.05	0.12		0.05	0.2	D	0.025
Drum #128B-04-0015	J02H96	02/03/05	0.05	U	0.05	0.05	UD	0.05	0.012	J	0.05	0.008	J	0.05	0.024	JD	0.024
Drum #128B-04-0011	J02H97	02/03/05	0.05	U	0.05	0.05	UD	0.05	0.05	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0014	J02H98	02/03/05	0.05	U	0.05	0.05	UD	0.05	0.05	U	0.05	0.05	U	0.05	0.025	UD	0.025

Table B-3. 128-B-2 Waste Characterization Data From Samples Collected During Excavation. (7 Pages)

Sample Location	HEIS Number	Sample Date	Carbon tetrachloride			Chlorobenzene			Chloroform			Hexachlorobenzene			Hexachlorobutadiene		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Tawny brown material near AOC	J022F5	11/11/04										0.003	J	0.05	0.05	U	0.05
Ash stockpile	J023C0	11/23/04										0.05	U	0.05	0.05	U	0.05
Suspect paint area	J023C3	11/23/04										0.05	U	0.05	0.05	U	0.05
Unknown liquid/oil spill area	J023C4	11/23/04										0.05	U	0.05	0.05	U	0.05
50 increment samples from pile 4I	J03030	03/10/05										0.05	U	0.05	0.05	U	0.05
30 increment samples from pile 3I	J03032	03/10/05										0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0009	J030B3	03/18/05										0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0010	J02H93	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0006	J02H94	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0007	J02H95	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0015	J02H96	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0011	J02H97	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05
Drum #128B-04-0014	J02H98	02/03/05	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05

Sample Location	HEIS Number	Sample Date	Hexachloroethane			Nitrobenzene			Pentachlorophenol			Pyridine			Tetrachloroethene		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Tawny brown material near AOC	J022F5	11/11/04	0.005	J	0.05	0.003	J	0.05	0.004	J	0.05	0.05	U	0.05			
Ash stockpile	J023C0	11/23/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05			
Suspect paint area	J023C3	11/23/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05			
Unknown liquid/oil spill area	J023C4	11/23/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05			
50 increment samples from pile 4I	J03030	03/10/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05			
30 increment samples from pile 3I	J03032	03/10/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05			
Drum #128B-04-0009	J030B3	03/18/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05			
Drum #128B-04-0010	J02H93	02/03/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0006	J02H94	02/03/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0007	J02H95	02/03/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0015	J02H96	02/03/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0011	J02H97	02/03/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05	0.025	UD	0.025
Drum #128B-04-0014	J02H98	02/03/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.05	0.05	U	0.05	0.025	UD	0.025

Sample Location	HEIS Number	Sample Date	Trichloroethene			Vinyl chloride		
			mg/L	Q	PQL	mg/L	Q	PQL
Drum #128B-04-0010	J02H93	02/03/05	0.025	UD	0.025	0.05	UD	0.05
Drum #128B-04-0006	J02H94	02/03/05	0.025	UD	0.025	0.05	UD	0.05
Drum #128B-04-0007	J02H95	02/03/05	0.025	UD	0.025	0.05	UD	0.05
Drum #128B-04-0015	J02H96	02/03/05	0.025	UD	0.025	0.05	UD	0.05
Drum #128B-04-0011	J02H97	02/03/05	0.025	UD	0.025	0.05	UD	0.05
Drum #128B-04-0014	J02H98	02/03/05	0.025	UD	0.025	0.05	UD	0.05

Table B-3. 128-B-2 Waste Characterization Data From Samples Collected During Excavation. (7 Pages)

Sample Location	HEIS Number	Sample Date	2,4-Dichloro-phenoxyacetic acid			2-(2,4,5-Trichlorophenoxy)			alpha-Chlordane			Endrin			Gamma-BHC (Lindane)		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Ash stockpile	J023C0	11/23/04	10	U	10	5	U	5	0.5	U	0.5	1	U	1	0.5	U	0.5
Suspect paint area	J023C3	11/23/04	10	U	10	5	U	5	0.5	U	0.5	1	U	1	0.5	U	0.5
Unknown liquid/oil spill area	J023C4	11/23/04	10	U	10	5	U	5	0.5	U	0.5	1	U	1	0.5	U	0.5

Sample Location	HEIS Number	Sample Date	gamma-Chlordane			Heptachlor			Heptachlor epoxide			Methoxychlor			Toxaphene		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Ash stockpile	J023C0	11/23/04	0.5	U	0.5	0.5	U	0.5	0.5	U	0.5	5	U	5	50	U	50
Suspect paint area	J023C3	11/23/04	0.5	U	0.5	0.5	U	0.5	0.5	U	0.5	5	U	5	50	U	50
Unknown liquid/oil spill area	J023C4	11/23/04	0.5	U	0.5	0.5	U	0.5	0.5	U	0.5	5	U	5	50	U	50

Sample Location	HEIS Number	Sample Date	Arsenic			Barium			Cadmium			Chromium			Lead		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Tawny brown material near AOC	J022F5	11/11/04	15.6	U	15.6	122	C	2.4	14.5		1.8	91.2		4.8	16900		13.2
Ash stockpile	J023C0	11/23/04	18.1	U	18.1	130		2.1	3.5	U	3.5	12.8		8.8	33.3	U	33.3
Graphite area (suspect lead)	J023C1	11/23/04	18.1	U	18.1	86.3		2.1	3.5	U	3.5	8.8	U	8.8	33.3	U	33.3
Dark reddish-brown material (suspect lead)	J023C2	11/23/04	18.1	U	18.1	82.7		2.1	3.5	U	3.5	8.8	U	8.8	33.3	U	33.3
Suspect paint area	J023C3	11/23/04	18.1	U	18.1	53.1		2.1	3.5	U	3.5	8.9		8.8	33.3	U	33.3
Unknown liquid/oil spill area	J023C4	11/23/04	18.1	U	18.1	175		2.1	3.5	U	3.5	8.8	U	8.8	33.3	U	33.3
50 increment samples from pile 41	J03030	03/10/05	17.4	U	17.4	286		1.2	2.4	U	2.4	11.6		2.4	647		11.4
30 increment samples from pile 31	J03032	03/10/05	17.4	U	17.4	261		1.2	2.4	U	2.4	174		2.4	730		11.4
Drum #128B-04-0009	J030B3	03/18/05	17.4	U	17.4	127		1.2	20.3		2.4	20.3		2.4	564000		11.4

Sample Location	HEIS Number	Sample Date	Mercury			Selenium			Silver		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Tawny brown material near AOC	J022F5	11/11/04	0.1	U	0.1	22.2	U	22.2	6	U	6
Ash stockpile	J023C0	11/23/04	0.25		0.1	48.4	U	48.4	5.1	U	5.1
Graphite area (suspect lead)	J023C1	11/23/04	0.1	U	0.1	48.4	U	48.4	5.1	U	5.1
Dark reddish-brown material (suspect lead)	J023C2	11/23/04	0.1	U	0.1	48.4	U	48.4	5.1	U	5.1
Suspect paint area	J023C3	11/23/04	0.1	U	0.1	48.4	U	48.4	5.1	U	5.1
Unknown liquid/oil spill area	J023C4	11/23/04	0.1	U	0.1	48.4	U	48.4	5.1	U	5.1
50 increment samples from pile 41	J03030	03/10/05	0.1	U	0.1	24	U	24	3	U	3
30 increment samples from pile 31	J03032	03/10/05	0.1	U	0.1	24	U	24	3.4		3
Drum #128B-04-0009	J030B3	03/18/05	0.1	U	0.1	24	U	24	3	U	3

APPENDIX C
CALCULATION OF 95% UCL VALUES FOR
VERIFICATION DATA
(44 Pages)

CALCULATION COVER SHEET

Project Title: 100-B/C Area Remedial Action Project **Job No.** 14655
Area 600
Discipline Environmental ***Calc. No.** 0600X-CA-V0052
Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations
Computer Program Excel **Program No.** Excel 2003

The attached calculations have been generated to document compliance with established cleanup levels. These documents should be used in conjunction with other relevant documents in the administrative record.

Committed Calculation ☒ Preliminary ☐ Superseded ☐ Voided ☐

Rev.	Sheet Numbers	Originator	Checker	Reviewer	Approval	Date
0	Cover = 1 Sheets = 14 Attm. 1 = 29 Total = 44	<i>JMCA</i> 9/6/05 J. M. Capron	<i>J.M. Blakley</i> 9/8/05 T. M. Blakley <i>JB Miley</i> 9-13-05 T. B. Miley	<i>L.M. Dittmer</i> 9/14/05 L. M. Dittmer	<i>D.N. Strom</i> D. N. Strom	9-15-05
SUMMARY OF REVISIONS						

* Obtain calc no. from DIS

DE01437.03 (12/09/2004)

Washington Closure Hanford

CALCULATION SHEET

 Originator J. M. Capron
 Project 100-B/C Area Remedial Action Project

 Date 09/06/05
 Job No. 14655
Calc. No. 0600X-CA-V0052Checked T. M. BlakleyChecked T. B. MileyRev. No. 0Date 9/8/05Date 9-13-05Sheet No. 1 of 14Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations**Summary****Purpose:**

Calculate the 95% upper confidence limit (UCL) to evaluate compliance with cleanup standards for the subject site. Also, perform the *Washington Administrative Code* (WAC) 173-340-740(7)(e) Model Toxics Control Act (MTCOA) 3-part test for nonradionuclide analytes and calculate the relative percent difference (RPD) for primary-duplicate sample pairs for each contaminant of concern (COC) and contaminant of potential concern (COPC), as necessary.

Table of Contents:

Sheets 1 to 2 - Calculation Sheet Summary
 Sheets 3 to 4 - Calculation Sheet Shallow Zone Verification Data - Excavated Area
 Sheet 5 - Calculation Sheet Duplicate Analysis - Excavated Area
 Sheets 6 to 7 - Calculation Sheet Shallow Zone Verification Data - Staging Area
 Sheet 8 - Calculation Sheet Duplicate Analysis - Staging Area
 Sheets 9 to 14 - Ecology Software (MTCASat) Results
 Attachment 1 - 128-B-2 Verification Sampling Results (29 sheets)

Given/References:

- 1) Sample Results (Attachment 1)
- 2) Lookup values, background values, and remedial action goals (RAGs) are taken from DOE-RL (2005b), DOE-RL (2001), and Ecology (1996).
- 3) DOE-RL, 2001, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, DOE/RL-92-24, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- 4) DOE-RL, 2005a, *100 Area Remedial Action Sampling and Analysis Plan* (SAP), DOE/RL-96-22, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- 5) DOE-RL, 2005b, *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (RDR/RAWP), DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- 6) Ecology, 1992, *Statistical Guidance for Ecology Site Managers*, Publication #92-54, Washington Department of Ecology, Olympia, Washington.
- 7) Ecology, 1993, *Statistical Guidance for Ecology Site Managers, Supplement S-6, Analyzing Site or Background Data with Below-detection Limit or Below-PQL Values (Censored Data Sets)*, Publication #92-54, Washington Department of Ecology, Olympia, Washington.
- 8) Ecology, 1996, *Model Toxic Control Act Cleanup Levels and Risk Calculations (CLARC II)*, Publication #94-145, Washington State Department of Ecology, Olympia, Washington.
- 9) EPA, 1994, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA 540/R-94/013, U.S. Environmental Protection Agency, Washington, D.C.
- 10) WAC 173-340, 1996, "Model Toxic Control Act - Cleanup," *Washington Administration Code*.

Solution:

Calculation methodology is described in Ecology Pub. #92-54 (Ecology 1992, 1993), below, and in the RDR/RAWP (DOE-RL 2005b). Use data from attached worksheets to perform the 95% UCL calculation for each analyte, the WAC 173-340-740(7)(e) 3-part test for nonradionuclides, and the RPD calculations for each COC and COPC. The hazard quotient and carcinogenic risk calculations are located in a separate calculation brief as an appendix to the Remaining Sites Verification Package (RSVP).

Calculation Description:

The subject calculations were performed on data from soil verification samples from the subject waste site. The data were entered into an EXCEL 2003 spreadsheet and calculations performed by using the built-in spreadsheet functions and/or creating formulae within the cells. The statistical evaluation of data for use in accordance with the RDR/RAWP (DOE-RL 2005b) is documented by this calculation. Duplicate RPD results are used in evaluation of data quality within the RSVP for this site.

Methodology:

For nonradioactive analytes with <50% of the data below detection limits and all radionuclide analytes, the statistical value calculated to evaluate the effectiveness of cleanup is the 95% UCL. For nonradioactive analytes with >50% of the data below detection limits, the maximum detected value for the data set is used instead of the 95% UCL. The evaluation of the portion of the data set below detection limits is shown with the attached sample results. All nonradionuclide data reported as being undetected are set to 1/2 the detection limit value for calculation of the statistics (Ecology 1993). For radionuclide data, calculation of the statistics was done on the reported value. In cases where the laboratory does not report a value below the minimum detectable activity (MDA), half of the MDA is used in statistical calculations.

For the statistical evaluation of duplicate sample pairs, the samples are averaged before being included in the data set, after adjustments for censored data as described above.

For nonradionuclides, the WAC 173-340 statistical guidance suggests that a test for distributional form be performed on the data and the 95% UCL calculated on the appropriate distribution using Ecology software. For nonradionuclide small data sets ($n < 10$) and all radionuclide data sets, the calculations are performed assuming nonparametric distribution, so no tests for distribution are performed. For nonradionuclide data sets of ten or greater, distributional testing is done using Ecology's MTCASat software (Ecology 1993).

The WAC 173-340-740(7)(e) 3-part test is performed for nonradionuclide analytes only and determines if:

- 1) the 95% UCL exceeds the most stringent cleanup limit for each non-radionuclide COC,
- 2) greater than 10% of the raw data exceed the most stringent cleanup limit for each non-radionuclide COC,
- 3) the maximum value of the raw data set exceeds two times the most stringent cleanup limit for each non-radionuclide COC.

The RPD is calculated when both the primary value and the duplicate are above detection limits and are greater than 5 times the target detection limit (TDL). The TDL is a laboratory detection limit pre-determined for each analytical method, listed in Table II.1 of the SAP (DOE-RL 2005a). The RPD calculations use the following formula:

$$RPD = \frac{|M-S|}{((M+S)/2)} * 100$$

where, M = Main Sample Value S = Split (or duplicate) Sample Value

For quality assurance/quality control (QA/QC) split and duplicate RPD calculations, a value less than 30% indicates the data compare favorably. For regulatory splits, a threshold of 35% is used (EPA 1994). If the RPD is greater than 30% (or 35% for regulatory split data), further investigation regarding the usability of the data is performed. No regulatory split samples were collected for cleanup verification of the subject site. Additional discussion as necessary is provided in the data quality assessment section of the applicable RSVP.

Washington Closure Hanford

CALCULATION SHEET

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project

Date 09/06/05
Job No. 14655

Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
Checked T. B. Miley

Rev. No. 0
Date 7/8/05
Date 8/1/05
Sheet No. 2 of 14

Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Summary (continued)

Results:

The results presented in the summary tables that follow are for use in risk analysis and the RSVP for this site.

Results Summary - Excavated Area				Results Summary - Staging Area			
Analyte	95% UCL*	Maximum*	Units	Analyte	95% UCL*	Maximum*	Units
Uranium-233/234	6.58E-01		pCi/g	Cesium-137	1.4E-01		pCi/g
Uranium-238	7.92E-01		pCi/g	Uranium-233/234	7.53E-01		pCi/g
Radium-226	4.61E-01		pCi/g	Uranium-238	5.62E-01		pCi/g
Arsenic		3.1E+00	mg/kg	Radium-226	6.03E-01		pCi/g
Barium	5.99E+01		mg/kg	Arsenic		4.3E+00	mg/kg
Beryllium	1.11E+00		mg/kg	Barium	8.07E+01		mg/kg
Boron		4.9E+00	mg/kg	Beryllium	7.4E-01		mg/kg
Chromium	1.07E+01		mg/kg	Boron	2.9E+00		mg/kg
Cobalt	8.9E+00		mg/kg	Cadmium		1.9E-01	mg/kg
Copper	1.66E+01		mg/kg	Chromium	1.89E+01		mg/kg
Lead	1.13E+01		mg/kg	Cobalt	7.6E+00		mg/kg
Manganese	3.62E+02		mg/kg	Copper	1.19E+01		mg/kg
Molybdenum		1.7E+00	mg/kg	Lead	3.35E+01		mg/kg
Nickel	1.22E+01		mg/kg	Manganese	3.67E+02		mg/kg
Vanadium	5.29E+01		mg/kg	Mercury		3.E-02	mg/kg
Zinc	4.74E+01		mg/kg	Molybdenum		1.3E+00	mg/kg
Bis(2-ethylhexyl)phthalate		6.2E-01	mg/kg	Nickel	1.09E+01		mg/kg
Di-n-butylphthalate		1.8E-02	mg/kg	Vanadium	3.91E+01		mg/kg
Toluene		4.E-03	mg/kg	Zinc	4.45E+01		mg/kg
Aroclor-1254		2.2E-02	mg/kg	Aroclor-1254		3.6E-01	mg/kg
WAC 173-340-740(7)(e) Evaluation				4,4'-DDE		1.6E-02	mg/kg
WAC 3-Part Test for most stringent cleanup limit:				Endrin aldehyde		7.E-03	mg/kg
95% UCL > Cleanup Limit?	YES	Because of the "yes" answers to the MTCA 3-part test for lead, a detailed assessment using RESRAD will be performed for this contaminant.		gamma-Chlordane		2.4E-02	mg/kg
> 10% above Cleanup Limit?	YES			Butylbenzylphthalate		1.7E-02	mg/kg
Any sample > 2x Cleanup Limit?	YES			Fluoranthene		2.2E-02	mg/kg
				Phenol		2.3E-02	mg/kg
				Pyrene		3.1E-02	mg/kg
				Toluene		3.E-03	mg/kg
				WAC 173-340-740(7)(e) Evaluation			
				WAC 3-Part Test for most stringent cleanup limit:			
				95% UCL > Cleanup Limit?	YES	Because of the "yes" answers to the MTCA 3-part test for chromium and lead, a detailed assessment using RESRAD will be performed for these contaminants.	
				> 10% above Cleanup Limit?	YES		
				Any sample > 2x Cleanup Limit?	YES		
				Note: All data sets meet the 3-part test criteria when compared to direct exposure cleanup limits.			

*For nonradionuclides, where less than 50% of a data set is censored (below detection limits), the 95% UCL value is used for a given analyte. Where greater than 50% of a data set is censored, the statistical value defaults to the maximum detected value in the data set.

Relative Percent Difference (RPD) Results* - QA/QC Analysis	
Analyte	Duplicate Analysis
Barium	1.8%
Chromium	2.7%
Copper	22%
Manganese	0.30%
Vanadium	3.6%
Zinc	1.7%

Relative Percent Difference (RPD) Results* - QA/QC Analysis	
Analyte	Duplicate Analysis
Barium	8.0%
Chromium	2.0%
Copper	27%
Manganese	2.9%
Vanadium	2.8%
Zinc	10%

*RPD evaluation was not required for analytes not included in these tables

DDE = dichlorodiphenyldichloroethylene

MTCA = Model Toxic Control Act

QA/QC = quality assurance/quality control

RESRAD = RESidual RADioactivity

RPD = relative percent difference

UCL = upper confidence level

WAC = Washington Administrative Code

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project

Date 09/06/05
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Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
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Rev. No. 0
Date 9/8/05
Date 9-13-05
Sheet No. 3 of 14

Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

1 Shallow Zone Verification Data - Excavated Area

Sampling Area	HEIS Number	Sample Date	Barium			Beryllium			Chromium			Cobalt			Copper			Manganese			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	mg/kg	Q	PQL
12	J03CF0	6/8/2005	5.03E+01	C	1.1E-01	1.0E+00		5.E-02	7.5E+00	CJ	3.8E-01	8.0E+00		4.9E-01	1.35E+01		4.4E-01	3.33E+02		1.1E-01	1.20E+01		1.2E+00
Duplicate of J03CF0	J03CH2	6/8/2005	5.12E+01	C	1.1E-01	7.7E-01	B	5.E-02	7.3E+00	J	3.9E-01	8.4E+00	B	5.0E-01	1.69E+01	C	4.4E-01	3.34E+02		1.1E-01	1.01E+01	B	1.2E+00
13	J03CF1	6/8/2005	8.03E+01	C	1.1E-01	8.4E-01		6.E-02	1.04E+01	CJ	3.9E-01	8.0E+00		5.0E-01	9.8E+00		4.4E-01	3.98E+02		1.1E-01	1.12E+01		1.2E+00
14	J03CF2	6/8/2005	3.68E+01	C	1.1E-01	6.7E-01		6.E-02	1.12E+01	CJ	3.9E-01	7.3E+00		5.0E-01	1.55E+01		4.4E-01	3.88E+02		1.1E-01	1.25E+01		1.2E+00
15	J03CF3	6/8/2005	7.12E+01	C	1.1E-01	8.8E-01		6.E-02	1.02E+01	CJ	3.9E-01	8.6E+00		5.0E-01	1.03E+01		4.4E-01	3.76E+02		1.1E-01	1.05E+01		1.2E+00
16	J03CF4	6/8/2005	3.65E+01	C	1.1E-01	1.2E+00		6.E-02	5.4E+00	CJ	3.9E-01	8.5E+00		5.0E-01	1.25E+01		4.4E-01	3.32E+02		1.1E-01	9.9E+00		1.2E+00
17	J03CF5	6/8/2005	3.86E+01	C	1.1E-01	1.2E+00		6.E-02	6.3E+00	CJ	3.9E-01	8.9E+00		5.0E-01	1.36E+01		4.4E-01	3.12E+02		1.1E-01	1.19E+01		1.2E+00
18	J03CF6	6/8/2005	5.47E+01	C	1.1E-01	1.2E+00		5.E-02	9.5E+00	CJ	3.7E-01	9.1E+00		4.8E-01	1.47E+01		4.3E-01	3.70E+02		1.1E-01	1.27E+01		1.2E+00
19	J03CF7	6/8/2005	4.38E+01	C	1.1E-01	1.3E+00		5.E-02	7.3E+00	CJ	3.8E-01	8.8E+00		4.9E-01	1.81E+01		4.4E-01	3.26E+02		1.1E-01	1.44E+01		1.2E+00
20	J03CF8	6/8/2005	5.15E+01	C	1.1E-01	1.2E+00		5.E-02	7.3E+00	CJ	3.7E-01	9.1E+00		4.8E-01	1.33E+01		4.3E-01	3.34E+02		1.1E-01	1.07E+01		1.2E+00
21	J03CF9	6/8/2005	5.50E+01	C	1.1E-01	7.6E-01	B	5.E-02	1.55E+01	J	3.8E-01	8.6E+00	B	4.8E-01	1.93E+01	C	4.3E-01	3.27E+02		1.1E-01	1.11E+01	B	1.2E+00
22	J03CH0	6/8/2005	4.41E+01	C	1.1E-01	8.9E-01	B	5.E-02	6.4E+00	J	3.8E-01	9.2E+00	B	4.8E-01	1.79E+01	C	4.3E-01	3.20E+02		1.1E-01	1.00E+01	B	1.2E+00

17 Statistical Computation Input Data

Sampling Area	HEIS Number	Sample Date	Barium mg/kg	Beryllium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Manganese mg/kg	Nickel mg/kg
12	J03CF0/ J03CH2	6/8/2005	5.08E+01	8.9E-01	7.4E+00	8.2E+00	1.52E+01	3.34E+02	1.11E+01
13	J03CF1	6/8/2005	8.03E+01	8.4E-01	1.04E+01	8.0E+00	9.8E+00	3.98E+02	1.12E+01
14	J03CF2	6/8/2005	3.68E+01	6.7E-01	1.12E+01	7.3E+00	1.55E+01	3.88E+02	1.25E+01
15	J03CF3	6/8/2005	7.12E+01	8.8E-01	1.02E+01	8.6E+00	1.03E+01	3.76E+02	1.05E+01
16	J03CF4	6/8/2005	3.65E+01	1.2E+00	5.4E+00	8.5E+00	1.25E+01	3.32E+02	9.9E+00
17	J03CF5	6/8/2005	3.86E+01	1.2E+00	6.3E+00	8.9E+00	1.36E+01	3.12E+02	1.19E+01
18	J03CF6	6/8/2005	5.47E+01	1.2E+00	9.5E+00	9.1E+00	1.47E+01	3.70E+02	1.27E+01
19	J03CF7	6/8/2005	4.38E+01	1.3E+00	7.3E+00	8.8E+00	1.81E+01	3.26E+02	1.44E+01
20	J03CF8	6/8/2005	5.15E+01	1.2E+00	7.3E+00	9.1E+00	1.33E+01	3.34E+02	1.07E+01
21	J03CF9	6/8/2005	5.50E+01	7.6E-01	1.55E+01	8.6E+00	1.93E+01	3.27E+02	1.11E+01
22	J03CH0	6/8/2005	4.41E+01	8.9E-01	6.4E+00	9.2E+00	1.79E+01	3.20E+02	1.00E+01

32 Statistical Computations

	Barium	Beryllium	Chromium	Cobalt	Copper	Manganese	Nickel
Statistical value based on	Large data set (n ≥ 10), use MTCASat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Large data set (n ≥ 10), use MTCASat lognormal distribution.	Large data set (n ≥ 10), use MTCASat normal distribution.	Large data set (n ≥ 10), use MTCASat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Large data set (n ≥ 10), use MTCASat lognormal distribution.
N	11	11	11	11	11	11	11
% < Detection limit	0%	0%	0%	0%	0%	0%	0%
mean	5.12E+01	1.0E+00	8.8E+00	8.6E+00	1.46E+01	3.47E+02	1.15E+01
standard deviation	1.40E+01	2.E-01	2.9E+00	5.7E-01	3.1E+00	3.0E+01	1.3E+00
95% UCL on mean	5.99E+01	1.1E+00	1.07E+01	8.9E+00	1.66E+01	3.62E+02	1.22E+01
maximum value	8.03E+01	1.3E+00	1.55E+01	9.2E+00	1.93E+01	3.98E+02	1.44E+01
Statistical value	5.99E+01	1.1E+00	1.07E+01	8.9E+00	1.66E+01	3.62E+02	1.22E+01
Background	NA	NA	NA	NA	NA	NA	NA
Statistical value above background	5.99E+01	1.1E+00	1.07E+01	8.9E+00	1.66E+01	3.62E+02	1.22E+01
Most Stringent Cleanup Limit for nonradionuclide and RAG type	132 BG/GW Protection	1.51 BG/GW & River Protection	18.5 BG/GW & River Protection	32 GW Protection	22.0 BG/River Protection	512 BG/GW Protection	19.1 BG/GW Protection
WAC 173-340 3-PART TEST							
95% UCL > Cleanup Limit?	NA	NA	NA	NA	NA	NA	NA
> 10% above Cleanup Limit?	NA	NA	NA	NA	NA	NA	NA
Any sample > 2X Cleanup Limit?	NA	NA	NA	NA	NA	NA	NA
WAC 173-340 Compliance?	NA	Because all values are below background (132 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (18.5 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (15.7 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (22.0 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (512 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (19.1 mg/kg), the MTCA 3-part test is not required.

52 B = blank contamination
53 BG = background
54 C = blank contamination
55 GW = groundwater
56 HEIS = Hanford Environmental Information System
57 J = estimated
58
59
MTCA = Model Toxic Control Act
NA = not applicable
PQL = practical quantitation limit
Q = qualifier
RAG = remedial action goal
WAC = Washington Administrative Code

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project

Date 09/06/05
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Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
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Rev. No. 0
Date 9/13/05
Date 9-13-05
Sheet No. 4 of 14

Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

1 Shallow Zone Verification Data - Excavated Area

Sampling Area	HEIS Number	Sample Date	Lead			Vanadium			Zinc			Uranium-233/234		Uranium-238		Radium-226	
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	pCi/g	Q	MDA	pCi/g	Q	MDA
12	J03CF0	6/8/2005	5.6E+00		1.4E+00	4.66E+01	J	3.3E-01	4.26E+01	CJ	2.7E-01	6.45E-01		2.6E-01	8.83E-01		3.24E-01
Duplicate of J03CF0	J03CH2	6/8/2005	6.7E+00	CJ	1.4E+00	4.83E+01	J	3.3E-01	4.19E+01	CJ	2.8E-01	4.94E-01		2.7E-01	8.12E-01		4.19E-01
13	J03CF1	6/8/2005	5.2E+00		1.4E+00	3.86E+01	J	3.3E-01	4.18E+01	CJ	2.8E-01	7.18E-01		2.4E-01	7.49E-01		5.98E-01
14	J03CF2	6/8/2005	4.9E+00		1.4E+00	3.09E+01	J	3.3E-01	3.32E+01	CJ	2.8E-01	5.74E-01		2.4E-01	6.38E-01		3.85E-01
15	J03CF3	6/8/2005	5.8E+00		1.4E+00	4.02E+01	J	3.3E-01	3.95E+01	CJ	2.8E-01	7.20E-01		2.9E-01	6.44E-01		5.54E-01
16	J03CF4	6/8/2005	5.5E+00		1.4E+00	4.80E+01	J	3.3E-01	4.41E+01	CJ	2.8E-01	6.31E-01		2.5E-01	4.98E-01		3.77E-01
17	J03CF5	6/8/2005	4.1E+00		1.4E+00	5.44E+01	J	3.3E-01	4.45E+01	CJ	2.8E-01	6.48E-01		2.9E-01	9.53E-01		3.45E-01
18	J03CF6	6/8/2005	1.39E+01		1.3E+00	4.98E+01	J	3.2E-01	4.46E+01	CJ	2.7E-01	5.77E-01		2.6E-01	9.51E-01		3.46E-01
19	J03CF7	6/8/2005	5.6E+00		1.4E+00	5.44E+01	J	3.3E-01	6.19E+01	CJ	2.7E-01	4.75E-01		2.3E-01	5.64E-01		3.54E-01
20	J03CF8	6/8/2005	5.7E+00		1.3E+00	4.98E+01	J	3.2E-01	4.31E+01	CJ	2.7E-01	7.38E-01		2.5E-01	6.42E-01		3.89E-01
21	J03CF9	6/8/2005	2.58E+01	CJ	1.3E+00	4.57E+01		3.2E-01	4.23E+01	C	2.7E-01	6.15E-01		2.9E-01	6.92E-01		5.15E-01
22	J03CH0	6/8/2005	6.6E+00	CJ	1.3E+00	6.07E+01		3.2E-01	4.67E+01	C	2.7E-01	4.95E-01		2.2E-01	7.28E-01		3.09E-01

17 Statistical Computation Input Data

Sampling Area	HEIS Number	Sample Date	Lead mg/kg	Vanadium mg/kg	Zinc mg/kg	Uranium-233/234 pCi/g	Uranium-238 pCi/g	Radium-226 pCi/g
12	J03CF0/ J03CH2	6/8/2005	6.2E+00	4.75E+01	4.23E+01	5.70E-01	8.48E-01	3.72E-01
13	J03CF1	6/8/2005	5.2E+00	3.86E+01	4.18E+01	7.18E-01	7.49E-01	5.98E-01
14	J03CF2	6/8/2005	4.9E+00	3.09E+01	3.32E+01	5.74E-01	6.38E-01	3.85E-01
15	J03CF3	6/8/2005	5.8E+00	4.02E+01	3.95E+01	7.20E-01	6.44E-01	5.54E-01
16	J03CF4	6/8/2005	5.5E+00	4.80E+01	4.41E+01	6.31E-01	4.98E-01	3.77E-01
17	J03CF5	6/8/2005	4.1E+00	5.44E+01	4.45E+01	6.48E-01	9.53E-01	3.45E-01
18	J03CF6	6/8/2005	1.39E+01	4.98E+01	4.46E+01	5.77E-01	9.51E-01	3.46E-01
19	J03CF7	6/8/2005	5.6E+00	5.44E+01	6.19E+01	4.75E-01	5.64E-01	3.54E-01
20	J03CF8	6/8/2005	5.7E+00	4.98E+01	4.31E+01	7.38E-01	6.42E-01	3.89E-01
21	J03CF9	6/8/2005	2.58E+01	4.57E+01	4.23E+01	6.15E-01	6.92E-01	5.15E-01
22	J03CH0	6/8/2005	6.6E+00	6.07E+01	4.67E+01	4.95E-01	7.28E-01	3.09E-01

32 Statistical Computations

	Lead	Vanadium	Zinc	Uranium-233/234	Uranium-238	Radium-226
Statistical value based on	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Radionuclide data set. Use nonparametric z-statistic.	Radionuclide data set. Use nonparametric z-statistic.	Radionuclide data set. Use nonparametric z-statistic.
N	11	11	11	11	11	11
% < Detection limit	0%	0%	0%	0%	0%	0%
mean	8.1E+00	4.73E+01	4.40E+01	6.15E-01	7.19E-01	4.13E-01
standard deviation	6.4E+00	8.3E+00	6.9E+00	8.8E-02	1.48E-01	9.6E-02
Z-statistic	1.645	1.645	1.645	1.645	1.645	1.645
95% UCL on mean	1.13E+01	5.29E+01	4.74E+01	6.58E-01	7.92E-01	4.61E-01
maximum value	2.58E+01	6.07E+01	6.19E+01	7.38E-01	9.53E-01	5.98E-01
Statistical value	1.13E+01	5.29E+01	4.74E+01	6.58E-01	7.92E-01	4.61E-01
Background	NA	NA	NA	1.1	1.1	0.815
Statistical value above background	1.13E+01	5.29E+01	4.74E+01	0 (< BG)	0 (< BG)	0 (< BG)
Lookup Value - 15 mrem/yr for radionuclides				1.1	1.1	1.04
Most Stringent Cleanup Limit for nonradionuclide and RAG type	BG/GW & River Protection 10.2	BG/GW Protection 85.1	BG/River Protection 67.8			
WAC 173-340 3-PART TEST						
95% UCL > Cleanup Limit?	YES	NA	NA			
> 10% above Cleanup Limit?	YES	NA	NA			
Any sample > 2X Cleanup Limit?	YES	NA	NA			
WAC 173-340 Compliance?	NO	Because of the "yes" answers to the MTCA 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to direct exposure cleanup levels.	Because all values are below background (85.1 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (67.8 mg/kg), the MTCA 3-part test is not required.		

54 BG = background
55 C = blank contamination
56 GW = groundwater
57 HEIS = Hanford Environmental Information System
58 J = estimated
59 MDA = minimum detectable activity
60 MTCA = Model Toxic Control Act
61

NA = not applicable
PQL = practical quantitation limit
Q = qualifier
RAG = remedial action goal
RESRAD = RESidual RADioactivity
WAC = Washington Administrative Code

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project

Date 09/06/05
Job No. 14655

Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
Checked T. B. Miley

Rev. No. 0
Date 9/8/05
Date 9-13-05
Sheet No. 5 of 14

Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

1 Duplicate Analysis - Excavated Area

Sampling Area	HEIS Number	Sample Date	Arsenic			Barium			Beryllium			Boron			Chromium			Cobalt			Copper		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
12	J03CF0	6/8/2005	2.5E+00	U	2.5E+00	5.03E+01	C	1.1E-01	1.0E+00		5.E-02	1.3E+00	UJ	1.3E+00	7.5E+00	CJ	3.8E-01	8.0E+00		4.9E-01	1.35E+01		4.4E-01
Duplicate of J03CF0	J03CH2	6/8/2005	2.7E+00	B	2.5E+00	5.12E+01	C	1.1E-01	7.7E-01	B	6.E-02	3.0E+00	C	1.3E+00	7.3E+00	J	3.9E-01	8.4E+00	B	5.0E-01	1.69E+01	C	4.4E-01

6 Analysis:

Duplicate Analysis	(TDL)	10	2	0.5	2	1	2	1
	Both > PQL?	No-Stop (acceptable)	Yes (continue)	Yes (continue)	No-Stop (acceptable)	Yes (continue)	Yes (continue)	Yes (continue)
	Both >5xTDL?		Yes (calc RPD)	No-Stop (acceptable)		Yes (calc RPD)	No-Stop (acceptable)	Yes (calc RPD)
	RPD		1.8%			2.7%		22%

Sampling Area	HEIS Number	Sample Date	Lead			Manganese			Molybdenum			Nickel			Vanadium			Zinc			Radium-226		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	pCi/g	Q	MDA
12	J03CF0	6/8/2005	5.6E+00		1.4E+00	3.33E+02		1.1E-01	8.8E-01	U	8.8E-01	1.20E+01		1.2E+00	4.66E+01	J	3.3E-01	4.26E+01	CJ	2.7E-01	3.24E-01		1.6E-01
Duplicate of J03CF0	J03CH2	6/8/2005	6.7E+00	CJ	1.4E+00	3.34E+02		1.1E-01	1.0E+00	BJ	8.9E-01	1.01E+01	B	1.2E+00	4.83E+01		3.3E-01	4.19E+01	C	2.8E-01	4.19E-01		1.5E-01

17 Analysis:

Duplicate Analysis	(TDL)	5	5	2	4	2.5	1	0.1
	Both > PQL/MDA?	Yes (continue)	Yes (continue)	No-Stop (acceptable)	Yes (continue)	Yes (continue)	Yes (continue)	Yes (continue)
	Both >5xTDL?	No-Stop (acceptable)	Yes (calc RPD)		No-Stop (acceptable)	Yes (calc RPD)	Yes (calc RPD)	No-Stop (acceptable)
	RPD		0.30%			3.6%	1.7%	

Sampling Area	HEIS Number	Sample Date	Uranium-233/234			Uranium-238			Aroclor-1254			bis(2-Ethylhexyl)phthalate			Di-n-butylphthalate			Toluene		
			pCi/g	Q	MDA	pCi/g	Q	MDA	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
12	J03CF0	6/8/2005	6.45E-01		0.26	8.83E-01		2.6E-01	1.3E+01	U	1.3E+01	6.60E+02	U	6.6E+02	1.8E+01	J	3.4E+02	4.E+00	J	5.E+00
Duplicate of J03CF0	J03CH2	6/8/2005	4.94E-01		0.27	8.12E-01		2.7E-01	1.4E+01		1.3E+01	6.20E+02	B	3.4E+02	3.4E+02	U	3.4E+02	5.E+00	U	5.E+00

28 Analysis:

Duplicate Analysis	(TDL)	1.0	1.0	17	330	330	10
	Both > PQL/MDA?	Yes (continue)	Yes (continue)	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)
	Both >5xTDL?	No-Stop (acceptable)	No-Stop (acceptable)				
	RPD						

33 B = blank contamination
34 C = blank contamination
35 HEIS = Hanford Environmental Information System
36 J = estimated
37 MDA = minimum detectable activity
38 PQL = practical quantitation limit
Q = qualifier
RPD = relative percent difference
TDL = target detection limit

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project
Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
Job No. 14655

Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
Checked T. B. Miley

Rev. No. 0
Date 9/8/05
Date 9-13-05
Sheet No. 6 of 14

1 Shallow Zone Verification Data - Staging Area

Sampling Area	HEIS Number	Sample Date	Barium			Beryllium			Boron			Chromium			Cobalt			Copper			Manganese		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
1	J03CC9	6/8/2005	8.34E+01	C	1.1E-01	7.4E-01		5.E-02	6.7E+00	J	1.3E+00	1.22E+01	CJ	3.8E-01	8.0E+00		4.9E-01	1.23E+01		4.4E-01	3.97E+02		1.1E-01
2	J03CD0	6/8/2005	7.29E+01	C	1.1E-01	6.8E-01		6.E-02	2.3E+00	J	1.3E+00	1.04E+01	CJ	3.9E-01	7.2E+00		5.0E-01	1.08E+01		4.4E-01	3.42E+02		1.1E-01
3	J03CD1	6/8/2005	7.91E+01	C	1.1E-01	7.4E-01		6.E-02	1.7E+00	J	1.3E+00	1.59E+01	CJ	3.9E-01	7.5E+00		5.0E-01	1.20E+01		4.4E-01	3.61E+02		1.1E-01
4	J03CD2	6/8/2005	8.35E+01	C	1.1E-01	6.6E-01		6.E-02	2.2E+00	J	1.3E+00	2.55E+01	CJ	3.9E-01	6.7E+00		5.1E-01	1.24E+01		4.5E-01	3.29E+02		1.1E-01
5	J03CD3	6/8/2005	7.88E+01	C	1.1E-01	7.2E-01		6.E-02	1.3E+00	UJ	1.3E+00	1.08E+01	CJ	3.9E-01	8.0E+00		5.0E-01	1.06E+01		4.4E-01	3.90E+02		1.1E-01
6	J03CD4	6/8/2005	7.71E+01	C	1.1E-01	6.9E-01		6.E-02	2.7E+00	J	1.3E+00	1.00E+01	CJ	3.9E-01	6.7E+00		5.0E-01	9.3E+00		4.4E-01	3.39E+02		1.1E-01
Duplicate of J03CD4	J03CH1	6/8/2005	8.35E+01	C	1.1E-01	5.7E-01	B	5.E-02	3.6E+00	C	1.2E+00	9.8E+00	J	3.8E-01	6.9E+00	B	4.9E-01	1.22E+01	C	4.3E-01	3.49E+02		1.1E-01
7	J03CD5	6/8/2005	7.78E+01	C	1.1E-01	7.1E-01		5.E-02	1.2E+00	UJ	1.2E+00	1.03E+01	CJ	3.8E-01	7.2E+00		4.8E-01	9.9E+00		4.3E-01	3.48E+02		1.1E-01
8	J03CD6	6/8/2005	8.00E+01	C	1.1E-01	7.4E-01		5.E-02	2.4E+00	J	1.3E+00	3.58E+01	CJ	3.8E-01	7.7E+00		4.9E-01	1.39E+01		4.4E-01	3.43E+02		1.1E-01
9	J03CD7	6/8/2005	7.82E+01	C	1.1E-01	5.1E-01		6.E-02	1.3E+00	UJ	1.3E+00	1.28E+01	CJ	3.9E-01	6.2E+00		5.0E-01	9.4E+00		4.4E-01	3.35E+02		1.1E-01
10	J03CD8	6/8/2005	7.94E+01	C	1.1E-01	8.1E-01		5.E-02	1.2E+00	UJ	1.2E+00	9.7E+00	CJ	3.7E-01	7.8E+00		4.8E-01	9.3E+00		4.3E-01	3.75E+02		1.1E-01
11	J03CD9	6/8/2005	7.42E+01	C	1.1E-01	7.3E-01		5.E-02	1.2E+00	UJ	1.2E+00	9.3E+00	CJ	3.7E-01	6.8E+00		4.7E-01	8.4E+00		4.2E-01	3.47E+02		1.1E-01

17 Statistical Computation Input Data

Sampling Area	HEIS Number	Sample Date	Barium mg/kg	Beryllium mg/kg	Boron mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Manganese mg/kg
1	J03CC9	6/8/2005	8.34E+01	7.4E-01	6.7E+00	1.22E+01	8.0E+00	1.23E+01	3.97E+02
2	J03CD0	6/8/2005	7.29E+01	6.8E-01	2.3E+00	1.04E+01	7.2E+00	1.08E+01	3.42E+02
3	J03CD1	6/8/2005	7.91E+01	7.4E-01	1.7E+00	1.59E+01	7.5E+00	1.20E+01	3.61E+02
4	J03CD2	6/8/2005	8.35E+01	6.6E-01	2.2E+00	2.55E+01	6.7E+00	1.24E+01	3.29E+02
5	J03CD3	6/8/2005	7.88E+01	7.2E-01	6.5E-01	1.08E+01	8.0E+00	1.06E+01	3.90E+02
6	J03CD4/ J03CH1	6/8/2005	8.03E+01	6.3E-01	3.2E+00	9.9E+00	6.8E+00	1.08E+01	3.44E+02
7	J03CD5	6/8/2005	7.78E+01	7.1E-01	6.0E-01	1.03E+01	7.2E+00	9.9E+00	3.48E+02
8	J03CD6	6/8/2005	8.00E+01	7.4E-01	2.4E+00	3.58E+01	7.7E+00	1.39E+01	3.43E+02
9	J03CD7	6/8/2005	7.82E+01	5.1E-01	6.5E-01	1.28E+01	6.2E+00	9.4E+00	3.35E+02
10	J03CD8	6/8/2005	7.94E+01	8.1E-01	6.0E-01	9.7E+00	7.8E+00	9.3E+00	3.75E+02
11	J03CD9	6/8/2005	7.42E+01	7.3E-01	6.0E-01	9.3E+00	6.8E+00	8.4E+00	3.47E+02

32 Statistical Computations

	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Manganese
Statistical value based on	Large data set (n ≥ 10), use MTCASat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.	Large data set (n ≥ 10), use MTCASat lognormal distribution.	Large data set (n ≥ 10), use MTCASat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use Z-statistic.
N	11	11	11	11	11	11	11
% < Detection limit	0%	0%	45%	0%	0%	0%	0%
mean	7.89E+01	7.0E-01	2.0E+00	1.48E+01	7.3E+00	1.09E+01	3.56E+02
standard deviation	3.2E+00	8.E-02	1.8E+00	8.4E+00	6.E-01	1.6E+00	2.2E+01
95% UCL on mean	8.07E+01	7.4E-01	2.9E+00	1.89E+01	7.6E+00	1.19E+01	3.67E+02
maximum value	8.35E+01	8.1E-01	6.7E+00	3.58E+01	8.0E+00	1.39E+01	3.97E+02
Statistical value	8.07E+01	7.4E-01	2.9E+00	1.89E+01	7.6E+00	1.19E+01	3.67E+02
Background	NA	NA	NA	NA	NA	NA	NA
Statistical value above background	8.07E+01	7.4E-01	2.9E+00	1.89E+01	7.6E+00	1.19E+01	3.67E+02
Most Stringent Cleanup Limit for nonradionuclide and RAG type	132 BG/GW Protection	1.51 BG/GW & River Protection	320 GW Protection	18.5 BG/GW & River Protection	32 GW Protection	22.0 BG/River Protection	512 BG/GW Protection
WAC 173-340 3-PART TEST							
95% UCL > Cleanup Limit?	NA	NA	NO	YES	NA	NA	NA
> 10% above Cleanup Limit?	NA	NA	NO	YES	NA	NA	NA
Any sample > 2X Cleanup Limit?	NA	NA	NO	NO	NA	NA	NA
WAC 173-340 Compliance?	NO	Because all values are below background (132 mg/kg), the MTCA 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup level.	Because of the "yes" answers to the MTCA 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to direct exposure cleanup levels.	Because all values are below background (15.7 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (22.0 mg/kg), the MTCA 3-part test is not required.	Because all values are below background (512 mg/kg), the MTCA 3-part test is not required.

53 B = blank contamination
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58 J = estimated
59 MTCA = Model Toxic Control Act
60 NA = not applicable
61
PQL = practical quantitation limit
U = undetected
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RAG = remedial action goal
RESRAD = RESidual RADioactivity
U = undetected
WAC = Washington Administrative Code

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project

Date 09/06/05
Job No. 14655

Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
Checked T. B. Miley

Rev. No. 0
Date 9/8/05
Date 9-13-05
Sheet No. 7 of 14

Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Shallow Zone Verification Data - Staging Area																												
2 3	Sampling Area	HEIS Number	Sample Date	Nickel			Lead			Vanadium			Zinc			Cesium-137			Uranium-233/234			Uranium-238			Radium-226			
				mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	
4	1	J03CC9	6/8/2005	1.19E+01		1.2E+00	7.0E+00		1.4E+00	4.34E+01	J	3.3E-01	4.48E+01	CJ	2.7E-01	1.90E-01		1.30E-01	8.91E-01		2.5E-01	6.60E-01		2.5E-01	4.38E-01		2.0E-01	
5	2	J03CD0	6/8/2005	9.6E+00		1.2E+00	7.1E+00		1.4E+00	3.64E+01	J	3.3E-01	3.71E+01	CJ	2.8E-01	8.3E-02	U	8.3E-02	6.56E-01		2.8E-01	4.38E-01		2.8E-01	5.00E-01		1.3E-01	
6	3	J03CD1	6/8/2005	1.04E+01		1.2E+00	2.29E+01		1.4E+00	4.10E+01	J	3.3E-01	4.13E+01	CJ	2.8E-01	1.0E-01	U	1.0E-01	5.34E-01		2.4E-01	4.40E-01		2.4E-01	7.63E-01		4.2E-01	
7	4	J03CD2	6/8/2005	1.06E+01		1.2E+00	6.32E+01		1.4E+00	3.50E+01	J	3.4E-01	4.65E+01	CJ	2.8E-01	3.06E-01		1.1E-01	6.38E-01		2.4E-01	4.78E-01		2.4E-01	5.42E-01		2.2E-01	
8	5	J03CD3	6/8/2005	1.06E+01		1.2E+00	6.7E+00		1.4E+00	3.68E+01	J	3.3E-01	4.00E+01	CJ	2.8E-01	0.087	U	8.7E-02	7.12E-01		3.0E-01	7.91E-01		3.0E-01	6.38E-01		1.6E-01	
9	6	J03CD4	6/8/2005	1.05E+01		1.2E+00	7.3E+00		1.4E+00	3.68E+01	J	3.3E-01	4.03E+01	CJ	2.8E-01	1.3E-01	U	1.3E-01	8.50E-01		2.4E-01	5.98E-01		2.4E-01	4.24E-01		1.8E-01	
10	Duplicate of J03CD4		J03CH1	6/8/2005	1.03E+01	B	1.2E+00	7.0E+00	CJ	1.4E+00	3.58E+01		3.3E-01	4.44E+01	CJ	2.7E-01	1.0E-01	U	1.0E-01	7.40E-01		2.5E-01	5.47E-01		2.5E-01	5.96E-01		1.7E-01
11	7	J03CD5	6/8/2005	1.03E+01		1.2E+00	5.3E+00		1.3E+00	3.70E+01	J	3.2E-01	4.53E+01	CJ	2.7E-01	2.1E-01	U	2.1E-01	7.72E-01		3.3E-01	3.43E-01		3.3E-01	6.74E-01		1.4E-01	
12	8	J03CD6	6/8/2005	1.12E+01		1.2E+00	7.77E+01		1.4E+00	3.64E+01	J	3.3E-01	4.48E+01	CJ	2.7E-01	1.5E-01	U	1.5E-01	8.52E-01		3.4E-01	3.14E-01		3.4E-01	5.28E-01		1.3E-01	
13	9	J03CD7	6/8/2005	8.8E+00		1.2E+00	2.06E+01		1.4E+00	1.88E+01	J	3.3E-01	3.55E+01	CJ	2.8E-01	2.2E-01	U	2.2E-01	5.85E-01		2.5E-01	3.90E-01		2.5E-01	5.04E-01		1.6E-01	
14	10	J03CD8	6/8/2005	1.05E+01		1.2E+00	6.0E+00		1.3E+00	4.02E+01	J	3.2E-01	4.62E+01	CJ	2.7E-01	1.5E-01	U	1.5E-01	6.06E-01		3.1E-01	4.44E-01		3.1E-01	4.51E-01		1.5E-01	
15	11	J03CD9	6/8/2005	1.00E+01		1.2E+00	6.0E+00		1.3E+00	3.46E+01	J	3.2E-01	4.15E+01	CJ	2.6E-01	1.4E-01	U	1.4E-01	6.04E-01		2.3E-01	5.44E-01		2.3E-01	5.44E-01		1.9E-01	

17 Statistical Computation Input Data																							
18	Sampling Area	HEIS Number	Sample Date	Nickel mg/kg		Lead mg/kg		Vanadium mg/kg		Zinc mg/kg		Cesium-137 pCi/g		Uranium-233/234 pCi/g		Uranium-238 pCi/g		Radium-226 pCi/g					
20	1	J03CC9	6/8/2005	1.19E+01		7.0E+00		4.34E+01		4.48E+01		1.90E-01		8.91E-01		6.60E-01		4.38E-01					
21	2	J03CD0	6/8/2005	9.6E+00		7.1E+00		3.64E+01		3.71E+01		4.2E-02		6.56E-01		4.38E-01		5.00E-01					
22	3	J03CD1	6/8/2005	1.04E+01		2.29E+01		4.10E+01		4.13E+01		5.0E-02		5.34E-01		4.40E-01		7.63E-01					
23	4	J03CD2	6/8/2005	1.06E+01		6.32E+01		3.50E+01		4.65E+01		3.06E-01		6.38E-01		4.78E-01		5.42E-01					
24	5	J03CD3	6/8/2005	1.06E+01		6.7E+00		3.68E+01		4.00E+01		4.4E-02		7.12E-01		7.91E-01		6.38E-01					
25	6	J03CD4/ J03CH1	6/8/2005	1.04E+01		7.2E+00		3.63E+01		4.24E+01		5.8E-02		7.95E-01		5.73E-01		5.10E-01					
26	7	J03CD5	6/8/2005	1.03E+01		5.3E+00		3.70E+01		4.53E+01		1.1E-01		7.72E-01		3.43E-01		6.74E-01					
27	8	J03CD6	6/8/2005	1.12E+01		7.77E+01		3.64E+01		4.48E+01		7.5E-02		8.52E-01		3.14E-01		5.28E-01					
28	9	J03CD7	6/8/2005	8.8E+00		2.06E+01		1.88E+01		3.55E+01		1.1E-01		5.85E-01		3.90E-01		5.04E-01					
29	10	J03CD8	6/8/2005	1.05E+01		6.0E+00		4.02E+01		4.62E+01		7.5E-02		6.06E-01		4.44E-01		4.51E-01					
30	11	J03CD9	6/8/2005	1.00E+01		6.0E+00		3.46E+01		4.15E+01		7.0E-02		6.04E-01		5.44E-01		5.44E-01					

32 Statistical Computations																										
			Nickel			Lead			Vanadium			Zinc			Cesium-137			Uranium-233/234			Uranium-238			Radium-226		
Statistical value based on			Large data set (n ≥10), use MTCASat lognormal distribution.			Large data set (n ≥10), lognormal and normal distribution rejected, use Z-statistic.			Large data set (n ≥10), lognormal and normal distribution rejected, use Z-statistic.			Large data set (n ≥10), use MTCASat lognormal distribution.			Radionuclide data set. Use nonparametric z-statistic.			Radionuclide data set. Use nonparametric z-statistic.			Radionuclide data set. Use nonparametric z-statistic.			Radionuclide data set. Use nonparametric z-statistic.		
N			11			11			11			11			11			11			11			11		
% < Detection limit			0%			0%			0%			0%			82%			0%			0%			0%		
mean			1.04E+01			2.09E+01			3.60E+01			4.23E+01			1.0E-01			6.95E-01			4.92E-01			5.54E-01		
standard deviation			8.E-01			2.55E+01			6.3E+00			3.7E+00			8.0E-02			1.18E-01			1.41E-01			9.87E-02		
Z-statistic			1.645			1.645			1.645			1.645			1.645			1.645			1.645			1.645		
95% UCL on mean			1.09E+01			3.35E+01			3.91E+01			4.45E+01			1.4E-01			7.53E-01			5.62E-01			6.03E-01		
maximum value			1.19E+01			7.77E+01			4.34E+01			4.65E+01			3.06E-01			8.91E-01			7.91E-01			7.63E-01		
Statistical value			1.09E+01			3.35E+01			3.91E+01			4.45E+01			1.4E-01			7.53E-01			5.62E-01			6.03E-01		
Background			NA			NA			NA			NA			NA			1.1			1.1			1.1		
Statistical value above background			1.09E+01			3.35E+01			3.91E+01			4.45E+01			1.4E-01			0 (< BG)			0 (< BG)			0 (< BG)		
Lookup Value - 15 mrem/yr for radionuclides															6.2			1.1			1.1			1.04		
Most Stringent Cleanup Limit for nonradionuclide and RAG type			19.1 BG/GW Protection			10.2 BG/GW & River Protection			85.1 BG/GW Protection			67.8 BG/River Protection														
WAC 173-340 3-PART TEST																										
95% UCL > Cleanup Limit?			NA			YES			NA			NA														
> 10% above Cleanup Limit?			NA			YES			NA			NA														
Any sample > 2X Cleanup Limit?			NA			YES			NA			NA														
WAC 173-340 Compliance?			NO			Because all values are below background (19.1 mg/kg), the MTCA 3-part test is not required.			Because of the "yes" answers to the MTCA 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to direct exposure cleanup levels.			Because all values are below background (85.1 mg/kg), the MTCA 3-part test is not required.			Because all values are below background (67.8 mg/kg), the MTCA 3-part test is not required.											

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron
Project 100-B/C Area Remedial Action Project
Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
Job No. 14655

Calc. No. 0600X-CA-V0052
Checked T. M. Blakley
Checked T. B. Miley

Rev. No. 0
Date 9/8/05
Date 9-13-05
Sheet No. 8 of 14

1 Duplicate Analysis - Staging Area

Sampling Area	HEIS Number	Sample Date	Arsenic			Barium			Beryllium			Boron			Cadmium			Chromium			Cobalt		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
6	J03CD4	6/8/2005	2.5	U	2.5	7.71E+01	C	1.1E-01	6.9E-01		6.E-02	2.7E+00	J	1.3E+00	1.8E-01		1.7E-01	1.00E+01	CJ	3.9E-01	6.7E+00		5.0E-01
Duplicate of J03CD4	J03CH1	6/8/2005	4.3	B	2.4	8.35E+01	C	1.1E-01	5.7E-01	B	5.E-02	3.6E+00	C	1.2E+00	1.6E-01	U	1.6E-01	9.8E+00	J	3.8E-01	6.9E+00	C	4.9E-01

6 Analysis:

Duplicate Analysis	(TDL)	10	2	0.5	2	0.2	1	2
	Both > PQL?	No-Stop (acceptable)	Yes (continue)	Yes (continue)	Yes (continue)	No-Stop (acceptable)	Yes (continue)	Yes (continue)
	Both >5xTDL?		Yes (calc RPD)	No-Stop (acceptable)	No-Stop (acceptable)		Yes (calc RPD)	No-Stop (acceptable)
	RPD		8.0%				2.0%	

Sampling Area	HEIS Number	Sample Date	Copper			Lead			Manganese			Mercury			Molybdenum			Nickel			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	mg/kg	Q	PQL
6	J03CD4	6/8/2005	9.3E+00		4.4E-01	7.3E+00		1.4E+00	3.39E+02		1.1E-01	2.E-02	U	2.E-02	1.2E+00		8.9E-01	1.05E+01		1.2E+00	3.68E+01	J	3.3E-01
Duplicate of J03CD4	J03CH1	6/8/2005	1.22E+01	C	4.3E-01	7.0E+00	CJ	1.4E+00	3.49E+02		1.1E-01	2.E-02	U	2.E-02	1.2E+00	BJ	8.7E-01	1.03E+01	B	1.2E+00	3.58E+01		3.3E-01

17 Analysis:

Duplicate Analysis	(TDL)	1	5	5	0.29	2	4	2.5
	Both > PQL/MDA?	Yes (continue)	Yes (continue)	Yes (continue)	No-Stop (acceptable)	Yes (continue)	Yes (continue)	Yes (continue)
	Both >5xTDL?	Yes (calc RPD)	No-Stop (acceptable)	Yes (calc RPD)		No-Stop (acceptable)	No-Stop (acceptable)	Yes (calc RPD)
	RPD	27%		2.9%				2.8%

Sampling Area	HEIS Number	Sample Date	Zinc			Cesium-137			Radium-226			Uranium-233/234			Uranium-238			Aroclor-1254			4,4'-DDE		
			mg/kg	Q	PQL	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	µg/kg	Q	PQL	µg/kg	Q	PQL
6	J03CD4	6/8/2005	4.03E+01	CJ	2.8E-01	1.3E-01	U	1.3E-01	4.24E-01		1.8E-01	8.50E-01		2.4E-01	5.98E-01		2.4E-01	1.3E+01	U	1.3E+01	3.4E+00	U	3.4E+00
Duplicate of J03CD4	J03CH1	6/8/2005	4.44E+01	C	2.7E-01	1.0E-01	U	1.0E-01	5.96E-01		1.7E-01	7.40E-01		2.5E-01	5.47E-01		2.5E-01	1.3E+01	U	1.3E+01	3.3E+00	U	3.3E+00

28 Analysis:

Duplicate Analysis	(TDL)	1.0	0.1	0.1	1.0	1.0	17	3.3
	Both > PQL/MDA?	Yes (continue)	No-Stop (acceptable)	Yes (continue)	Yes (continue)	Yes (continue)	No-Stop (acceptable)	No-Stop (acceptable)
	Both >5xTDL?	Yes (calc RPD)		No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)		
	RPD	10%						

Sampling Area	HEIS Number	Sample Date	Endrin aldehyde			gamma-Chlordane			Butylbenzylphthalate			Fluoranthene			Phenol			Pyrene			Toluene		
			µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
6	J03CD4	6/8/2005	3.4E+00	U	3.4E+00	1.7E+00	U	1.7E+00	3.4E+02	U	3.4E+02	3.4E+02	U	3.4E+02	3.4E+02	U	3.4E+02	3.4E+02	U	3.4E+02	5.E+00	U	5.E+00
Duplicate of J03CD4	J03CH1	6/8/2005	3.3E+00	U	3.3E+00	1.7E+00	U	1.7E+00	3.4E+02	U	3.4E+02	3.4E+02	U	3.4E+02	3.4E+02	U	3.4E+02	3.4E+02	U	3.4E+02	5.E+00	UJ	5.E+00

39 Analysis:

Duplicate Analysis	(TDL)	3	16.5	330	330	330	330	10
	Both > PQL/MDA?	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)	No-Stop (acceptable)
	Both >5xTDL?							
	RPD							

44 B = blank contamination
45 C = blank contamination
46 DDE = dichlorodiphenyldichloroethylene
47 HEIS = Hanford Environmental Information System
48 J = estimated
49 MDA = minimum detectable activity
PQL = practical quantitation limit
Q = qualifier
RPD = relative percent difference
TDL = target detection limit

Washington Closure Hanford

CALCULATION SHEET

Originator J. M. Capron
 Project 100-B/C Area Remedial Action Project
 Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
 Job No. 14655

Calc. No. 0600X-CA-V0052
 Checked T. M. Blakley
 Checked T. B. Miley

Rev. No. 0
 Date 7/27/05
 Date 9.13.05
 Sheet No. 9 of 14

Ecology Software (MTCStat) Results - Excavated Area

DATA	ID	Barium 95% UCL Calculation				DATA	ID	Beryllium 95% UCL Calculation			
5.08E+01	J03CF0/ J03CH2					8.9E-01	J03CF0/ J03CH2				
8.03E+01	J03CF1					8.4E-01	J03CF1				
3.68E+01	J03CF2	Number of samples		Uncensored values		6.7E-01	J03CF2	Number of samples		Uncensored values	
7.12E+01	J03CF3	Uncensored	11	Mean	51.2	8.8E-01	J03CF3	Uncensored	11	Mean	1.0
3.65E+01	J03CF4	Censored		Lognormal mean	51.3	1.2E+00	J03CF4	Censored		Lognormal mean	1.0
3.86E+01	J03CF5	Detection limit or PQL		Std. devn.	14.0	1.2E+00	J03CF5	Detection limit or PQL		Std. devn.	0.2
5.47E+01	J03CF6	Method detection limit		Median	50.8	1.2E+00	J03CF6	Method detection limit		Median	0.9
4.38E+01	J03CF7	TOTAL	11	Min.	36.5	1.3E+00	J03CF7	TOTAL	11	Min.	0.7
5.15E+01	J03CF8			Max.	80.3	1.2E+00	J03CF8			Max.	1.3
5.50E+01	J03CF9					7.6E-01	J03CF9				
4.41E+01	J03CH0	Lognormal distribution?		Normal distribution?		8.9E-01	J03CH0	Lognormal distribution?		Normal distribution?	
		r-squared is:	0.939	r-squared is:	0.892			r-squared is:	0.893	r-squared is:	0.886
		Recommendations:						Recommendations:			
		Use lognormal distribution.						Reject BOTH lognormal and normal distributions. See Statistics Guidance.			
		UCL (Land's method) is	59.9					UCL (based on Z-statistic) is	1.1		
DATA	ID	Chromium 95% UCL Calculation				DATA	ID	Cobalt 95% UCL Calculation			
7.4E+00	J03CF0/ J03CH2					8.2E+00	J03CF0/ J03CH2				
1.04E+01	J03CF1					8.0E+00	J03CF1				
1.12E+01	J03CF2	Number of samples		Uncensored values		7.3E+00	J03CF2	Number of samples		Uncensored values	
1.02E+01	J03CF3	Uncensored	11	Mean	8.8	8.6E+00	J03CF3	Uncensored	11	Mean	8.6
5.4E+00	J03CF4	Censored		Lognormal mean	8.8	8.5E+00	J03CF4	Censored		Lognormal mean	8.6
6.3E+00	J03CF5	Detection limit or PQL		Std. devn.	2.9	8.9E+00	J03CF5	Detection limit or PQL		Std. devn.	0.57
9.5E+00	J03CF6	Method detection limit		Median	7.4	9.1E+00	J03CF6	Method detection limit		Median	8.6
7.3E+00	J03CF7	TOTAL	11	Min.	5.4	8.8E+00	J03CF7	TOTAL	11	Min.	7.3
7.3E+00	J03CF8			Max.	15.5	9.1E+00	J03CF8			Max.	9.2
1.55E+01	J03CF9					8.6E+00	J03CF9				
6.4E+00	J03CH0	Lognormal distribution?		Normal distribution?		9.2E+00	J03CH0	Lognormal distribution?		Normal distribution?	
		r-squared is:	0.950	r-squared is:	0.887			r-squared is:	0.884	r-squared is:	0.904
		Recommendations:						Recommendations:			
		Use lognormal distribution.						Use normal distribution.			
		UCL (Land's method) is	10.7					UCL (based on t-statistic) is	8.9		

Washington Closure Hanford

CALCULATION SHEET

Originator J. M. Capron
 Project 100-B/C Area Remedial Action Project
 Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
 Job No. 14655

Calc. No. 0600X-CA-V0052
 Checked T. M. Blakley
 Checked T. B. Miley

Rev. No. 0
 Date 9/13/05
 Date 9-13-05
 Sheet No. 10 of 14

Ecology Software (MTCStat) Results - Excavated Area

DATA	ID	Copper 95% UCL Calculation				DATA	ID	Manganese 95% UCL Calculation			
1.52E+01	J03CF0/ J03CH2					3.34E+02	J03CF0/ J03CH2				
9.8E+00	J03CF1					3.98E+02	J03CF1				
1.55E+01	J03CF2	Number of samples	11	Uncensored values		3.88E+02	J03CF2	Number of samples	11	Uncensored values	
1.03E+01	J03CF3	Uncensored		Mean	14.6	3.76E+02	J03CF3	Uncensored		Mean	347
1.25E+01	J03CF4	Censored		Lognormal mean	14.6	3.32E+02	J03CF4	Censored		Lognormal mean	347
1.36E+01	J03CF5	Detection limit or PQL		Std. devn.	3.1	3.12E+02	J03CF5	Detection limit or PQL		Std. devn.	30
1.47E+01	J03CF6	Method detection limit		Median	14.7	3.70E+02	J03CF6	Method detection limit		Median	334
1.81E+01	J03CF7	TOTAL	11	Min.	9.8	3.26E+02	J03CF7	TOTAL	11	Min.	312
1.33E+01	J03CF8			Max.	19.3	3.34E+02	J03CF8			Max.	398
1.93E+01	J03CF9					3.27E+02	J03CF9				
1.79E+01	J03CH0	Lognormal distribution?		Normal distribution?		3.20E+02	J03CH0	Lognormal distribution?		Normal distribution?	
		r-squared is: 0.962		r-squared is: 0.973				r-squared is: 0.887		r-squared is: 0.879	
		Recommendations:						Recommendations:			
		Use lognormal distribution.						Reject BOTH lognormal and normal distributions. See Statistics Guidance.			
		UCL (Land's method) is	16.6					UCL (based on Z-statistic) is	362		
DATA	ID	Nickel 95% UCL Calculation				DATA	ID	Lead 95% UCL Calculation			
1.11E+01	J03CF0/ J03CH2					6.2E+00	J03CF0/ J03CH2				
1.12E+01	J03CF1					5.2E+00	J03CF1				
1.25E+01	J03CF2	Number of samples	11	Uncensored values		4.9E+00	J03CF2	Number of samples	11	Uncensored values	
1.05E+01	J03CF3	Uncensored		Mean	11.5	5.8E+00	J03CF3	Uncensored		Mean	8.1
9.9E+00	J03CF4	Censored		Lognormal mean	11.5	5.5E+00	J03CF4	Censored		Lognormal mean	7.9
1.19E+01	J03CF5	Detection limit or PQL		Std. devn.	1.3	4.1E+00	J03CF5	Detection limit or PQL		Std. devn.	6.4
1.27E+01	J03CF6	Method detection limit		Median	11.1	1.39E+01	J03CF6	Method detection limit		Median	5.7
1.44E+01	J03CF7	TOTAL	11	Min.	9.9	5.6E+00	J03CF7	TOTAL	11	Min.	4.1
1.07E+01	J03CF8			Max.	14.4	5.7E+00	J03CF8			Max.	25.8
1.11E+01	J03CF9					2.58E+01	J03CF9				
1.00E+01	J03CH0	Lognormal distribution?		Normal distribution?		6.6E+00	J03CH0	Lognormal distribution?		Normal distribution?	
		r-squared is: 0.941		r-squared is: 0.915				r-squared is: 0.712		r-squared is: 0.564	
		Recommendations:						Recommendations:			
		Use lognormal distribution.						Reject BOTH lognormal and normal distributions. See Statistics Guidance.			
		UCL (Land's method) is	12.2					UCL (based on Z-statistic) is	11.3		

Washington Closure Hanford

CALCULATION SHEET

Originator J. M. Capron
 Project 100-B/G Area Remedial Action Project
 Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
 Job No. 14655

Calc. No. 0600X-CA-V0052
 Checked T. M. Blakley
 Checked T. B. Miley

Rev. No. 0
 Date 9/8/05
 Date 9-13-05
 Sheet No. 11 of 14

Ecology Software (MTCASat) Results - Excavated Area

DATA	ID	Vanadium 95% UCL Calculation				DATA	ID	Zinc 95% UCL Calculation			
4.75E+01	J03CF0/ J03CH2					4.23E+01	J03CF0/ J03CH2				
3.86E+01	J03CF1					4.18E+01	J03CF1				
3.09E+01	J03CF2	Number of samples	11	Uncensored values		3.32E+01	J03CF2	Number of samples	11	Uncensored values	
4.02E+01	J03CF3	Uncensored		Mean	47.3	3.95E+01	J03CF3	Uncensored		Mean	44.0
4.80E+01	J03CF4	Censored		Lognormal mean	47.4	4.41E+01	J03CF4	Censored		Lognormal mean	44.0
5.44E+01	J03CF5	Detection limit or PQL		Std. devn.	8.3	4.45E+01	J03CF5	Detection limit or PQL		Std. devn.	6.9
4.98E+01	J03CF6	Method detection limit		Median	48.0	4.46E+01	J03CF6	Method detection limit		Median	43.1
5.44E+01	J03CF7	TOTAL	11	Min.	30.9	6.19E+01	J03CF7	TOTAL	11	Min.	33.2
4.98E+01	J03CF8			Max.	60.7	4.31E+01	J03CF8			Max.	61.9
4.57E+01	J03CF9					4.23E+01	J03CF9				
6.07E+01	J03CH0	Lognormal distribution?		Normal distribution?		4.67E+01	J03CH0	Lognormal distribution?		Normal distribution?	
		r-squared is:	0.926	r-squared is:	0.962			r-squared is:	0.811	r-squared is:	0.760
		Recommendations:						Recommendations:			
		Use lognormal distribution.						Reject BOTH lognormal and normal distributions. See Statistics Guidance.			
		UCL (Land's method) is	52.9					UCL (based on Z-statistic) is	47.4		

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CALCULATION SHEET

Originator J. M. Capron
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 Date 9/18/05
 Date 9-13-05
 Sheet No. 12 of 14

Ecology Software (MTCASat) Results - Staging Area

Barium 95% UCL Calculation										Beryllium 95% UCL Calculation									
DATA	ID									DATA	ID								
8.34E+01	J03CC9									7.4E-01	J03CC9								
7.29E+01	J03CD0									6.8E-01	J03CD0								
7.91E+01	J03CD1	Number of samples			Uncensored values					7.4E-01	J03CD1	Number of samples			Uncensored values				
8.35E+01	J03CD2	Uncensored	11		Mean	78.9				6.6E-01	J03CD2	Uncensored	11		Mean	0.70			
7.88E+01	J03CD3	Censored			Lognormal mean	78.9				7.2E-01	J03CD3	Censored			Lognormal mean	0.70			
8.03E+01	J03CD4/ J03CH1	Detection limit or PQL			Std. devn.	3.2				6.3E-01	J03CD4/ J03CH1	Detection limit or PQL			Std. devn.	0.08			
7.78E+01	J03CD5	Method detection limit			Median	79.1				7.1E-01	J03CD5	Method detection limit			Median	0.72			
8.00E+01	J03CD6	TOTAL	11		Min.	72.9				7.4E-01	J03CD6	TOTAL	11		Min.	0.51			
7.82E+01	J03CD7				Max.	83.5				5.1E-01	J03CD7				Max.	0.81			
7.94E+01	J03CD8									8.1E-01	J03CD8								
7.42E+01	J03CD9	Lognormal distribution?			Normal distribution?					7.3E-01	J03CD9	Lognormal distribution?			Normal distribution?				
		r-squared is:	0.924		r-squared is:	0.929						r-squared is:	0.815		r-squared is:	0.860			
		Recommendations:										Recommendations:							
		Use lognormal distribution.										Reject BOTH lognormal and normal distributions. See Statistics Guidance.							
		UCL (Land's method) is	80.7									UCL (based on Z-statistic) is	0.74						
Boron 95% UCL Calculation										Chromium 95% UCL Calculation									
DATA	ID									DATA	ID								
6.7E+00	J03CC9									1.22E+01	J03CC9								
2.3E+00	J03CD0									1.04E+01	J03CD0								
1.7E+00	J03CD1	Number of samples			Uncensored values					1.59E+01	J03CD1	Number of samples			Uncensored values				
2.2E+00	J03CD2	Uncensored	11		Mean	2.0				2.55E+01	J03CD2	Uncensored	11		Mean	14.8			
6.5E-01	J03CD3	Censored			Lognormal mean	2.0				1.08E+01	J03CD3	Censored			Lognormal mean	14.7			
3.2E+00	J03CD4/ J03CH1	Detection limit or PQL			Std. devn.	1.8				9.9E+00	J03CD4/ J03CH1	Detection limit or PQL			Std. devn.	8.4			
6.0E-01	J03CD5	Method detection limit			Median	1.7				1.03E+01	J03CD5	Method detection limit			Median	10.8			
2.4E+00	J03CD6	TOTAL	11		Min.	0.60				3.58E+01	J03CD6	TOTAL	11		Min.	9.3			
6.5E-01	J03CD7				Max.	6.7				1.28E+01	J03CD7				Max.	35.8			
6.0E-01	J03CD8									9.7E+00	J03CD8								
6.0E-01	J03CD9	Lognormal distribution?			Normal distribution?					9.3E+00	J03CD9	Lognormal distribution?			Normal distribution?				
		r-squared is:	0.867		r-squared is:	0.742						r-squared is:	0.776		r-squared is:	0.672			
		Recommendations:										Recommendations:							
		Reject BOTH lognormal and normal distributions. See Statistics Guidance.										Reject BOTH lognormal and normal distributions. See Statistics Guidance.							
		UCL (based on Z-statistic) is	2.9									UCL (based on Z-statistic) is	18.9						

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CALCULATION SHEET

Originator J. M. Capron
 Project 100-B/C Area Remedial Action Project
 Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
 Job No. 14655

Calc. No. 0600X-CA-V0052
 Checked T. M. Blakley
 Checked T. B. Miley

Rev. No. 0
 Date 9/8/05
 Date 4-13-05
 Sheet No. 13 of 14

Ecology Software (MTCASat) Results - Staging Area

Cobalt 95% UCL Calculation										Copper 95% UCL Calculation									
DATA	ID									DATA	ID								
8.0E+00	J03CC9									1.23E+01	J03CC9								
7.2E+00	J03CD0									1.08E+01	J03CD0								
7.5E+00	J03CD1	Number of samples				Uncensored values				1.20E+01	J03CD1	Number of samples				Uncensored values			
6.7E+00	J03CD2	Uncensored	11			Mean	7.3			1.24E+01	J03CD2	Uncensored	11			Mean	10.9		
8.0E+00	J03CD3	Censored				Lognormal mean	7.3			1.06E+01	J03CD3	Censored				Lognormal mean	10.9		
6.8E+00	J03CD4/ J03CH1	Detection limit or PQL				Std. devn.	0.6			1.08E+01	J03CD4/ J03CH1	Detection limit or PQL				Std. devn.	1.6		
7.2E+00	J03CD5	Method detection limit				Median	7.2			9.9E+00	J03CD5	Method detection limit				Median	10.8		
7.7E+00	J03CD6	TOTAL	11			Min.	6.2			1.39E+01	J03CD6	TOTAL	11			Min.	8.4		
6.2E+00	J03CD7					Max.	8.0			9.4E+00	J03CD7					Max.	13.9		
7.8E+00	J03CD8									9.3E+00	J03CD8								
6.8E+00	J03CD9	Lognormal distribution?				Normal distribution?				8.4E+00	J03CD9	Lognormal distribution?				Normal distribution?			
		r-squared is:	0.948			r-squared is:	0.953					r-squared is:	0.979			r-squared is:	0.971		
		Recommendations:										Recommendations:							
		Use lognormal distribution.										Use lognormal distribution.							
		UCL (Land's method) is		7.6								UCL (Land's method) is		11.9					
Manganese 95% UCL Calculation										Nickel 95% UCL Calculation									
DATA	ID									DATA	ID								
3.97E+02	J03CC9									1.19E+01	J03CC9								
3.42E+02	J03CD0									9.6E+00	J03CD0								
3.61E+02	J03CD1	Number of samples				Uncensored values				1.04E+01	J03CD1	Number of samples				Uncensored values			
3.29E+02	J03CD2	Uncensored	11			Mean	356			1.06E+01	J03CD2	Uncensored	11			Mean	10.4		
3.90E+02	J03CD3	Censored				Lognormal mean	356			1.06E+01	J03CD3	Censored				Lognormal mean	10.4		
3.44E+02	J03CD4/ J03CH1	Detection limit or PQL				Std. devn.	22			1.04E+01	J03CD4/ J03CH1	Detection limit or PQL				Std. devn.	0.8		
3.48E+02	J03CD5	Method detection limit				Median	347			1.03E+01	J03CD5	Method detection limit				Median	10.4		
3.43E+02	J03CD6	TOTAL	11			Min.	329			1.12E+01	J03CD6	TOTAL	11			Min.	8.8		
3.35E+02	J03CD7					Max.	397			8.8E+00	J03CD7					Max.	11.9		
3.75E+02	J03CD8									1.05E+01	J03CD8								
3.47E+02	J03CD9	Lognormal distribution?				Normal distribution?				1.00E+01	J03CD9	Lognormal distribution?				Normal distribution?			
		r-squared is:	0.899			r-squared is:	0.889					r-squared is:	0.918			r-squared is:	0.925		
		Recommendations:										Recommendations:							
		Reject BOTH lognormal and normal distributions. See Statistics Guidance.										Use lognormal distribution.							
		UCL (based on Z-statistic) is		367								UCL (Land's method) is		10.9					

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CALCULATION SHEET

Originator J. M. Capron
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 Subject 128-B-2 Burn Pit Cleanup Verification 95% UCL Calculations

Date 09/06/05
 Job No. 14655

Calc. No. 0600X-CA-V0052
 Checked T. M. Blakley
 Checked T. B. Miley

Rev. No. 0
 Date 9/8/05
 Date 9-13-05
 Sheet No. 14 of 14

Ecology Software (MTCStat) Results - Staging Area

Lead 95% UCL Calculation						Vanadium 95% UCL Calculation					
DATA	ID					DATA	ID				
7.0E+00	J03CC9					4.34E+01	J03CC9				
7.1E+00	J03CD0					3.64E+01	J03CD0				
2.29E+01	J03CD1	Number of samples		Uncensored values		4.10E+01	J03CD1	Number of samples		Uncensored values	
6.32E+01	J03CD2	Uncensored	11	Mean	20.9	3.50E+01	J03CD2	Uncensored	11	Mean	36.0
6.7E+00	J03CD3	Censored		Lognormal mean	20.2	3.68E+01	J03CD3	Censored		Lognormal mean	36.2
7.2E+00	J03CD4/ J03CH1	Detection limit or PQL		Std. devn.	25.5	3.63E+01	J03CD4/ J03CH1	Detection limit or PQL		Std. devn.	6.3
5.3E+00	J03CD5	Method detection limit		Median	7.1	3.70E+01	J03CD5	Method detection limit		Median	36.4
7.77E+01	J03CD6	TOTAL	11	Min.	5.3	3.64E+01	J03CD6	TOTAL	11	Min.	18.8
2.06E+01	J03CD7			Max.	77.7	1.88E+01	J03CD7			Max.	43.4
6.0E+00	J03CD8					4.02E+01	J03CD8				
6.0E+00	J03CD9	Lognormal distribution?		Normal distribution?		3.46E+01	J03CD9	Lognormal distribution?		Normal distribution?	
		r-squared is:	0.788	r-squared is:	0.657			r-squared is:	0.610	r-squared is:	0.709
		Recommendations:						Recommendations:			
		Reject BOTH lognormal and normal distributions. See Statistics Guidance.						Reject BOTH lognormal and normal distributions. See Statistics Guidance.			
		UCL (based on Z-statistic) is	33.5					UCL (based on Z-statistic) is	39.1		
Zinc 95% UCL Calculation											
DATA	ID										
4.48E+01	J03CC9										
3.71E+01	J03CD0										
4.13E+01	J03CD1	Number of samples		Uncensored values							
4.65E+01	J03CD2	Uncensored	11	Mean	42.3						
4.00E+01	J03CD3	Censored		Lognormal mean	42.3						
4.24E+01	J03CD4/ J03CH1	Detection limit or PQL		Std. devn.	3.7						
4.53E+01	J03CD5	Method detection limit		Median	42.4						
4.48E+01	J03CD6	TOTAL	11	Min.	35.5						
3.55E+01	J03CD7			Max.	46.5						
4.62E+01	J03CD8										
4.15E+01	J03CD9	Lognormal distribution?		Normal distribution?							
		r-squared is:	0.917	r-squared is:	0.930						
		Recommendations:									
		Use lognormal distribution.									
		UCL (Land's method) is	44.5								

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Americium-241 GEA			Cesium-137			Cobalt-60			Europium-152			Europium-154			Europium-155		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
1	J03CC9	6/8/05	0.25	U	0.25	0.190	U	0.130	0.092	U	0.092	0.25	U	0.25	0.33	U	0.33	0.21	U	0.21
2	J03CD0	6/8/05	0.35	U	0.35	0.083	U	0.083	0.080	U	0.080	0.19	U	0.19	0.30	U	0.30	0.19	U	0.19
3	J03CD1	6/8/05	0.10	U	0.10	0.10	U	0.10	0.12	U	0.12	0.33	U	0.33	0.37	U	0.37	0.18	U	0.18
4	J03CD2	6/8/05	0.26	U	0.26	0.306	U	0.11	0.12	U	0.12	0.28	U	0.28	0.29	U	0.29	0.23	U	0.23
5	J03CD3	6/8/05	0.38	U	0.38	0.087	U	0.087	0.096	U	0.096	0.19	U	0.19	0.30	U	0.30	0.20	U	0.20
6	J03CD4	6/8/05	0.12	U	0.12	0.13	U	0.13	0.14	U	0.14	0.36	U	0.36	0.43	U	0.43	0.21	U	0.21
Duplicate of J03CD4	J03CH1	6/8/05	0.36	U	0.36	0.10	U	0.10	0.10	U	0.10	0.22	U	0.22	0.27	U	0.27	0.21	U	0.21
7	J03CD5	6/8/05	0.42	U	0.42	0.21	U	0.21	0.098	U	0.098	0.19	U	0.19	0.33	U	0.33	0.22	U	0.22
8	J03CD6	6/8/05	0.37	U	0.37	0.15	U	0.15	0.079	U	0.079	0.20	U	0.20	0.22	U	0.22	0.20	U	0.20
9	J03CD7	6/8/05	0.41	U	0.41	0.22	U	0.22	0.083	U	0.083	0.20	U	0.20	0.31	U	0.31	0.22	U	0.22
10	J03CD8	6/8/05	0.40	U	0.40	0.15	U	0.15	0.098	U	0.098	0.20	U	0.20	0.31	U	0.31	0.21	U	0.21
11	J03CD9	6/8/05	0.12	U	0.12	0.14	U	0.14	0.13	U	0.13	0.36	U	0.36	0.39	U	0.39	0.20	U	0.20
% < Detection limit			100%			82%			100%			100%			100%			100%		
Maximum value			0.42			0.306			0.14			0.36			0.43			0.23		

Sample Location	HEIS Number	Sample Date	Americium-241 GEA			Cesium-137			Cobalt-60			Europium-152			Europium-154			Europium-155		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
12	J03CF0	6/8/05	0.21	U	0.21	0.085	U	0.085	0.096	U	0.096	0.22	U	0.22	0.30	U	0.30	0.19	U	0.19
Duplicate of J03CF0	J03CH2	6/8/05	0.22	U	0.22	0.098	U	0.098	0.079	U	0.079	0.26	U	0.26	0.33	U	0.33	0.23	U	0.23
13	J03CF1	6/8/05	0.39	U	0.39	0.083	U	0.083	0.095	U	0.095	0.21	U	0.21	0.26	U	0.26	0.21	U	0.21
14	J03CF2	6/8/05	0.22	U	0.22	0.098	U	0.098	0.10	U	0.10	0.21	U	0.21	0.30	U	0.30	0.20	U	0.20
15	J03CF3	6/8/05	0.35	U	0.35	0.076	U	0.076	0.081	U	0.081	0.18	U	0.18	0.27	U	0.27	0.21	U	0.21
16	J03CF4	6/8/05	0.19	U	0.19	0.076	U	0.076	0.066	U	0.066	0.21	U	0.21	0.28	U	0.28	0.17	U	0.17
17	J03CF5	6/8/05	0.29	U	0.29	0.058	U	0.058	0.068	U	0.068	0.15	U	0.15	0.25	U	0.25	0.16	U	0.16
18	J03CF6	6/8/05	0.26	U	0.26	0.06	U	0.06	0.061	U	0.061	0.13	U	0.13	0.18	U	0.18	0.15	U	0.15
19	J03CF7	6/8/05	0.079	U	0.079	0.07	U	0.07	0.089	U	0.089	0.24	U	0.24	0.28	U	0.28	0.14	U	0.14
20	J03CF8	6/8/05	0.21	U	0.21	0.054	U	0.054	0.054	U	0.054	0.12	U	0.12	0.17	U	0.17	0.14	U	0.14
21	J03CF9	6/8/05	0.20	U	0.20	0.079	U	0.079	0.092	U	0.092	0.21	U	0.21	0.25	U	0.25	0.19	U	0.19
22	J03CH0	6/8/05	0.066	U	0.066	0.07	U	0.07	0.078	U	0.078	0.20	U	0.20	0.23	U	0.23	0.12	U	0.12
% < Detection limit			100%			100%			100%			100%			100%			100%		
Maximum value			0.39			0.098			0.10			0.26			0.33			0.23		

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

B = blank contamination

BHC = hexachlorocyclohexane

C = blank contamination

GEA = gamma energy analysis

HEIS = Hanford Environmental Information System

J = estimate

MDA = minimum detectable activity

PQL = practical quantitation limit

TCLP = toxicity characteristic leachate procedure

TPH = total petroleum hydrocarbons

Q = qualifier

U = undetected

Attachment	1	Sheet No.	1 of 29
Originator	J. M. Capron	Date	09/06/05
Checked	T. M. Blakley	Date	9/10/05
Checked	T. B. Miley	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Potassium-40			Radium-226			Radium-228			Silver-108 m			Thorium-228 GEA			Thorium-232 GEA		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
1	J03CC9	6/8/05	10.7		0.91	0.438		0.20	0.82	U	0.82	0.067	U	0.067	0.624		0.10	0.82	U	0.82
2	J03CD0	6/8/05	13.6		0.54	0.500		0.13	0.797		0.36	0.062	U	0.062	0.868		0.12	0.797		0.36
3	J03CD1	6/8/05	8.55		0.88	0.506		0.17	0.763		0.42	0.078	U	0.078	0.766		0.13	0.763		0.42
4	J03CD2	6/8/05	11.7		0.72	0.542		0.22	0.958		0.48	0.073	U	0.073	0.680		0.16	0.958		0.48
5	J03CD3	6/8/05	12.8		0.89	0.638		0.16	0.845		0.26	0.063	U	0.063	0.735		0.086	0.845		0.26
6	J03CD4	6/8/05	10.8		1.2	0.424		0.18	0.61	U	0.61	0.085	U	0.085	1.02		0.13	0.61	U	0.61
Duplicate of J03CD4	J03CH1	6/8/05	11.5		0.64	0.596		0.17	0.634		0.27	0.061	U	0.061	0.664		0.095	0.634		0.27
7	J03CD5	6/8/05	11.6		0.72	0.674		0.14	0.805		0.34	0.062	U	0.062	0.886		0.15	0.805		0.34
8	J03CD6	6/8/05	10.2		0.86	0.528		0.13	0.808		0.34	0.056	U	0.056	0.651		0.087	0.808		0.34
9	J03CD7	6/8/05	12.0		0.68	0.504		0.16	0.76	U	0.76	0.067	U	0.067	0.745		0.15	0.76	U	0.76
10	J03CD8	6/8/05	13.2		0.46	0.451		0.15	0.892		0.40	0.068	U	0.068	0.651		0.094	0.892		0.4
11	J03CD9	6/8/05	9.37		1.3	0.544		0.19	0.739		0.43	0.089	U	0.089	0.685		0.18	0.739		0.43
% < Detection limit			0%			0%			18%			100%			0%			18%		
Maximum value			13.6			0.674			0.958			0.089			1.02			0.958		

Sample Location	HEIS Number	Sample Date	Potassium-40			Radium-226			Radium-228			Silver-108 m			Thorium-228 GEA			Thorium-232 GEA		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
12	J03CF0	6/8/05	9.36		1.2	0.324		0.16	0.820		0.30	0.060	U	0.060	0.509		0.084	0.820		0.30
Duplicate of J03CF0	J03CH2	6/8/05	9.16		1.3	0.419		0.15	0.61		0.30	0.071	U	0.071	0.498		0.14	0.61		0.30
13	J03CF1	6/8/05	13.8		0.68	0.598		0.16	0.762		0.34	0.060	U	0.060	0.717		0.086	0.762		0.34
14	J03CF2	6/8/05	10.2		0.69	0.385		0.17	0.666		0.37	0.061	U	0.061	0.599		0.15	0.666		0.37
15	J03CF3	6/8/05	11.9		0.66	0.554		0.15	0.701		0.35	0.062	U	0.062	0.713		0.14	0.701		0.35
16	J03CF4	6/8/05	8.47		0.85	0.377		0.11	0.776		0.36	0.052	U	0.052	0.465		0.12	0.776		0.36
17	J03CF5	6/8/05	8.78		0.46	0.345		0.098	0.66	U	0.66	0.045	U	0.045	0.542		0.11	0.66	U	0.66
18	J03CF6	6/8/05	8.28		0.56	0.346		0.11	0.71	U	0.71	0.048	U	0.048	0.597		0.10	0.71	U	0.71
19	J03CF7	6/8/05	7.12		0.67	0.354		0.13	0.38	U	0.38	0.061	U	0.061	0.529		0.096	0.38	U	0.38
20	J03CF8	6/8/05	8.76		0.51	0.389		0.097	0.497		0.24	0.039	U	0.039	0.423		0.06	0.497		0.24
21	J03CF9	6/8/05	9.37		1.1	0.515		0.13	0.833		0.4	0.046	U	0.046	0.692		0.13	0.833		0.40
22	J03CH0	6/8/05	6.23		0.59	0.309		0.13	0.33	U	0.33	0.051	U	0.051	0.504		0.072	0.33	U	0.33
% < Detection limit			0%			0%			36%			100%			0%			36%		
Maximum value			13.8			0.598			0.833			0.071			0.717			0.833		

Attachment	1	Sheet No.	2 of 29
Originator	J. M. Capron	Date	09/06/05
Checked	T. M. Blakley	Date	9/8/05
Checked	T. B. Milley	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Uranium-233/234			Uranium-235			Uranium-235 GEA			Uranium-238			Uranium-238 GEA		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
1	J03CC9	6/8/05	0.891		0.25	0.040	U	0.31	0.31	U	0.31	0.660		0.25	13	U	13
2	J03CD0	6/8/05	0.656		0.28	0	U	0.34	0.28	U	0.28	0.438		0.28	7.9	U	7.9
3	J03CD1	6/8/05	0.534		0.24	0.076	U	0.29	0.31	U	0.31	0.440		0.24	13	U	13
4	J03CD2	6/8/05	0.638		0.24	0	U	0.30	0.36	U	0.36	0.478		0.24	14	U	14
5	J03CD3	6/8/05	0.712		0.30	0	U	0.37	0.27	U	0.27	0.791		0.30	9.6	U	9.6
6	J03CD4	6/8/05	0.850		0.24	0	U	0.29	0.35	U	0.35	0.598		0.24	15	U	15
Duplicate of J03CD4	J03CH1	6/8/05	0.740		0.25	0.039	U	0.30	0.31	U	0.31	0.547		0.25	10	U	10
7	J03CD5	6/8/05	0.772		0.33	0.208	U	0.40	0.31	U	0.31	0.343		0.33	10	U	10
8	J03CD6	6/8/05	0.852		0.34	0.054	U	0.42	0.26	U	0.26	0.314	U	0.34	10	U	10
9	J03CD7	6/8/05	0.585		0.25	0.039	U	0.30	0.32	U	0.32	0.390		0.25	9.6	U	9.6
10	J03CD8	6/8/05	0.606		0.31	0	U	0.37	0.32	U	0.32	0.444		0.31	11	U	11
11	J03CD9	6/8/05	0.604		0.23	0.037	U	0.28	0.36	U	0.36	0.544		0.23	15	U	15
% < Detection limit			0%			100%			100%			9%			100%		
Maximum value			0.891			0.208			0.36			0.791			15		

Sample Location	HEIS Number	Sample Date	Uranium-233/234			Uranium-235			Uranium-235 GEA			Uranium-238			Uranium-238 GEA		
			pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
12	J03CF0	6/8/05	0.645		0.26	0.041	U	0.31	0.29	U	0.29	0.883		0.26	11	U	11
Duplicate of J03CF0	J03CH2	6/8/05	0.494		0.27	0.085	U	0.33	0.32	U	0.32	0.812		0.27	12	U	12
13	J03CF1	6/8/05	0.718		0.24	0.038	U	0.29	0.30	U	0.30	0.749		0.24	10	U	10
14	J03CF2	6/8/05	0.574		0.24	0	U	0.30	0.29	U	0.29	0.638		0.24	11	U	11
15	J03CF3	6/8/05	0.720		0.29	0	U	0.35	0.31	U	0.31	0.644		0.29	9.8	U	9.8
16	J03CF4	6/8/05	0.631		0.25	0.040	U	0.31	0.27	U	0.27	0.498		0.25	9.8	U	9.8
17	J03CF5	6/8/05	0.648		0.29	0	U	0.35	0.22	U	0.22	0.953		0.29	6.8	U	6.8
18	J03CF6	6/8/05	0.577		0.26	0	U	0.31	0.21	U	0.21	0.951		0.26	7.1	U	7.1
19	J03CF7	6/8/05	0.475		0.23	0.036	U	0.27	0.24	U	0.24	0.564		0.23	9.9	U	9.9
20	J03CF8	6/8/05	0.738		0.25	0.117	U	0.3	0.20	U	0.20	0.642		0.25	6.4	U	6.4
21	J03CF9	6/8/05	0.615		0.29	0	U	0.36	0.27	U	0.27	0.692		0.29	10	U	10
22	J03CH0	6/8/05	0.495		0.22	0.176	U	0.27	0.20	U	0.20	0.728		0.22	8.4	U	8.4
% < Detection limit			0%			100%			100%			0%			100%		
Maximum value			0.738			0.176			0.32			0.953			12		

Attachment 1
 Originator J. M. Capron
 Checked T. M. Blakley
 Checked T. B. Miley
 Calc. No. 0600X-CA-V0052

Sheet No. 3 of 29
 Date 09/06/05
 Date 7/8/05
 Date 9-13-05
 Rev. No. 0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Asbestos
1	J03C94	06/08/05	Trace
2	J03C95	06/08/05	None Detected
3	J03C96	06/08/05	Trace
4	J03C97	06/08/05	Trace
5	J03C98	06/08/05	None Detected
6	J03C99	06/08/05	None Detected
7	J03CB0	06/08/05	None Detected
8	J03CB1	06/08/05	Trace
9	J03CB2	06/08/05	Trace
10	J03CB3	06/08/05	None Detected
11	J03CB4	06/08/05	None Detected
12	J03CB5	06/08/05	None Detected
13	J03CB6	06/08/05	None Detected
14	J03CB7	06/08/05	None Detected
15	J03CB8	06/08/05	None Detected
16	J03CB9	06/08/05	None Detected
17	J03CC0	06/08/05	None Detected
18	J03CC1	06/08/05	None Detected
19	J03CC2	06/08/05	None Detected
20	J03CC3	06/08/05	None Detected
21	J03CC4	06/08/05	None Detected
22	J03CC5	06/08/05	None Detected
Duplicate of J03C99	J03CC6	06/08/05	None Detected
Duplicate of J03CB5	J03CC7	06/08/05	None Detected

Trace = <1%

Attachment	1	Sheet No.	4 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9/13/05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Antimony			Arsenic			Barium			Beryllium			Boron			Cadmium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
1	J03CC9	6/8/05	2.2	UJ	2.2	3.4		2.5	83.4	C	0.11	0.74		0.05	6.7	J	1.3	0.19		0.16
2	J03CD0	6/8/05	2.2	UJ	2.2	2.5	U	2.5	72.9	C	0.11	0.68		0.06	2.3	J	1.3	0.17	U	0.17
3	J03CD1	6/8/05	2.2	UJ	2.2	2.5		2.5	79.1	C	0.11	0.74		0.06	1.7	J	1.3	0.17		0.17
4	J03CD2	6/8/05	2.2	UJ	2.2	2.5	U	2.5	83.5	C	0.11	0.66		0.06	2.2	J	1.3	0.17	U	0.17
5	J03CD3	6/8/05	2.2	UJ	2.2	2.5	U	2.5	78.8	C	0.11	0.72		0.06	1.3	UJ	1.3	0.17	U	0.17
6	J03CD4	6/8/05	2.2	UJ	2.2	2.5	U	2.5	77.1	C	0.11	0.69		0.06	2.7	J	1.3	0.18		0.17
Duplicate of J03CD4	J03CH1	6/8/05	2.2	UJ	2.2	4.3	B	2.4	83.5	C	0.11	0.57	B	0.05	3.6	C	1.2	0.16	U	0.16
7	J03CD5	6/8/05	2.2	UJ	2.2	3.5		2.4	77.8	C	0.11	0.71		0.05	1.2	UJ	1.2	0.16	U	0.16
8	J03CD6	6/8/05	2.2	UJ	2.2	2.7		2.5	80	C	0.11	0.74		0.05	2.4	J	1.3	0.16	U	0.16
9	J03CD7	6/8/05	2.2	UJ	2.2	2.5	U	2.5	78.2	C	0.11	0.51		0.06	1.3	UJ	1.3	0.17	U	0.17
10	J03CD8	6/8/05	2.1	UJ	2.1	2.4	U	2.4	79.4	C	0.11	0.81		0.05	1.2	UJ	1.2	0.16	U	0.16
11	J03CD9	6/8/05	2.1	UJ	2.1	2.4	U	2.4	74.2	C	0.11	0.73		0.05	1.2	UJ	1.2	0.16	U	0.16
% < Detection limit			100%			55%			0%			0%			45%			73%		
Maximum value			2.2			4.3			83.5			0.81			6.7			0.19		

Sample Location	HEIS Number	Sample Date	Antimony			Arsenic			Barium			Beryllium			Boron			Cadmium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
12	J03CF0	6/8/05	2.2	UJ	2.2	2.5	U	2.5	50.3	C	0.11	1.0		0.05	1.3	UJ	1.3	0.16	U	0.16
Duplicate of J03CF0	J03CH2	6/8/05	2.2	UJ	2.2	2.7	B	2.5	51.2	C	0.11	0.77	B	0.06	3.0	C	1.3	0.17	U	0.17
13	J03CF1	6/8/05	2.2	UJ	2.2	2.5	U	2.5	80.3	C	0.11	0.84		0.06	1.3	J	1.3	0.17	U	0.17
14	J03CF2	6/8/05	2.2	UJ	2.2	2.5	U	2.5	36.8	C	0.11	0.67		0.06	1.3	UJ	1.3	0.17	U	0.17
15	J03CF3	6/8/05	2.2	UJ	2.2	2.5	U	2.5	71.2	C	0.11	0.88		0.06	1.3	UJ	1.3	0.17	U	0.17
16	J03CF4	6/8/05	2.2	UJ	2.2	2.5	U	2.5	36.5	C	0.11	1.2		0.06	1.3	UJ	1.3	0.17	U	0.17
17	J03CF5	6/8/05	2.2	UJ	2.2	2.5	U	2.5	38.6	C	0.11	1.2		0.06	1.3	UJ	1.3	0.17	U	0.17
18	J03CF6	6/8/05	2.1	UJ	2.1	2.4	U	2.4	54.7	C	0.11	1.2		0.05	1.2	UJ	1.2	0.16	U	0.16
19	J03CF7	6/8/05	2.2	UJ	2.2	2.5	U	2.5	43.8	C	0.11	1.3		0.05	1.3	J	1.3	0.16	U	0.16
20	J03CF8	6/8/05	2.1	UJ	2.1	2.4	U	2.4	51.5	C	0.11	1.2		0.05	1.2	UJ	1.2	0.16	U	0.16
21	J03CF9	6/8/05	2.1	UJ	2.1	3.1	B	2.4	55	C	0.11	0.76	B	0.05	4.9	C	1.2	0.16	U	0.16
22	J03CH0	6/8/05	2.1	UJ	2.1	2.4	U	2.4	44.1	C	0.11	0.89	B	0.05	3.2	C	1.2	0.16	U	0.16
% < Detection limit			100%			82%			0%			0%			55%			100%		
Maximum value			2.2			3.1			80.3			1.3			4.9			0.17		

Sample Location	HEIS Number	Sample Date	Antimony			Arsenic			Barium			Beryllium			Boron			Cadmium		
			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	J03CC8	6/8/05	0.37	UJ	0.37	0.41	U	0.41	0.98	C	0.02	0.01	B	0.009	1.1	UJ	1.1	0.03	U	0.03

Attachment 1
 Originator J. M. Capron
 Checked T. M. Blakley
 Checked T. B. Miley
 Calc. No. 0600X-CA-V0052

Sheet No. 5 of 29
 Date 09/06/05
 Date 9/6/05
 Date 9/3/05
 Rev. No. 0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Chromium			Cobalt			Copper			Lead			Manganese			Mercury		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
1	J03CC9	6/8/05	12.2	CJ	0.38	8.0		0.49	12.3		0.44	7.0		1.4	397		0.11	0.02	U	0.02
2	J03CD0	6/8/05	10.4	CJ	0.39	7.2		0.50	10.8		0.44	7.1		1.4	342		0.11	0.02	U	0.02
3	J03CD1	6/8/05	15.9	CJ	0.39	7.5		0.50	12.0		0.44	22.9		1.4	361		0.11	0.02	U	0.02
4	J03CD2	6/8/05	25.5	CJ	0.39	6.7		0.51	12.4		0.45	63.2		1.4	329		0.11	0.02	U	0.02
5	J03CD3	6/8/05	10.8	CJ	0.39	8.0		0.50	10.6		0.44	6.7		1.4	390		0.11	0.01	U	0.01
6	J03CD4	6/8/05	10.0	CJ	0.39	6.7		0.50	9.3		0.44	7.3		1.4	339		0.11	0.02	U	0.02
Duplicate of J03CD4	J03CH1	6/8/05	9.8	J	0.38	6.9	C	0.49	12.2	C	0.43	7.0	CJ	1.4	349		0.11	0.02	U	0.02
7	J03CD5	6/8/05	10.3	CJ	0.38	7.2		0.48	9.9		0.43	5.3		1.3	348		0.11	0.02	U	0.02
8	J03CD6	6/8/05	35.8	CJ	0.38	7.7		0.49	13.9		0.44	77.7		1.4	343		0.11	0.03		0.02
9	J03CD7	6/8/05	12.8	CJ	0.39	6.2		0.50	9.4		0.44	20.6		1.4	335		0.11	0.01	U	0.01
10	J03CD8	6/8/05	9.7	CJ	0.37	7.8		0.48	9.3		0.43	6.0		1.3	375		0.11	0.02	U	0.02
11	J03CD9	6/8/05	9.3	CJ	0.37	6.8		0.47	8.4		0.42	6.0		1.3	347		0.11	0.01	U	0.01
% < Detection limit			0%			0%			0%			0%			0%			82%		
Maximum value			35.8			8.0			13.9			77.7			397			0.03		

Sample Location	HEIS Number	Sample Date	Chromium			Cobalt			Copper			Lead			Manganese			Mercury		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
12	J03CF0	6/8/05	7.5	CJ	0.38	8.0		0.49	13.5		0.44	5.6		1.4	333		0.11	0.01	U	0.01
Duplicate of J03CF0	J03CH2	6/8/05	7.3	J	0.39	8.4	B	0.50	16.9	C	0.44	6.7	CJ	1.4	334		0.11	0.01	U	0.01
13	J03CF1	6/8/05	10.4	CJ	0.39	8.0		0.50	9.8		0.44	5.2		1.4	398		0.11	0.01	U	0.01
14	J03CF2	6/8/05	11.2	CJ	0.39	7.3		0.50	15.5		0.44	4.9		1.4	288		0.11	0.01	U	0.01
15	J03CF3	6/8/05	10.2	CJ	0.39	8.6		0.50	10.3		0.44	5.8		1.4	376		0.11	0.01	U	0.01
16	J03CF4	6/8/05	5.4	CJ	0.39	8.5		0.50	12.5		0.44	6.5		1.4	332		0.11	0.01	U	0.01
17	J03CF5	6/8/05	6.3	CJ	0.39	8.9		0.50	13.6		0.44	4.1		1.4	312		0.11	0.02	U	0.02
18	J03CF6	6/8/05	9.5	CJ	0.37	9.1		0.48	14.7		0.43	13.9		1.3	370		0.11	0.01	U	0.01
19	J03CF7	6/8/05	7.3	CJ	0.38	8.8		0.49	18.1		0.44	5.6		1.4	326		0.11	0.01	U	0.01
20	J03CF8	6/8/05	7.3	CJ	0.37	9.1		0.48	13.3		0.43	5.7		1.3	334		0.11	0.01	U	0.01
21	J03CF9	6/8/05	15.5	J	0.38	8.6	B	0.48	19.3	C	0.43	25.8	CJ	1.3	327		0.11	0.02	U	0.02
22	J03CH0	6/8/05	6.4	J	0.38	9.2	B	0.48	17.9	C	0.43	6.6	CJ	1.3	320		0.11	0.01	U	0.01
% < Detection limit			0%			0%			0%			0%			0%			100%		
Maximum value			15.5			9.2			19.3			25.8			398			0.02		

Sample Location	HEIS Number	Sample Date	Chromium			Cobalt			Copper			Lead			Manganese			Mercury		
			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	J03CC8	6/8/05	0.14	BJ	0.06	0.11	B	0.08	0.12	UJ	0.12	0.41	UJ	0.41	4		0.02	0.02	U	0.02

Attachment 1
 Originator J. M. Capron
 Checked T. M. Blakley
 Checked T. B. Miley
 Calc. No. 0600X-CA-V0052

Sheet No. 6 of 29
 Date 09/06/05
 Date 9/18/05
 Date 9-13-05
 Rev. No. 0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	Molybdenum			Nickel			Selenium			Silver			Vanadium			Zinc		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
1	J03CC9	6/8/05	0.88	U	0.88	11.9		1.2	2.7	U	2.7	0.49	U	0.49	43.4	J	0.33	44.8	CJ	0.27
2	J03CD0	6/8/05	0.88	U	0.88	9.6		1.2	2.7	U	2.7	0.50	U	0.50	36.4	J	0.33	37.1	CJ	0.28
3	J03CD1	6/8/05	1.0		0.88	10.4		1.2	2.7	U	2.7	0.50	U	0.50	41.0	J	0.33	41.3	CJ	0.28
4	J03CD2	6/8/05	0.9	U	0.9	10.6		1.2	2.8	U	2.8	0.51	U	0.51	35.0	J	0.34	46.5	CJ	0.28
5	J03CD3	6/8/05	0.89		0.89	10.6		1.2	2.7	U	2.7	0.50	U	0.50	36.8	J	0.33	40	CJ	0.28
6	J03CD4	6/8/05	1.2		0.89	10.5		1.2	2.7	U	2.7	0.50	U	0.50	36.8	J	0.33	40.3	CJ	0.28
Duplicate of J03CD4	J03CH1	6/8/05	1.2	BJ	0.87	10.3	B	1.2	2.7	U	2.7	0.49	U	0.49	35.8		0.33	44.4	C	0.27
7	J03CD5	6/8/05	0.86	U	0.86	10.3		1.2	2.6	U	2.6	0.48	U	0.48	37.0	J	0.32	45.3	CJ	0.27
8	J03CD6	6/8/05	1.3		0.87	11.2		1.2	2.7	U	2.7	0.49	U	0.49	36.4	J	0.33	44.8	CJ	0.27
9	J03CD7	6/8/05	0.88	U	0.88	8.8		1.2	2.7	U	2.7	0.50	U	0.50	18.8	J	0.33	35.5	CJ	0.28
10	J03CD8	6/8/05	0.85	U	0.85	10.6		1.2	2.6	U	2.6	0.48	U	0.48	40.2	J	0.32	46.2	CJ	0.27
11	J03CD9	6/8/05	0.84	U	0.84	10.0		1.2	2.6	U	2.6	0.47	U	0.47	34.6	J	0.32	41.5	CJ	0.26
% < Detection limit			64%			0%			100%			100%			0%			0%		
Maximum value			1.3			11.9			2.8			0.51			43.4			46.5		

Sample Location	HEIS Number	Sample Date	Molybdenum			Nickel			Selenium			Silver			Vanadium			Zinc		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
12	J03CF0	6/8/05	0.88	U	0.88	12.0		1.2	2.7	U	2.7	0.49	U	0.49	46.6	J	0.33	42.6	CJ	0.27
Duplicate of J03CF0	J03CH2	6/8/05	1.0	BJ	0.89	10.1	B	1.2	2.7	U	2.7	0.50	U	0.50	48.3		0.33	41.9	C	0.28
13	J03CF1	6/8/05	0.88	U	0.88	11.2		1.2	2.7	U	2.7	0.50	U	0.50	38.6	J	0.33	41.8	CJ	0.28
14	J03CF2	6/8/05	0.88	U	0.88	12.5		1.2	2.7	U	2.7	0.50	U	0.50	30.9	J	0.33	33.2	CJ	0.28
15	J03CF3	6/8/05	0.88	U	0.88	10.5		1.2	2.7	U	2.7	0.50	U	0.50	40.2	J	0.33	39.5	CJ	0.28
16	J03CF4	6/8/05	0.88	U	0.88	9.9		1.2	2.7	U	2.7	0.50	U	0.50	48.0	J	0.33	44.1	CJ	0.28
17	J03CF5	6/8/05	0.88	U	0.88	11.9		1.2	2.7	U	2.7	0.50	U	0.50	54.4	J	0.33	44.5	CJ	0.28
18	J03CF6	6/8/05	0.85	U	0.85	12.7		1.2	2.6	U	2.6	0.48	U	0.48	49.8	J	0.32	44.6	CJ	0.27
19	J03CF7	6/8/05	1.1		0.87	14.4		1.2	2.7	U	2.7	0.49	U	0.49	54.4	J	0.33	61.9	CJ	0.27
20	J03CF8	6/8/05	0.85	U	0.85	10.7		1.2	2.6	U	2.6	0.48	U	0.48	49.9	J	0.32	43.1	CJ	0.27
21	J03CF9	6/8/05	1.7	BJ	0.86	11.1	B	1.2	2.6	U	2.6	0.48	U	0.48	45.7		0.32	42.3	C	0.27
22	J03CH0	6/8/05	0.86	UJ	0.86	10	B	1.2	2.6	U	2.6	0.48	U	0.48	60.7		0.32	46.7	C	0.27
% < Detection limit			73%			0%			100%			100%			0%			0%		
Maximum value			1.7			14.4			2.7			0.50			60.7			61.9		

Sample Location	HEIS Number	Sample Date	Molybdenum			Nickel			Selenium			Silver			Vanadium			Zinc		
			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	J03CC8	6/8/05	0.15	UJ	0.15	0.2	U	0.2	0.45	U	0.45	0.08	U	0.08	0.06	U	0.06	1.5	UJ	1.5

Attachment 1
 Originator J. M. Capron
 Checked T. M. Blakley
 Checked T. B. Miley
 Calc. No. 0600X-CA-V0052

Sheet No. 7 of 29
 Date 09/06/05
 Date 9/8/05
 Date 9-13-05
 Rev. No. 0

Attachment 1. 128-B-2 Verification Sampling Results.

Sample Location	HEIS Number	Sample Date	TPH		
			mg/kg	Q	PQL
1	J03CC9	6/8/05	133	U	133
2	J03CD0	6/8/05	133	U	133
3	J03CD1	6/8/05	134	U	134
4	J03CD2	6/8/05	134	U	134
5	J03CD3	6/8/05	133	U	133
6	J03CD4	6/8/05	134	U	134
Duplicate of J03CD4	J03CH1	6/8/05	134	U	134
7	J03CD5	6/8/05	133	U	133
8	J03CD6	6/8/05	133	U	133
9	J03CD7	6/8/05	132	U	132
10	J03CD8	6/8/05	132	U	132
11	J03CD9	6/8/05	133	U	133
% < Detection limit			100%		
Maximum value			134		

Sample Location	HEIS Number	Sample Date	TPH		
			mg/kg	Q	PQL
12	J03CF0	6/8/05	134	U	134
Duplicate of J03CF0	J03CH2	6/8/05	134	U	134
13	J03CF1	6/8/05	134	U	134
14	J03CF2	6/8/05	132	U	132
15	J03CF3	6/8/05	133	U	133
16	J03CF4	6/8/05	133	U	133
17	J03CF5	6/8/05	134	U	134
18	J03CF6	6/8/05	133	U	133
19	J03CF7	6/8/05	134	U	134
20	J03CF8	6/8/05	133	U	133
21	J03CF9	6/8/05	132	U	132
22	J03CH0	6/8/05	132	U	132
% < Detection limit			100%		
Maximum value			134		

Attachment	1	Sheet No.	8 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CC8			J03CC9			J03CD0			J03CD1		
	Equipment Blank			Sample Location 1			Sample Location 2			Sample Location 3		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls (PCBs)												
Aroclor-1016				13	U	13	13	U	13	13	U	13
Aroclor-1221				13	U	13	13	U	13	13	U	13
Aroclor-1232				13	U	13	13	U	13	13	U	13
Aroclor-1242				13	U	13	13	U	13	13	U	13
Aroclor-1248				13	U	13	13	U	13	13	U	13
Aroclor-1254				13	U	13	89		13	98	J	13
Aroclor-1260				13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Alpha-BHC				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
alpha-Chlordane				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Delta-BHC				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Dichlorodiphenyldichloroethane				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyldichloroethylene				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyltrichloroethane				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dieldrin				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan I				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan II				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endosulfan sulfate				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin aldehyde				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin ketone				3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Gamma-BHC (Lindane)				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
gamma-Chlordane				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor epoxide				1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Methoxychlor				17	U	17	17	U	17	17	U	17
Toxaphene				170	UJ	170	170	UJ	170	170	UJ	170
SVOA (Semivolatile Organic Analytes)												
1,2,4-Trichlorobenzene	330	UJ	330	340	UJ	340	340	UJ	340	340	UJ	340
1,2-Dichlorobenzene	330	U	330	340	U	340	340	U	340	340	U	340
1,3-Dichlorobenzene	330	U	330	340	U	340	340	U	340	340	U	340
1,4-Dichlorobenzene	330	U	330	340	U	340	340	U	340	340	U	340
2,4,5-Trichlorophenol	830	U	830	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	340	U	340	340	U	340
2,4-Dichlorophenol	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
2,4-Dimethylphenol	330	UJ	330	340	UJ	340	340	UJ	340	340	UJ	340
2,4-Dinitrophenol	830	UJ	830	840	UJ	840	840	UJ	840	840	UJ	840
2,4-Dinitrotoluene	330	U	330	340	U	340	340	U	340	340	U	340
2,6-Dinitrotoluene	330	U	330	340	U	340	340	U	340	340	U	340
2-Chloronaphthalene	330	U	330	340	U	340	340	U	340	340	U	340
2-Chlorophenol	330	U	330	340	U	340	340	U	340	340	U	340
2-Methylnaphthalene	330	UJ	330	340	UJ	340	340	UJ	340	340	UJ	340

Attachment	1	Sheet No.	9 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/10/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CC8			J03CC9			J03CD0			J03CD1		
	Equipment Blank			Sample Location 1			Sample Location 2			Sample Location 3		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	340	U	340	340	U	340
2-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
3,3'-Dichlorobenzidine	330	U	330	340	U	340	340	U	340	340	U	340
3+4 Methylphenol (cresol, m+p)	330	U	330	340	U	340	340	U	340	340	U	340
3-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	830	U	830	840	U	840	840	U	840	840	U	840
4-Bromophenylphenyl ether	330	U	330	340	U	340	340	U	340	340	U	340
4-Chloro-3-methylphenol	330	UJ	330	340	UJ	340	340	UJ	340	340	UJ	340
4-Chloroaniline	330	U	330	340	U	340	340	U	340	340	U	340
4-Chlorophenylphenyl ether	330	U	330	340	U	340	340	U	340	340	U	340
4-Nitroaniline	830	U	830	840	UJ	840	840	UJ	840	840	UJ	840
4-Nitrophenol	830	U	830	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	340	U	340	340	U	340	340	U	340
Acenaphthylene	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
Anthracene	330	U	330	340	U	340	340	U	340	340	U	340
Benzo(a)anthracene	330	U	330	340	U	340	340	U	340	340	U	340
Benzo(a)pyrene	330	U	330	340	U	340	340	U	340	340	U	340
Benzo(b)fluoranthene	330	U	330	340	U	340	340	U	340	340	U	340
Benzo(ghi)perylene	330	U	330	340	U	340	340	U	340	340	U	340
Benzo(k)fluoranthene	330	U	330	340	U	340	340	U	340	340	U	340
Bis(2-chloro-1-methylethyl) ether	330	U	330	340	U	340	340	U	340	340	U	340
Bis(2-Chloroethoxy)methane	330	U	330	340	U	340	340	U	340	340	U	340
Bis(2-chloroethyl) ether	330	U	330	340	U	340	340	U	340	340	U	340
Bis(2-ethylhexyl) phthalate	50	JB	330	660	U	660	660	U	660	660	U	660
Butylbenzylphthalate	330	U	330	340	U	340	340	U	340	340	U	340
Carbazole	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
Chrysene	330	U	330	340	U	340	340	U	340	340	U	340
Dibenz[a,h]anthracene	330	U	330	340	U	340	340	U	340	340	U	340
Dibenzofuran	330	U	330	340	U	340	340	U	340	340	U	340
Diethylphthalate	75	J	330	340	U	340	340	U	340	340	U	340
Dimethyl phthalate	330	U	330	340	U	340	340	U	340	340	U	340
Di-n-butylphthalate	520		330	660	U	660	660	U	660	660	U	660
Di-n-octylphthalate	330	U	330	340	U	340	340	U	340	340	U	340
Fluoranthene	330	U	330	22	J	340	340	U	340	340	U	340
Fluorene	330	U	330	340	U	340	340	U	340	340	U	340
Hexachlorobenzene	330	U	330	340	U	340	340	U	340	340	U	340
Hexachlorobutadiene	330	U	330	340	U	340	340	U	340	340	U	340
Hexachlorocyclopentadiene	330	UJ	330	340	U	340	340	U	340	340	U	340
Hexachloroethane	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
Indeno(1,2,3-cd)pyrene	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
Isophorone	330	UJ	330	340	UJ	340	340	UJ	340	340	UJ	340
Naphthalene	330	U	330	340	U	340	340	U	340	340	U	340
Nitrobenzene	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	340	U	340	340	U	340

Attachment	1	Sheet No.	10 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CC8			J03CC9			J03CD0			J03CD1		
	Equipment Blank			Sample Location 1			Sample Location 2			Sample Location 3		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
N-Nitrosodiphenylamine	330	U	330	340	UJ	340	340	UJ	340	340	UJ	340
Pentachlorophenol	830	U	830	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	340	U	340	340	U	340	340	U	340
Phenol	330	U	330	23	J	340	21	J	340	340	U	340
Pyrene	330	U	330	31	J	340	340	U	340	340	U	340
Volatiles												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	6	U	6
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	6	U	6
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	6	U	6
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	6	U	6
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	6	U	6
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	6	U	6
1,2-Dichloroethene(Total)	5	U	5	5	U	5	5	U	5	6	U	6
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	6	U	6
2-Butanone	10	U	10	10	U	10	10	U	10	11	U	11
2-Hexanone	10	U	10	10	U	10	10	U	10	11	U	11
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	11	U	11
Acetone	10	U	10	10	U	10	10	U	10	11	U	11
Benzene	5	U	5	5	U	5	5	U	5	6	U	6
Bromodichloromethane	5	U	5	5	U	5	5	U	5	6	U	6
Bromoform	5	U	5	5	U	5	5	U	5	6	U	6
Bromomethane	10	U	10	10	U	10	10	U	10	11	U	11
Carbon disulfide	5	U	5	5	U	5	5	U	5	6	U	6
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	6	U	6
Chlorobenzene	5	U	5	5	U	5	5	U	5	6	U	6
Chloroethane	10	U	10	10	U	10	10	U	10	11	U	11
Chloroform	5	U	5	5	U	5	5	U	5	6	U	6
Chloromethane	10	U	10	10	U	10	10	U	10	11	U	11
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	6	U	6
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	6	U	6
Dibromochloromethane	5	U	5	5	U	5	5	U	5	6	U	6
Ethylbenzene	5	U	5	5	U	5	5	U	5	6	U	6
Methylenechloride	10	U	10	19	U	19	16	U	16	19	U	19
Styrene	5	U	5	5	U	5	5	U	5	6	U	6
Tetrachloroethene	5	U	5	5	U	5	5	U	5	6	U	6
Toluene	5	U	5	5	U	5	3	J	5	6	U	6
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	6	U	6
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	6	U	6
Trichloroethene	5	U	5	5	U	5	5	U	5	6	U	6
Vinyl chloride	10	U	10	10	U	10	10	U	10	11	U	11
Xylenes (total)	5	U	5	5	U	5	5	U	5	6	U	6

Attachment	1	Sheet No.	11 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/10/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CD2			J03CD3			J03CD4			J03CD5		
	Sample Location 4			Sample Location 5			Sample Location 6			Sample Location 7		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	14	U	14	13	U	13	13	U	13	13	U	13
Aroclor-1221	14	U	14	13	U	13	13	U	13	13	U	13
Aroclor-1232	14	U	14	13	U	13	13	U	13	13	U	13
Aroclor-1242	14	U	14	13	U	13	13	U	13	13	U	13
Aroclor-1248	14	U	14	13	U	13	13	U	13	13	U	13
Aroclor-1254	110	J	14	13	U	13	13	U	13	13	U	13
Aroclor-1260	14	U	14	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Alpha-BHC	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
alpha-Chlordane	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Delta-BHC	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Dichlorodiphenyldichloroethane	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Dichlorodiphenyldichloroethylene	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Dichlorodiphenyltrichloroethane	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Dieldrin	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan I	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan II	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Endosulfan sulfate	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Endrin	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Endrin aldehyde	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Endrin ketone	34	UD	34	3.4	U	3.4	3.4	U	3.4	3.3	U	3.3
Gamma-BHC (Lindane)	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
gamma-Chlordane	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor epoxide	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Methoxychlor	170	UD	170	17	U	17	17	U	17	17	U	17
Toxaphene	1700	UDJ	1700	170	UJ	170	170	UJ	170	170	UJ	170
SVOAs												
1,2,4-Trichlorobenzene	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
1,2-Dichlorobenzene	340	U	340	340	U	340	340	U	340	340	U	340
1,3-Dichlorobenzene	340	U	340	340	U	340	340	U	340	340	U	340
1,4-Dichlorobenzene	340	U	340	340	U	340	340	U	340	340	U	340
2,4,5-Trichlorophenol	850	U	850	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	340	U	340	340	U	340	340	U	340	340	U	340
2,4-Dichlorophenol	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
2,4-Dimethylphenol	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
2,4-Dinitrophenol	850	UJ	850	840	UJ	840	840	UJ	840	840	UJ	840
2,4-Dinitrotoluene	340	U	340	340	U	340	340	U	340	340	U	340
2,6-Dinitrotoluene	340	U	340	340	U	340	340	U	340	340	U	340
2-Chloronaphthalene	340	U	340	340	U	340	340	U	340	340	U	340
2-Chlorophenol	340	U	340	340	U	340	340	U	340	340	U	340
2-Methylnaphthalene	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340

Attachment	1	Sheet No.	12 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CD2			J03CD3			J03CD4			J03CD5		
	Sample Location 4			Sample Location 5			Sample Location 6			Sample Location 7		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
2-Methylphenol (cresol, o-)	340	U	340	340	U	340	340	U	340	340	U	340
2-Nitroaniline	850	U	850	840	U	840	840	U	840	840	U	840
2-Nitrophenol	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
3,3'-Dichlorobenzidine	340	U	340	340	U	340	340	U	340	340	U	340
3+4 Methylphenol (cresol, m+p)	340	U	340	340	U	340	340	U	340	340	U	340
3-Nitroaniline	850	U	850	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	850	U	850	840	U	840	840	U	840	840	U	840
4-Bromophenylphenyl ether	340	U	340	340	U	340	340	U	340	340	U	340
4-Chloro-3-methylphenol	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
4-Chloroaniline	340	U	340	340	U	340	340	U	340	340	U	340
4-Chlorophenylphenyl ether	340	U	340	340	U	340	340	U	340	340	U	340
4-Nitroaniline	850	UJ	850	840	UJ	840	840	UJ	840	840	UJ	840
4-Nitrophenol	850	U	850	840	U	840	840	U	840	840	U	840
Acenaphthene	340	U	340	340	U	340	340	U	340	340	U	340
Acenaphthylene	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
Anthracene	340	U	340	340	U	340	340	U	340	340	U	340
Benzo(a)anthracene	340	U	340	340	U	340	340	U	340	340	U	340
Benzo(a)pyrene	340	U	340	340	U	340	340	U	340	340	U	340
Benzo(b)fluoranthene	340	U	340	340	U	340	340	U	340	340	U	340
Benzo(ghi)perylene	340	U	340	340	U	340	340	U	340	340	U	340
Benzo(k)fluoranthene	340	U	340	340	U	340	340	U	340	340	U	340
Bis(2-chloro-1-methylethyl)ether	340	U	340	340	U	340	340	U	340	340	U	340
Bis(2-Chloroethoxy)methane	340	U	340	340	U	340	340	U	340	340	U	340
Bis(2-chloroethyl) ether	340	U	340	340	U	340	340	U	340	340	U	340
Bis(2-ethylhexyl) phthalate	660	U	660	660	U	660	660	U	660	660	U	660
Butylbenzylphthalate	340	U	340	340	U	340	340	U	340	17	J	17
Carbazole	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
Chrysene	340	U	340	340	U	340	340	U	340	340	U	340
Dibenz[a,h]anthracene	340	U	340	340	U	340	340	U	340	340	U	340
Dibenzofuran	340	U	340	340	U	340	340	U	340	340	U	340
Diethylphthalate	340	U	340	340	U	340	340	U	340	340	U	340
Dimethyl phthalate	340	U	340	340	U	340	340	U	340	340	U	340
Di-n-butylphthalate	660	U	660	660	U	660	660	U	660	660	U	660
Di-n-octylphthalate	340	U	340	340	U	340	340	U	340	340	U	340
Fluoranthene	340	U	340	340	U	340	340	U	340	340	U	340
Fluorene	340	U	340	340	U	340	340	U	340	340	U	340
Hexachlorobenzene	340	U	340	340	U	340	340	U	340	340	U	340
Hexachlorobutadiene	340	U	340	340	U	340	340	U	340	340	U	340
Hexachlorocyclopentadiene	340	U	340	340	U	340	340	U	340	340	U	340
Hexachloroethane	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
Indeno(1,2,3-cd)pyrene	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
Isophorone	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
Naphthalene	340	U	340	340	U	340	340	U	340	340	U	340
Nitrobenzene	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
N-Nitroso-di-n-dipropylamine	340	U	340	340	U	340	340	U	340	340	U	340

Attachment	1	Sheet No.	13 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/18/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CD2			J03CD3			J03CD4			J03CD5		
	Sample Location 4			Sample Location 5			Sample Location 6			Sample Location 7		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
N-Nitrosodiphenylamine	340	UJ	340	340	UJ	340	340	UJ	340	340	UJ	340
Pentachlorophenol	850	U	850	840	U	840	840	U	840	840	U	840
Phenanthrene	340	U	340	340	U	340	340	U	340	340	U	340
Phenol	340	U	340	340	U	340	340	U	340	17	J	340
Pyrene	340	U	340	340	U	340	340	U	340	340	U	340
Volatiles												
1,1,1-Trichloroethane	5	U	5	6	U	6	5	U	5	6	U	6
1,1,2,2-Tetrachloroethane	5	U	5	6	U	6	5	U	5	6	U	6
1,1,2-Trichloroethane	5	U	5	6	U	6	5	U	5	6	U	6
1,1-Dichloroethane	5	U	5	6	U	6	5	U	5	6	U	6
1,1-Dichloroethene	5	U	5	6	U	6	5	U	5	6	U	6
1,2-Dichloroethane	5	U	5	6	U	6	5	U	5	6	U	6
1,2-Dichloroethene (Total)	5	U	5	6	U	6	5	U	5	6	U	6
1,2-Dichloropropane	5	U	5	6	U	6	5	U	5	6	U	6
2-Butanone	10	U	10	11	U	11	10	U	10	11	U	11
2-Hexanone	10	U	10	11	U	11	10	U	10	11	U	11
4-Methyl-2-Pentanone	10	U	10	11	U	11	10	U	10	11	U	11
Acetone	10	U	10	11	U	11	10	U	10	11	U	11
Benzene	5	U	5	6	U	6	5	U	5	6	U	6
Bromodichloromethane	5	U	5	6	U	6	5	U	5	6	U	6
Bromoform	5	U	5	6	U	6	5	U	5	6	U	6
Bromomethane	10	U	10	11	U	11	10	U	10	11	U	11
Carbon disulfide	5	U	5	6	U	6	5	U	5	6	U	6
Carbon tetrachloride	5	U	5	6	U	6	5	U	5	6	U	6
Chlorobenzene	5	U	5	6	U	6	5	U	5	6	U	6
Chloroethane	10	U	10	11	U	11	10	U	10	11	U	11
Chloroform	5	U	5	6	U	6	5	U	5	6	U	6
Chloromethane	10	U	10	11	U	11	10	U	10	11	U	11
cis-1,2-Dichloroethylene	5	U	5	6	U	6	5	U	5	6	U	6
cis-1,3-Dichloropropene	5	U	5	6	U	6	5	U	5	6	U	6
Dibromochloromethane	5	U	5	6	U	6	5	U	5	6	U	6
Ethylbenzene	5	U	5	6	U	6	5	U	5	6	U	6
Methylenechloride	15	U	15	15	U	15	17	U	17	19	U	19
Styrene	5	U	5	6	U	6	5	U	5	6	U	6
Tetrachloroethene	5	U	5	6	U	6	5	U	5	6	U	6
Toluene	5	U	5	6	U	6	5	U	5	6	U	6
trans-1,2-Dichloroethylene	5	U	5	6	U	6	5	U	5	6	U	6
trans-1,3-Dichloropropene	5	U	5	6	U	6	5	U	5	6	U	6
Trichloroethene	5	U	5	6	U	6	5	U	5	6	U	6
Vinyl chloride	10	U	10	11	U	11	10	U	10	11	U	11
Xylenes (total)	5	U	5	6	U	6	5	U	5	6	U	6

Attachment	1	Sheet No.	14 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	7/18/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CD6			J03CD7			J03CD8			J03CD9		
	Sample Location 8			Sample Location 9			Sample Location 10			Sample Location 11		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	360		13	22		13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Alpha-BHC	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
alpha-Chlordane	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Delta-BHC	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Dichlorodiphenyldichloroethane	33	UD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyldichloroethylene	16	JD	16	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyltrichloroethane	33	UD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dieldrin	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan I	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan II	33	UD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endosulfan sulfate	33	UD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin	33	UD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin aldehyde	7	JD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin ketone	33	UD	33	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Gamma-BHC (Lindane)	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
gamma-Chlordane	24	D	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor epoxide	17	UD	17	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Methoxychlor	170	UD	170	17	U	17	17	U	17	17	U	17
Toxaphene	1700	UDJ	1700	170	UJ	170	170	UJ	170	170	UJ	170
SVOAs												
1,2,4-Trichlorobenzene	340	UJ	340	340	UJ	340	330	UJ	330	330	UJ	330
1,2-Dichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
1,3-Dichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
1,4-Dichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	830	U	830	830	U	830
2,4,6-Trichlorophenol	340	U	340	340	U	340	330	U	330	330	U	330
2,4-Dichlorophenol	340	UJ	340	340	UJ	340	330	U	330	330	U	330
2,4-Dimethylphenol	340	UJ	340	340	UJ	340	330	UJ	330	330	UJ	330
2,4-Dinitrophenol	840	UJ	840	840	UJ	840	830	UJ	830	830	UJ	830
2,4-Dinitrotoluene	340	U	340	340	U	340	330	U	330	330	U	330
2,6-Dinitrotoluene	340	U	340	340	U	340	330	U	330	330	U	330
2-Chloronaphthalene	340	U	340	340	U	340	330	U	330	330	U	330
2-Chlorophenol	340	U	340	340	U	340	330	U	330	330	U	330
2-Methylnaphthalene	340	UJ	340	340	UJ	340	330	UJ	330	330	UJ	330

Attachment

1

Sheet No.

15 of 29

Originator

J. M. Capron *JMC*

Date

09/06/05

Checked

T. M. Blakley *TMB*

Date

9/10/05

Checked

T. B. Miley *TBM*

Date

9-13-05

Calc. No.

0600X-CA-V0052

Rev. No.

0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CD6			J03CD7			J03CD8			J03CD9		
	Sample Location 8			Sample Location 9			Sample Location 10			Sample Location 11		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
2-Methylphenol (cresol, o-)	340	U	340	340	U	340	330	U	330	330	U	330
2-Nitroaniline	840	U	840	840	U	840	830	U	830	830	U	830
2-Nitrophenol	340	UJ	340	340	UJ	340	330	U	330	330	U	330
3,3'-Dichlorobenzidine	340	U	340	340	U	340	330	U	330	330	U	330
3+4 Methylphenol (cresol, m+p)	340	U	340	340	U	340	330	U	330	330	U	330
3-Nitroaniline	840	U	840	840	U	840	830	U	830	830	U	830
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	830	U	830	830	U	830
4-Bromophenylphenyl ether	340	U	340	340	U	340	330	U	330	330	U	330
4-Chloro-3-methylphenol	340	UJ	340	340	UJ	340	330	UJ	330	330	UJ	330
4-Chloroaniline	340	U	340	340	U	340	330	U	330	330	U	330
4-Chlorophenylphenyl ether	340	U	340	340	U	340	330	U	330	330	U	330
4-Nitroaniline	840	UJ	840	840	UJ	840	830	U	830	830	U	830
4-Nitrophenol	840	U	840	840	U	840	830	U	830	830	U	830
Acenaphthene	340	U	340	340	U	340	330	U	330	330	U	330
Acenaphthylene	340	UJ	340	340	UJ	340	330	U	330	330	U	330
Anthracene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(a)anthracene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(a)pyrene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(b)fluoranthene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(ghi)perylene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(k)fluoranthene	340	U	340	340	U	340	330	U	330	330	U	330
Bis(2-chloro-1-methylethyl)ether	340	U	340	340	U	340	330	U	330	330	U	330
Bis(2-Chloroethoxy)methane	340	U	340	340	U	340	330	U	330	330	U	330
Bis(2-chloroethyl) ether	340	U	340	340	U	340	330	U	330	330	U	330
Bis(2-ethylhexyl) phthalate	660	U	660	660	U	660	660	U	660	660	U	660
Butylbenzylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Carbazole	340	UJ	340	340	UJ	340	330	U	330	330	U	330
Chrysene	340	U	340	340	U	340	330	U	330	330	U	330
Dibenz[a,h]anthracene	340	U	340	340	U	340	330	U	330	330	U	330
Dibenzofuran	340	U	340	340	U	340	330	U	330	330	U	330
Diethylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Dimethyl phthalate	340	U	340	340	U	340	330	U	330	330	U	330
Di-n-butylphthalate	660	U	660	660	U	660	330	U	330	330	U	330
Di-n-octylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Fluoranthene	340	U	340	340	U	340	330	U	330	330	U	330
Fluorene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachlorobutadiene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachlorocyclopentadiene	340	U	340	340	U	340	330	UJ	330	330	UJ	330
Hexachloroethane	340	UJ	340	340	UJ	340	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	340	UJ	340	340	UJ	340	330	U	330	330	U	330
Isophorone	340	UJ	340	340	UJ	340	330	UJ	330	330	UJ	330
Naphthalene	340	U	340	340	U	340	330	U	330	330	U	330
Nitrobenzene	340	UJ	340	340	UJ	340	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	340	U	340	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	16 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CD6			J03CD7			J03CD8			J03CD9		
	Sample Location 8			Sample Location 9			Sample Location 10			Sample Location 11		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
N-Nitrosodiphenylamine	340	UJ	340	340	UJ	340	330	U	330	330	U	330
Pentachlorophenol	840	U	840	840	U	840	830	U	830	830	U	830
Phenanthrene	340	U	340	340	U	340	330	U	330	330	U	330
Phenol	18	J	340	340	U	340	330	U	330	330	U	330
Pyrene	340	U	340	340	U	340	330	U	330	330	U	330
Volatiles												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene(Total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	9	U	9	9	U	9	10	U	10
2-Hexanone	10	U	10	9	U	9	9	U	9	10	U	10
4-Methyl-2-Pentanone	10	U	10	9	U	9	9	U	9	10	U	10
Acetone	10	U	10	9	U	9	9	U	9	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	9	U	9	9	U	9	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	9	U	9	9	U	9	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	9	U	9	9	U	9	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylenechloride	24	U	24	21	U	21	17	U	17	23	U	23
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	9	U	9	9	U	9	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	17 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF0			J03CF1			J03CF2			J03CF3		
	Sample Location 12			Sample Location 13			Sample Location 14			Sample Location 15		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Alpha-BHC	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
alpha-Chlordane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Delta-BHC	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Dichlorodiphenyldichloroethane	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyldichloroethylene	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyltrichloroethane	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dieldrin	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan I	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan II	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endosulfan sulfate	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin aldehyde	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin ketone	3.4	U	3.4	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Gamma-BHC (Lindane)	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
gamma-Chlordane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor epoxide	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Methoxychlor	17	U	17	17	U	17	17	U	17	17	U	17
Toxaphene	170	UJ	170	170	UJ	170	170	UJ	170	170	UJ	170
SVOAs												
1,2,4-Trichlorobenzene	340	UJ	340	330	UJ	330	330	UJ	330	330	UJ	330
1,2-Dichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
1,3-Dichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
1,4-Dichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	830	U	830	830	U	830	840	U	840
2,4,6-Trichlorophenol	340	U	340	330	U	330	330	U	330	330	U	330
2,4-Dichlorophenol	340	U	340	330	U	330	330	U	330	330	U	330
2,4-Dimethylphenol	340	UJ	340	330	UJ	330	330	UJ	330	330	UJ	330
2,4-Dinitrophenol	840	UJ	840	830	UJ	830	830	UJ	830	840	UJ	840
2,4-Dinitrotoluene	340	U	340	330	U	330	330	U	330	330	U	330
2,6-Dinitrotoluene	340	U	340	330	U	330	330	U	330	330	U	330
2-Chloronaphthalene	340	U	340	330	U	330	330	U	330	330	U	330
2-Chlorophenol	340	U	340	330	U	330	330	U	330	330	U	330
2-Methylnaphthalene	340	UJ	340	330	UJ	330	330	UJ	330	330	UJ	330

Attachment	1	Sheet No.	18 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/14/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF0			J03CF1			J03CF2			J03CF3		
	Sample Location 12			Sample Location 13			Sample Location 14			Sample Location 15		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
2-Methylphenol (cresol, o-)	340	U	340	330	U	330	330	U	330	330	U	330
2-Nitroaniline	840	U	840	830	U	830	830	U	830	840	U	840
2-Nitrophenol	340	U	340	330	U	330	330	U	330	330	U	330
3,3'-Dichlorobenzidine	340	U	340	330	U	330	330	U	330	330	U	330
3+4 Methylphenol (cresol, m+p)	340	U	340	330	U	330	330	U	330	330	U	330
3-Nitroaniline	840	U	840	830	U	830	830	U	830	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	830	U	830	830	U	830	840	U	840
4-Bromophenylphenyl ether	340	U	340	330	U	330	330	U	330	330	U	330
4-Chloro-3-methylphenol	340	UJ	340	330	UJ	330	330	UJ	330	330	UJ	330
4-Chloroaniline	340	U	340	330	U	330	330	U	330	330	U	330
4-Chlorophenylphenyl ether	340	U	340	330	U	330	330	U	330	330	U	330
4-Nitroaniline	840	U	840	830	U	830	830	U	830	840	U	840
4-Nitrophenol	840	U	840	830	U	830	830	U	830	840	U	840
Acenaphthene	340	U	340	330	U	330	330	U	330	330	U	330
Acenaphthylene	340	U	340	330	U	330	330	U	330	330	U	330
Anthracene	340	U	340	330	U	330	330	U	330	330	U	330
Benzo(a)anthracene	340	U	340	330	U	330	330	U	330	330	U	330
Benzo(a)pyrene	340	U	340	330	U	330	330	U	330	330	U	330
Benzo(b)fluoranthene	340	U	340	330	U	330	330	U	330	330	U	330
Benzo(ghi)perylene	340	U	340	330	U	330	330	U	330	330	U	330
Benzo(k)fluoranthene	340	U	340	330	U	330	330	U	330	330	U	330
Bis(2-chloro-1-methylethyl)ether	340	U	340	330	U	330	330	U	330	330	U	330
Bis(2-Chloroethoxy)methane	340	U	340	330	U	330	330	U	330	330	U	330
Bis(2-chloroethyl) ether	340	U	340	330	U	330	330	U	330	330	U	330
Bis(2-ethylhexyl) phthalate	660	U	660	660	U	660	660	U	660	660	U	660
Butylbenzylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Carbazole	340	U	340	330	U	330	330	U	330	330	U	330
Chrysene	340	U	340	330	U	330	330	U	330	330	U	330
Dibenz[a,h]anthracene	340	U	340	330	U	330	330	U	330	330	U	330
Dibenzofuran	340	U	340	330	U	330	330	U	330	330	U	330
Diethylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Dimethyl phthalate	340	U	340	330	U	330	330	U	330	330	U	330
Di-n-butylphthalate	18	J	340	330	U	330	330	U	330	330	U	330
Di-n-octylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Fluoranthene	340	U	340	330	U	330	330	U	330	330	U	330
Fluorene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachlorobutadiene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachlorocyclopentadiene	340	UJ	340	330	UJ	330	330	UJ	330	330	UJ	330
Hexachloroethane	340	U	340	330	U	330	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	340	U	340	330	U	330	330	U	330	330	U	330
Isophorone	340	UJ	340	330	UJ	330	330	UJ	330	330	UJ	330
Naphthalene	340	U	340	330	U	330	330	U	330	330	U	330
Nitrobenzene	340	U	340	330	U	330	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	340	U	340	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	19 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF0 Sample Location 12 Sample Date 6/8/05			J03CF1 Sample Location 13 Sample Date 6/8/05			J03CF2 Sample Location 14 Sample Date 6/8/05			J03CF3 Sample Location 15 Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
N-Nitrosodiphenylamine	340	U	340	330	U	330	330	U	330	330	U	330
Pentachlorophenol	840	U	840	830	U	830	830	U	830	840	U	840
Phenanthrene	340	U	340	330	U	330	330	U	330	330	U	330
Phenol	340	U	340	330	U	330	330	U	330	330	U	330
Pyrene	340	U	340	330	U	330	330	U	330	330	U	330
Volatiles												
1,1,1-Trichloroethane	5	U	5	5	U	5	4	U	4	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	4	U	4	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	4	U	4	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	4	U	4	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	4	U	4	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	4	U	4	5	U	5
1,2-Dichloroethene(Total)	5	U	5	5	U	5	4	U	4	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	4	U	4	5	U	5
2-Butanone	10	U	10	10	U	10	9	U	9	9	U	9
2-Hexanone	10	U	10	10	U	10	9	U	9	9	U	9
4-Methyl-2-Pentanone	10	U	10	10	U	10	9	U	9	9	U	9
Acetone	10	U	10	10	U	10	9	U	9	9	U	9
Benzene	5	U	5	5	U	5	4	U	4	5	U	5
Bromodichloromethane	5	U	5	5	U	5	4	U	4	5	U	5
Bromoform	5	U	5	5	U	5	4	U	4	5	U	5
Bromomethane	10	U	10	10	U	10	9	U	9	9	U	9
Carbon disulfide	5	U	5	5	U	5	4	U	4	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	4	U	4	5	U	5
Chlorobenzene	5	U	5	5	U	5	4	U	4	5	U	5
Chloroethane	10	U	10	10	U	10	9	U	9	9	U	9
Chloroform	5	U	5	5	U	5	4	U	4	5	U	5
Chloromethane	10	U	10	10	U	10	9	U	9	9	U	9
cis-1,2-Dichloroethylene	5	U	5	5	U	5	4	U	4	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	4	U	4	5	U	5
Dibromochloromethane	5	U	5	5	U	5	4	U	4	5	U	5
Ethylbenzene	5	U	5	5	U	5	4	U	4	5	U	5
Methylenechloride	17	U	17	15	U	15	12	U	12	19	U	19
Styrene	5	U	5	5	U	5	4	U	4	5	U	5
Tetrachloroethene	5	U	5	5	U	5	4	U	4	5	U	5
Toluene	4	J	5	5	U	5	4	U	4	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	4	U	4	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	4	U	4	5	U	5
Trichloroethene	5	U	5	5	U	5	4	U	4	5	U	5
Vinyl chloride	10	U	10	10	U	10	9	U	9	9	U	9
Xylenes (total)	5	U	5	5	U	5	4	U	4	5	U	5

Attachment	1	Sheet No.	20 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF4			J03CF5			J03CF6			J03CF7		
	Sample Location 16			Sample Location 17			Sample Location 18			Sample Location 19		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	8.5	J	13	13	U	13	14		13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Alpha-BHC	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
alpha-Chlordane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Delta-BHC	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Dichlorodiphenyldichloroethane	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Dichlorodiphenyldichloroethylene	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Dichlorodiphenyltrichloroethane	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Dieldrin	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan I	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan II	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Endosulfan sulfate	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Endrin	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Endrin aldehyde	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Endrin ketone	3.3	U	3.3	3.4	U	3.4	3.3	U	3.3	3.4	U	3.4
Gamma-BHC (Lindane)	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
gamma-Chlordane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor epoxide	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Methoxychlor	17	U	17	17	U	17	17	U	17	17	U	17
Toxaphene	170	UJ	170	170	UJ	170	170	UJ	170	170	UJ	170
SVOAs												
1,2,4-Trichlorobenzene	330	UJ	330	340	UJ	340	330	UJ	330	340	UJ	340
1,2-Dichlorobenzene	330	U	330	340	U	340	330	U	330	340	U	340
1,3-Dichlorobenzene	330	U	330	340	U	340	330	U	330	340	U	340
1,4-Dichlorobenzene	330	U	330	340	U	340	330	U	330	340	U	340
2,4,5-Trichlorophenol	830	U	830	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	330	U	330	340	U	340
2,4-Dichlorophenol	330	U	330	340	U	340	330	U	330	340	U	340
2,4-Dimethylphenol	330	UJ	330	340	UJ	340	330	UJ	330	340	UJ	340
2,4-Dinitrophenol	830	UJ	830	840	UJ	840	840	UJ	840	840	UJ	840
2,4-Dinitrotoluene	330	U	330	340	U	340	330	U	330	340	U	340
2,6-Dinitrotoluene	330	U	330	340	U	340	330	U	330	340	U	340
2-Chloronaphthalene	330	U	330	340	U	340	330	U	330	340	U	340
2-Chlorophenol	330	U	330	340	U	340	330	U	330	340	U	340
2-Methylnaphthalene	330	UJ	330	340	UJ	340	330	UJ	330	340	UJ	340

Attachment	1	Sheet No.	21 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	7/8/05
Checked	T. B. Miley <i>TBM</i>	Date	7-12-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF4			J03CF5			J03CF6			J03CF7		
	Sample Location 16			Sample Location 17			Sample Location 18			Sample Location 19		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	330	U	330	340	U	340
2-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	340	U	340	330	U	330	340	U	340
3,3'-Dichlorobenzidine	330	U	330	340	U	340	330	U	330	340	U	340
3+4 Methylphenol (cresol, m+p)	330	U	330	340	U	340	330	U	330	340	U	340
3-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	830	U	830	840	U	840	840	U	840	840	U	840
4-Bromophenylphenyl ether	330	U	330	340	U	340	330	U	330	340	U	340
4-Chloro-3-methylphenol	330	UJ	330	340	UJ	340	330	UJ	330	340	UJ	340
4-Chloroaniline	330	U	330	340	U	340	330	U	330	340	U	340
4-Chlorophenylphenyl ether	330	U	330	340	U	340	330	U	330	340	U	340
4-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
4-Nitrophenol	830	U	830	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	340	U	340	330	U	330	340	U	340
Acenaphthylene	330	U	330	340	U	340	330	U	330	340	U	340
Anthracene	330	U	330	340	U	340	330	U	330	340	U	340
Benzo(a)anthracene	330	U	330	340	U	340	330	U	330	340	U	340
Benzo(a)pyrene	330	U	330	340	U	340	330	U	330	340	U	340
Benzo(b)fluoranthene	330	U	330	340	U	340	330	U	330	340	U	340
Benzo(ghi)perylene	330	U	330	340	U	340	330	U	330	340	U	340
Benzo(k)fluoranthene	330	U	330	340	U	340	330	U	330	340	U	340
Bis(2-chloro-1-methylethyl)ether	330	U	330	340	U	340	330	U	330	340	U	340
Bis(2-Chloroethoxy)methane	330	U	330	340	U	340	330	U	330	340	U	340
Bis(2-chloroethyl) ether	330	U	330	340	U	340	330	U	330	340	U	340
Bis(2-ethylhexyl) phthalate	660	U	660	660	U	660	660	U	660	660	U	660
Butylbenzylphthalate	330	U	330	340	U	340	330	U	330	340	U	340
Carbazole	330	U	330	340	U	340	330	U	330	340	U	340
Chrysene	330	U	330	340	U	340	330	U	330	340	U	340
Dibenz[a,h]anthracene	330	U	330	340	U	340	330	U	330	340	U	340
Dibenzofuran	330	U	330	340	U	340	330	U	330	340	U	340
Diethylphthalate	330	U	330	340	U	340	330	U	330	340	U	340
Dimethyl phthalate	330	U	330	340	U	340	330	U	330	340	U	340
Di-n-butylphthalate	330	U	330	340	U	340	330	U	330	340	U	340
Di-n-octylphthalate	330	U	330	340	U	340	330	U	330	340	U	340
Fluoranthene	330	U	330	340	U	340	330	U	330	340	U	340
Fluorene	330	U	330	340	U	340	330	U	330	340	U	340
Hexachlorobenzene	330	U	330	340	U	340	330	U	330	340	U	340
Hexachlorobutadiene	330	U	330	340	U	340	330	U	330	340	U	340
Hexachlorocyclopentadiene	330	UJ	330	340	UJ	340	330	UJ	330	340	UJ	340
Hexachloroethane	330	U	330	340	U	340	330	U	330	340	U	340
Indeno(1,2,3-cd)pyrene	330	U	330	340	U	340	330	U	330	340	U	340
Isophorone	330	UJ	330	340	UJ	340	330	UJ	330	340	UJ	340
Naphthalene	330	U	330	340	U	340	330	U	330	340	U	340
Nitrobenzene	330	U	330	340	U	340	330	U	330	340	U	340
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	330	U	330	340	U	340

Attachment	1	Sheet No.	22 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF4			J03CF5			J03CF6			J03CF7		
	Sample Location 16			Sample Location 17			Sample Location 18			Sample Location 19		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
N-Nitrosodiphenylamine	330	U	330	340	U	340	330	U	330	340	U	340
Pentachlorophenol	830	U	830	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	340	U	340	330	U	330	340	U	340
Phenol	330	U	330	340	U	340	330	U	330	340	U	340
Pyrene	330	U	330	340	U	340	330	U	330	340	U	340
Volatiles												
1,1,1-Trichloroethane	5	U	5	5	U	5	4	U	4	6	U	6
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	4	U	4	6	U	6
1,1,2-Trichloroethane	5	U	5	5	U	5	4	U	4	6	U	6
1,1-Dichloroethane	5	U	5	5	U	5	4	U	4	6	U	6
1,1-Dichloroethene	5	U	5	5	U	5	4	U	4	6	U	6
1,2-Dichloroethane	5	U	5	5	U	5	4	U	4	6	U	6
1,2-Dichloroethene (Total)	5	U	5	5	U	5	4	U	4	6	U	6
1,2-Dichloropropane	5	U	5	5	U	5	4	U	4	6	U	6
2-Butanone	9	U	9	9	U	9	9	U	9	11	U	11
2-Hexanone	9	U	9	9	U	9	9	U	9	11	U	11
4-Methyl-2-Pentanone	9	U	9	9	U	9	9	U	9	11	U	11
Acetone	9	U	9	9	U	9	9	U	9	11	U	11
Benzene	5	U	5	5	U	5	4	U	4	6	U	6
Bromodichloromethane	5	U	5	5	U	5	4	U	4	6	U	6
Bromoform	5	U	5	5	U	5	4	U	4	6	U	6
Bromomethane	9	U	9	9	U	9	9	U	9	11	U	11
Carbon disulfide	5	U	5	5	U	5	4	U	4	6	U	6
Carbon tetrachloride	5	U	5	5	U	5	4	U	4	6	U	6
Chlorobenzene	5	U	5	5	U	5	4	U	4	6	U	6
Chloroethane	9	U	9	9	U	9	9	U	9	11	U	11
Chloroform	5	U	5	5	U	5	4	U	4	6	U	6
Chloromethane	9	U	9	9	U	9	9	U	9	11	U	11
cis-1,2-Dichloroethylene	5	U	5	5	U	5	4	U	4	6	U	6
cis-1,3-Dichloropropene	5	U	5	5	U	5	4	U	4	6	U	6
Dibromochloromethane	5	U	5	5	U	5	4	U	4	6	U	6
Ethylbenzene	5	U	5	5	U	5	4	U	4	6	U	6
Methylenechloride	12	U	12	12	U	12	14	U	14	13	U	13
Styrene	5	U	5	5	U	5	4	U	4	6	U	6
Tetrachloroethene	5	U	5	5	U	5	4	U	4	6	U	6
Toluene	5	U	5	5	U	5	4	U	4	6	U	6
trans-1,2-Dichloroethylene	5	U	5	5	U	5	4	U	4	6	U	6
trans-1,3-Dichloropropene	5	U	5	5	U	5	4	U	4	6	U	6
Trichloroethene	5	U	5	5	U	5	4	U	4	6	U	6
Vinyl chloride	9	U	9	9	U	9	9	U	9	11	U	11
Xylenes (total)	5	U	5	5	U	5	4	U	4	6	U	6

Attachment	1	Sheet No.	23 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF8			J03CF9			J03CH0			J03CH1		
	Sample Location 20			Sample Location 21			Sample Location 22			Duplicate of J03CD4		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
PCBs												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	13	U	13	22		13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Alpha-BHC	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
alpha-Chlordane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Delta-BHC	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Dichlorodiphenyldichloroethane	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyldichloroethylene	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dichlorodiphenyltrichloroethane	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Dieldrin	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan I	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Endosulfan II	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endosulfan sulfate	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin aldehyde	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Endrin ketone	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3	3.3	U	3.3
Gamma-BHC (Lindane)	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
gamma-Chlordane	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Heptachlor epoxide	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7	1.7	U	1.7
Methoxychlor	17	U	17	17	U	17	17	U	17	17	U	17
Toxaphene	170	UJ	170	170	UJ	170	170	UJ	170	170	UJ	170
SVOAs												
1,2,4-Trichlorobenzene	330	UJ	330	330	UJ	330	330	UJ	330	340	UJ	340
1,2-Dichlorobenzene	330	U	330	330	U	330	330	U	330	340	U	340
1,3-Dichlorobenzene	330	U	330	330	U	330	330	U	330	340	U	340
1,4-Dichlorobenzene	330	U	330	330	U	330	330	U	330	340	U	340
2,4,5-Trichlorophenol	840	U	840	830	U	830	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	330	U	330	330	U	330	340	U	340
2,4-Dichlorophenol	330	U	330	330	U	330	330	U	330	340	U	340
2,4-Dimethylphenol	330	UJ	330	330	UJ	330	330	UJ	330	340	UJ	340
2,4-Dinitrophenol	840	UJ	840	830	UJ	830	840	UJ	840	840	UJ	840
2,4-Dinitrotoluene	330	U	330	330	U	330	330	U	330	340	U	340
2,6-Dinitrotoluene	330	U	330	330	U	330	330	U	330	340	U	340
2-Chloronaphthalene	330	U	330	330	U	330	330	U	330	340	U	340
2-Chlorophenol	330	U	330	330	U	330	330	U	330	340	U	340
2-Methylnaphthalene	330	UJ	330	330	UJ	330	330	UJ	330	340	UJ	340

Attachment	1	Sheet No.	24 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/16/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF8			J03CF9			J03CH0			J03CH1		
	Sample Location 20			Sample Location 21			Sample Location 22			Duplicate of J03CD4		
	Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05			Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
2-Methylphenol (cresol, o-)	330	U	330	330	U	330	330	U	330	340	U	340
2-Nitroaniline	840	U	840	830	U	830	840	U	840	840	U	840
2-Nitrophenol	330	U	330	330	U	330	330	U	330	340	U	340
3,3'-Dichlorobenzidine	330	U	330	330	U	330	330	U	330	340	U	340
3+4 Methylphenol (cresol, m+p)	330	U	330	330	U	330	330	U	330	340	U	340
3-Nitroaniline	840	U	840	830	U	830	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	830	U	830	840	U	840	840	U	840
4-Bromophenylphenyl ether	330	U	330	330	U	330	330	U	330	340	U	340
4-Chloro-3-methylphenol	330	UJ	330	330	UJ	330	330	UJ	330	340	UJ	340
4-Chloroaniline	330	U	330	330	U	330	330	U	330	340	U	340
4-Chlorophenylphenyl ether	330	U	330	330	U	330	330	U	330	340	U	340
4-Nitroaniline	840	U	840	830	U	830	840	U	840	840	U	840
4-Nitrophenol	840	U	840	830	U	830	840	U	840	840	U	840
Acenaphthene	330	U	330	330	U	330	330	U	330	340	U	340
Acenaphthylene	330	U	330	330	U	330	330	U	330	340	U	340
Anthracene	330	U	330	330	U	330	330	U	330	340	U	340
Benzo(a)anthracene	330	U	330	330	U	330	330	U	330	340	U	340
Benzo(a)pyrene	330	U	330	330	U	330	330	U	330	340	U	340
Benzo(b)fluoranthene	330	U	330	330	U	330	330	U	330	340	U	340
Benzo(ghi)perylene	330	U	330	330	U	330	330	U	330	340	U	340
Benzo(k)fluoranthene	330	U	330	330	U	330	330	U	330	340	U	340
Bis(2-chloro-1-methylethyl)ether	330	U	330	330	U	330	330	U	330	340	U	340
Bis(2-Chloroethoxy)methane	330	U	330	330	U	330	330	U	330	340	U	340
Bis(2-chloroethyl) ether	330	U	330	330	U	330	330	U	330	340	U	340
Bis(2-ethylhexyl) phthalate	660	U	660	660	U	660	660	U	660	660	U	660
Butylbenzylphthalate	330	U	330	330	U	330	330	U	330	340	U	340
Carbazole	330	U	330	330	U	330	330	U	330	340	U	340
Chrysene	330	U	330	330	U	330	330	U	330	340	U	340
Dibenz[a,h]anthracene	330	U	330	330	U	330	330	U	330	340	U	340
Dibenzofuran	330	U	330	330	U	330	330	U	330	340	U	340
Diethylphthalate	330	U	330	330	U	330	330	U	330	340	U	340
Dimethyl phthalate	330	U	330	330	U	330	330	U	330	340	U	340
Di-n-butylphthalate	17	J	330	330	U	330	330	U	330	340	U	340
Di-n-octylphthalate	330	U	330	330	U	330	330	U	330	340	U	340
Fluoranthene	330	U	330	330	U	330	330	U	330	340	U	340
Fluorene	330	U	330	330	U	330	330	U	330	340	U	340
Hexachlorobenzene	330	U	330	330	U	330	330	U	330	340	U	340
Hexachlorobutadiene	330	U	330	330	U	330	330	U	330	340	U	340
Hexachlorocyclopentadiene	330	UJ	330	330	UJ	330	330	UJ	330	340	UJ	340
Hexachloroethane	330	U	330	330	U	330	330	U	330	340	U	340
Indeno(1,2,3-cd)pyrene	330	U	330	330	U	330	330	U	330	340	U	340
Isophorone	330	UJ	330	330	UJ	330	330	UJ	330	340	UJ	340
Naphthalene	330	U	330	330	U	330	330	U	330	340	U	340
Nitrobenzene	330	U	330	330	U	330	330	U	330	340	U	340
N-Nitroso-di-n-dipropylamine	330	U	330	330	U	330	330	U	330	340	U	340

Attachment	1	Sheet No.	25 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CF8 Sample Location 20 Sample Date 6/8/05			J03CF9 Sample Location 21 Sample Date 6/8/05			J03CH0 Sample Location 22 Sample Date 6/8/05			J03CH1 Duplicate of J03CD4 Sample Date 6/8/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
SVOAs (continued)												
N-Nitrosodiphenylamine	330	U	330	330	U	330	330	U	330	340	U	340
Pentachlorophenol	840	U	840	830	U	830	840	U	840	840	U	840
Phenanthrene	330	U	330	330	U	330	330	U	330	340	U	340
Phenol	330	U	330	330	U	330	330	U	330	340	U	340
Pyrene	330	U	330	330	U	330	330	U	330	340	U	340
Volatiles												
1,1,1-Trichloroethane	5	U	5	6	U	6	5	U	5	5	UJ	5
1,1,2,2-Tetrachloroethane	5	U	5	6	U	6	5	U	5	5	UJ	5
1,1,2-Trichloroethane	5	U	5	6	U	6	5	U	5	5	UJ	5
1,1-Dichloroethane	5	U	5	6	U	6	5	U	5	5	UJ	5
1,1-Dichloroethene	5	U	5	6	U	6	5	U	5	5	UJ	5
1,2-Dichloroethane	5	U	5	6	U	6	5	U	5	5	UJ	5
1,2-Dichloroethene (Total)	5	U	5	6	U	6	5	U	5	5	UJ	5
1,2-Dichloropropane	5	U	5	6	U	6	5	U	5	5	UJ	5
2-Butanone	10	U	10	11	U	11	10	U	10	10	UJ	10
2-Hexanone	10	U	10	11	U	11	10	U	10	10	UJ	10
4-Methyl-2-Pentanone	10	U	10	11	U	11	10	U	10	10	UJ	10
Acetone	10	U	10	11	U	11	10	U	10	10	UJ	10
Benzene	5	U	5	6	U	6	5	U	5	5	UJ	5
Bromodichloromethane	5	U	5	6	U	6	5	U	5	5	UJ	5
Bromoform	5	U	5	6	U	6	5	U	5	5	UJ	5
Bromomethane	10	U	10	11	U	11	10	U	10	10	UJ	10
Carbon disulfide	5	U	5	6	U	6	5	U	5	5	UJ	5
Carbon tetrachloride	5	U	5	6	U	6	5	U	5	5	UJ	5
Chlorobenzene	5	U	5	6	U	6	5	U	5	5	UJ	5
Chloroethane	10	U	10	11	U	11	10	U	10	10	UJ	10
Chloroform	5	U	5	6	U	6	5	U	5	5	UJ	5
Chloromethane	10	U	10	11	U	11	10	U	10	10	UJ	10
cis-1,2-Dichloroethylene	5	U	5	6	U	6	5	U	5	5	UJ	5
cis-1,3-Dichloropropene	5	U	5	6	U	6	5	U	5	5	UJ	5
Dibromochloromethane	5	U	5	6	U	6	5	U	5	5	UJ	5
Ethylbenzene	5	U	5	6	U	6	5	U	5	5	UJ	5
Methylenechloride	16	U	16	10	U	10	10	U	10	18	UJ	18
Styrene	5	U	5	6	U	6	5	U	5	5	UJ	5
Tetrachloroethene	5	U	5	6	U	6	5	U	5	5	UJ	5
Toluene	5	U	5	6	U	6	5	U	5	5	UJ	5
trans-1,2-Dichloroethylene	5	U	5	6	U	6	5	U	5	5	UJ	5
trans-1,3-Dichloropropene	5	U	5	6	U	6	5	U	5	5	UJ	5
Trichloroethene	5	U	5	6	U	6	5	U	5	5	UJ	5
Vinyl chloride	10	U	10	11	U	11	10	U	10	10	UJ	10
Xylenes (total)	5	U	5	6	U	6	5	U	5	5	UJ	5

Attachment	1	Sheet No.	26 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	9/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CH2			J03CK0			Excavated Area Calculations		Staging Area Calculations	
	Duplicate of J03CF0 Sample Date 6/8/05			Trip Blank Sample Date 6/7/05			% < Detection limit	Maximum value	% < Detection limit	Maximum value
	µg/kg	Q	PQL	µg/L	Q	PQL				
PCBs										
Aroclor-1016	13	U	13		U		100%	NA	100%	NA
Aroclor-1221	13	U	13				100%	NA	100%	NA
Aroclor-1232	13	U	13				100%	NA	100%	NA
Aroclor-1242	13	U	13				100%	NA	100%	NA
Aroclor-1248	13	U	13				100%	NA	100%	NA
Aroclor-1254	14		13				64%	2.2E-02	55%	3.6E-01
Aroclor-1260	13	U	13				100%	NA	100%	NA
Pesticides										
Aldrin	1.7	U	1.7				100%	NA	100%	NA
Alpha-BHC	1.7	U	1.7				100%	NA	100%	NA
alpha-Chlordane	1.7	U	1.7				100%	NA	100%	NA
beta-1,2,3,4,5,6- Hexachlorocyclohexane	1.7	U	1.7				100%	NA	100%	NA
Delta-BHC	1.7	U	1.7				100%	NA	100%	NA
Dichlorodiphenyldichloroethane	3.4	U	3.4				100%	NA	100%	NA
Dichlorodiphenyldichloroethylene	3.4	U	3.4				100%	NA	91%	1.6E-02
Dichlorodiphenyltrichloroethane	3.4	U	3.4				100%	NA	100%	NA
Dieldrin	1.7	U	1.7				100%	NA	100%	NA
Endosulfan I	1.7	U	1.7				100%	NA	100%	NA
Endosulfan II	3.4	U	3.4				100%	NA	100%	NA
Endosulfan sulfate	3.4	U	3.4				100%	NA	100%	NA
Endrin	3.4	U	3.4				100%	NA	100%	NA
Endrin aldehyde	3.4	U	3.4				100%	NA	91%	7.E-03
Endrin ketone	3.4	U	3.4				100%	NA	100%	NA
Gamma-BHC (Lindane)	1.7	U	1.7				100%	NA	100%	NA
gamma-Chlordane	1.7	U	1.7				100%	NA	91%	2.4E-02
Heptachlor	1.7	U	1.7				100%	NA	100%	NA
Heptachlor epoxide	1.7	U	1.7				100%	NA	100%	NA
Methoxychlor	17	U	17				100%	NA	100%	NA
Toxaphene	170	UJ	170				100%	NA	100%	NA
SVOAs										
1,2,4-Trichlorobenzene	340	UJ	340				100%	NA	100%	NA
1,2-Dichlorobenzene	340	U	340				100%	NA	100%	NA
1,3-Dichlorobenzene	340	U	340				100%	NA	100%	NA
1,4-Dichlorobenzene	340	U	340				100%	NA	100%	NA
2,4,5-Trichlorophenol	840	U	840				100%	NA	100%	NA
2,4,6-Trichlorophenol	340	U	340				100%	NA	100%	NA
2,4-Dichlorophenol	340	U	340				100%	NA	100%	NA
2,4-Dimethylphenol	340	UJ	340				100%	NA	100%	NA
2,4-Dinitrophenol	840	UJ	840				100%	NA	100%	NA
2,4-Dinitrotoluene	340	U	340				100%	NA	100%	NA
2,6-Dinitrotoluene	340	U	340				100%	NA	100%	NA
2-Chloronaphthalene	340	U	340				100%	NA	100%	NA
2-Chlorophenol	340	U	340				100%	NA	100%	NA
2-Methylnaphthalene	340	UJ	340				100%	NA	100%	NA

Attachment	1	Sheet No.	27 of 29
Originator	J. M. Capron	Date	09/06/05
Checked	T. M. Blakley	Date	9/8/05
Checked	T. B. Miley	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CH2			J03CK0			Excavated Area Calculations		Staging Area Calculations	
	Duplicate of J03CF0			Trip Blank			% < Detection limit	Maximum value	% < Detection limit	Maximum value
	Sample Date 6/8/05			Sample Date 6/7/05						
	µg/kg	Q	PQL	µg/L	Q	PQL		mg/kg		mg/kg
SVOAs (continued)										
2-Methylphenol (cresol, o-)	340	U	340				100%	NA	100%	NA
2-Nitroaniline	840	U	840				100%	NA	100%	NA
2-Nitrophenol	340	U	340				100%	NA	100%	NA
3,3'-Dichlorobenzidine	340	U	340				100%	NA	100%	NA
3+4 Methylphenol (cresol, m+p)	340	U	340				100%	NA	100%	NA
3-Nitroaniline	840	U	840				100%	NA	100%	NA
4,6-Dinitro-2-methylphenol	840	U	840				100%	NA	100%	NA
4-Bromophenylphenyl ether	340	U	340				100%	NA	100%	NA
4-Chloro-3-methylphenol	340	UJ	340				100%	NA	100%	NA
4-Chloroaniline	340	U	340				100%	NA	100%	NA
4-Chlorophenylphenyl ether	340	U	340				100%	NA	100%	NA
4-Nitroaniline	840	U	840				100%	NA	100%	NA
4-Nitrophenol	840	U	840				100%	NA	100%	NA
Acenaphthene	340	U	340				100%	NA	100%	NA
Acenaphthylene	340	U	340				100%	NA	100%	NA
Anthracene	340	U	340				100%	NA	100%	NA
Benzo(a)anthracene	340	U	340				100%	NA	100%	NA
Benzo(a)pyrene	340	U	340				100%	NA	100%	NA
Benzo(b)fluoranthene	340	U	340				100%	NA	100%	NA
Benzo(ghi)perylene	340	U	340				100%	NA	100%	NA
Benzo(k)fluoranthene	340	U	340				100%	NA	100%	NA
Bis(2-chloro-1-methylethyl)ether	340	U	340				100%	NA	100%	NA
Bis(2-Chloroethoxy)methane	340	U	340				100%	NA	100%	NA
Bis(2-chloroethyl) ether	340	U	340				100%	NA	100%	NA
Bis(2-ethylhexyl) phthalate	620	B	340				91%	6.2E-01	100%	NA
Butylbenzylphthalate	340	U	340				100%	NA	91%	1.7E-02
Carbazole	340	U	340				100%	NA	100%	NA
Chrysene	340	U	340				100%	NA	100%	NA
Dibenz[a,h]anthracene	340	U	340				100%	NA	100%	NA
Dibenzofuran	340	U	340				100%	NA	100%	NA
Diethylphthalate	340	U	340				100%	NA	100%	NA
Dimethyl phthalate	340	U	340				100%	NA	100%	NA
Di-n-butylphthalate	340	U	340				82%	1.8E-02	100%	NA
Di-n-octylphthalate	340	U	340				100%	NA	100%	NA
Fluoranthene	340	U	340				100%	NA	91%	2.2E-02
Fluorene	340	U	340				100%	NA	100%	NA
Hexachlorobenzene	340	U	340				100%	NA	100%	NA
Hexachlorobutadiene	340	U	340				100%	NA	100%	NA
Hexachlorocyclopentadiene	340	UJ	340				100%	NA	100%	NA
Hexachloroethane	340	U	340				100%	NA	100%	NA
Indeno(1,2,3-cd)pyrene	340	U	340				100%	NA	100%	NA
Isophorone	340	UJ	340				100%	NA	100%	NA
Naphthalene	340	U	340				100%	NA	100%	NA
Nitrobenzene	340	U	340				100%	NA	100%	NA
N-Nitroso-di-n-dipropylamine	340	U	340				100%	NA	100%	NA

Attachment	1	Sheet No.	28 of 29
Originator	J. M. Capron <i>JMC</i>	Date	09/06/05
Checked	T. M. Blakley <i>TMB</i>	Date	7/8/05
Checked	T. B. Miley <i>TBM</i>	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

Attachment 1. 128-B-2 Verification Sampling Results.

Constituent	J03CH2			J03CK0			Excavated Area Calculations		Staging Area Calculations	
	Duplicate of J03CF0			Trip Blank			% < Detection limit	Maximum value	% < Detection limit	Maximum value
	Sample Date 6/8/05			Sample Date 6/7/05						
	µg/kg	Q	PQL	µg/L	Q	PQL		mg/kg		mg/kg
SVOAs (continued)										
N-Nitrosodiphenylamine	340	U	340				100%	NA	100%	NA
Pentachlorophenol	840	U	840				100%	NA	100%	NA
Phenanthrene	340	U	340				100%	NA	100%	NA
Phenol	340	U	340				100%	NA	64%	2.3E-02
Pyrene	340	U	340				100%	NA	91%	3.1E-02
VOA										
1,1,1-Trichloroethane	5	U	5	5	U	5	100%	NA	100%	NA
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	100%	NA	100%	NA
1,1,2-Trichloroethane	5	U	5	5	U	5	100%	NA	100%	NA
1,1-Dichloroethane	5	U	5	5	U	5	100%	NA	100%	NA
1,1-Dichloroethene	5	U	5	5	U	5	100%	NA	100%	NA
1,2-Dichloroethane	5	U	5	5	U	5	100%	NA	100%	NA
1,2-Dichloroethene (Total)	5	U	5	5	U	5	100%	NA	100%	NA
1,2-Dichloropropane	5	U	5	5	U	5	100%	NA	100%	NA
2-Butanone	10	U	10	10	U	10	100%	NA	100%	NA
2-Hexanone	10	U	10	10	U	10	100%	NA	100%	NA
4-Methyl-2-Pentanone	10	U	10	10	U	10	100%	NA	100%	NA
Acetone	10	U	10	10	U	10	100%	NA	100%	NA
Benzene	5	U	5	5	U	5	100%	NA	100%	NA
Bromodichloromethane	5	U	5	5	U	5	100%	NA	100%	NA
Bromoform	5	U	5	5	U	5	100%	NA	100%	NA
Bromomethane	10	U	10	10	U	10	100%	NA	100%	NA
Carbon disulfide	5	U	5	5	U	5	100%	NA	100%	NA
Carbon tetrachloride	5	U	5	5	U	5	100%	NA	100%	NA
Chlorobenzene	5	U	5	5	U	5	100%	NA	100%	NA
Chloroethane	10	U	10	10	U	10	100%	NA	100%	NA
Chloroform	5	U	5	5	U	5	100%	NA	100%	NA
Chloromethane	10	U	10	10	U	10	100%	NA	100%	NA
cis-1,2-Dichloroethylene	5	U	5	5	U	5	100%	NA	100%	NA
cis-1,3-Dichloropropene	5	U	5	5	U	5	100%	NA	100%	NA
Dibromochloromethane	5	U	5	5	U	5	100%	NA	100%	NA
Ethylbenzene	5	U	5	5	U	5	100%	NA	100%	NA
Methylenechloride	10	U	10	5	JB	5	100%	NA	100%	NA
Styrene	5	U	5	5	U	5	100%	NA	100%	NA
Tetrachloroethene	5	U	5	5	U	5	100%	NA	100%	NA
Toluene	5	U	5	5	U	5	91%	4.E-03	91%	3.E-03
trans-1,2-Dichloroethylene	5	U	5	5	U	5	100%	NA	100%	NA
trans-1,3-Dichloropropene	5	U	5	5	U	5	100%	NA	100%	NA
Trichloroethene	5	U	5	5	U	5	100%	NA	100%	NA
Vinyl chloride	10	U	10	10	U	10	100%	NA	100%	NA
Xylenes (total)	5	U	5	5	U	5	100%	NA	100%	NA

Attachment	1	Sheet No.	29 of 29
Originator	J. M. Capron	Date	09/06/05
Checked	T. M. Blakley	Date	9/8/05
Checked	T. B. Miley	Date	9-13-05
Calc. No.	0600X-CA-V0052	Rev. No.	0

APPENDIX D

**CALCULATION OF HAZARD QUOTIENTS AND
EXCESS CARCINOGENIC RISK**

(5 Pages)

CALCULATION COVER SHEET

Project Title 100-B/C Burial Grounds Remedial Action Project **Job No.** 14655
Area 600
Discipline Environmental ***Calc. No.** 0600X-CA-V0051
Subject 128-B-2 Burn Pit Hazard Quotient and Carcinogenic Risk Calculation
Computer Program Excel **Program No.** Excel 2003

The attached calculations have been generated to document compliance with established cleanup levels. These documents should be used in conjunction with other relevant documents in the administrative record.

Committed Calculation ☒ **Preliminary** ☐ **Superseded** ☐ **Voided** ☐

Rev.	Sheet Numbers	Originator	Checker	Reviewer	Approval	Date
0	Cover = 1 Summary = 4	J. M. Capron <i>J. M. Capron</i>	T. M. Blakley <i>T. M. Blakley</i>	L. M. Dittmer <i>L. M. Dittmer</i>	D. N. Strom <i>D. N. Strom</i>	9-8-05
	Total = 5	9/07/05	9/8/05	9/8/05		
SUMMARY OF REVISION						

*Obtain Calc. No. from DIS

DE01437.03 (12/09/2004)

Washington Closure Hanford		CALCULATION SHEET					
Originator:	J. M. Capron <i>JMC</i>	Date:	09/07/05	Calc. No.:	0600X-CA-V0051	Rev.:	0
Project:	100-B/C Area Remedial Action	Job No:	14655	Checked:	T. M. Blakley <i>TMB</i>	Date:	7/8/05
Subject:	128-B-2 Burn Pit Hazard Quotient and Carcinogenic Risk Calculation					Sheet No.	1 of 4

PURPOSE:

Provide documentation to support the calculation of the hazard quotient (HQ) and carcinogenic (excess cancer) risk values for the 128-B-2 Burn Pit Remaining Sites Verification Package (BHI 2005). In accordance with the remedial action goals (RAGs) in the remedial design report/remedial action work plan (RDR/RAWP) (DOE-RL 2005), the following criteria must be met:

- 1) An HQ of <1.0 for all individual noncarcinogens
- 2) A cumulative HQ of <1.0 for noncarcinogens
- 3) An excess cancer risk of $<1 \times 10^{-6}$ for individual carcinogens
- 4) A cumulative excess cancer risk of $<1 \times 10^{-5}$ for carcinogens.

GIVEN/REFERENCES:

- 1) BHI, 2005, Waste Site Reclassification Form 2005-038, and Attachment *Remaining Sites Verification Package for the 128-B-2, 100-B Burn Pit #2 Waste Site*, Bechtel Hanford, Inc., Richland, Washington.
- 2) DOE-RL, 2005, *Remedial Design Report/Remedial Action Work Plan for the 100 Areas*, DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- 3) EPA, 1994, *Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children*, EPA/540/R-93/081, Publication No. 9285.7-15-1, U.S. Environmental Protection Agency, Washington, D.C.
- 4) WAC 173-340, "Model Toxics Control Act – Cleanup," *Washington Administrative Code*, 1996.

SOLUTION:

- 1) Calculate an HQ for each noncarcinogenic constituent detected above background or required detection limit/practical quantitation limit and compare it to the individual HQ of <1.0 (DOE-RL 2005).
- 2) Sum the HQs and compare to the cumulative HQ criterion of <1.0 .
- 3) Calculate an excess cancer risk value for each carcinogenic constituent detected above background or required detection limit/practical quantitation limit and compare it to the individual excess cancer risk criterion of $<1 \times 10^{-6}$ (DOE-RL 2005).
- 4) Sum the excess cancer risk values and compare to the cumulative cancer risk criterion of $<1 \times 10^{-5}$.

Washington Closure Hanford		CALCULATION SHEET			
Originator:	J. M. Capron	Date:	09/07/05	Calc. No.:	0600X-CA-V0051
Project:	100-B/C Area Remedial Action	Job No:	14655	Checked:	T. M. Blakley
Subject:	128-B-2 Burn Pit Hazard Quotient and Carcinogenic Risk Calculation				Rev.: 0 Date: 7/8/05 Sheet No. 2 of 4

METHODOLOGY:

Hazard quotient and carcinogenic risk calculations were computed separately for each of the two verification sampling areas at the 128-B-2 site using the data from BHI (2005). Of the contaminants of concern and contaminants of potential concern for the site, boron and molybdenum require the HQ and risk calculations because these analytes were detected and a Washington State or Hanford Site background value is not available. Lead is included for both sampling areas and chromium is included for the staging sampling area because the statistical values for these constituents were above their respective Washington State or Hanford Site background values within those sampling areas. Aroclor-1254, toluene, several pesticides, and several semivolatile organic analytes (as shown in Tables 1 and 2, below) are included because they were detected by laboratory analysis and cannot be attributed to natural occurrence. An example of the HQ and risk calculations is presented below:

- 1) For example, the statistical value for boron in the excavation sampling area is 4.9 mg/kg, divided by the noncarcinogenic RAG value of 16,000 mg/kg (boron is identified as a noncarcinogen in WAC 173-340-740[3]), is 3.1×10^{-4} . Comparing this value, and all other individual values, to the requirement of <1.0 , this criterion is met.
- 2) After the HQ calculations are completed for the appropriate analytes, the cumulative HQ is obtained by summing the individual values. (To avoid errors due to intermediate rounding, the individual HQ values prior to rounding are used for this calculation.) The sums of the HQ values for the excavation and staging sampling areas are 5.1×10^{-2} and 3.2×10^{-1} , respectively. Comparing these values to the requirement of <1.0 , this criterion is met.
- 3) To calculate the excess cancer risk, the statistical value is divided by the carcinogenic RAG value, then multiplied by 1×10^{-6} . For example, the maximum value for aroclor-1254 in the excavation sampling area is 0.022 mg/kg; divided by 0.5 mg/kg and multiplied as indicated is 4.4×10^{-8} . Comparing this value, and all other individual values, to the requirement of $<1 \times 10^{-6}$, this criterion is met.
- 4) After these calculations are completed for the carcinogenic analytes, the cumulative excess cancer risk can be obtained by summing the individual values. (To avoid errors due to intermediate rounding, the individual excess carcinogenic risk values prior to rounding are used for this calculation.) The sums of the excess cancer risk values for the excavation and staging sampling areas are 5.3×10^{-8} and 7.3×10^{-7} , respectively. Comparing these values to the requirement of $<1 \times 10^{-5}$, this criterion is met.

RESULTS:

- 1) List individual noncarcinogens and corresponding HQs >1.0 : None
- 2) List the cumulative noncarcinogenic HQ >1.0 : None
- 3) List individual carcinogens and corresponding excess cancer risk $>1 \times 10^{-6}$: None
- 4) List the cumulative excess cancer risk for carcinogens $>1 \times 10^{-5}$: None.

Tables 1 and 2 show the results of the calculations for the excavation and staging sampling areas, respectively.

Washington Closure Hanford

CALCULATION SHEET

Originator:	J. M. Capron <i>JMC</i>	Date:	09/07/05	Calc. No.:	0600X-CA-V0051	Rev.:	0
Project:	100-B/C Area Remedial Action	Job No:	14655	Checked:	T. M. Blakley <i>TMB</i>	Date:	9/8/05
Subject:	128-B-2 Burn Pit Hazard Quotient and Carcinogenic Risk Calculation					Sheet No.	3 of 4

Table 1. Hazard Quotient and Excess Cancer Risk Results for the 128-B-2 Excavation Sampling Area.

Contaminants of Potential Concern/ Contaminants of Concern ^a	Statistical Value ^a (mg/kg)	Noncarcinogen RAG ^b (mg/kg)	Hazard Quotient	Carcinogen RAG ^b (mg/kg)	Carcinogen Risk
Metals					
Boron	4.9	16,000	3.1E-04	--	--
Lead ^c	11.3	353	3.2E-02	--	--
Molybdenum	1.7	400	4.3E-03	--	--
Semivolatiles					
Bis(2-ethylhexyl) phthalate	0.62	1,600	3.9E-04	71.4	8.7E-09
Di-n-butylphthalate	0.018	8,000	2.3E-06	--	--
Polychlorinated Biphenyls					
Aroclor-1254	0.022	1.6	1.4E-02	0.5	4.4E-08
Volatiles					
Toluene	0.004	16,000	2.5E-07	--	--
Totals					
Cumulative Hazard Quotient:			5.1E-02		
Cumulative Excess Cancer Risk:					5.3E-08

Notes:

RAG = remedial action goal

-- = not applicable

^a = From BHI (2005).^b = Value obtained from *Washington Administrative Code* (WAC) 173-340-740(3), Method B, 1996, unless otherwise noted.^c = Value for the noncarcinogen RAG derived from EPA (1994).

Washington Closure Hanford

CALCULATION SHEET

Originator:	J. M. Capron <i>JMC</i>	Date:	09/07/05	Calc. No.:	0600X-CA-V0051	Rev.:	0
Project:	100-B/C Area Remedial Action	Job No:	14655	Checked:	T. M. Blakley <i>TMB</i>	Date:	9/8/05
Subject:	128-B-2 Burn Pit Hazard Quotient and Carcinogenic Risk Calculation					Sheet No. 4 of 4	

Table 2. Hazard Quotient and Excess Cancer Risk Results for the 128-B-2 Staging Sampling Area.

Contaminants of Potential Concern/ Contaminants of Concern ^a	Statistical Value ^a (mg/kg)	Noncarcinogen RAG ^b (mg/kg)	Hazard Quotient	Carcinogen RAG ^b (mg/kg)	Carcinogen Risk
Metals					
Boron	2.9	16,000	1.8E-04	--	--
Chromium, total	18.9	120,000	1.6E-04		
Lead ^c	33.5	353	9.5E-02	--	--
Molybdenum	1.3	400	3.3E-03	--	--
Semivolatiles					
Butylbenzylphthalate	0.017	16,000	1.1E-06	--	--
Fluoranthene	0.022	3,200	6.9E-06	--	--
Phenol	0.023	24,000	9.6E-07	--	--
Pyrene	0.031	2,400	1.3E-05	--	--
Pesticides					
Chlordane (alpha, gamma)	0.024	40	6.0E-04	2.86	8.4E-09
DDE, 4,4'-	0.016	--	--	2.94	5.4E-09
Endrin (and ketone, aldehyde)	0.007	24	2.9E-04	--	--
Polychlorinated Biphenyls					
Aroclor-1254	0.36	1.6	2.3E-01	0.5	7.2E-07
Volatiles					
Toluene	0.003	16,000	1.9E-07	--	--
Totals					
Cumulative Hazard Quotient:			3.2E-01		
Cumulative Excess Cancer Risk:					7.3E-07

Notes:

RAG = remedial action goal

-- = not applicable

^a = From BHI (2005).^b = Value obtained from *Washington Administrative Code* (WAC) 173-340-740(3), Method B, 1996, unless otherwise noted.^c = Value for the noncarcinogen RAG derived from EPA (1994).**CONCLUSION:**

This calculation demonstrates that the 128-B-2 burn pit waste site meets the requirements for the hazard quotients and carcinogenic (excess cancer) risk as identified in the RDR/RAWP (DOE-RL 2005).