Table 4-1. Sample quantities and quality control frequencies.

Parameter	Estimated Sample Quantity	Field QC Analyses				Laboratory QC Samples						Total
		Rinse Blank		Field Duplicate		Matrix Spike		Matrix Spike Duplicate		Lab Duplicate		
		Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	
Soil												
PCBs (USEPA SW-846 8082)	TBD	1/day	TBD	1/20	TBD	1/20	TBD	1/20	TBD	NA	NA	TBD
TOC (Lloyd Kahn)	TBD	NA	NA	1/20	TBD	NA	NA	NA	NA	1/20	TBD	TBD

Notes:

1. *1/day = One rinse blank per day or one per 20 samples, whichever is more frequent. Rinse blanks not required when dedicated sampling equipment is used.*
2. *Freq = Frequency*
3. *NA = Not Applicable*
4. *No. = Number*
5. *QC = Quality Control*
6. *TBD = To Be Determined*
7. *PCBs = polychlorinated biphenyls*
8. *TOC = total organic carbon*

Table 4-2. PCB Method Reporting Limits.

Analyte	Soil (µg/kg)	
	Laboratory MDL	Laboratory RL
PCBs (USEPA SW-846 8082)		
Aroclor 1016	2.5	31
Aroclor 1221	3.2	31
Aroclor 1232	9.5	31
Aroclor 1242	3.1	31
Aroclor 1248	4.3	31
Aroclor 1254	5.4	31
Aroclor 1260	4.7	31

Notes:

1. *The target reporting limits are based on wet weight. The actual reporting limits will vary based on sample weight and moisture content.*
2. *PCBs = polychlorinated biphenyls*
3. *MDL = Method Detection Limit*
4. *RL = Reporting Limit*
5. *µg/kg = micrograms per kilogram*

Table 4-3. Sample containers, preservation, and holding times.

Parameter	Method	Bottle Type	Preservation	Holding Time[1]
Soil				
PCBs	USEPA - SW-846 8082	8 oz. glass jar with Teflon®-lined lid (Minimum sample needed = 10-20 grams)	Cool to 4°C	14 days to extraction 40 days from extraction to analysis
Total Organic Carbon	Lloyd Kahn	1-4 oz. glass jar with Teflon®-lined lid (Minimum sample needed = 10-20 grams)	Cool to 4°C	28 days to analysis

PCBs (USEPA SW-846 8082)

1. All holding times are measured from date of collection.

2. PCBs = polychlorinated biphenyls

Table 4-4. Laboratory quality control limits.

Parameter	Accuracy - % Recovery			Precision - RPD		
	Surrogate	MS/MSD	LCS	MS/MSD	Lab Duplicate	Field Duplicate
Soil						
PCBs	30-150	40-150	50-140	50	NA	50
Total Organic Carbon	NA	70-130	70-130	NA	30	50

Notes:

1 The listed QC limits are based on SW-846 guidance and are advisory. The actual limits are determined based on laboratory performance. Frequent failure to meet the QC limits, however, warrants investigation of the laboratory.

2. LCS = Laboratory Control Sample

3. MS/MSD = Matrix Spike/Matrix Spike Duplicate

4. RPD = Relative Percent Difference

5. PCBs = polychlorinated biphenyls

6. NA = not applicable

7. PCBs = polychlorinated biphenyls

8. TOC = total organic carbon

Table 4-5. Analytical measurements quality control requirements.

Analysis Method	Parameter	Field/Lab Requirement	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
SW-846 8082	PCB	Field Sampling	Field Duplicate	1/20 samples	RPD<100% (soils)	NA
			Equipment Blank	1/20 samples	< RL	NA
		Laboratory	Matrix Spike and Matrix Spike Duplicate	Per Field Team Submission or 1/20 samples	Per Table 4-4	1. Evaluate Batch (Narrate)
			Initial Calibration	Five-point for 1016/1260 mix. Five other aroclors at midpoint concentration analyzed before and after 5 pt.	Linear mean RSD for 1016/1260 mix <20%	1. Evaluate 2. Recalibrate when QC criteria is not met
			Second Source Calibration Verification	Once per five-point initial calibration for 1016/1260 mix	mix within ±15% of expected value	1. Evaluate 2. Recalibrate when QC criteria is not met
			Retention Time Window	Each initial calibration and calibration verification for 1016/1260 mix	±3 STD deviations for each analyte retention time in 72-hour period	1. Evaluate 2. Reanalyze all samples analyzed since the last retention time check
			Initial Calibration Verification	Daily before sample analysis for all aroclors at mid-point	1016/1260 mix within ±15% of expected value	1. Evaluate 2. Recalibrate when QC criteria is not met
			Calibration Verification and Pattern Recognition Standards	After every 10 samples for 1016/1260 mix and at end of analysis sequence for 1016/1260 and all detected aroclors	1016/1260 mix within ±15% of expected value	1. Evaluate 2. Clean system 3. Reanalyze calibration verification and all samples since the last acceptable calibration verification
			Cleanup Blank	1/batch or 1/20 samples per cleanup procedure performed	< RL	1. Evaluate 2. Clean system 2. Reanalyze when QC criteria is not met
			Surrogate	Every sample	Per Table 4-4	1. Rerun 2. Re-extract as necessary (Narrate)
SW-846 8082	PCB	Laboratory (continued)	Method Blank	1/batch/matrix or 1/20 samples, whichever more frequent	< RL	1. Rerun 2. Evaluate batch (Narrate) 3. Re-extract as necessary
			Laboratory Control Sample (Matrix Spike Blank)	1/batch/matrix or 1/20 samples, whichever more frequent	Per Table 4-4	1. Rerun 2. Evaluate batch (Narrate) 3. Re-extract as necessary

1 RL - Reporting Limit (equivalent to low point of analytical curve).