Appendix A

BENTHIC MACROINVERTEBRATE COMMUNITY STUDY OF WASTE AREA GROUPING 2 DEPOSITION AREAS

BENTHIC MACROINVERTEBRATE COMMUNITY STUDY OF WASTE AREA GROUPING 2 DEPOSITION AREAS

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1. INTRODUCTION

Benthic macroinvertebrates are organisms visible to the unaided eye that inhabit the bottom substrates of aquatic systems, and include organisms such as insects, mollusks, crustaceans, annelids, bryozoans, and planarians (Platts et al. 1983). Because these organisms live in close association with the substrate and have relatively long life spans, analyses of benthic macroinvertebrate community composition can aid in assessing the role of sediment contaminants in overall system "health." Benthic macroinvertebrates have been collected from riffle areas in streams of the White Oak Creek (WOC) watershed since 1986 for the Biological Monitoring and Abatement Program (BMAP) at Oak Ridge National Laboratory (ORNL). However, deposition areas (e.g., pools, White Oak Lake) have not been sampled. It is in these areas that contaminants entering the watershed may accumulate, and therefore have a greater impact.

The objectives of this study were to evaluate the ecological condition of the benthic macroinvertebrate communities in major areas of sediment deposition in streams of the WOC watershed in Waste Area Grouping (WAG) 2, and to evaluate whether significant ecological damage would result from maintenance operations.

This study focused on major deposition areas in WOC watershed including White Oak Lake (WOL) and two weirs each on WOC and Melton Branch (MEB).

2. DESCRIPTION OF STUDY AREAS

Samples were collected from six sites within WAG 2 (Fig. 1) and four sites outside WAG 2 that served as references (Figs. 1 and 2). Sampling sites in WAG 2 included two each in WOL, WOC, and MEB. In WOL, the sampling sites were located approximately 100 m and 300 m upstream of WOL Dam, and were referred to as WOLLS and WOLUS, respectively. In WOC, one site was located at the X-14 weir just upstream of the confluence with MEB, and the other was located at the weir just downstream of Melton Valley Drive; these sites were referred to as WOCLS and WOCUS, respectively. In MEB, one site was located in the deposition area just upstream of the X-13 weir (MEBLS), and the other was located approximately 200 m downstream of the HFIR discharge tributary (MEBUS).

Artificial impoundments were selected as reference sites based on similarities in physical structure (substrate type, water depth, and width) (Table 1). Reference sites consisted of two locations within the main ORNL complex on streams just north of Bethel Valley Road; First Creek and WOC (Fig. 1). The two other reference sites were located on Clear Creek, located just southeast of Norris Dam in Norris, Tennessee (Fig. 2). The First Creek site, located ~ 28 m upstream of Bethel Valley Road, was a small impoundment behind a spill dam; this site was referred to as First Creek Pool (FCP). A weir on WOC (WCK68), located approximately 6.8 kilometers above the mouth of the stream was also used as a reference site. This site was located just downstream of a reference site used in the ORNL BMAP. The two remaining reference sites (CCKLD and CCKUD) were above spill dams on Clear Creek (Fig. 2), a relatively undisturbed stream with little development from its headwaters to the mouth of the stream.

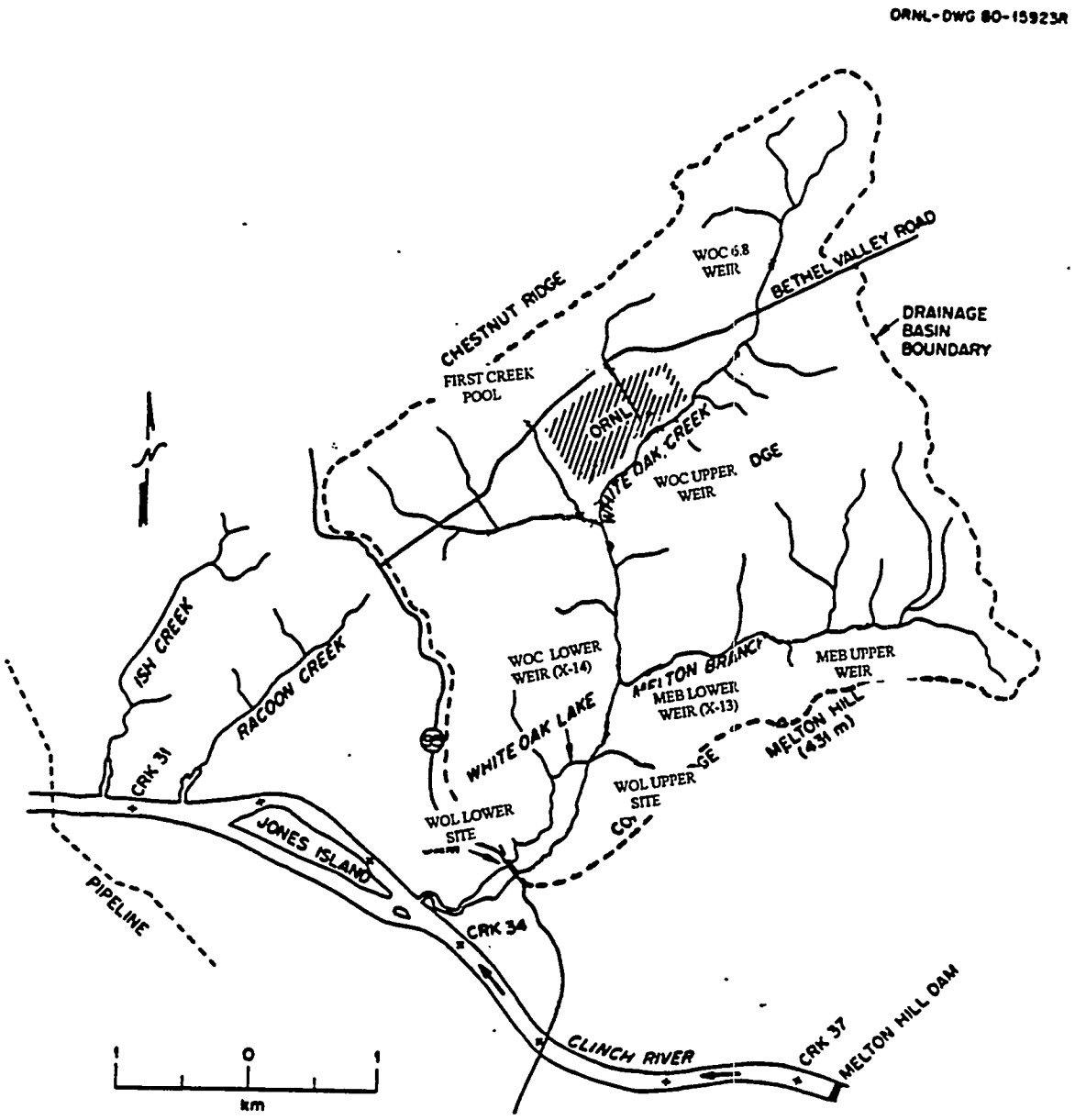

Fig. A.1. Location of benthic macroinvertebrate core sampling sites on the Oak Ridge Reservation.

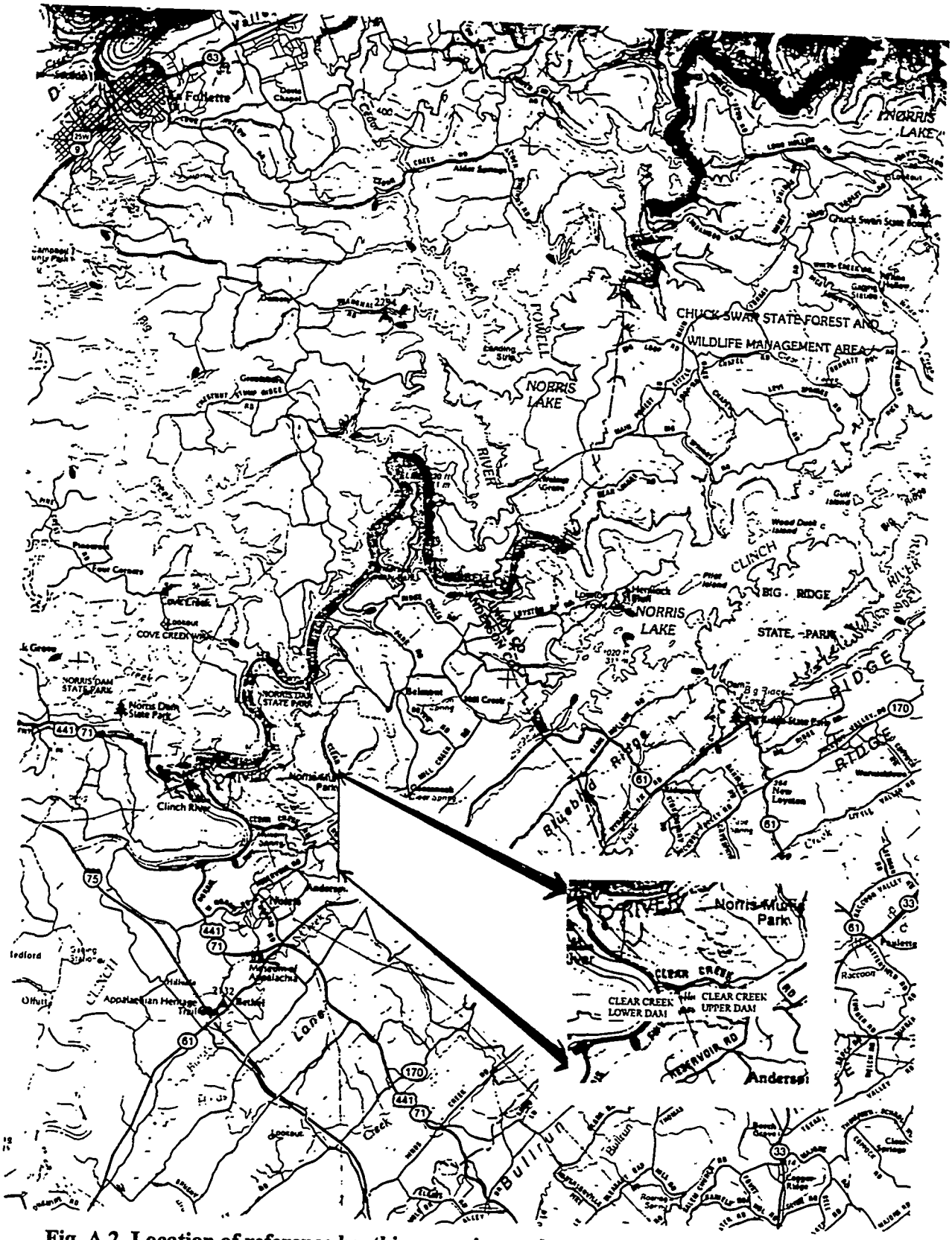

Fig. A.2. Location of reference benthic macroinvertebrate core sampling sites on Clear Creek, Anderson County, Tennessee.

Table A.1. Summary of physical characteristics of the WAG 2 study sites and reference sites (June 1995)

Site	Average depth (cm)	Substrate type	Transect width (m)
WAG 2 Sites			
WOC[a] lower weir (WOCLS)	18.2	Silt	16.0
WOC[a] upper weir (WOCUS)	36.6	Silt	14.0
Melton Branch lower weir (MEBLS)	51.8	Silt	6.0
Melton Branch upper weir (MEBUS)	41.4	Gravel/sand/silt	4.3
WOL[b] lower site (WOLLS)	100.2	Silt	170.0
WOL[b] upper site (WOLUS)	41.4	Silt	180.0
Reference sites			
First Creek pool (FCP)	32.2	Silt/detritus	19.0
WOC[a] 6.8 weir (WCK68)	22.2	Gravel/sand/silt	4.0
Clear Creek lower dam (CCKLD)	78.8	Gravel/sand/silt	19.0
Clear Creek upper dam (CCKUD)	74.6	Silt/detritus	20.2

[a]WOC= White Oak Creek; [b]WOL= White Oak Lake.

3. MATERIALS AND METHODS

3.1 SAMPLE COLLECTION

Before collection of invertebrate samples, various chemical and physical aspects (D.O., conductivity, pH, temperature, site width, and water depth) were measured at each site, in accordance with Standard Operating Procedures (SOP-3) of the BMAP Benthic Macroinvertebrate Monitoring Project Quality Assurance Plan (Q.P.) (Smith 1992). Five replicate macroinvertebrate samples were collected from each site with a hand-held coring device. The coring device had an internal diameter of 5 cm, and was inserted into the substrate to a depth of 20.5 cm. An aluminum skirt (27 x 27 cm) attached to the corer ensured consistent sampling depths. Following procedures outlined in section 7, SOP-5 of the Benthic Macroinvertebrate Q.P., sample replicates were taken at evenly spaced intervals along a transect running perpendicular to the shoreline at each site. After the corer was extracted from the substrate, the contents were emptied into a Surber net (363-µm mesh), and substrate composition was determined by visual inspection, using methods described in SOP-2.

After identifying substrate composition, the Surber net containing the sample was lowered into the water and gently agitated to flush out the fine sediments. The contents of the net were then transferred into an appropriately labeled sample jar, and preserved in 80% ethanol. Prior to processing, samples were stored and maintained in a secure storage facility at ORNL, in accordance with approved quality assurance procedures (SOP-9, Smith 1992).

3.2 LABORATORY PROCEDURES

Appropriate procedures outlined in the BMAP Benthic Macroinvertebrate Monitoring Project Sample Processing QA Plan (Wojtowicz and Smith 1992) were followed for processing samples. Briefly, sample processing consisted of washing each sample in a 250 µm sieve and sorting the remaining organisms to the lowest practical taxon. Chironomidae (midge) larvae were mounted on microscope slides for identification under compound microscopes, while the remaining organisms were identified using stereo microscopes. A reference collection was created containing two or three specimens of each taxon encountered.

The procedure normally followed for evaluating sorting efficiency (SOP- 4 in Wojtowicz and Smith 1992) was modified for processing WAG 2 samples because it was felt that the modified procedure was more rigorous. In the original procedure, half the sample material sorted by an individual is randomly selected for resorting by a different individual. If the prescribed sorting efficiency of 80% is not met, all of the future material sorted by the individual that failed is checked until that individual can consistently achieve the prescribed efficiency. In the procedure used for WAG 2 samples, if any of an individual's randomly checked samples (i.e., of the 10% checked) do not meet the prescribed sorting efficiency of 80%, then all of that individuals sorted material is resorted. If an individual always sorts samples at or above the prescribed efficiency level, sorting proceeds more rapidly. The results of sorting efficiency quality control checks for the WAG 2 samples are given in WAG 2 project files in a summary report provided by the laboratory that processed the samples. No sorting failures were reported for the WAG 2 samples.

3.3 DATA ANALYSIS

Data analysis was performed with the aid of Statistical Analysis System software and procedures (SAS 1985a, 1985b). Statistical analyses consisted of both descriptive and parametric techniques. Descriptive techniques included determinations of mean values for density, total richness, EPT richness (the total number of Ephemeroptera, Plecoptera, and Trichoptera taxa), and Chironomidae taxa richness for each site. A one-way analysis of the variance (ANOVA) with site as the main effect was performed on density, total richness, and Chironomidae taxa richness. Site differences were separated with a Tukey's Test, with the level of significance set as $p \leq 0.05$. Because major differences in substrate were observed among some sites while samples were collected (Table 1), the analysis was repeated on two groups based on substrate type (i.e., silt and gravel). However, this analysis gave no indication that substrate was a major factor contributing to any differences. Therefore, no further detailed consideration was given to this factor in the results. Prior to performing the ANOVAs, values for each response variable were appropriately transformed (i.e. $\log_{10}(X+1)$ for density values, and square root of X for total and Chironomidae taxa richness values, where X = the individual values for density, taxonomic richness, and Chironomidae richness; Elliot 1977).

Because Ephemeroptera, Plecoptera, and Trichoptera (EPT) taxa are generally considered sensitive to environmental disturbance (Lenat 1988), BMAP benthic macroinvertebrate studies effectively use this metric to evaluate the biological condition of stream sites (e.g., Smith 1993). However, due to the very low numbers encountered at all sites (no site had a mean EPT richness above two), it was felt this metric would not be useful for characterizing WAG 2 sites or effectively separating any site differences, and therefore not considered further in the analysis.

4. DATA ASSESSMENT

The sampling and analysis plan developed and approved by project management for the benthic macroinvertebrate task of the WAG 2 Remedial Investigation (RI) resulted from issues and data deficiencies identified through the data quality objectives (DQO) process (Watkins and Herbes 1994). All goals established in the DQO process for this task were met.

4.1 SAMPLE CHAIN-OF-CUSTODY

Sample chain-of-custody was maintained and documented from collection through their final disposition in a secure area at ORNL after processing. Copies of the sample chain-of-custody sheets are in WAG 2 project files.

4.2 COMPLETENESS

Having developed the most extensive and suitable benthic macroinvertebrate sampling plan possible within budget constraints, anything less than 100% completion of the plan outlined in the RI Work Plan (Watkins and Herbes 1994) was considered unacceptable. All 50 samples collected for the project were processed, and the results from these samples are included in this report.

4.3 PRECISION

An acceptable sampling precision for benthic macroinvertebrate studies is often controlled by budget constraints (Resh and McElravy 1993). A high level of precision (i.e., <±20% of the mean for benthic macroinvertebrate samples) can require an astronomical number of sampling units (e.g., >100 sampling units per site). It has been found however, that estimates of ±40% of the true mean can generally be achieved with six sampling units (Resh and McElravy 1993). Thus, depending upon sample variation, five sample units as used in this study should allow differences in site means of two to three fold to be detected.

In the laboratory, no sorting efficiency failures occurred in the 10% of samples (i.e., 5 of 50 samples) subjected to quality control checks (see summary report in WAG 2 project files).

4.4 DATA REVIEW

The final data set was obtained in electronic form (Lotus®) and in hard copy from the laboratory that processed the samples. A copy of the data as submitted by the laboratory is provided in WAG 2 project files, as part of their final report submitted to the benthic macroinvertebrate task PI. The accuracy of the data was initially validated by comparing an output of the data from the electronic copy with the copy provided in the subcontractor's report. Procedures available with the Statistical Analysis System (SAS 1985a; SAS 1985b) allowed the data to be subjected to various sorts (i.e., rearrangements) to identify inconsistencies and misspellings. Inconsistencies and misspellings were corrected, and appropriate changes were made to make the data set compatible with other data collected by the task Principal Investigator since 1984 from other projects associated with the Department of Energy's Oak Ridge Operations; these changes had no affect on data accuracy or precision. Some observations were eliminated because they included taxa not considered benthic. The observations eliminated included those with the invertebrate taxa Corixidae, Entomobryidae, and Gerridae. These three taxonomic groups live on the surface of the water or in the water column and are sometimes collected accidentally with benthic sampling devices. A copy of the final data set used to conduct all analyses is provided in WAG 2 project files.

5. RESULTS

5.1 TAXONOMIC COMPOSITION

A checklist of benthic macroinvertebrate taxa collected at each site is presented in WAG 2 project files. There were a total of 105 taxa identified, with 60 of these being in the Chironomidae (Diptera) family. Taxonomic composition varied with site, with only one major taxonomic group being present at all sites (Oligochaeta). Although most taxa identified to the genus level were collected from less than 50% of the sites, *Dubiraphia* sp. (Elmidae: Coleoptera), and five Chironomidae genera (*Chironomus, Cryptotendipes, Cryptochironomus, Stictochironomus,* and *Tanytarsus*) were present in at least 60% of the sites.

Plecoptera were collected from three sites only, all of which were reference sites (CCKUD, FCP, and WCK68). Conversely, Megaloptera were collected only at three study sites (WOCLS, WOLLS, and MEBUS).

5.2 ABUNDANCE

5.2.1 Total density

Mean densities (number of organisms/0.1 m^2) for each site are presented in Fig. 3. Statistically significant differences in densities were not detected among any sites (Tables 2 and 3). Although large differences in densities appeared to exist among some of these sites (e.g., WOCLS had 954.8 organisms/0.1 m^2, compared to 132.3 organisms/0.1 m^2 at WOLUS), high variation among samples may have limited the ability of the test to detect statistically significant differences.

5.2.2 Relative abundance

Oligochaetes and chironomids were the predominant taxa at all sites, and except for FCP, WOCLS, and WOCUS, the Chironomidae accounted for over 60% of the total density (Fig. 4). Oligocheates and chironomids co-dominated at FCP and both WOC sites. The relative abundance of the other taxa, which included Coleoptera (beetles), Odonata (dragonflies), Gastropods (snails), Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies), ranged from 1.54% at WOLUS to 27.6% at FCP.

Because of the predominance of the Chironomidae at most sites (i.e., >35% of total density at all sites), a closer examination was made of the relative abundances of the major chironomid taxa to further characterize the study sites. Three of the four major taxonomic groups examined comprised > 5% of the total community density at five of the ten sites (Fig. 4). At the extremes in relative abundance, only two of the taxonomic groups exceeded 5% of the total community density at MEBLS, WOLUS, and FCP, while at CCKUD and WCK68, all four major taxonomic groups exceeded 5% of the total density. There were no distinct or consistent differences between the reference sites and the WAG 2 study sites in predominant taxa which made the WAG 2 sites uniquely different from the reference sites. For example, the Chironomini comprised half or more of the chironomid composition at the two Melton Branch sites, CCKUD, and WCK68, while at the two WOL sites and FCP, the Tanypodinae comprised over half of the total chironomid density.

5.3 RICHNESS

5.3.1 Total richness

The reference sites WCK68 and CCKUD had significantly higher total richness values than both WOL sites, while WOCUS had significantly higher richness values than WOLUS (Tables 2 and 3). The WOL sites did not have significantly lower richness values than the remaining sites, including the reference sites FCP and CCKLD.

5.3.2 Chironomidae taxa richness

Chironomidae taxon represented 60 of the 105 taxa identified. Statistical analyses were performed on four major taxa of Chironomidae (Tanypodinae, Tanytarsini, Orthocladiinae, and Chironomini) to ascertain if differences may have existed between any of the sites investigated. The pattern of differences among the sites in the richness of the Chironomidae closely resembled the pattern exhibited by total richness (Fig. 3). Chironomid richness was highest at CCKUD and WCK68, and lowest at the two WOL sites, with about a 3-fold difference existing between these high and low

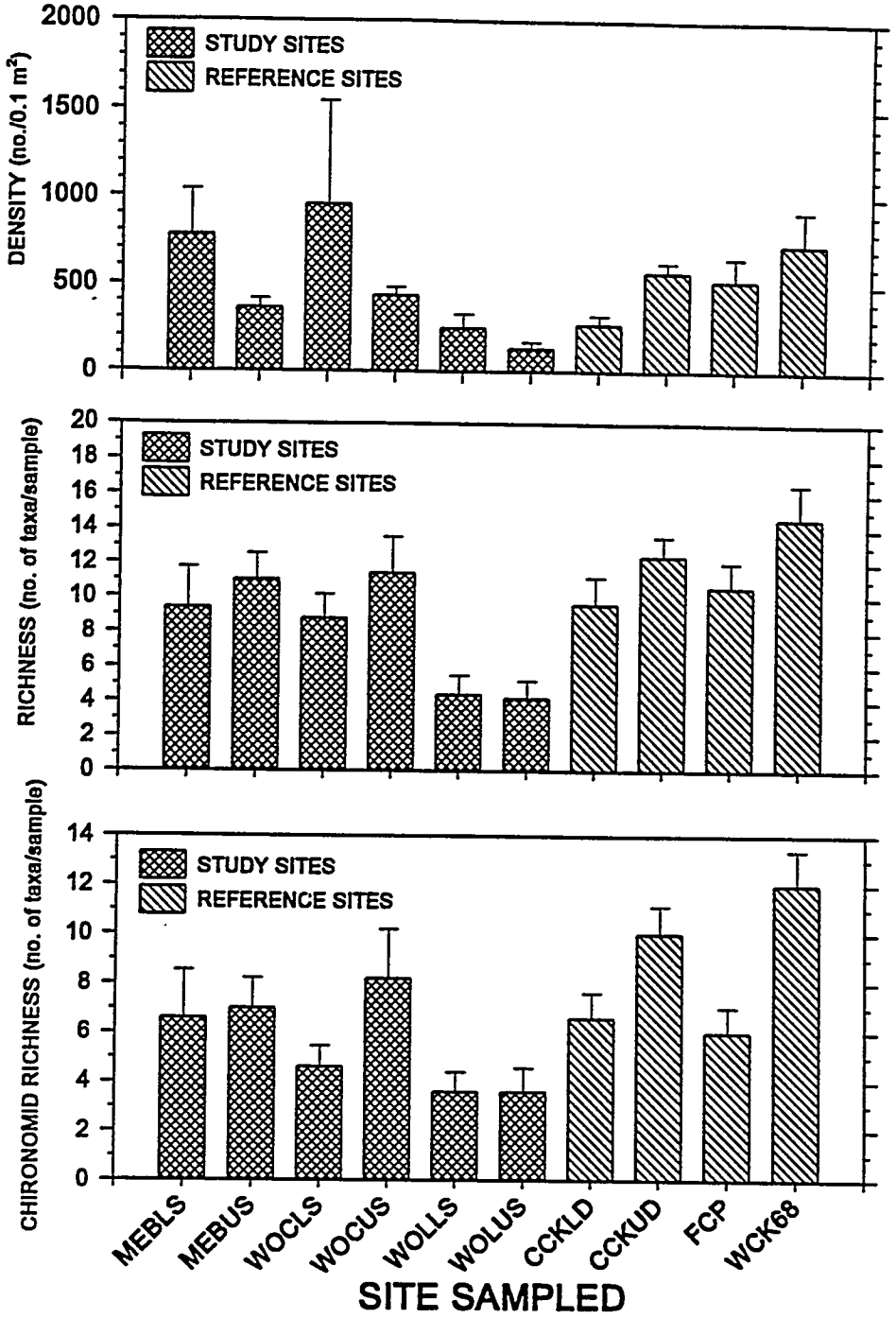

Fig. A.3. Mean total density, mean total richness, and mean richness of major Chironomidae taxa of the benthic macroinvertebrate communities in WAG 2 study sites and reference sites (June 1995).

Table A.2. F-values and *p*-values for one-way analysis of variance (ANOVA) using the variables density, total richness, and Chironomidae taxa richness for benthic macroinvertebrate communities in WAG 2 and associated reference sites (June 1995)

Variable[a]	*f*-value	*p*-value
Density	1.15	0.3499
Total Richness	4.39	0.0005
Chironomidae Richness	3.63	0.0022

[a]Degrees of freedom = 9 and 40 for numerator and denominator respectively.

Table A.3. Results of site comparisons with Tukey test of values for density, total richness, and Chironomidae taxa richness of the benthic macroinvertebrate communities in WAG 2 and associated reference sites, June 1995.[a]

DENSITY

ALL

WOCLS MEBLS WCK68 WOLLS WOLUS CCKLD MEBUS FCP WOCUS CCKUD

TOTAL RICHNESS

ALL

WCK68 CCKUD WOCUS MEBUS FCP CCKLD MEBLS WOCLS WOLLS WOLUS

CHIRONOMIDAE RICHNESS

ALL

WCK68 CCKUD WOCUS MEBUS CCKLD MEBLS FCP WOCLS WOLLS WOLUS

[a]Sites not connected by the same line are significantly different ($p < 0.05$), based on Tukey's Studentized range test (HSD). Sites are arranged in order of highest to lowest values from left to right. $n = 5$.

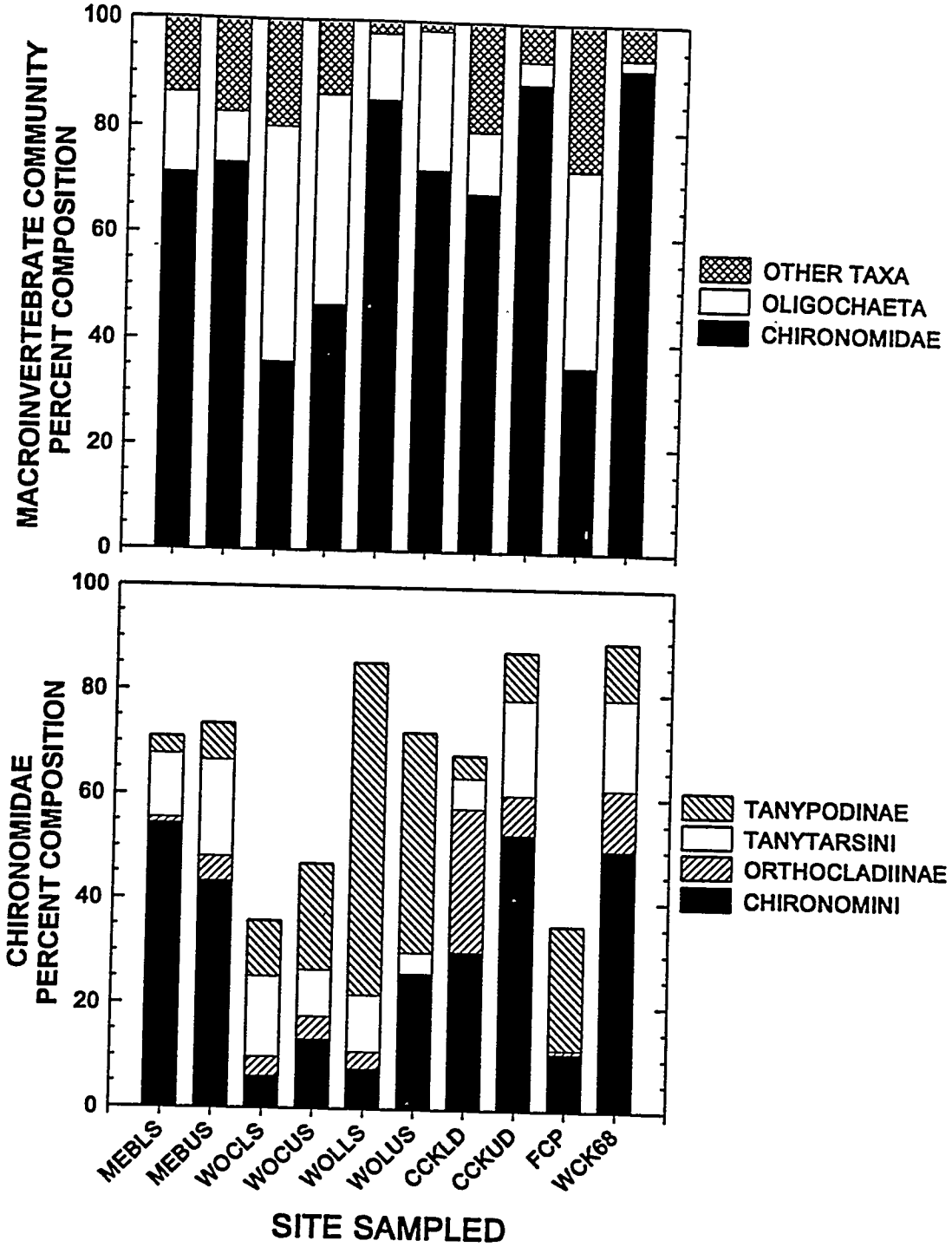

Fig. A.4. Relative abundance of selected benthic macroinvertebrate and of the major Chironomidae taxa at study sites in WAG 2 and associated reference sites, June 1995. The Chironominae were included as a separate taxonomic group because the individuals left in this group could not be further identified; further identification would have placed them within the Tanytarsini or Chironomini.

values. However, only these site differences were statistically significant (Tables 2 and 3). Values for the other six sites were statistically indistinguishable from either those for CCKUD, WCK68, or the two WOL sites. This implies that chironomid richness at all WAG 2 study sites fell within the range that existed at the reference sites used in this study.

6. DISCUSSION

Several uncertainties were apparent within the benthic macroinvertebrate task. The small number of samples taken per site (five) allow only for the detection of large differences (i.e., $\geq 50\%$). This was further complicated by the diverse habitat present at these sites. The resulting variability among sampling units limited the capacity to detect differences among sites. In addition, the single sampling event could not take into account the seasonal variation present in benthic macroinvertebrate communities, thus the possibility of failing to detect important site differences is increased. However, results reported in this study do provide an indication of benthic macroinvertebrate community composition at the various sites when the samples were taken. Identification of substrate composition did not include other substrate factors such as organic content. Because a majority of the organisms collected rely on organic materials in the substrate as a primary food source, organic content of the substrate at the various sites may have also influenced community composition.

There were no detectable statistically significant differences in densities among the WAG 2 and reference sites, possibly because sites with the highest densities also tended to have high variation among replicates. Relative abundance of the three categories of macroinvertebrates at each site indicated that with the exception of FCP, WOCUS, and WOCLS where oligochaetes co-dominated with the Chironomidae, chironomids were the most numerous organisms regardless of substrate type. This is not unexpected, since oligochaetes and Chironomidae use hemoglobin to aid in the uptake of oxygen, thus enabling them to inhabit areas where low oxygen levels can occur, such as areas of sediment deposition (Hynes 1974; Brinkhurst and Gelder 1991).

The two sites within WOL had the lowest values for all parameters investigated. However, these differences were only statistically significant from those of just two reference sites for total richness and Chironomidae taxa richness. White Oak Lake sites were clearly the most depauperate, although it is not possible to determine whether contaminants, habitat, or other perturbations are responsible for the condition of the benthic macroinvertebrate community. White Oak Lake impounds WOC for a substantial distance upstream of the two sampling sites, whereas at the other sites, impoundments resulting from the weirs were generally less than 50 m long. No reference sites were found of equivalent size, thus comparisons in benthic community composition with reference sites used in this study may not be entirely appropriate. The remaining sites within WAG 2 were generally similar to the reference sites.

The objectives of this study were to evaluate the ecological condition of the benthic macroinvertebrate community in sediment deposition areas of WAG 2, and to determine if significant ecological damage would result from routine maintenance operations. These results suggest that since no major differences existed between the MEB, WOC, and the reference sites, it appears that maintenance scheduled for the four WAG 2 weir sites will not impact any fragile or unique benthic macroinvertebrate communities, although short-term, severe impacts would occur to those communities currently existing. The presence of an apparently depauperate community in WOL also suggests that maintenance scheduled for this body of water should result in no major impacts to either a fragile or unique community.

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Appendix B

DATA TABLES FOR RISKS TO FISH, INVERTEBRATES, AND PLANTS

Table B.1. Screening of aqueous concentrations of chemicals detected in streams against screening benchmarks for aquatic life (Suter and Mabrey 1996). All concentrations are mg/L.

Chemical	Reach	Samples	Detects	P.L. Mean	95% UCB	Quotient	Benchmark Value	Benchmark
1,1-Dichloroethane	W4T	3	1	0.0010	0.001	0.0001	14.6800	LCV_ALLO
	W4T	3	1	0.0010	0.001	0.0001	14.6800	LCV_FISH
	W4T	3	1	0.0010	0.001	0.0001	8.2190	LTV_FISH
	W4T	3	1	0.0010	0.001	0.0012	0.8340	S_ACU_V
	W4T	3	1	0.0010	0.001	0.0215	0.0466	S_CHR_V
ALUMINUM	1C	9	7	0.3308	0.503	1.0941	0.4600	LCV_ALLO
	1WC	2	2	0.1485	0.613	1.3317	0.4600	LCV_ALLO
	BWC	2	1	0.1960	0.196	0.4261	0.4600	LCV_ALLO
	HRT	8	5	0.1249	0.178	0.3869	0.4600	LCV_ALLO
	IHP	12	7	0.1666	0.306	0.6643	0.4600	LCV_ALLO
	LMB	29	16	0.1149	0.151	0.3281	0.4600	LCV_ALLO
	LWC	2	1	0.1230	0.123	0.2674	0.4600	LCV_ALLO
	MWC	18	14	0.1122	0.131	0.2851	0.4600	LCV_ALLO
	NWT	2	2	0.1210	0.481	1.0454	0.4600	LCV_ALLO
	RAC	2	2	0.1480	0.843	1.8315	0.4600	LCV_ALLO
	UMB	9	5	0.2312	0.306	0.6648	0.4600	LCV_ALLO
	W4T	16	11	0.2607	0.491	1.0673	0.4600	LCV_ALLO
	WOL	13	13	0.8752	1.102	2.3958	0.4600	LCV_ALLO
	WS	10	8	0.3284	0.455	0.9900	0.4600	LCV_ALLO
	1C	9	7	0.3308	0.503	1.0941	0.4600	LCV_AQPL
	1WC	2	2	0.1485	0.613	1.3317	0.4600	LCV_AQPL
	BWC	2	1	0.1960	0.196	0.4261	0.4600	LCV_AQPL
	HRT	8	5	0.1249	0.178	0.3869	0.4600	LCV_AQPL
	IHP	12	7	0.1666	0.306	0.6643	0.4600	LCV_AQPL
	LMB	29	16	0.1149	0.151	0.3281	0.4600	LCV_AQPL
	LWC	2	1	0.1230	0.123	0.2674	0.4600	LCV_AQPL
	MWC	18	14	0.1122	0.131	0.2851	0.4600	LCV_AQPL
	NWT	2	2	0.1210	0.481	1.0454	0.4600	LCV_AQPL
	RAC	2	2	0.1480	0.843	1.8315	0.4600	LCV_AQPL
	UMB	9	5	0.2312	0.306	0.6648	0.4600	LCV_AQPL
	W4T	16	11	0.2607	0.491	1.0673	0.4600	LCV_AQPL
	WOL	13	13	0.8752	1.102	2.3958	0.4600	LCV_AQPL
	WS	10	8	0.3284	0.455	0.9900	0.4600	LCV_AQPL
	1C	9	7	0.3308	0.503	0.2649	1.9000	LCV_DAPH
	1WC	2	2	0.1485	0.613	0.3224	1.9000	LCV_DAPH
	BWC	2	1	0.1960	0.196	0.1032	1.9000	LCV_DAPH
	HRT	8	5	0.1249	0.178	0.0937	1.9000	LCV_DAPH
	IHP	12	7	0.1666	0.306	0.1608	1.9000	LCV_DAPH
	LMB	29	16	0.1149	0.151	0.0794	1.9000	LCV_DAPH
	LWC	2	1	0.1230	0.123	0.0647	1.9000	LCV_DAPH
	MWC	18	14	0.1122	0.131	0.0690	1.9000	LCV_DAPH
	NWT	2	2	0.1210	0.481	0.2531	1.9000	LCV_DAPH
	RAC	2	2	0.1480	0.843	0.4434	1.9000	LCV_DAPH
	UMB	9	5	0.2312	0.306	0.1609	1.9000	LCV_DAPH
	W4T	16	11	0.2607	0.491	0.2584	1.9000	LCV_DAPH
	WOL	13	13	0.8752	1.102	0.5800	1.9000	LCV_DAPH
	WS	10	8	0.3284	0.455	0.2397	1.9000	LCV_DAPH
	1C	9	7	0.3308	0.503	0.1531	3.2880	LCV_FISH
	1WC	2	2	0.1485	0.613	0.1863	3.2880	LCV_FISH
	BWC	2	1	0.1960	0.196	0.0596	3.2880	LCV_FISH
	HRT	8	5	0.1249	0.178	0.0541	3.2880	LCV_FISH
	IHP	12	7	0.1666	0.306	0.0929	3.2880	LCV_FISH
	LMB	29	16	0.1149	0.151	0.0459	3.2880	LCV_FISH
	LWC	2	1	0.1230	0.123	0.0374	3.2880	LCV_FISH
	MWC	18	14	0.1122	0.131	0.0399	3.2880	LCV_FISH
	NWT	2	2	0.1210	0.481	0.1463	3.2880	LCV_FISH
	RAC	2	2	0.1480	0.843	0.2562	3.2880	LCV_FISH
	UMB	9	5	0.2312	0.306	0.0930	3.2880	LCV_FISH
	W4T	16	11	0.2607	0.491	0.1493	3.2880	LCV_FISH
	WOL	13	13	0.8752	1.102	0.3352	3.2880	LCV_FISH
	WS	10	8	0.3284	0.455	0.1385	3.2880	LCV_FISH
	1C	9	7	0.3308	0.503	0.9320	0.5400	LTV_DAPH
	1WC	2	2	0.1485	0.613	1.1344	0.5400	LTV_DAPH

	BWC	2	1	0.1960	0.196	0.3630	0.5400	LTV_DAPH
	HRT	8	5	0.1249	0.178	0.3296	0.5400	LTV_DAPH
	IHP	12	7	0.1666	0.306	0.5658	0.5400	LTV_DAPH
	LMB	29	16	0.1149	0.151	0.2795	0.5400	LTV_DAPH
	LWC	2	1	0.1230	0.123	0.2278	0.5400	LTV_DAPH
	MWC	18	14	0.1122	0.131	0.2429	0.5400	LTV_DAPH
	NWT	2	2	0.1210	0.481	0.8905	0.5400	LTV_DAPH
	RAC	2	2	0.1480	0.843	1.5602	0.5400	LTV_DAPH
	UMB	9	5	0.2312	0.306	0.5663	0.5400	LTV_DAPH
	W4T	16	11	0.2607	0.491	0.9092	0.5400	LTV_DAPH
	WOL	13	13	0.8752	1.102	2.0408	0.5400	LTV_DAPH
	WS	10	8	0.3284	0.455	0.8433	0.5400	LTV_DAPH
	1C	9	7	0.3308	0.503	0.1071	4.7000	LTV_FISH
	1WC	2	2	0.1485	0.613	0.1303	4.7000	LTV_FISH
	BWC	2	1	0.1960	0.196	0.0417	4.7000	LTV_FISH
	HRT	8	5	0.1249	0.178	0.0379	4.7000	LTV_FISH
	IHP	12	7	0.1666	0.306	0.0650	4.7000	LTV_FISH
	LMB	29	16	0.1149	0.151	0.0321	4.7000	LTV_FISH
	LWC	2	1	0.1230	0.123	0.0262	4.7000	LTV_FISH
	MWC	18	14	0.1122	0.131	0.0279	4.7000	LTV_FISH
	NWT	2	2	0.1210	0.481	0.1023	4.7000	LTV_FISH
	RAC	2	2	0.1480	0.843	0.1793	4.7000	LTV_FISH
	UMB	9	5	0.2312	0.306	0.0651	4.7000	LTV_FISH
	W4T	16	11	0.2607	0.491	0.1045	4.7000	LTV_FISH
	WOL	13	13	0.8752	1.102	0.2345	4.7000	LTV_FISH
	WS	10	8	0.3284	0.455	0.0969	4.7000	LTV_FISH
	1C	9	7	0.3308	0.503	0.6710	0.7500	NAWQ_ACU
	1WC	2	2	0.1485	0.613	0.8167	0.7500	NAWQ_ACU
	BWC	2	1	0.1960	0.196	0.2613	0.7500	NAWQ_ACU
	HRT	8	5	0.1249	0.178	0.2373	0.7500	NAWQ_ACU
	IHP	12	7	0.1666	0.306	0.4074	0.7500	NAWQ_ACU
	LMB	29	16	0.1149	0.151	0.2012	0.7500	NAWQ_ACU
	LWC	2	1	0.1230	0.123	0.1640	0.7500	NAWQ_ACU
	MWC	18	14	0.1122	0.131	0.1749	0.7500	NAWQ_ACU
	NWT	2	2	0.1210	0.481	0.6412	0.7500	NAWQ_ACU
	RAC	2	2	0.1480	0.843	1.1234	0.7500	NAWQ_ACU
	UMB	9	5	0.2312	0.306	0.4077	0.7500	NAWQ_ACU
	W4T	16	11	0.2607	0.491	0.6546	0.7500	NAWQ_ACU
	WOL	13	13	0.8752	1.102	1.4694	0.7500	NAWQ_ACU
	WS	10	8	0.3284	0.455	0.6072	0.7500	NAWQ_ACU
	1C	9	7	0.3308	0.503	5.7848	0.0870	NAWQ_CHR
	1WC	2	2	0.1485	0.613	7.0409	0.0870	NAWQ_CHR
	BWC	2	1	0.1960	0.196	2.2529	0.0870	NAWQ_CHR
	HRT	8	5	0.1249	0.178	2.0455	0.0870	NAWQ_CHR
	IHP	12	7	0.1666	0.306	3.5121	0.0870	NAWQ_CHR
	LMB	29	16	0.1149	0.151	1.7346	0.0870	NAWQ_CHR
	LWC	2	1	0.1230	0.123	1.4138	0.0870	NAWQ_CHR
	MWC	18	14	0.1122	0.131	1.5074	0.0870	NAWQ_CHR
	NWT	2	2	0.1210	0.481	5.5274	0.0870	NAWQ_CHR
	RAC	2	2	0.1480	0.843	9.6841	0.0870	NAWQ_CHR
	UMB	9	5	0.2312	0.306	3.5149	0.0870	NAWQ_CHR
	W4T	16	11	0.2607	0.491	5.6431	0.0870	NAWQ_CHR
	WOL	13	13	0.8752	1.102	12.6673	0.0870	NAWQ_CHR
	WS	10	8	0.3284	0.455	5.2342	0.0870	NAWQ_CHR
ANTIMONY	HRT	8	1	0.0190	0.019	0.0311	0.6100	LCV_ALLO
	LMB	29	1	0.0190	0.019	0.0311	0.6100	LCV_ALLO
	MWC	18	2	0.0384	0.039	0.0644	0.6100	LCV_ALLO
	HRT	8	1	0.0190	0.019	0.0311	0.6100	LCV_AQPL
	LMB	29	1	0.0190	0.019	0.0311	0.6100	LCV_AQPL
	MWC	18	2	0.0384	0.039	0.0644	0.6100	LCV_AQPL
	HRT	8	1	0.0190	0.019	0.0035	5.4000	LCV_DAPH
	LMB	29	1	0.0190	0.019	0.0035	5.4000	LCV_DAPH
	MWC	18	2	0.0384	0.039	0.0073	5.4000	LCV_DAPH
	HRT	8	1	0.0190	0.019	0.0119	1.6000	LCV_FISH
	LMB	29	1	0.0190	0.019	0.0119	1.6000	LCV_FISH
	MWC	18	2	0.0384	0.039	0.0246	1.6000	LCV_FISH
	HRT	8	1	0.0190	0.019	0.0100	1.9000	LTV_DAPH
	LMB	29	1	0.0190	0.019	0.0100	1.9000	LTV_DAPH
	MWC	18	2	0.0384	0.039	0.0207	1.9000	LTV_DAPH
	HRT	8	1	0.0190	0.019	0.0082	2.3100	LTV_FISH

	LMB	29	1	0.0190	0.019	0.0082	2.3100	LTV_FISH
	MWC	18	2	0.0384	0.039	0.0170	2.3100	LTV_FISH
	HRT	8	1	0.0190	0.019	0.0193	0.9850	S_ACU_V
	LMB	29	1	0.0190	0.019	0.0193	0.9850	S_ACU_V
	MWC	18	2	0.0384	0.039	0.0399	0.9850	S_ACU_V
	HRT	8	1	0.0190	0.019	0.1827	0.1040	S_CHR_V
	LMB	29	1	0.0190	0.019	0.1827	0.1040	S_CHR_V
	MWC	18	2	0.0384	0.039	0.3778	0.1040	S_CHR_V
ARSENIC	HRT	7	1	0.0010	0.001	0.0011	0.9140	LCV_DAPH
	LMB	26	6	0.0013	0.002	0.0017	0.9140	LCV_DAPH
	MWC	16	2	0.0010	0.001	0.0011	0.9140	LCV_DAPH
	UMB	8	2	0.0020	0.002	0.0022	0.9140	LCV_DAPH
	W4T	9	1	0.0010	0.001	0.0011	0.9140	LCV_DAPH
	WOL	12	1	0.0010	0.001	0.0011	0.9140	LCV_DAPH
	WS	9	1	0.0010	0.001	0.0011	0.9140	LCV_DAPH
	HRT	7	1	0.0010	0.001	0.0003	2.9620	LCV_FISH
	LMB	26	6	0.0013	0.002	0.0005	2.9620	LCV_FISH
	MWC	16	2	0.0010	0.001	0.0003	2.9620	LCV_FISH
	UMB	8	2	0.0020	0.002	0.0007	2.9620	LCV_FISH
	W4T	9	1	0.0010	0.001	0.0003	2.9620	LCV_FISH
	WOL	12	1	0.0010	0.001	0.0003	2.9620	LCV_FISH
	WS	9	1	0.0010	0.001	0.0003	2.9620	LCV_FISH
	HRT	7	1	0.0010	0.001	0.0016	0.6330	LTV_DAPH
	LMB	26	6	0.0013	0.002	0.0025	0.6330	LTV_DAPH
	MWC	16	2	0.0010	0.001	0.0016	0.6330	LTV_DAPH
	UMB	8	2	0.0020	0.002	0.0032	0.6330	LTV_DAPH
	W4T	9	1	0.0010	0.001	0.0016	0.6330	LTV_DAPH
	WOL	12	1	0.0010	0.001	0.0016	0.6330	LTV_DAPH
	WS	9	1	0.0010	0.001	0.0016	0.6330	LTV_DAPH
	HRT	7	1	0.0010	0.001	0.0005	2.1300	LTV_FISH
	LMB	26	6	0.0013	0.002	0.0007	2.1300	LTV_FISH
	MWC	16	2	0.0010	0.001	0.0005	2.1300	LTV_FISH
	UMB	8	2	0.0020	0.002	0.0009	2.1300	LTV_FISH
	W4T	9	1	0.0010	0.001	0.0005	2.1300	LTV_FISH
	WOL	12	1	0.0010	0.001	0.0005	2.1300	LTV_FISH
	WS	9	1	0.0010	0.001	0.0005	2.1300	LTV_FISH
	HRT	7	1	0.0010	0.001	0.0028	0.3600	NAWQ_ACU
	LMB	26	6	0.0013	0.002	0.0044	0.3600	NAWQ_ACU
	MWC	16	2	0.0010	0.001	0.0028	0.3600	NAWQ_ACU
	UMB	8	2	0.0020	0.002	0.0056	0.3600	NAWQ_ACU
	W4T	9	1	0.0010	0.001	0.0028	0.3600	NAWQ_ACU
	WOL	12	1	0.0010	0.001	0.0028	0.3600	NAWQ_ACU
	WS	9	1	0.0010	0.001	0.0028	0.3600	NAWQ_ACU
	HRT	7	1	0.0010	0.001	0.0053	0.1900	NAWQ_CHR
	LMB	26	6	0.0013	0.002	0.0083	0.1900	NAWQ_CHR
	MWC	16	2	0.0010	0.001	0.0053	0.1900	NAWQ_CHR
	UMB	8	2	0.0020	0.002	0.0105	0.1900	NAWQ_CHR
	W4T	9	1	0.0010	0.001	0.0053	0.1900	NAWQ_CHR
	WOL	12	1	0.0010	0.001	0.0053	0.1900	NAWQ_CHR
	WS	9	1	0.0010	0.001	0.0053	0.1900	NAWQ_CHR
Acetone	HRT	1	1	0.0010	0.001	0.0000	507.6400	LCV_ALLO
	IHP	1	1	0.0030	0.003	0.0000	507.6400	LCV_ALLO
	MWC	1	1	0.0050	0.005	0.0000	507.6400	LCV_ALLO
	UMB	1	1	0.0030	0.003	0.0000	507.6400	LCV_ALLO
	W4T	3	1	0.0020	0.002	0.0000	507.6400	LCV_ALLO
	WOL	1	1	0.0030	0.003	0.0000	507.6400	LCV_ALLO
	HRT	1	1	0.0010	0.001	0.0000	3114.1820	LCV_DAPH
	IHP	1	1	0.0030	0.003	0.0000	3114.1820	LCV_DAPH
	MWC	1	1	0.0050	0.005	0.0000	3114.1820	LCV_DAPH
	UMB	1	1	0.0030	0.003	0.0000	3114.1820	LCV_DAPH
	W4T	3	1	0.0020	0.002	0.0000	3114.1820	LCV_DAPH
	WOL	1	1	0.0030	0.003	0.0000	3114.1820	LCV_DAPH
	HRT	1	1	0.0010	0.001	0.0000	507.6400	LCV_FISH
	IHP	1	1	0.0030	0.003	0.0000	507.6400	LCV_FISH
	MWC	1	1	0.0050	0.005	0.0000	507.6400	LCV_FISH
	UMB	1	1	0.0030	0.003	0.0000	507.6400	LCV_FISH
	W4T	3	1	0.0020	0.002	0.0000	507.6400	LCV_FISH
	WOL	1	1	0.0030	0.003	0.0000	507.6400	LCV_FISH
	HRT	1	1	0.0010	0.001	0.0000	161.8670	LTV_FISH

	IHP	1	1	0.0030	0.003	0.0000	161.8670	LTV_FISH
	MWC	1	1	0.0050	0.005	0.0000	161.8670	LTV_FISH
	UMB	1	1	0.0030	0.003	0.0000	161.8670	LTV_FISH
	W4T	3	1	0.0020	0.002	0.0000	161.8670	LTV_FISH
	WOL	1	1	0.0030	0.003	0.0000	161.8670	LTV_FISH
	HRT	1	1	0.0010	0.001	0.0000	200.0000	S_ACU_V
	IHP	1	1	0.0030	0.003	0.0000	200.0000	S_ACU_V
	MWC	1	1	0.0050	0.005	0.0000	200.0000	S_ACU_V
	UMB	1	1	0.0030	0.003	0.0000	200.0000	S_ACU_V
	W4T	3	1	0.0020	0.002	0.0000	200.0000	S_ACU_V
	WOL	1	1	0.0030	0.003	0.0000	200.0000	S_ACU_V
	HRT	1	1	0.0010	0.001	0.0001	11.2000	S_CHR_V
	IHP	1	1	0.0030	0.003	0.0003	11.2000	S_CHR_V
	MWC	1	1	0.0050	0.005	0.0004	11.2000	S_CHR_V
	UMB	1	1	0.0030	0.003	0.0003	11.2000	S_CHR_V
	W4T	3	1	0.0020	0.002	0.0002	11.2000	S_CHR_V
	WOL	1	1	0.0030	0.003	0.0003	11.2000	S_CHR_V
BARIUM	1C	9	8	0.0412	0.046	0.0079	5.8000	LCV_ALLO
	1WC	2	2	0.0340	0.040	0.0070	5.8000	LCV_ALLO
	BWC	2	2	0.0640	0.260	0.0448	5.8000	LCV_ALLO
	HRT	8	8	0.0580	0.063	0.0109	5.8000	LCV_ALLO
	IHP	12	11	0.0349	0.037	0.0063	5.8000	LCV_ALLO
	LMB	29	29	0.0511	0.057	0.0098	5.8000	LCV_ALLO
	LWC	2	2	0.0380	0.070	0.0120	5.8000	LCV_ALLO
	MWC	18	16	0.0348	0.036	0.0063	5.8000	LCV_ALLO
	NWT	2	1	0.0440	0.044	0.0076	5.8000	LCV_ALLO
	RAC	2	1	0.0290	0.029	0.0050	5.8000	LCV_ALLO
	UMB	9	9	0.0526	0.065	0.0113	5.8000	LCV_ALLO
	W4T	16	16	0.1646	0.204	0.0351	5.8000	LCV_ALLO
	WOL	13	12	0.0462	0.051	0.0087	5.8000	LCV_ALLO
	WS	10	10	0.0619	0.075	0.0130	5.8000	LCV_ALLO
	1C	9	8	0.0412	0.046	0.0079	5.8000	LCV_DAPH
	1WC	2	2	0.0340	0.040	0.0070	5.8000	LCV_DAPH
	BWC	2	2	0.0640	0.260	0.0448	5.8000	LCV_DAPH
	HRT	8	8	0.0580	0.063	0.0109	5.8000	LCV_DAPH
	IHP	12	11	0.0349	0.037	0.0063	5.8000	LCV_DAPH
	LMB	29	29	0.0511	0.057	0.0098	5.8000	LCV_DAPH
	LWC	2	2	0.0380	0.070	0.0120	5.8000	LCV_DAPH
	MWC	18	16	0.0348	0.036	0.0063	5.8000	LCV_DAPH
	NWT	2	1	0.0440	0.044	0.0076	5.8000	LCV_DAPH
	RAC	2	1	0.0290	0.029	0.0050	5.8000	LCV_DAPH
	UMB	9	9	0.0526	0.065	0.0113	5.8000	LCV_DAPH
	W4T	16	16	0.1646	0.204	0.0351	5.8000	LCV_DAPH
	WOL	13	12	0.0462	0.051	0.0087	5.8000	LCV_DAPH
	WS	10	10	0.0619	0.075	0.0130	5.8000	LCV_DAPH
	1C	9	8	0.0412	0.046	0.6609	0.0691	S_ACU_V
	1WC	2	2	0.0340	0.040	0.5834	0.0691	S_ACU_V
	BWC	2	2	0.0640	0.260	3.7587	0.0691	S_ACU_V
	HRT	8	8	0.0580	0.063	0.9145	0.0691	S_ACU_V
	IHP	12	11	0.0349	0.037	0.5297	0.0691	S_ACU_V
	LMB	29	29	0.0511	0.057	0.8251	0.0691	S_ACU_V
	LWC	2	2	0.0380	0.070	1.0068	0.0691	S_ACU_V
	MWC	18	16	0.0348	0.036	0.5256	0.0691	S_ACU_V
	NWT	2	1	0.0440	0.044	0.6368	0.0691	S_ACU_V
	RAC	2	1	0.0290	0.029	0.4197	0.0691	S_ACU_V
	UMB	9	9	0.0526	0.065	0.9445	0.0691	S_ACU_V
	W4T	16	16	0.1646	0.204	2.9450	0.0691	S_ACU_V
	WOL	13	12	0.0462	0.051	0.7334	0.0691	S_ACU_V
	WS	10	10	0.0619	0.075	1.0878	0.0691	S_ACU_V
	1C	9	8	0.0412	0.046	12.0185	0.0038	S_CHR_V
	1WC	2	2	0.0340	0.040	10.6089	0.0038	S_CHR_V
	BWC	2	2	0.0640	0.260	68.3490	0.0038	S_CHR_V
	HRT	8	8	0.0580	0.063	16.6286	0.0038	S_CHR_V
	IHP	12	11	0.0349	0.037	9.6327	0.0038	S_CHR_V
	LMB	29	29	0.0511	0.057	15.0031	0.0038	S_CHR_V
	LWC	2	2	0.0380	0.070	18.3076	0.0038	S_CHR_V
	MWC	18	16	0.0348	0.036	9.5571	0.0038	S_CHR_V
	NWT	2	1	0.0440	0.044	11.5789	0.0038	S_CHR_V
	RAC	2	1	0.0290	0.029	7.6316	0.0038	S_CHR_V
	UMB	9	9	0.0526	0.065	17.1754	0.0038	S_CHR_V

	W4T	16	16	0.1646	0.204	53.5530	0.0038	S_CHR_V
	WOL	13	12	0.0462	0.051	13.3365	0.0038	S_CHR_V
	WS	10	10	0.0619	0.075	19.7810	0.0038	S_CHR_V
BERYLLIUM	1C	9	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	HRT	8	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	IHP	12	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	LMB	29	5	0.0001	0.000	0.0373	0.0053	LCV_ALLO
	MWC	18	2	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	UMB	9	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	W4T	16	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	WOL	13	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	WS	10	1	0.0000	0.000	0.0000	0.0053	LCV_ALLO
	1C	9	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	HRT	8	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	IHP	12	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	LMB	29	5	0.0001	0.000	0.0000	100.0000	LCV_AQPL
	MWC	18	2	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	UMB	9	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	W4T	16	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	WOL	13	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	WS	10	1	0.0000	0.000	0.0000	100.0000	LCV_AQPL
	1C	9	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	HRT	8	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	IHP	12	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	LMB	29	5	0.0001	0.000	0.0373	0.0053	LCV_DAPH
	MWC	18	2	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	UMB	9	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	W4T	16	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	WOL	13	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	WS	10	1	0.0000	0.000	0.0000	0.0053	LCV_DAPH
	1C	9	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	HRT	8	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	IHP	12	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	LMB	29	5	0.0001	0.000	0.0035	0.0570	LCV_FISH
	MWC	18	2	0.0000	0.000	0.0000	0.0570	LCV_FISH
	UMB	9	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	W4T	16	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	WOL	13	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	WS	10	1	0.0000	0.000	0.0000	0.0570	LCV_FISH
	1C	9	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	HRT	8	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	IHP	12	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	LMB	29	5	0.0001	0.000	0.0521	0.0038	LTV_DAPH
	MWC	18	2	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	UMB	9	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	W4T	16	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	WOL	13	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	WS	10	1	0.0000	0.000	0.0000	0.0038	LTV_DAPH
	1C	9	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	HRT	8	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	IHP	12	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	LMB	29	5	0.0001	0.000	0.0013	0.1480	LTV_FISH
	MWC	18	2	0.0000	0.000	0.0000	0.1480	LTV_FISH
	UMB	9	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	W4T	16	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	WOL	13	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	WS	10	1	0.0000	0.000	0.0000	0.1480	LTV_FISH
	1C	9	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	HRT	8	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	IHP	12	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	LMB	29	5	0.0001	0.000	0.0007	0.2710	S_ACU_V
	MWC	18	2	0.0000	0.000	0.0000	0.2710	S_ACU_V
	UMB	9	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	W4T	16	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	WOL	13	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	WS	10	1	0.0000	0.000	0.0000	0.2710	S_ACU_V
	1C	9	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
	HRT	8	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
	IHP	12	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
	LMB	29	5	0.0001	0.000	0.0389	0.0051	S_CHR_V

	MWC	18	2	0.0000	0.000	0.0000	0.0051	S_CHR_V
	UMB	9	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
	W4T	16	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
	WOL	13	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
	WS	10	1	0.0000	0.000	0.0000	0.0051	S_CHR_V
BORON	1C	9	3	0.0218	0.036	0.0041	8.8300	LCV_ALLO
	HRT	8	2	0.0354	0.044	0.0050	8.8300	LCV_ALLO
	IHP	12	3	0.0354	0.046	0.0052	8.8300	LCV_ALLO
	LMB	29	14	0.0498	0.054	0.0061	8.8300	LCV_ALLO
	MWC	18	7	0.0325	0.040	0.0046	8.8300	LCV_ALLO
	UMB	9	2	0.0394	0.055	0.0062	8.8300	LCV_ALLO
	W4T	16	7	0.1750	0.226	0.0255	8.8300	LCV_ALLO
	WOL	13	5	0.1029	0.207	0.0234	8.8300	LCV_ALLO
	WS	10	5	0.1099	0.240	0.0272	8.8300	LCV_ALLO
	1C	9	3	0.0218	0.036	0.0041	8.8300	LCV_DAPH
	HRT	8	2	0.0354	0.044	0.0050	8.8300	LCV_DAPH
	IHP	12	3	0.0354	0.046	0.0052	8.8300	LCV_DAPH
	LMB	29	14	0.0498	0.054	0.0061	8.8300	LCV_DAPH
	MWC	18	7	0.0325	0.040	0.0046	8.8300	LCV_DAPH
	UMB	9	2	0.0394	0.055	0.0062	8.8300	LCV_DAPH
	W4T	16	7	0.1750	0.226	0.0255	8.8300	LCV_DAPH
	WOL	13	5	0.1029	0.207	0.0234	8.8300	LCV_DAPH
	WS	10	5	0.1099	0.240	0.0272	8.8300	LCV_DAPH
	1C	9	3	0.0218	0.036	5.1193	0.0070	LTV_DAPH
	HRT	8	2	0.0354	0.044	6.2762	0.0070	LTV_DAPH
	IHP	12	3	0.0354	0.046	6.5284	0.0070	LTV_DAPH
	LMB	29	14	0.0498	0.054	7.7056	0.0070	LTV_DAPH
	MWC	18	7	0.0325	0.040	5.7857	0.0070	LTV_DAPH
	UMB	9	2	0.0394	0.055	7.8653	0.0070	LTV_DAPH
	W4T	16	7	0.1750	0.226	32.2145	0.0070	LTV_DAPH
	WOL	13	5	0.1029	0.207	29.5793	0.0070	LTV_DAPH
	WS	10	5	0.1099	0.240	34.2666	0.0070	LTV_DAPH
	1C	9	3	0.0218	0.036	0.0033	11.0000	S_ACU_V
	HRT	8	2	0.0354	0.044	0.0040	11.0000	S_ACU_V
	IHP	12	3	0.0354	0.046	0.0042	11.0000	S_ACU_V
	LMB	29	14	0.0498	0.054	0.0049	11.0000	S_ACU_V
	MWC	18	7	0.0325	0.040	0.0037	11.0000	S_ACU_V
	UMB	9	2	0.0394	0.055	0.0050	11.0000	S_ACU_V
	W4T	16	7	0.1750	0.226	0.0205	11.0000	S_ACU_V
	WOL	13	5	0.1029	0.207	0.0188	11.0000	S_ACU_V
	WS	10	5	0.1099	0.240	0.0218	11.0000	S_ACU_V
	1C	9	3	0.0218	0.036	0.0655	0.5470	S_CHR_V
	HRT	8	2	0.0354	0.044	0.0803	0.5470	S_CHR_V
	IHP	12	3	0.0354	0.046	0.0835	0.5470	S_CHR_V
	LMB	29	14	0.0498	0.054	0.0986	0.5470	S_CHR_V
	MWC	18	7	0.0325	0.040	0.0740	0.5470	S_CHR_V
	UMB	9	2	0.0394	0.055	0.1007	0.5470	S_CHR_V
	W4T	16	7	0.1750	0.226	0.4123	0.5470	S_CHR_V
	WOL	13	5	0.1029	0.207	0.3785	0.5470	S_CHR_V
	WS	10	5	0.1099	0.240	0.4385	0.5470	S_CHR_V
CADMIUM	LMB	29	1	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	MWC	17	1	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	W4T	12	2	0.0011	0.001	9.1811	0.0002	LCV_ALLO
	WOL	13	1	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	LMB	29	1	0.0000	0.000	0.0000	0.0020	LCV_AQPL
	MWC	17	1	0.0000	0.000	0.0000	0.0020	LCV_AQPL
	W4T	12	2	0.0011	0.001	0.6886	0.0020	LCV_AQPL
	WOL	13	1	0.0000	0.000	0.0000	0.0020	LCV_AQPL
	LMB	29	1	0.0000	0.000	0.0000	0.0002	LCV_DAPH
	MWC	17	1	0.0000	0.000	0.0000	0.0002	LCV_DAPH
	W4T	12	2	0.0011	0.001	9.1811	0.0002	LCV_DAPH
	WOL	13	1	0.0000	0.000	0.0000	0.0002	LCV_DAPH
	LMB	29	1	0.0000	0.000	0.0000	0.0017	LCV_FISH
	MWC	17	1	0.0000	0.000	0.0000	0.0017	LCV_FISH
	W4T	12	2	0.0011	0.001	0.8101	0.0017	LCV_FISH
	WOL	13	1	0.0000	0.000	0.0000	0.0017	LCV_FISH
	LMB	29	1	0.0000	0.000	0.0000	0.0008	LTV_DAPH
	MWC	17	1	0.0000	0.000	0.0000	0.0008	LTV_DAPH
	W4T	12	2	0.0011	0.001	1.8362	0.0008	LTV_DAPH

	WOL	13	1	0.0000	0.000	0.0000	0.0008	LTV_DAPH
	LMB	29	1	0.0000	0.000	0.0000	0.0018	LTV_FISH
	MWC	17	1	0.0000	0.000	0.0000	0.0018	LTV_FISH
	W4T	12	2	0.0011	0.001	0.7651	0.0018	LTV_FISH
	WOL	13	1	0.0000	0.000	0.0000	0.0018	LTV_FISH
	LMB	29	1	0.0000	0.000	0.0000	0.0039	NAWQ_ACU
	MWC	17	1	0.0000	0.000	0.0000	0.0039	NAWQ_ACU
	W4T	12	2	0.0011	0.001	0.3531	0.0039	NAWQ_ACU
	WOL	13	1	0.0000	0.000	0.0000	0.0039	NAWQ_ACU
	LMB	29	1	0.0000	0.000	0.0000	0.0011	NAWQ_CHR
	MWC	17	1	0.0000	0.000	0.0000	0.0011	NAWQ_CHR
	W4T	12	2	0.0011	0.001	1.2520	0.0011	NAWQ_CHR
	WOL	13	1	0.0000	0.000	0.0000	0.0011	NAWQ_CHR
CALCIUM	1C	9	9	43.8333	48.460	0.4178	116.0000	LCV_ALLO
	1WC	2	2	40.9000	47.845	0.4125	116.0000	LCV_ALLO
	BWC	2	2	23.5500	80.058	0.6902	116.0000	LCV_ALLO
	HRT	8	8	41.7500	48.219	0.4157	116.0000	LCV_ALLO
	IHP	12	12	44.3667	47.985	0.4137	116.0000	LCV_ALLO
	LMB	29	29	58.4483	66.339	0.5719	116.0000	LCV_ALLO
	LWC	2	2	44.2000	58.090	0.5008	116.0000	LCV_ALLO
	MWC	18	18	43.4833	46.474	0.4006	116.0000	LCV_ALLO
	NWT	2	2	48.8500	129.350	1.1151	116.0000	LCV_ALLO
	RAC	2	2	84.1000	137.767	1.1876	116.0000	LCV_ALLO
	UMB	9	9	63.6889	82.307	0.7095	116.0000	LCV_ALLO
	W4T	16	16	76.5938	90.049	0.7763	116.0000	LCV_ALLO
	WOL	13	13	44.1000	47.219	0.4071	116.0000	LCV_ALLO
	WS	10	10	37.0600	45.099	0.3888	116.0000	LCV_ALLO
	1C	9	9	43.8333	48.460	0.4178	116.0000	LCV_DAPH
	1WC	2	2	40.9000	47.845	0.4125	116.0000	LCV_DAPH
	BWC	2	2	23.5500	80.058	0.6902	116.0000	LCV_DAPH
	HRT	8	8	41.7500	48.219	0.4157	116.0000	LCV_DAPH
	IHP	12	12	44.3667	47.985	0.4137	116.0000	LCV_DAPH
	LMB	29	29	58.4483	66.339	0.5719	116.0000	LCV_DAPH
	LWC	2	2	44.2000	58.090	0.5008	116.0000	LCV_DAPH
	MWC	18	18	43.4833	46.474	0.4006	116.0000	LCV_DAPH
	NWT	2	2	48.8500	129.350	1.1151	116.0000	LCV_DAPH
	RAC	2	2	84.1000	137.767	1.1876	116.0000	LCV_DAPH
	UMB	9	9	63.6889	82.307	0.7095	116.0000	LCV_DAPH
	W4T	16	16	76.5938	90.049	0.7763	116.0000	LCV_DAPH
	WOL	13	13	44.1000	47.219	0.4071	116.0000	LCV_DAPH
	WS	10	10	37.0600	45.099	0.3888	116.0000	LCV_DAPH
CHROMIUM	HRT	8	1	0.0030	0.003	1.5000	0.0020	LCV_ALLO
	LMB	29	1	0.0070	0.007	3.5000	0.0020	LCV_ALLO
	UMB	9	2	0.0036	0.005	2.4665	0.0020	LCV_ALLO
	W4T	16	2	0.0040	0.004	2.0000	0.0020	LCV_ALLO
	WOL	13	7	0.0154	0.019	9.7495	0.0020	LCV_ALLO
	HRT	8	1	0.0030	0.003	1.5000	0.0020	LCV_AQPL
	LMB	29	1	0.0070	0.007	3.5000	0.0020	LCV_AQPL
	UMB	9	2	0.0036	0.005	2.4665	0.0020	LCV_AQPL
	W4T	16	2	0.0040	0.004	2.0000	0.0020	LCV_AQPL
	WOL	13	7	0.0154	0.019	9.7495	0.0020	LCV_AQPL
	HRT	8	1	0.0030	0.003	0.4892	0.0061	LCV_DAPH
	LMB	29	1	0.0070	0.007	1.1416	0.0061	LCV_DAPH
	UMB	9	2	0.0036	0.005	0.8045	0.0061	LCV_DAPH
	W4T	16	2	0.0040	0.004	0.6523	0.0061	LCV_DAPH
	WOL	13	7	0.0154	0.019	3.1799	0.0061	LCV_DAPH
	HRT	8	1	0.0030	0.003	0.0410	0.0732	LCV_FISH
	LMB	29	1	0.0070	0.007	0.0957	0.0732	LCV_FISH
	UMB	9	2	0.0036	0.005	0.0674	0.0732	LCV_FISH
	W4T	16	2	0.0040	0.004	0.0547	0.0732	LCV_FISH
	WOL	13	7	0.0154	0.019	0.2665	0.0732	LCV_FISH
	HRT	8	1	0.0030	0.003	6.0000	0.0005	LTV_DAPH
	LMB	29	1	0.0070	0.007	14.0000	0.0005	LTV_DAPH
	UMB	9	2	0.0036	0.005	9.8660	0.0005	LTV_DAPH
	W4T	16	2	0.0040	0.004	8.0000	0.0005	LTV_DAPH
	WOL	13	7	0.0154	0.019	38.9979	0.0005	LTV_DAPH
	HRT	8	1	0.0030	0.003	0.0588	0.0510	LTV_FISH
	LMB	29	1	0.0070	0.007	0.1373	0.0510	LTV_FISH
	UMB	9	2	0.0036	0.005	0.0967	0.0510	LTV_FISH

	W4T	16	2	0.0040	0.004	0.0784	0.0510	LTV_FISH
	WOL	13	7	0.0154	0.019	0.3823	0.0510	LTV_FISH
	HRT	8	1	0.0030	0.003	0.1875	0.0160	NAWQ_ACU
	LMB	29	1	0.0070	0.007	0.4375	0.0160	NAWQ_ACU
	UMB	9	2	0.0036	0.005	0.3083	0.0160	NAWQ_ACU
	W4T	16	2	0.0040	0.004	0.2500	0.0160	NAWQ_ACU
	WOL	13	7	0.0154	0.019	1.2187	0.0160	NAWQ_ACU
	HRT	8	1	0.0030	0.003	0.2727	0.0110	NAWQ_CHR
	LMB	29	1	0.0070	0.007	0.6364	0.0110	NAWQ_CHR
	UMB	9	2	0.0036	0.005	0.4485	0.0110	NAWQ_CHR
	W4T	16	2	0.0040	0.004	0.3636	0.0110	NAWQ_CHR
	WOL	13	7	0.0154	0.019	1.7726	0.0110	NAWQ_CHR
COBALT	HRT	8	1	0.0020	0.002	0.3922	0.0051	LCV_ALLO
	UMB	9	1	0.0050	0.005	0.9804	0.0051	LCV_ALLO
	W4T	16	1	0.0030	0.003	0.5882	0.0051	LCV_ALLO
	WOL	13	1	0.0020	0.002	0.3922	0.0051	LCV_ALLO
	WS	10	1	0.0110	0.011	2.1569	0.0051	LCV_ALLO
	HRT	8	1	0.0020	0.002	0.3922	0.0051	LCV_DAPH
	UMB	9	1	0.0050	0.005	0.9804	0.0051	LCV_DAPH
	W4T	16	1	0.0030	0.003	0.5882	0.0051	LCV_DAPH
	WOL	13	1	0.0020	0.002	0.3922	0.0051	LCV_DAPH
	WS	10	1	0.0110	0.011	2.1569	0.0051	LCV_DAPH
	HRT	8	1	0.0020	0.002	0.0069	0.2900	LCV_FISH
	UMB	9	1	0.0050	0.005	0.0172	0.2900	LCV_FISH
	W4T	16	1	0.0030	0.003	0.0103	0.2900	LCV_FISH
	WOL	13	1	0.0020	0.002	0.0069	0.2900	LCV_FISH
	WS	10	1	0.0110	0.011	0.0379	0.2900	LCV_FISH
	HRT	8	1	0.0020	0.002	0.4545	0.0044	LTV_DAPH
	UMB	9	1	0.0050	0.005	1.1364	0.0044	LTV_DAPH
	W4T	16	1	0.0030	0.003	0.6818	0.0044	LTV_DAPH
	WOL	13	1	0.0020	0.002	0.4545	0.0044	LTV_DAPH
	WS	10	1	0.0110	0.011	2.5000	0.0044	LTV_DAPH
	HRT	8	1	0.0020	0.002	0.0025	0.8100	LTV_FISH
	UMB	9	1	0.0050	0.005	0.0062	0.8100	LTV_FISH
	W4T	16	1	0.0030	0.003	0.0037	0.8100	LTV_FISH
	WOL	13	1	0.0020	0.002	0.0025	0.8100	LTV_FISH
	WS	10	1	0.0110	0.011	0.0136	0.8100	LTV_FISH
	HRT	8	1	0.0020	0.002	0.0103	0.1950	S_ACU_V
	UMB	9	1	0.0050	0.005	0.0256	0.1950	S_ACU_V
	W4T	16	1	0.0030	0.003	0.0154	0.1950	S_ACU_V
	WOL	13	1	0.0020	0.002	0.0103	0.1950	S_ACU_V
	WS	10	1	0.0110	0.011	0.0564	0.1950	S_ACU_V
	HRT	8	1	0.0020	0.002	0.6536	0.0031	S_CHR_V
	UMB	9	1	0.0050	0.005	1.6340	0.0031	S_CHR_V
	W4T	16	1	0.0030	0.003	0.9804	0.0031	S_CHR_V
	WOL	13	1	0.0020	0.002	0.6536	0.0031	S_CHR_V
	WS	10	1	0.0110	0.011	3.5948	0.0031	S_CHR_V
COPPER	1C	9	4	0.0024	0.004	16.1181	0.0002	LCV_ALLO
	1WC	2	1	0.0070	0.007	30.4348	0.0002	LCV_ALLO
	HRT	8	1	0.0020	0.002	8.6957	0.0002	LCV_ALLO
	IHP	12	7	0.0059	0.008	34.9408	0.0002	LCV_ALLO
	LMB	29	18	0.0050	0.006	27.3447	0.0002	LCV_ALLO
	LWC	2	1	0.0130	0.013	56.5217	0.0002	LCV_ALLO
	MWC	18	10	0.0053	0.007	30.1813	0.0002	LCV_ALLO
	UMB	9	5	0.0091	0.015	64.5996	0.0002	LCV_ALLO
	W4T	16	6	0.0099	0.014	60.9745	0.0002	LCV_ALLO
	WOL	13	6	0.0063	0.008	35.1402	0.0002	LCV_ALLO
	WS	10	3	0.0028	0.004	16.9332	0.0002	LCV_ALLO
	1C	9	4	0.0024	0.004	3.7072	0.0010	LCV_AQPL
	1WC	2	1	0.0070	0.007	7.0000	0.0010	LCV_AQPL
	HRT	8	1	0.0020	0.002	2.0000	0.0010	LCV_AQPL
	IHP	12	7	0.0059	0.008	8.0364	0.0010	LCV_AQPL
	LMB	29	18	0.0050	0.006	6.2893	0.0010	LCV_AQPL
	LWC	2	1	0.0130	0.013	13.0000	0.0010	LCV_AQPL
	MWC	18	10	0.0053	0.007	6.9417	0.0010	LCV_AQPL
	UMB	9	5	0.0091	0.015	14.8579	0.0010	LCV_AQPL
	W4T	16	6	0.0099	0.014	14.0241	0.0010	LCV_AQPL
	WOL	13	6	0.0063	0.008	8.0822	0.0010	LCV_AQPL
	WS	10	3	0.0028	0.004	3.8946	0.0010	LCV_AQPL

1C	9	4	0.0024	0.004	16.1181	0.0002	LCV_DAPH
1WC	2	1	0.0070	0.007	30.4348	0.0002	LCV_DAPH
HRT	8	1	0.0020	0.002	8.6957	0.0002	LCV_DAPH
IHP	12	7	0.0059	0.008	34.9408	0.0002	LCV_DAPH
LMB	29	18	0.0050	0.006	27.3447	0.0002	LCV_DAPH
LWC	2	1	0.0130	0.013	56.5217	0.0002	LCV_DAPH
MWC	18	10	0.0053	0.007	30.1813	0.0002	LCV_DAPH
UMB	9	5	0.0091	0.015	64.5996	0.0002	LCV_DAPH
W4T	16	6	0.0099	0.014	60.9745	0.0002	LCV_DAPH
WOL	13	6	0.0063	0.008	35.1402	0.0002	LCV_DAPH
WS	10	3	0.0028	0.004	16.9332	0.0002	LCV_DAPH
1C	9	4	0.0024	0.004	0.9756	0.0038	LCV_FISH
1WC	2	1	0.0070	0.007	1.8421	0.0038	LCV_FISH
HRT	8	1	0.0020	0.002	0.5263	0.0038	LCV_FISH
IHP	12	7	0.0059	0.008	2.1148	0.0038	LCV_FISH
LMB	29	18	0.0050	0.006	1.6551	0.0038	LCV_FISH
LWC	2	1	0.0130	0.013	3.4211	0.0038	LCV_FISH
MWC	18	10	0.0053	0.007	1.8268	0.0038	LCV_FISH
UMB	9	5	0.0091	0.015	3.9100	0.0038	LCV_FISH
W4T	16	6	0.0099	0.014	3.6906	0.0038	LCV_FISH
WOL	13	6	0.0063	0.008	2.1269	0.0038	LCV_FISH
WS	10	3	0.0028	0.004	1.0249	0.0038	LCV_FISH
1C	9	4	0.0024	0.004	0.6111	0.0061	LCV_NDI
1WC	2	1	0.0070	0.007	1.1540	0.0061	LCV_NDI
HRT	8	1	0.0020	0.002	0.3297	0.0061	LCV_NDI
IHP	12	7	0.0059	0.008	1.3248	0.0061	LCV_NDI
LMB	29	18	0.0050	0.006	1.0368	0.0061	LCV_NDI
LWC	2	1	0.0130	0.013	2.1431	0.0061	LCV_NDI
MWC	18	10	0.0053	0.007	1.1444	0.0061	LCV_NDI
UMB	9	5	0.0091	0.015	2.4494	0.0061	LCV_NDI
W4T	16	6	0.0099	0.014	2.3119	0.0061	LCV_NDI
WOL	13	6	0.0063	0.008	1.3324	0.0061	LCV_NDI
WS	10	3	0.0028	0.004	0.6420	0.0061	LCV_NDI
1C	9	4	0.0024	0.004	18.0837	0.0002	LTV_DAPH
1WC	2	1	0.0070	0.007	34.1463	0.0002	LTV_DAPH
HRT	8	1	0.0020	0.002	9.7561	0.0002	LTV_DAPH
IHP	12	7	0.0059	0.008	39.2019	0.0002	LTV_DAPH
LMB	29	18	0.0050	0.006	30.6795	0.0002	LTV_DAPH
LWC	2	1	0.0130	0.013	63.4146	0.0002	LTV_DAPH
MWC	18	10	0.0053	0.007	33.8619	0.0002	LTV_DAPH
UMB	9	5	0.0091	0.015	72.4776	0.0002	LTV_DAPH
W4T	16	6	0.0099	0.014	68.4105	0.0002	LTV_DAPH
WOL	13	6	0.0063	0.008	39.4255	0.0002	LTV_DAPH
WS	10	3	0.0028	0.004	18.9982	0.0002	LTV_DAPH
1C	9	4	0.0024	0.004	0.7414	0.0050	LTV_FISH
1WC	2	1	0.0070	0.007	1.4000	0.0050	LTV_FISH
HRT	8	1	0.0020	0.002	0.4000	0.0050	LTV_FISH
IHP	12	7	0.0059	0.008	1.6073	0.0050	LTV_FISH
LMB	29	18	0.0050	0.006	1.2579	0.0050	LTV_FISH
LWC	2	1	0.0130	0.013	2.6000	0.0050	LTV_FISH
MWC	18	10	0.0053	0.007	1.3883	0.0050	LTV_FISH
UMB	9	5	0.0091	0.015	2.9716	0.0050	LTV_FISH
W4T	16	6	0.0099	0.014	2.8048	0.0050	LTV_FISH
WOL	13	6	0.0063	0.008	1.6164	0.0050	LTV_FISH
WS	10	3	0.0028	0.004	0.7789	0.0050	LTV_FISH
1C	9	4	0.0024	0.004	0.2060	0.0180	NAWQ_ACU
1WC	2	1	0.0070	0.007	0.3889	0.0180	NAWQ_ACU
HRT	8	1	0.0020	0.002	0.1111	0.0180	NAWQ_ACU
IHP	12	7	0.0059	0.008	0.4465	0.0180	NAWQ_ACU
LMB	29	18	0.0050	0.006	0.3494	0.0180	NAWQ_ACU
LWC	2	1	0.0130	0.013	0.7222	0.0180	NAWQ_ACU
MWC	18	10	0.0053	0.007	0.3856	0.0180	NAWQ_ACU
UMB	9	5	0.0091	0.015	0.8254	0.0180	NAWQ_ACU
W4T	16	6	0.0099	0.014	0.7791	0.0180	NAWQ_ACU
WOL	13	6	0.0063	0.008	0.4490	0.0180	NAWQ_ACU
WS	10	3	0.0028	0.004	0.2164	0.0180	NAWQ_ACU
1C	9	4	0.0024	0.004	0.3089	0.0120	NAWQ_CHR
1WC	2	1	0.0070	0.007	0.5833	0.0120	NAWQ_CHR
HRT	8	1	0.0020	0.002	0.1667	0.0120	NAWQ_CHR
IHP	12	7	0.0059	0.008	0.6697	0.0120	NAWQ_CHR
LMB	29	18	0.0050	0.006	0.5241	0.0120	NAWQ_CHR

	LWC	2	1	0.0130	0.013	1.0833	0.0120	NAWQ_CHR
	MWC	18	10	0.0053	0.007	0.5785	0.0120	NAWQ_CHR
	UMB	9	5	0.0091	0.015	1.2382	0.0120	NAWQ_CHR
	W4T	16	6	0.0099	0.014	1.1687	0.0120	NAWQ_CHR
	WOL	13	6	0.0063	0.008	0.6735	0.0120	NAWQ_CHR
	WS	10	3	0.0028	0.004	0.3246	0.0120	NAWQ_CHR
Carbon disulfide	1C	1	1	0.0070	0.007	0.0287	0.2440	LCV_ALLO
	HRT	1	1	0.0050	0.005	0.0205	0.2440	LCV_ALLO
	IHP	1	1	0.0050	0.005	0.0205	0.2440	LCV_ALLO
	LMB	1	1	0.0110	0.011	0.0451	0.2440	LCV_ALLO
	MWC	1	1	0.0130	0.013	0.0533	0.2440	LCV_ALLO
	NWT	1	1	0.0040	0.004	0.0164	0.2440	LCV_ALLO
	RAC	1	1	0.0160	0.016	0.0656	0.2440	LCV_ALLO
	UMB	1	1	0.0110	0.011	0.0451	0.2440	LCV_ALLO
	WOL	1	1	0.0030	0.003	0.0123	0.2440	LCV_ALLO
	WS	1	1	0.0170	0.017	0.0697	0.2440	LCV_ALLO
	1C	1	1	0.0070	0.007	0.0287	0.2440	LCV_DAPH
	HRT	1	1	0.0050	0.005	0.0205	0.2440	LCV_DAPH
	IHP	1	1	0.0050	0.005	0.0205	0.2440	LCV_DAPH
	LMB	1	1	0.0110	0.011	0.0451	0.2440	LCV_DAPH
	MWC	1	1	0.0130	0.013	0.0533	0.2440	LCV_DAPH
	NWT	1	1	0.0040	0.004	0.0164	0.2440	LCV_DAPH
	RAC	1	1	0.0160	0.016	0.0656	0.2440	LCV_DAPH
	UMB	1	1	0.0110	0.011	0.0451	0.2440	LCV_DAPH
	WOL	1	1	0.0030	0.003	0.0123	0.2440	LCV_DAPH
	WS	1	1	0.0170	0.017	0.0697	0.2440	LCV_DAPH
	1C	1	1	0.0070	0.007	0.0007	9.5380	LCV_FISH
	HRT	1	1	0.0050	0.005	0.0005	9.5380	LCV_FISH
	IHP	1	1	0.0050	0.005	0.0005	9.5380	LCV_FISH
	LMB	1	1	0.0110	0.011	0.0012	9.5380	LCV_FISH
	MWC	1	1	0.0130	0.013	0.0014	9.5380	LCV_FISH
	NWT	1	1	0.0040	0.004	0.0004	9.5380	LCV_FISH
	RAC	1	1	0.0160	0.016	0.0017	9.5380	LCV_FISH
	UMB	1	1	0.0110	0.011	0.0012	9.5380	LCV_FISH
	WOL	1	1	0.0030	0.003	0.0003	9.5380	LCV_FISH
	WS	1	1	0.0170	0.017	0.0018	9.5380	LCV_FISH
	1C	1	1	0.0070	0.007	0.0012	5.7190	LTV_FISH
	HRT	1	1	0.0050	0.005	0.0009	5.7190	LTV_FISH
	IHP	1	1	0.0050	0.005	0.0009	5.7190	LTV_FISH
	LMB	1	1	0.0110	0.011	0.0019	5.7190	LTV_FISH
	MWC	1	1	0.0130	0.013	0.0023	5.7190	LTV_FISH
	NWT	1	1	0.0040	0.004	0.0007	5.7190	LTV_FISH
	RAC	1	1	0.0160	0.016	0.0028	5.7190	LTV_FISH
	UMB	1	1	0.0110	0.011	0.0019	5.7190	LTV_FISH
	WOL	1	1	0.0030	0.003	0.0005	5.7190	LTV_FISH
	WS	1	1	0.0170	0.017	0.0030	5.7190	LTV_FISH
	1C	1	1	0.0070	0.007	0.0440	0.1590	S_ACU_V
	HRT	1	1	0.0050	0.005	0.0314	0.1590	S_ACU_V
	IHP	1	1	0.0050	0.005	0.0314	0.1590	S_ACU_V
	LMB	1	1	0.0110	0.011	0.0692	0.1590	S_ACU_V
	MWC	1	1	0.0130	0.013	0.0818	0.1590	S_ACU_V
	NWT	1	1	0.0040	0.004	0.0252	0.1590	S_ACU_V
	RAC	1	1	0.0160	0.016	0.1006	0.1590	S_ACU_V
	UMB	1	1	0.0110	0.011	0.0692	0.1590	S_ACU_V
	WOL	1	1	0.0030	0.003	0.0189	0.1590	S_ACU_V
	WS	1	1	0.0170	0.017	0.1069	0.1590	S_ACU_V
	1C	1	1	0.0070	0.007	0.7874	0.0089	S_CHR_V
	HRT	1	1	0.0050	0.005	0.5624	0.0089	S_CHR_V
	IHP	1	1	0.0050	0.005	0.5624	0.0089	S_CHR_V
	LMB	1	1	0.0110	0.011	1.2373	0.0089	S_CHR_V
	MWC	1	1	0.0130	0.013	1.4623	0.0089	S_CHR_V
	NWT	1	1	0.0040	0.004	0.4499	0.0089	S_CHR_V
	RAC	1	1	0.0160	0.016	1.7998	0.0089	S_CHR_V
	UMB	1	1	0.0110	0.011	1.2373	0.0089	S_CHR_V
	WOL	1	1	0.0030	0.003	0.3375	0.0089	S_CHR_V
	WS	1	1	0.0170	0.017	1.9123	0.0089	S_CHR_V
Chloroform	1C	1	1	0.0000	0.000	0.0000	1.2400	LCV_ALLO
	IHP	1	1	0.0020	0.002	0.0016	1.2400	LCV_ALLO
	MWC	1	1	0.0010	0.001	0.0008	1.2400	LCV_ALLO

	WOL	1	1	0.0000	0.000	0.0000	1.2400	LCV_ALLO
	1C	1	1	0.0000	0.000	0.0000	4.4830	LCV_DAPH
	IHP	1	1	0.0020	0.002	0.0004	4.4830	LCV_DAPH
	MWC	1	1	0.0010	0.001	0.0002	4.4830	LCV_DAPH
	WOL	1	1	0.0000	0.000	0.0000	4.4830	LCV_DAPH
	1C	1	1	0.0000	0.000	0.0000	1.2400	LCV_FISH
	IHP	1	1	0.0020	0.002	0.0016	1.2400	LCV_FISH
	MWC	1	1	0.0010	0.001	0.0008	1.2400	LCV_FISH
	WOL	1	1	0.0000	0.000	0.0000	1.2400	LCV_FISH
	1C	1	1	0.0000	0.000	0.0000	8.4000	LTV_FISH
	IHP	1	1	0.0020	0.002	0.0002	8.4000	LTV_FISH
	MWC	1	1	0.0010	0.001	0.0001	8.4000	LTV_FISH
	WOL	1	1	0.0000	0.000	0.0000	8.4000	LTV_FISH
	1C	1	1	0.0000	0.000	0.0000	3.3600	S_ACU_V
	IHP	1	1	0.0020	0.002	0.0006	3.3600	S_ACU_V
	MWC	1	1	0.0010	0.001	0.0003	3.3600	S_ACU_V
	WOL	1	1	0.0000	0.000	0.0000	3.3600	S_ACU_V
	1C	1	1	0.0000	0.000	0.0000	0.1880	S_CHR_V
	IHP	1	1	0.0020	0.002	0.0106	0.1880	S_CHR_V
	MWC	1	1	0.0010	0.001	0.0053	0.1880	S_CHR_V
	WOL	1	1	0.0000	0.000	0.0000	0.1880	S_CHR_V
IRON	1C	9	8	0.3924	0.592	3.7449	0.1580	LCV_ALLO
	BWC	2	1	0.1270	0.127	0.8038	0.1580	LCV_ALLO
	HRT	8	8	0.2448	0.305	1.9294	0.1580	LCV_ALLO
	IHP	12	8	0.2020	0.357	2.2619	0.1580	LCV_ALLO
	LMB	29	28	0.1870	0.231	1.4639	0.1580	LCV_ALLO
	LWC	2	2	0.1700	0.334	2.1149	0.1580	LCV_ALLO
	MWC	18	16	0.1442	0.166	1.0498	0.1580	LCV_ALLO
	RAC	2	1	0.2590	0.259	1.6392	0.1580	LCV_ALLO
	UMB	9	9	0.3292	0.461	2.9168	0.1580	LCV_ALLO
	W4T	16	15	0.5062	0.761	4.8151	0.1580	LCV_ALLO
	WOL	13	13	1.0815	1.346	8.5173	0.1580	LCV_ALLO
	WS	10	10	0.6578	1.021	6.4590	0.1580	LCV_ALLO
	1C	9	8	0.3924	0.592	3.7449	0.1580	LCV_DAPH
	BWC	2	1	0.1270	0.127	0.8038	0.1580	LCV_DAPH
	HRT	8	8	0.2448	0.305	1.9294	0.1580	LCV_DAPH
	IHP	12	8	0.2020	0.357	2.2619	0.1580	LCV_DAPH
	LMB	29	28	0.1870	0.231	1.4639	0.1580	LCV_DAPH
	LWC	2	2	0.1700	0.334	2.1149	0.1580	LCV_DAPH
	MWC	18	16	0.1442	0.166	1.0498	0.1580	LCV_DAPH
	RAC	2	1	0.2590	0.259	1.6392	0.1580	LCV_DAPH
	UMB	9	9	0.3292	0.461	2.9168	0.1580	LCV_DAPH
	W4T	16	15	0.5062	0.761	4.8151	0.1580	LCV_DAPH
	WOL	13	13	1.0815	1.346	8.5173	0.1580	LCV_DAPH
	WS	10	10	0.6578	1.021	6.4590	0.1580	LCV_DAPH
	1C	9	8	0.3924	0.592	0.4552	1.3000	LCV_FISH
	BWC	2	1	0.1270	0.127	0.0977	1.3000	LCV_FISH
	HRT	8	8	0.2448	0.305	0.2345	1.3000	LCV_FISH
	IHP	12	8	0.2020	0.357	0.2749	1.3000	LCV_FISH
	LMB	29	28	0.1870	0.231	0.1779	1.3000	LCV_FISH
	LWC	2	2	0.1700	0.334	0.2570	1.3000	LCV_FISH
	MWC	18	16	0.1442	0.166	0.1276	1.3000	LCV_FISH
	RAC	2	1	0.2590	0.259	0.1992	1.3000	LCV_FISH
	UMB	9	9	0.3292	0.461	0.3545	1.3000	LCV_FISH
	W4T	16	15	0.5062	0.761	0.5852	1.3000	LCV_FISH
	WOL	13	13	1.0815	1.346	1.0352	1.3000	LCV_FISH
	WS	10	10	0.6578	1.021	0.7850	1.3000	LCV_FISH
	1C	9	8	0.3924	0.592	36.9811	0.0160	LTV_DAPH
	BWC	2	1	0.1270	0.127	7.9375	0.0160	LTV_DAPH
	HRT	8	8	0.2448	0.305	19.0530	0.0160	LTV_DAPH
	IHP	12	8	0.2020	0.357	22.3365	0.0160	LTV_DAPH
	LMB	29	28	0.1870	0.231	14.4561	0.0160	LTV_DAPH
	LWC	2	2	0.1700	0.334	20.8848	0.0160	LTV_DAPH
	MWC	18	16	0.1442	0.166	10.3667	0.0160	LTV_DAPH
	RAC	2	1	0.2590	0.259	16.1875	0.0160	LTV_DAPH
	UMB	9	9	0.3292	0.461	28.8034	0.0160	LTV_DAPH
	W4T	16	15	0.5062	0.761	47.5493	0.0160	LTV_DAPH
	WOL	13	13	1.0815	1.346	84.1088	0.0160	LTV_DAPH
	WS	10	10	0.6578	1.021	63.7822	0.0160	LTV_DAPH
	1C	9	8	0.3924	0.592	0.5917	1.0000	NAWQ_CHR

	BWC	2	1	0.1270	0.127	0.1270	1.0000	NAWQ_CHR
	HRT	8	8	0.2448	0.305	0.3048	1.0000	NAWQ_CHR
	IHP	12	8	0.2020	0.357	0.3574	1.0000	NAWQ_CHR
	LMB	29	28	0.1870	0.231	0.2313	1.0000	NAWQ_CHR
	LWC	2	2	0.1700	0.334	0.3342	1.0000	NAWQ_CHR
	MWC	18	16	0.1442	0.166	0.1659	1.0000	NAWQ_CHR
	RAC	2	1	0.2590	0.259	0.2590	1.0000	NAWQ_CHR
	UMB	9	9	0.3292	0.461	0.4609	1.0000	NAWQ_CHR
	W4T	16	15	0.5062	0.761	0.7608	1.0000	NAWQ_CHR
	WOL	13	13	1.0815	1.346	1.3457	1.0000	NAWQ_CHR
	WS	10	10	0.6578	1.021	1.0205	1.0000	NAWQ_CHR
LEAD	1C	8	1	0.0020	0.002	0.1631	0.0123	LCV_ALLO
	BWC	2	1	0.0040	0.004	0.3263	0.0123	LCV_ALLO
	IHP	11	1	0.0040	0.004	0.3263	0.0123	LCV_ALLO
	LMB	23	2	0.0021	0.002	0.1840	0.0123	LCV_ALLO
	LWC	2	1	0.0020	0.002	0.1631	0.0123	LCV_ALLO
	W4T	9	2	0.0013	0.002	0.1740	0.0123	LCV_ALLO
	WOL	12	8	0.0028	0.003	0.2721	0.0123	LCV_ALLO
	WS	8	1	0.0020	0.002	0.1631	0.0123	LCV_ALLO
	1C	8	1	0.0020	0.002	0.0040	0.5000	LCV_AQPL
	BWC	2	1	0.0040	0.004	0.0080	0.5000	LCV_AQPL
	IHP	11	1	0.0040	0.004	0.0080	0.5000	LCV_AQPL
	LMB	23	2	0.0021	0.002	0.0045	0.5000	LCV_AQPL
	LWC	2	1	0.0020	0.002	0.0040	0.5000	LCV_AQPL
	W4T	9	2	0.0013	0.002	0.0043	0.5000	LCV_AQPL
	WOL	12	8	0.0028	0.003	0.0067	0.5000	LCV_AQPL
	WS	8	1	0.0020	0.002	0.0040	0.5000	LCV_AQPL
	1C	8	1	0.0020	0.002	0.1631	0.0123	LCV_DAPH
	BWC	2	1	0.0040	0.004	0.3263	0.0123	LCV_DAPH
	IHP	11	1	0.0040	0.004	0.3263	0.0123	LCV_DAPH
	LMB	23	2	0.0021	0.002	0.1840	0.0123	LCV_DAPH
	LWC	2	1	0.0020	0.002	0.1631	0.0123	LCV_DAPH
	W4T	9	2	0.0013	0.002	0.1740	0.0123	LCV_DAPH
	WOL	12	8	0.0028	0.003	0.2721	0.0123	LCV_DAPH
	WS	8	1	0.0020	0.002	0.1631	0.0123	LCV_DAPH
	1C	8	1	0.0020	0.002	0.1059	0.0189	LCV_FISH
	BWC	2	1	0.0040	0.004	0.2119	0.0189	LCV_FISH
	IHP	11	1	0.0040	0.004	0.2119	0.0189	LCV_FISH
	LMB	23	2	0.0021	0.002	0.1195	0.0189	LCV_FISH
	LWC	2	1	0.0020	0.002	0.1059	0.0189	LCV_FISH
	W4T	9	2	0.0013	0.002	0.1130	0.0189	LCV_FISH
	WOL	12	8	0.0028	0.003	0.1767	0.0189	LCV_FISH
	WS	8	1	0.0020	0.002	0.1059	0.0189	LCV_FISH
	1C	8	1	0.0020	0.002	0.0786	0.0255	LCV_NDI
	BWC	2	1	0.0040	0.004	0.1571	0.0255	LCV_NDI
	IHP	11	1	0.0040	0.004	0.1571	0.0255	LCV_NDI
	LMB	23	2	0.0021	0.002	0.0886	0.0255	LCV_NDI
	LWC	2	1	0.0020	0.002	0.0786	0.0255	LCV_NDI
	W4T	9	2	0.0013	0.002	0.0838	0.0255	LCV_NDI
	WOL	12	8	0.0028	0.003	0.1310	0.0255	LCV_NDI
	WS	8	1	0.0020	0.002	0.0786	0.0255	LCV_NDI
	1C	8	1	0.0020	0.002	0.0909	0.0220	LTV_FISH
	BWC	2	1	0.0040	0.004	0.1818	0.0220	LTV_FISH
	IHP	11	1	0.0040	0.004	0.1818	0.0220	LTV_FISH
	LMB	23	2	0.0021	0.002	0.1026	0.0220	LTV_FISH
	LWC	2	1	0.0020	0.002	0.0909	0.0220	LTV_FISH
	W4T	9	2	0.0013	0.002	0.0970	0.0220	LTV_FISH
	WOL	12	8	0.0028	0.003	0.1516	0.0220	LTV_FISH
	WS	8	1	0.0020	0.002	0.0909	0.0220	LTV_FISH
	1C	8	1	0.0020	0.002	0.0244	0.0820	NAWQ_ACU
	BWC	2	1	0.0040	0.004	0.0488	0.0820	NAWQ_ACU
	IHP	11	1	0.0040	0.004	0.0488	0.0820	NAWQ_ACU
	LMB	23	2	0.0021	0.002	0.0275	0.0820	NAWQ_ACU
	LWC	2	1	0.0020	0.002	0.0244	0.0820	NAWQ_ACU
	W4T	9	2	0.0013	0.002	0.0260	0.0820	NAWQ_ACU
	WOL	12	8	0.0028	0.003	0.0407	0.0820	NAWQ_ACU
	WS	8	1	0.0020	0.002	0.0244	0.0820	NAWQ_ACU
	1C	8	1	0.0020	0.002	0.6250	0.0032	NAWQ_CHR
	BWC	2	1	0.0040	0.004	1.2500	0.0032	NAWQ_CHR
	IHP	11	1	0.0040	0.004	1.2500	0.0032	NAWQ_CHR

	LMB	23	2	0.0021	0.002	0.7051	0.0032	NAWQ_CHR
	LWC	2	1	0.0020	0.002	0.6250	0.0032	NAWQ_CHR
	W4T	9	2	0.0013	0.002	0.6667	0.0032	NAWQ_CHR
	WOL	12	8	0.0028	0.003	1.0423	0.0032	NAWQ_CHR
	WS	8	1	0.0020	0.002	0.6250	0.0032	NAWQ_CHR
MAGNESIUM	1C	9	9	9.3944	10.548	0.1286	82.0000	LCV_ALLO
	1WC	2	2	9.5050	11.936	0.1456	82.0000	LCV_ALLO
	BWC	2	2	11.6500	43.534	0.5309	82.0000	LCV_ALLO
	HRT	8	8	9.2375	10.597	0.1292	82.0000	LCV_ALLO
	IHP	12	12	9.6750	10.468	0.1277	82.0000	LCV_ALLO
	LMB	29	29	11.7938	14.053	0.1714	82.0000	LCV_ALLO
	LWC	2	2	9.1950	19.329	0.2357	82.0000	LCV_ALLO
	MWC	18	18	9.1383	9.782	0.1193	82.0000	LCV_ALLO
	NWT	2	2	8.8550	22.398	0.2731	82.0000	LCV_ALLO
	RAC	2	2	4.7600	4.886	0.0596	82.0000	LCV_ALLO
	UMB	9	9	12.4356	18.128	0.2211	82.0000	LCV_ALLO
	W4T	16	16	16.0956	17.779	0.2168	82.0000	LCV_ALLO
	WOL	13	13	8.6508	9.471	0.1155	82.0000	LCV_ALLO
	WS	10	10	8.6190	10.216	0.1246	82.0000	LCV_ALLO
	1C	9	9	9.3944	10.548	0.1286	82.0000	LCV_DAPH
	1WC	2	2	9.5050	11.936	0.1456	82.0000	LCV_DAPH
	BWC	2	2	11.6500	43.534	0.5309	82.0000	LCV_DAPH
	HRT	8	8	9.2375	10.597	0.1292	82.0000	LCV_DAPH
	IHP	12	12	9.6750	10.468	0.1277	82.0000	LCV_DAPH
	LMB	29	29	11.7938	14.053	0.1714	82.0000	LCV_DAPH
	LWC	2	2	9.1950	19.329	0.2357	82.0000	LCV_DAPH
	MWC	18	18	9.1383	9.782	0.1193	82.0000	LCV_DAPH
	NWT	2	2	8.8550	22.398	0.2731	82.0000	LCV_DAPH
	RAC	2	2	4.7600	4.886	0.0596	82.0000	LCV_DAPH
	UMB	9	9	12.4356	18.128	0.2211	82.0000	LCV_DAPH
	W4T	16	16	16.0956	17.779	0.2168	82.0000	LCV_DAPH
	WOL	13	13	8.6508	9.471	0.1155	82.0000	LCV_DAPH
	WS	10	10	8.6190	10.216	0.1246	82.0000	LCV_DAPH
MANGANESE	1C	9	9	0.0258	0.034	0.0308	1.1000	LCV_ALLO
	1WC	2	2	0.0195	0.023	0.0206	1.1000	LCV_ALLO
	BWC	2	1	0.0080	0.008	0.0073	1.1000	LCV_ALLO
	HRT	8	8	0.0444	0.051	0.0462	1.1000	LCV_ALLO
	IHP	12	12	0.0248	0.030	0.0270	1.1000	LCV_ALLO
	LMB	29	29	0.1169	0.138	0.1255	1.1000	LCV_ALLO
	LWC	2	2	0.0345	0.057	0.0515	1.1000	LCV_ALLO
	MWC	18	18	0.0292	0.031	0.0284	1.1000	LCV_ALLO
	NWT	2	2	0.0350	0.149	0.1351	1.1000	LCV_ALLO
	RAC	2	2	0.7330	5.323	4.8392	1.1000	LCV_ALLO
	UMB	9	9	0.0552	0.075	0.0678	1.1000	LCV_ALLO
	W4T	16	16	0.7425	1.378	1.2531	1.1000	LCV_ALLO
	WOL	13	13	0.1461	0.177	0.1608	1.1000	LCV_ALLO
	WS	10	10	1.6078	3.223	2.9304	1.1000	LCV_ALLO
	1C	9	9	0.0258	0.034	0.0308	1.1000	LCV_DAPH
	1WC	2	2	0.0195	0.023	0.0206	1.1000	LCV_DAPH
	BWC	2	1	0.0080	0.008	0.0073	1.1000	LCV_DAPH
	HRT	8	8	0.0444	0.051	0.0462	1.1000	LCV_DAPH
	IHP	12	12	0.0248	0.030	0.0270	1.1000	LCV_DAPH
	LMB	29	29	0.1169	0.138	0.1255	1.1000	LCV_DAPH
	LWC	2	2	0.0345	0.057	0.0515	1.1000	LCV_DAPH
	MWC	18	18	0.0292	0.031	0.0284	1.1000	LCV_DAPH
	NWT	2	2	0.0350	0.149	0.1351	1.1000	LCV_DAPH
	RAC	2	2	0.7330	5.323	4.8392	1.1000	LCV_DAPH
	UMB	9	9	0.0552	0.075	0.0678	1.1000	LCV_DAPH
	W4T	16	16	0.7425	1.378	1.2531	1.1000	LCV_DAPH
	WOL	13	13	0.1461	0.177	0.1608	1.1000	LCV_DAPH
	WS	10	10	1.6078	3.223	2.9304	1.1000	LCV_DAPH
	1C	9	9	0.0258	0.034	0.0191	1.7700	LCV_FISH
	1WC	2	2	0.0195	0.023	0.0128	1.7700	LCV_FISH
	BWC	2	1	0.0080	0.008	0.0045	1.7700	LCV_FISH
	HRT	8	8	0.0444	0.051	0.0287	1.7700	LCV_FISH
	IHP	12	12	0.0248	0.030	0.0168	1.7700	LCV_FISH
	LMB	29	29	0.1169	0.138	0.0780	1.7700	LCV_FISH
	LWC	2	2	0.0345	0.057	0.0320	1.7700	LCV_FISH
	MWC	18	18	0.0292	0.031	0.0177	1.7700	LCV_FISH

	NWT	2	2	0.0350	0.149	0.0840	1.7700	LCV_FISH
	RAC	2	2	0.7330	5.323	3.0074	1.7700	LCV_FISH
	UMB	9	9	0.0552	0.075	0.0421	1.7700	LCV_FISH
	W4T	16	16	0.7425	1.378	0.7787	1.7700	LCV_FISH
	WOL	13	13	0.1461	0.177	0.1000	1.7700	LCV_FISH
	WS	10	10	1.6078	3.223	1.8211	1.7700	LCV_FISH
	1C	9	9	0.0258	0.034	0.0308	1.1000	LTV_DAPH
	1WC	2	2	0.0195	0.023	0.0206	1.1000	LTV_DAPH
	BWC	2	1	0.0080	0.008	0.0073	1.1000	LTV_DAPH
	HRT	8	8	0.0444	0.051	0.0462	1.1000	LTV_DAPH
	IHP	12	12	0.0248	0.030	0.0270	1.1000	LTV_DAPH
	LMB	29	29	0.1169	0.138	0.1255	1.1000	LTV_DAPH
	LWC	2	2	0.0345	0.057	0.0515	1.1000	LTV_DAPH
	MWC	18	18	0.0292	0.031	0.0284	1.1000	LTV_DAPH
	NWT	2	2	0.0350	0.149	0.1351	1.1000	LTV_DAPH
	RAC	2	2	0.7330	5.323	4.8392	1.1000	LTV_DAPH
	UMB	9	9	0.0552	0.075	0.0678	1.1000	LTV_DAPH
	W4T	16	16	0.7425	1.378	1.2531	1.1000	LTV_DAPH
	WOL	13	13	0.1461	0.177	0.1608	1.1000	LTV_DAPH
	WS	10	10	1.6078	3.223	2.9304	1.1000	LTV_DAPH
	1C	9	9	0.0258	0.034	0.0267	1.2700	LTV_FISH
	1WC	2	2	0.0195	0.023	0.0178	1.2700	LTV_FISH
	BWC	2	1	0.0080	0.008	0.0063	1.2700	LTV_FISH
	HRT	8	8	0.0444	0.051	0.0401	1.2700	LTV_FISH
	IHP	12	12	0.0248	0.030	0.0234	1.2700	LTV_FISH
	LMB	29	29	0.1169	0.138	0.1087	1.2700	LTV_FISH
	LWC	2	2	0.0345	0.057	0.0446	1.2700	LTV_FISH
	MWC	18	18	0.0292	0.031	0.0246	1.2700	LTV_FISH
	NWT	2	2	0.0350	0.149	0.1170	1.2700	LTV_FISH
	RAC	2	2	0.7330	5.323	4.1914	1.2700	LTV_FISH
	UMB	9	9	0.0552	0.075	0.0587	1.2700	LTV_FISH
	W4T	16	16	0.7425	1.378	1.0853	1.2700	LTV_FISH
	WOL	13	13	0.1461	0.177	0.1393	1.2700	LTV_FISH
	WS	10	10	1.6078	3.223	2.5381	1.2700	LTV_FISH
	1C	9	9	0.0258	0.034	0.0230	1.4700	S_ACU_V
	1WC	2	2	0.0195	0.023	0.0154	1.4700	S_ACU_V
	BWC	2	1	0.0080	0.008	0.0054	1.4700	S_ACU_V
	HRT	8	8	0.0444	0.051	0.0346	1.4700	S_ACU_V
	IHP	12	12	0.0248	0.030	0.0202	1.4700	S_ACU_V
	LMB	29	29	0.1169	0.138	0.0939	1.4700	S_ACU_V
	LWC	2	2	0.0345	0.057	0.0385	1.4700	S_ACU_V
	MWC	18	18	0.0292	0.031	0.0213	1.4700	S_ACU_V
	NWT	2	2	0.0350	0.149	0.1011	1.4700	S_ACU_V
	RAC	2	2	0.7330	5.323	3.6212	1.4700	S_ACU_V
	UMB	9	9	0.0552	0.075	0.0507	1.4700	S_ACU_V
	W4T	16	16	0.7425	1.378	0.9377	1.4700	S_ACU_V
	WOL	13	13	0.1461	0.177	0.1204	1.4700	S_ACU_V
	WS	10	10	1.6078	3.223	2.1928	1.4700	S_ACU_V
	1C	9	9	0.0258	0.034	0.4219	0.0803	S_CHR_V
	1WC	2	2	0.0195	0.023	0.2822	0.0803	S_CHR_V
	BWC	2	1	0.0080	0.008	0.0996	0.0803	S_CHR_V
	HRT	8	8	0.0444	0.051	0.6335	0.0803	S_CHR_V
	IHP	12	12	0.0248	0.030	0.3697	0.0803	S_CHR_V
	LMB	29	29	0.1169	0.138	1.7190	0.0803	S_CHR_V
	LWC	2	2	0.0345	0.057	0.7048	0.0803	S_CHR_V
	MWC	18	18	0.0292	0.031	0.3896	0.0803	S_CHR_V
	NWT	2	2	0.0350	0.149	1.8512	0.0803	S_CHR_V
	RAC	2	2	0.7330	5.323	66.2901	0.0803	S_CHR_V
	UMB	9	9	0.0552	0.075	0.9281	0.0803	S_CHR_V
	W4T	16	16	0.7425	1.378	17.1654	0.0803	S_CHR_V
	WOL	13	13	0.1461	0.177	2.2034	0.0803	S_CHR_V
	WS	10	10	1.6078	3.223	40.1422	0.0803	S_CHR_V
MERCURY	LMB	17	1	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	MWC	13	1	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	WOL	10	2	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	WS	7	1	0.0000	0.000	0.0000	0.0002	LCV_ALLO
	LMB	17	1	0.0000	0.000	0.0000	0.0050	LCV_AQPL
	MWC	13	1	0.0000	0.000	0.0000	0.0050	LCV_AQPL
	WOL	10	2	0.0000	0.000	0.0000	0.0050	LCV_AQPL
	WS	7	1	0.0000	0.000	0.0000	0.0050	LCV_AQPL

	LMB	17	1	0.0000	0.000	0.0000	0.0010	LCV_DAPH
	MWC	13	1	0.0000	0.000	0.0000	0.0010	LCV_DAPH
	WOL	10	2	0.0000	0.000	0.0000	0.0010	LCV_DAPH
	WS	7	1	0.0000	0.000	0.0000	0.0010	LCV_DAPH
	LMB	17	1	0.0000	0.000	0.0000	0.0002	LCV_FISH
	MWC	13	1	0.0000	0.000	0.0000	0.0002	LCV_FISH
	WOL	10	2	0.0000	0.000	0.0000	0.0002	LCV_FISH
	WS	7	1	0.0000	0.000	0.0000	0.0002	LCV_FISH
	LMB	17	1	0.0000	0.000	0.0000	0.0009	LTV_DAPH
	MWC	13	1	0.0000	0.000	0.0000	0.0009	LTV_DAPH
	WOL	10	2	0.0000	0.000	0.0000	0.0009	LTV_DAPH
	WS	7	1	0.0000	0.000	0.0000	0.0009	LTV_DAPH
	LMB	17	1	0.0000	0.000	0.0000	0.0009	LTV_FISH
	MWC	13	1	0.0000	0.000	0.0000	0.0009	LTV_FISH
	WOL	10	2	0.0000	0.000	0.0000	0.0009	LTV_FISH
	WS	7	1	0.0000	0.000	0.0000	0.0009	LTV_FISH
	LMB	17	1	0.0000	0.000	0.0000	0.0024	NAWQ_ACU
	MWC	13	1	0.0000	0.000	0.0000	0.0024	NAWQ_ACU
	WOL	10	2	0.0000	0.000	0.0000	0.0024	NAWQ_ACU
	WS	7	1	0.0000	0.000	0.0000	0.0024	NAWQ_ACU
	LMB	17	1	0.0000	0.000	0.0000	0.0013	S_CHR_V
	MWC	13	1	0.0000	0.000	0.0000	0.0013	S_CHR_V
	WOL	10	2	0.0000	0.000	0.0000	0.0013	S_CHR_V
	WS	7	1	0.0000	0.000	0.0000	0.0013	S_CHR_V
MOLYBDENUM	RAC	2	1	0.0120	0.012	0.0136	0.8800	LCV_ALLO
	W4T	16	6	0.0152	0.019	0.0221	0.8800	LCV_ALLO
	RAC	2	1	0.0120	0.012	0.0136	0.8800	LCV_DAPH
	W4T	16	6	0.0152	0.019	0.0221	0.8800	LCV_DAPH
	RAC	2	1	0.0120	0.012	0.0333	0.3600	LTV_DAPH
	W4T	16	6	0.0152	0.019	0.0541	0.3600	LTV_DAPH
	RAC	2	1	0.0120	0.012	0.0012	10.1000	S_ACU_V
	W4T	16	6	0.0152	0.019	0.0019	10.1000	S_ACU_V
	RAC	2	1	0.0120	0.012	0.0502	0.2390	S_CHR_V
	W4T	16	6	0.0152	0.019	0.0816	0.2390	S_CHR_V
Methylene chloride	1C	1	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	LMB	1	1	0.0010	0.001	0.0000	42.6670	LCV_ALLO
	MWC	1	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	NWT	1	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	RAC	1	1	0.0020	0.002	0.0000	42.6670	LCV_ALLO
	UMB	1	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	W4T	3	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	WOL	1	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	WS	1	1	0.0000	0.000	0.0000	42.6670	LCV_ALLO
	1C	1	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	LMB	1	1	0.0010	0.001	0.0000	42.6670	LCV_DAPH
	MWC	1	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	NWT	1	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	RAC	1	1	0.0020	0.002	0.0000	42.6670	LCV_DAPH
	UMB	1	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	W4T	3	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	WOL	1	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	WS	1	1	0.0000	0.000	0.0000	42.6670	LCV_DAPH
	1C	1	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	LMB	1	1	0.0010	0.001	0.0000	108.0000	LCV_FISH
	MWC	1	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	NWT	1	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	RAC	1	1	0.0020	0.002	0.0000	108.0000	LCV_FISH
	UMB	1	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	W4T	3	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	WOL	1	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	WS	1	1	0.0000	0.000	0.0000	108.0000	LCV_FISH
	1C	1	1	0.0000	0.000	0.0000	0.4100	LTV_FISH
	LMB	1	1	0.0010	0.001	0.0024	0.4100	LTV_FISH
	MWC	1	1	0.0000	0.000	0.0000	0.4100	LTV_FISH
	NWT	1	1	0.0000	0.000	0.0000	0.4100	LTV_FISH
	RAC	1	1	0.0020	0.002	0.0049	0.4100	LTV_FISH
	UMB	1	1	0.0000	0.000	0.0000	0.4100	LTV_FISH
	W4T	3	1	0.0000	0.000	0.0000	0.4100	LTV_FISH
	WOL	1	1	0.0000	0.000	0.0000	0.4100	LTV_FISH

	WS	1	1	0.0000	0.000	0.0000	0.4100	LTV_FISH
	1C	1	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	LMB	1	1	0.0010	0.001	0.0000	25.6000	S_ACU_V
	MWC	1	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	NWT	1	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	RAC	1	1	0.0020	0.002	0.0001	25.6000	S_ACU_V
	UMB	1	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	W4T	3	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	WOL	1	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	WS	1	1	0.0000	0.000	0.0000	25.6000	S_ACU_V
	1C	1	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
	LMB	1	1	0.0010	0.001	0.0004	2.2400	S_CHR_V
	MWC	1	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
	NWT	1	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
	RAC	1	1	0.0020	0.002	0.0009	2.2400	S_CHR_V
	UMB	1	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
	W4T	3	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
	WOL	1	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
	WS	1	1	0.0000	0.000	0.0000	2.2400	S_CHR_V
NICKEL	LMB	29	1	0.0070	0.007	1.4000	0.0050	LCV_ALLO
	W4T	16	5	0.0136	0.015	3.0380	0.0050	LCV_ALLO
	WS	10	4	0.0104	0.014	2.8210	0.0050	LCV_ALLO
	LMB	29	1	0.0070	0.007	1.4000	0.0050	LCV_AQPL
	W4T	16	5	0.0136	0.015	3.0380	0.0050	LCV_AQPL
	WS	10	4	0.0104	0.014	2.8210	0.0050	LCV_AQPL
	LMB	29	1	0.0070	0.007	1.4000	0.0050	LCV_DAPH
	W4T	16	5	0.0136	0.015	3.0380	0.0050	LCV_DAPH
	WS	10	4	0.0104	0.014	2.8210	0.0050	LCV_DAPH
	LMB	29	1	0.0070	0.007	0.2000	0.0350	LCV_FISH
	W4T	16	5	0.0136	0.015	0.4340	0.0350	LCV_FISH
	WS	10	4	0.0104	0.014	0.4030	0.0350	LCV_FISH
	LMB	29	1	0.0070	0.007	0.0545	0.1284	LCV_NDI
	W4T	16	5	0.0136	0.015	0.1183	0.1284	LCV_NDI
	WS	10	4	0.0104	0.014	0.1099	0.1284	LCV_NDI
	LMB	29	1	0.0070	0.007	0.1556	0.0450	LTV_DAPH
	W4T	16	5	0.0136	0.015	0.3376	0.0450	LTV_DAPH
	WS	10	4	0.0104	0.014	0.3134	0.0450	LTV_DAPH
	LMB	29	1	0.0070	0.007	0.1129	0.0620	LTV_FISH
	W4T	16	5	0.0136	0.015	0.2450	0.0620	LTV_FISH
	WS	10	4	0.0104	0.014	0.2275	0.0620	LTV_FISH
	LMB	29	1	0.0070	0.007	0.0050	1.4000	NAWQ_ACU
	W4T	16	5	0.0136	0.015	0.0108	1.4000	NAWQ_ACU
	WS	10	4	0.0104	0.014	0.0101	1.4000	NAWQ_ACU
	LMB	29	1	0.0070	0.007	0.0438	0.1600	NAWQ_CHR
	W4T	16	5	0.0136	0.015	0.0949	0.1600	NAWQ_CHR
	WS	10	4	0.0104	0.014	0.0882	0.1600	NAWQ_CHR
POTASSIUM	1C	9	7	0.9363	1.066	0.0201	53.0000	LCV_ALLO
	1WC	2	2	1.6850	2.032	0.0383	53.0000	LCV_ALLO
	BWC	2	1	0.8870	0.887	0.0167	53.0000	LCV_ALLO
	HRT	8	8	1.8813	2.108	0.0398	53.0000	LCV_ALLO
	IHP	12	11	1.8167	2.057	0.0388	53.0000	LCV_ALLO
	LMB	29	28	2.0054	2.276	0.0429	53.0000	LCV_ALLO
	LWC	2	1	1.2000	1.200	0.0226	53.0000	LCV_ALLO
	MWC	18	17	1.7764	1.980	0.0374	53.0000	LCV_ALLO
	NWT	2	1	1.5900	1.590	0.0300	53.0000	LCV_ALLO
	RAC	2	1	0.8990	0.899	0.0170	53.0000	LCV_ALLO
	UMB	9	9	2.5233	3.478	0.0656	53.0000	LCV_ALLO
	W4T	16	16	7.0494	9.129	0.1722	53.0000	LCV_ALLO
	WOL	13	12	1.7679	2.005	0.0378	53.0000	LCV_ALLO
	WS	10	8	1.7448	2.089	0.0394	53.0000	LCV_ALLO
	1C	9	7	0.9363	1.066	0.0201	53.0000	LCV_DAPH
	1WC	2	2	1.6850	2.032	0.0383	53.0000	LCV_DAPH
	BWC	2	1	0.8870	0.887	0.0167	53.0000	LCV_DAPH
	HRT	8	8	1.8813	2.108	0.0398	53.0000	LCV_DAPH
	IHP	12	11	1.8167	2.057	0.0388	53.0000	LCV_DAPH
	LMB	29	28	2.0054	2.276	0.0429	53.0000	LCV_DAPH
	LWC	2	1	1.2000	1.200	0.0226	53.0000	LCV_DAPH
	MWC	18	17	1.7764	1.980	0.0374	53.0000	LCV_DAPH
	NWT	2	1	1.5900	1.590	0.0300	53.0000	LCV_DAPH

	RAC	2	1	0.8990	0.899	0.0170	53.0000	LCV_DAPH
	UMB	9	9	2.5233	3.478	0.0656	53.0000	LCV_DAPH
	W4T	16	16	7.0494	9.129	0.1722	53.0000	LCV_DAPH
	WOL	13	12	1.7679	2.005	0.0378	53.0000	LCV_DAPH
	WS	10	8	1.7448	2.089	0.0394	53.0000	LCV_DAPH
SILVER	BWC	2	1	0.0040	0.004	33.3333	0.0001	LCV_ALLO
	IHP	12	1	0.0040	0.004	33.3333	0.0001	LCV_ALLO
	W4T	16	1	0.0040	0.004	33.3333	0.0001	LCV_ALLO
	BWC	2	1	0.0040	0.004	0.1333	0.0300	LCV_AQPL
	IHP	12	1	0.0040	0.004	0.1333	0.0300	LCV_AQPL
	W4T	16	1	0.0040	0.004	0.1333	0.0300	LCV_AQPL
	BWC	2	1	0.0040	0.004	1.5385	0.0026	LCV_DAPH
	IHP	12	1	0.0040	0.004	1.5385	0.0026	LCV_DAPH
	W4T	16	1	0.0040	0.004	1.5385	0.0026	LCV_DAPH
	BWC	2	1	0.0040	0.004	33.3333	0.0001	LCV_FISH
	IHP	12	1	0.0040	0.004	33.3333	0.0001	LCV_FISH
	W4T	16	1	0.0040	0.004	33.3333	0.0001	LCV_FISH
	BWC	2	1	0.0040	0.004	7.1429	0.0006	LTV_DAPH
	IHP	12	1	0.0040	0.004	7.1429	0.0006	LTV_DAPH
	W4T	16	1	0.0040	0.004	7.1429	0.0006	LTV_DAPH
	BWC	2	1	0.0040	0.004	20.0000	0.0002	LTV_FISH
	IHP	12	1	0.0040	0.004	20.0000	0.0002	LTV_FISH
	W4T	16	1	0.0040	0.004	20.0000	0.0002	LTV_FISH
	BWC	2	1	0.0040	0.004	0.9756	0.0041	NAWQ_ACU
	IHP	12	1	0.0040	0.004	0.9756	0.0041	NAWQ_ACU
	W4T	16	1	0.0040	0.004	0.9756	0.0041	NAWQ_ACU
	BWC	2	1	0.0040	0.004	11.1111	0.0004	S_CHR_V
	IHP	12	1	0.0040	0.004	11.1111	0.0004	S_CHR_V
	W4T	16	1	0.0040	0.004	11.1111	0.0004	S_CHR_V
SODIUM	1C	9	9	4.5044	6.144	0.0090	680.0000	LCV_ALLO
	1WC	2	2	18.8500	40.001	0.0588	680.0000	LCV_ALLO
	BWC	2	1	0.5230	0.523	0.0008	680.0000	LCV_ALLO
	HRT	8	8	5.0038	5.694	0.0084	680.0000	LCV_ALLO
	IHP	12	12	16.4375	19.317	0.0284	680.0000	LCV_ALLO
	LMB	29	29	7.4876	8.950	0.0132	680.0000	LCV_ALLO
	LWC	2	2	17.4800	72.536	0.1067	680.0000	LCV_ALLO
	MWC	18	18	15.6189	18.004	0.0265	680.0000	LCV_ALLO
	NWT	2	2	3.4500	6.354	0.0093	680.0000	LCV_ALLO
	RAC	2	2	2.3700	3.570	0.0052	680.0000	LCV_ALLO
	UMB	9	9	7.6311	11.164	0.0164	680.0000	LCV_ALLO
	W4T	16	16	13.3956	15.115	0.0222	680.0000	LCV_ALLO
	WOL	13	13	13.3846	15.932	0.0234	680.0000	LCV_ALLO
	WS	10	10	26.6400	41.874	0.0616	680.0000	LCV_ALLO
	1C	9	9	4.5044	6.144	0.0090	680.0000	LCV_DAPH
	1WC	2	2	18.8500	40.001	0.0588	680.0000	LCV_DAPH
	BWC	2	1	0.5230	0.523	0.0008	680.0000	LCV_DAPH
	HRT	8	8	5.0038	5.694	0.0084	680.0000	LCV_DAPH
	IHP	12	12	16.4375	19.317	0.0284	680.0000	LCV_DAPH
	LMB	29	29	7.4876	8.950	0.0132	680.0000	LCV_DAPH
	LWC	2	2	17.4800	72.536	0.1067	680.0000	LCV_DAPH
	MWC	18	18	15.6189	18.004	0.0265	680.0000	LCV_DAPH
	NWT	2	2	3.4500	6.354	0.0093	680.0000	LCV_DAPH
	RAC	2	2	2.3700	3.570	0.0052	680.0000	LCV_DAPH
	UMB	9	9	7.6311	11.164	0.0164	680.0000	LCV_DAPH
	W4T	16	16	13.3956	15.115	0.0222	680.0000	LCV_DAPH
	WOL	13	13	13.3846	15.932	0.0234	680.0000	LCV_DAPH
	WS	10	10	26.6400	41.874	0.0616	680.0000	LCV_DAPH
STRONTIUM	1C	9	9	0.0829	0.095	0.0023	42.0000	LCV_ALLO
	1WC	2	2	0.0925	0.134	0.0032	42.0000	LCV_ALLO
	BWC	2	1	0.0360	0.036	0.0009	42.0000	LCV_ALLO
	HRT	8	8	0.0941	0.107	0.0026	42.0000	LCV_ALLO
	IHP	12	12	0.0973	0.106	0.0025	42.0000	LCV_ALLO
	LMB	29	29	0.1344	0.156	0.0037	42.0000	LCV_ALLO
	LWC	2	2	0.1000	0.207	0.0049	42.0000	LCV_ALLO
	MWC	18	18	0.0924	0.100	0.0024	42.0000	LCV_ALLO
	NWT	2	2	0.0965	0.169	0.0040	42.0000	LCV_ALLO
	RAC	2	2	0.1250	0.232	0.0055	42.0000	LCV_ALLO
	UMB	9	9	0.1467	0.200	0.0048	42.0000	LCV_ALLO

	W4T	16	16	0.1990	0.230	0.0055	42.0000	LCV_ALLO
	WOL	13	13	0.0960	0.105	0.0025	42.0000	LCV_ALLO
	WS	10	10	0.0938	0.116	0.0028	42.0000	LCV_ALLO
	1C	9	9	0.0829	0.095	0.0023	42.0000	LCV_DAPH
	1WC	2	2	0.0925	0.134	0.0032	42.0000	LCV_DAPH
	BWC	2	1	0.0360	0.036	0.0009	42.0000	LCV_DAPH
	HRT	8	8	0.0941	0.107	0.0026	42.0000	LCV_DAPH
	IHP	12	12	0.0973	0.106	0.0025	42.0000	LCV_DAPH
	LMB	29	29	0.1344	0.156	0.0037	42.0000	LCV_DAPH
	LWC	2	2	0.1000	0.207	0.0049	42.0000	LCV_DAPH
	MWC	18	18	0.0924	0.100	0.0024	42.0000	LCV_DAPH
	NWT	2	2	0.0965	0.169	0.0040	42.0000	LCV_DAPH
	RAC	2	2	0.1250	0.232	0.0055	42.0000	LCV_DAPH
	UMB	9	9	0.1467	0.200	0.0048	42.0000	LCV_DAPH
	W4T	16	16	0.1990	0.230	0.0055	42.0000	LCV_DAPH
	WOL	13	13	0.0960	0.105	0.0025	42.0000	LCV_DAPH
	WS	10	10	0.0938	0.116	0.0028	42.0000	LCV_DAPH
	1C	9	9	0.0829	0.095	0.0156	6.1000	S_ACU_V
	1WC	2	2	0.0925	0.134	0.0219	6.1000	S_ACU_V
	BWC	2	1	0.0360	0.036	0.0059	6.1000	S_ACU_V
	HRT	8	8	0.0941	0.107	0.0176	6.1000	S_ACU_V
	IHP	12	12	0.0973	0.106	0.0174	6.1000	S_ACU_V
	LMB	29	29	0.1344	0.156	0.0256	6.1000	S_ACU_V
	LWC	2	2	0.1000	0.207	0.0340	6.1000	S_ACU_V
	MWC	18	18	0.0924	0.100	0.0163	6.1000	S_ACU_V
	NWT	2	2	0.0965	0.169	0.0277	6.1000	S_ACU_V
	RAC	2	2	0.1250	0.232	0.0381	6.1000	S_ACU_V
	UMB	9	9	0.1467	0.200	0.0327	6.1000	S_ACU_V
	W4T	16	16	0.1990	0.230	0.0377	6.1000	S_ACU_V
	WOL	13	13	0.0960	0.105	0.0172	6.1000	S_ACU_V
	WS	10	10	0.0938	0.116	0.0191	6.1000	S_ACU_V
	1C	9	9	0.0829	0.095	0.1535	0.6200	S_CHR_V
	1WC	2	2	0.0925	0.134	0.2154	0.6200	S_CHR_V
	BWC	2	1	0.0360	0.036	0.0581	0.6200	S_CHR_V
	HRT	8	8	0.0941	0.107	0.1731	0.6200	S_CHR_V
	IHP	12	12	0.0973	0.106	0.1707	0.6200	S_CHR_V
	LMB	29	29	0.1344	0.156	0.2519	0.6200	S_CHR_V
	LWC	2	2	0.1000	0.207	0.3344	0.6200	S_CHR_V
	MWC	18	18	0.0924	0.100	0.1607	0.6200	S_CHR_V
	NWT	2	2	0.0965	0.169	0.2728	0.6200	S_CHR_V
	RAC	2	2	0.1250	0.232	0.3747	0.6200	S_CHR_V
	UMB	9	9	0.1467	0.200	0.3221	0.6200	S_CHR_V
	W4T	16	16	0.1990	0.230	0.3711	0.6200	S_CHR_V
	WOL	13	13	0.0960	0.105	0.1691	0.6200	S_CHR_V
	WS	10	10	0.0938	0.116	0.1877	0.6200	S_CHR_V
Trichloroethene	RAC	1	1	0.0010	0.001	0.0001	7.2570	LCV_ALLO
	W4T	3	1	0.0010	0.001	0.0001	7.2570	LCV_ALLO
	RAC	1	1	0.0010	0.001	0.0001	7.2570	LCV_DAPH
	W4T	3	1	0.0010	0.001	0.0001	7.2570	LCV_DAPH
	RAC	1	1	0.0010	0.001	0.0001	14.8670	LCV_FISH
	W4T	3	1	0.0010	0.001	0.0001	14.8670	LCV_FISH
	RAC	1	1	0.0010	0.001	0.0002	5.7580	LTV_FISH
	W4T	3	1	0.0010	0.001	0.0002	5.7580	LTV_FISH
	RAC	1	1	0.0010	0.001	0.0002	4.3500	S_ACU_V
	W4T	3	1	0.0010	0.001	0.0002	4.3500	S_ACU_V
	RAC	1	1	0.0010	0.001	0.0022	0.4650	S_CHR_V
	W4T	3	1	0.0010	0.001	0.0022	0.4650	S_CHR_V
VANADIUM	IHP	12	1	0.0040	0.004	0.0500	0.0800	LCV_ALLO
	LMB	29	1	0.0020	0.002	0.0250	0.0800	LCV_ALLO
	UMB	9	1	0.0020	0.002	0.0250	0.0800	LCV_ALLO
	WOL	13	2	0.0033	0.004	0.0480	0.0800	LCV_ALLO
	IHP	12	1	0.0040	0.004	0.0043	0.9400	LCV_DAPH
	LMB	29	1	0.0020	0.002	0.0021	0.9400	LCV_DAPH
	UMB	9	1	0.0020	0.002	0.0021	0.9400	LCV_DAPH
	WOL	13	2	0.0033	0.004	0.0041	0.9400	LCV_DAPH
	IHP	12	1	0.0040	0.004	0.0500	0.0800	LCV_FISH
	LMB	29	1	0.0020	0.002	0.0250	0.0800	LCV_FISH
	UMB	9	1	0.0020	0.002	0.0250	0.0800	LCV_FISH
	WOL	13	2	0.0033	0.004	0.0480	0.0800	LCV_FISH

	IHP	12	1	0.0040	0.004	0.0093	0.4300	LTV_DAPH
	LMB	29	1	0.0020	0.002	0.0047	0.4300	LTV_DAPH
	UMB	9	1	0.0020	0.002	0.0047	0.4300	LTV_DAPH
	WOL	13	2	0.0033	0.004	0.0089	0.4300	LTV_DAPH
	IHP	12	1	0.0040	0.004	0.0976	0.0410	LTV_FISH
	LMB	29	1	0.0020	0.002	0.0488	0.0410	LTV_FISH
	UMB	9	1	0.0020	0.002	0.0488	0.0410	LTV_FISH
	WOL	13	2	0.0033	0.004	0.0936	0.0410	LTV_FISH
	IHP	12	1	0.0040	0.004	0.0141	0.2840	S_ACU_V
	LMB	29	1	0.0020	0.002	0.0070	0.2840	S_ACU_V
	UMB	9	1	0.0020	0.002	0.0070	0.2840	S_ACU_V
	WOL	13	2	0.0033	0.004	0.0135	0.2840	S_ACU_V
	IHP	12	1	0.0040	0.004	0.2094	0.0191	S_CHR_V
	LMB	29	1	0.0020	0.002	0.1047	0.0191	S_CHR_V
	UMB	9	1	0.0020	0.002	0.1047	0.0191	S_CHR_V
	WOL	13	2	0.0033	0.004	0.2010	0.0191	S_CHR_V
Vinyl chloride	W4T	3	1	0.0000	0.000	0.0000	28.8790	LCV_ALLO
	W4T	3	1	0.0000	0.000	0.0000	28.8790	LCV_FISH
	W4T	3	1	0.0000	0.000	0.0000	14.5200	LTV_FISH
	W4T	3	1	0.0000	0.000	0.0000	1.5700	S_ACU_V
	W4T	3	1	0.0000	0.000	0.0000	0.0878	S_CHR_V
ZINC	1C	9	4	0.0193	0.028	0.9435	0.0300	LCV_ALLO
	1WC	2	2	0.0660	0.262	8.7242	0.0300	LCV_ALLO
	HRT	8	3	0.0044	0.007	0.2177	0.0300	LCV_ALLO
	IHP	11	9	0.0373	0.045	1.4882	0.0300	LCV_ALLO
	LMB	28	18	0.0124	0.014	0.4730	0.0300	LCV_ALLO
	MWC	17	11	0.0251	0.027	0.9161	0.0300	LCV_ALLO
	UMB	9	6	0.0569	0.114	3.7985	0.0300	LCV_ALLO
	W4T	16	6	0.0083	0.013	0.4240	0.0300	LCV_ALLO
	WOL	12	7	0.0363	0.053	1.7608	0.0300	LCV_ALLO
	WS	8	5	0.0083	0.015	0.5070	0.0300	LCV_ALLO
	1C	9	4	0.0193	0.028	0.9435	0.0300	LCV_AQPL
	1WC	2	2	0.0660	0.262	8.7242	0.0300	LCV_AQPL
	HRT	8	3	0.0044	0.007	0.2177	0.0300	LCV_AQPL
	IHP	11	9	0.0373	0.045	1.4882	0.0300	LCV_AQPL
	LMB	28	18	0.0124	0.014	0.4730	0.0300	LCV_AQPL
	MWC	17	11	0.0251	0.027	0.9161	0.0300	LCV_AQPL
	UMB	9	6	0.0569	0.114	3.7985	0.0300	LCV_AQPL
	W4T	16	6	0.0083	0.013	0.4240	0.0300	LCV_AQPL
	WOL	12	7	0.0363	0.053	1.7608	0.0300	LCV_AQPL
	WS	8	5	0.0083	0.015	0.5070	0.0300	LCV_AQPL
	1C	9	4	0.0193	0.028	0.6057	0.0467	LCV_DAPH
	1WC	2	2	0.0660	0.262	5.6008	0.0467	LCV_DAPH
	HRT	8	3	0.0044	0.007	0.1398	0.0467	LCV_DAPH
	IHP	11	9	0.0373	0.045	0.9554	0.0467	LCV_DAPH
	LMB	28	18	0.0124	0.014	0.3037	0.0467	LCV_DAPH
	MWC	17	11	0.0251	0.027	0.5881	0.0467	LCV_DAPH
	UMB	9	6	0.0569	0.114	2.4386	0.0467	LCV_DAPH
	W4T	16	6	0.0083	0.013	0.2722	0.0467	LCV_DAPH
	WOL	12	7	0.0363	0.053	1.1304	0.0467	LCV_DAPH
	WS	8	5	0.0083	0.015	0.3255	0.0467	LCV_DAPH
	1C	9	4	0.0193	0.028	0.7774	0.0364	LCV_FISH
	1WC	2	2	0.0660	0.262	7.1883	0.0364	LCV_FISH
	HRT	8	3	0.0044	0.007	0.1794	0.0364	LCV_FISH
	IHP	11	9	0.0373	0.045	1.2262	0.0364	LCV_FISH
	LMB	28	18	0.0124	0.014	0.3898	0.0364	LCV_FISH
	MWC	17	11	0.0251	0.027	0.7548	0.0364	LCV_FISH
	UMB	9	6	0.0569	0.114	3.1298	0.0364	LCV_FISH
	W4T	16	6	0.0083	0.013	0.3494	0.0364	LCV_FISH
	WOL	12	7	0.0363	0.053	1.4508	0.0364	LCV_FISH
	WS	8	5	0.0083	0.015	0.4177	0.0364	LCV_FISH
	1C	9	4	0.0193	0.028	0.0054	5.2430	LCV_NDI
	1WC	2	2	0.0660	0.262	0.0499	5.2430	LCV_NDI
	HRT	8	3	0.0044	0.007	0.0012	5.2430	LCV_NDI
	IHP	11	9	0.0373	0.045	0.0085	5.2430	LCV_NDI
	LMB	28	18	0.0124	0.014	0.0027	5.2430	LCV_NDI
	MWC	17	11	0.0251	0.027	0.0052	5.2430	LCV_NDI
	UMB	9	6	0.0569	0.114	0.0217	5.2430	LCV_NDI
	W4T	16	6	0.0083	0.013	0.0024	5.2430	LCV_NDI

WOL	12	7	0.0363	0.053	0.0101	5.2430	LCV_NDI
WS	8	5	0.0083	0.015	0.0029	5.2430	LCV_NDI
1C	9	4	0.0193	0.028	0.6022	0.0470	LTV_FISH
1WC	2	2	0.0660	0.262	5.5686	0.0470	LTV_FISH
HRT	8	3	0.0044	0.007	0.1390	0.0470	LTV_FISH
IHP	11	9	0.0373	0.045	0.9499	0.0470	LTV_FISH
LMB	28	18	0.0124	0.014	0.3019	0.0470	LTV_FISH
MWC	17	11	0.0251	0.027	0.5847	0.0470	LTV_FISH
UMB	9	6	0.0569	0.114	2.4246	0.0470	LTV_FISH
W4T	16	6	0.0083	0.013	0.2706	0.0470	LTV_FISH
WOL	12	7	0.0363	0.053	1.1239	0.0470	LTV_FISH
WS	8	5	0.0083	0.015	0.3236	0.0470	LTV_FISH
1C	9	4	0.0193	0.028	0.2359	0.1200	NAWQ_ACU
1WC	2	2	0.0660	0.262	2.1811	0.1200	NAWQ_ACU
HRT	8	3	0.0044	0.007	0.0544	0.1200	NAWQ_ACU
IHP	11	9	0.0373	0.045	0.3721	0.1200	NAWQ_ACU
LMB	28	18	0.0124	0.014	0.1183	0.1200	NAWQ_ACU
MWC	17	11	0.0251	0.027	0.2290	0.1200	NAWQ_ACU
UMB	9	6	0.0569	0.114	0.9496	0.1200	NAWQ_ACU
W4T	16	6	0.0083	0.013	0.1060	0.1200	NAWQ_ACU
WOL	12	7	0.0363	0.053	0.4402	0.1200	NAWQ_ACU
WS	8	5	0.0083	0.015	0.1267	0.1200	NAWQ_ACU
1C	9	4	0.0193	0.028	0.2573	0.1100	NAWQ_CHR
1WC	2	2	0.0660	0.262	2.3793	0.1100	NAWQ_CHR
HRT	8	3	0.0044	0.007	0.0594	0.1100	NAWQ_CHR
IHP	11	9	0.0373	0.045	0.4059	0.1100	NAWQ_CHR
LMB	28	18	0.0124	0.014	0.1290	0.1100	NAWQ_CHR
MWC	17	11	0.0251	0.027	0.2498	0.1100	NAWQ_CHR
UMB	9	6	0.0569	0.114	1.0360	0.1100	NAWQ_CHR
W4T	16	6	0.0083	0.013	0.1156	0.1100	NAWQ_CHR
WOL	12	7	0.0363	0.053	0.4802	0.1100	NAWQ_CHR
WS	8	5	0.0083	0.015	0.1383	0.1100	NAWQ_CHR

Table B.2. Screening of aqueous concentrations of chemicals detected in seeps and ephemeral tributaries against chronic NAWQC or Secondary Chronic Values (Suter and Mabrey 1996). All concentrations are mg/L.

Chemical	Reach	Seep	Samples	Detects	P.L. Mean	95% UCB	Quotient	Benchmark Value	Benchmark
1,1,1-Trichloroethane	MWC	SW2-3	2	1	0.0000	0.000	0.000	0.0621	S_CHR_V
1,1-Dichloroethane	W4T	BTT	1	1	0.0010	0.001	0.021	0.0466	S_CHR_V
	LMB	MID. DRAIN.	1	1	0.0010	0.001	0.021	0.0466	S_CHR_V
ALUMINUM	W4T	BTT	7	4	0.0336	0.040	0.461	0.0870	NAWQ_CHR
	LWC	EAST SEEP	9	9	0.8376	1.262	14.508	0.0870	NAWQ_CHR
	LMB	MBTRIB-3	2	2	0.1730	0.735	8.447	0.0870	NAWQ_CHR
	LMB	MID. DRAIN.	10	6	0.0713	0.108	1.242	0.0870	NAWQ_CHR
	LWC	MV-1	2	2	0.1990	0.275	3.158	0.0870	NAWQ_CHR
	UMB	MV-3	1	1	0.1620	0.162	1.862	0.0870	NAWQ_CHR
	WOL	RS-1	1	1	0.2980	0.298	3.425	0.0870	NAWQ_CHR
	WOL	RS-3A	10	10	10.0120	12.730	146.319	0.0870	NAWQ_CHR
	WOL	RS-3B	2	2	1.3450	1.819	20.903	0.0870	NAWQ_CHR
	MWC	SW2-1	1	1	0.1860	0.186	2.138	0.0870	NAWQ_CHR
	LMB	SW2-5	10	6	0.0686	0.098	1.124	0.0870	NAWQ_CHR
	Unknown	SW2-6	3	2	0.0753	0.201	2.313	0.0870	NAWQ_CHR
	Unknown	SW2-7	4	1	0.0380	0.038	0.437	0.0870	NAWQ_CHR
	W4T	SW4-2	6	2	0.0318	0.041	0.477	0.0870	NAWQ_CHR
	LMB	SW5-2	1	1	0.0780	0.078	0.897	0.0870	NAWQ_CHR
	LMB	SW5-4	6	2	0.0473	0.051	0.584	0.0870	NAWQ_CHR
	WOL	SW7-2	2	2	0.5740	1.066	12.258	0.0870	NAWQ_CHR
	LWC	SW7-3	8	8	0.4520	0.548	6.299	0.0870	NAWQ_CHR
	LWC	SW7-5	10	10	0.8017	1.122	12.898	0.0870	NAWQ_CHR
	LWC	SW7-6	1	1	0.7610	0.761	8.747	0.0870	NAWQ_CHR
	LWC	SW7-8	1	1	0.4120	0.412	4.736	0.0870	NAWQ_CHR
	HRT	SW9-2	3	2	0.9780	1.791	20.581	0.0870	NAWQ_CHR
	W4T	WAG4 MS1	11	10	0.1551	0.313	3.602	0.0870	NAWQ_CHR
	W4T	WAG4 T2A	7	7	0.4713	0.710	8.163	0.0870	NAWQ_CHR
	LWC	WCTRIB-1	2	1	0.9570	0.957	11.000	0.0870	NAWQ_CHR
	MWC	WCTRIB-2	1	1	0.1940	0.194	2.230	0.0870	NAWQ_CHR
	EWC	WOCET	2	2	1.0710	3.780	43.444	0.0870	NAWQ_CHR
ANTIMONY	W4T	SW4-1	2	1	0.0450	0.045	0.433	0.1040	S_CHR_V
ARSENIC	LWC	EAST SEEP	8	2	0.0016	0.003	0.016	0.1900	NAWQ_CHR
	LMB	MID. DRAIN.	7	2	0.0010	0.001	0.005	0.1900	NAWQ_CHR
	LWC	MV-1	2	1	0.0020	0.002	0.011	0.1900	NAWQ_CHR
	WOL	RS-3A	8	8	0.0169	0.020	0.107	0.1900	NAWQ_CHR
	Unknown	SW2-6	2	1	0.0010	0.001	0.005	0.1900	NAWQ_CHR
	Unknown	SW2-7	3	1	0.0010	0.001	0.005	0.1900	NAWQ_CHR
	W4T	SW4-1	2	1	0.0060	0.006	0.032	0.1900	NAWQ_CHR
	LWC	SW7-3	7	2	0.0030	0.003	0.016	0.1900	NAWQ_CHR

Acetone	IHP	5NNT	1	1	0.0080	0.008	0.001	11.2000	S_CHR_V
	LWC	MV-1	1	1	0.0010	0.001	0.000	11.2000	S_CHR_V
	LWC	MV-2	1	1	0.0030	0.003	0.000	11.2000	S_CHR_V
	MWC	SW2-1	1	1	0.0110	0.011	0.001	11.2000	S_CHR_V
	UMC	SW2-2	1	1	0.0010	0.001	0.000	11.2000	S_CHR_V
	MWC	SW2-4	1	1	0.0140	0.014	0.001	11.2000	S_CHR_V
	WOL	SW6-1	1	1	0.0030	0.003	0.000	11.2000	S_CHR_V
	LWC	SW7-5	1	1	0.0140	0.014	0.001	11.2000	S_CHR_V
	MWC	WCTRIB-2	1	1	0.0020	0.002	0.000	11.2000	S_CHR_V
	EWC	WOCET	1	1	0.0090	0.009	0.001	11.2000	S_CHR_V
BARIUM	W4T	BTT	7	7	0.2804	0.309	81.285	0.0038	S_CHR_V
	LWC	EAST SEEP	9	7	0.0312	0.036	9.479	0.0038	S_CHR_V
	UMB	MBTRIB-2A	1	1	0.0500	0.050	13.158	0.0038	S_CHR_V
	LMB	MBTRIB-3	2	2	0.0570	0.133	34.938	0.0038	S_CHR_V
	LMB	MID. DRAIN.	10	10	0.0914	0.113	29.641	0.0038	S_CHR_V
	LWC	MV-1	2	2	0.1505	0.160	42.098	0.0038	S_CHR_V
	UMB	MV-3	1	1	0.0490	0.049	12.895	0.0038	S_CHR_V
	WOL	RS-1	1	1	0.0360	0.036	9.474	0.0038	S_CHR_V
	WOL	RS-3A	10	8	0.0515	0.061	16.107	0.0038	S_CHR_V
	WOL	RS-3B	2	1	0.0290	0.029	7.632	0.0038	S_CHR_V
	MWC	SW2-1	1	1	0.0840	0.084	22.105	0.0038	S_CHR_V
	UMC	SW2-2	1	1	0.1040	0.104	27.368	0.0038	S_CHR_V
	MWC	SW2-3	1	1	0.0380	0.038	10.000	0.0038	S_CHR_V
	MWC	SW2-4	2	2	0.0935	0.324	85.251	0.0038	S_CHR_V
	LMB	SW2-5	10	10	0.2801	0.301	79.263	0.0038	S_CHR_V
	Unknown	SW2-6	3	3	0.1530	0.168	44.256	0.0038	S_CHR_V
	Unknown	SW2-7	4	4	0.1308	0.140	36.864	0.0038	S_CHR_V
	W4T	SW4-1	2	2	0.2455	0.362	95.343	0.0038	S_CHR_V
	W4T	SW4-2	6	6	0.3733	0.428	112.569	0.0038	S_CHR_V
	LMB	SW5-2	1	1	0.0640	0.064	16.842	0.0038	S_CHR_V
	LMB	SW5-4	6	6	0.1057	0.127	33.423	0.0038	S_CHR_V
	WOL	SW7-1	2	2	0.0720	0.078	20.609	0.0038	S_CHR_V
	WOL	SW7-2	2	1	0.0320	0.032	8.421	0.0038	S_CHR_V
	LWC	SW7-3	8	3	0.0207	0.022	5.771	0.0038	S_CHR_V
	LWC	SW7-5	10	10	0.0546	0.070	18.538	0.0038	S_CHR_V
	LWC	SW7-6	1	1	0.0490	0.049	12.895	0.0038	S_CHR_V
	LWC	SW7-8	1	1	0.0300	0.030	7.895	0.0038	S_CHR_V
	HRT	SW9-1	3	3	0.1360	0.147	38.560	0.0038	S_CHR_V
	HRT	SW9-2	3	3	0.2117	0.287	75.593	0.0038	S_CHR_V
	W4T	WAG4 MS1	11	10	0.1425	0.154	40.471	0.0038	S_CHR_V
	W4T	WAG4 T2A	7	7	0.0941	0.106	27.767	0.0038	S_CHR_V
	LWC	WCTRIB-1	2	2	0.0545	0.140	36.773	0.0038	S_CHR_V
	MWC	WCTRIB-2	1	1	0.0380	0.038	10.000	0.0038	S_CHR_V
	IHP	WCTRIB-3	1	1	0.0620	0.062	16.316	0.0038	S_CHR_V
	EWC	WOCET	2	2	0.0490	0.112	29.510	0.0038	S_CHR_V
BERYLLIUM	W4T	BTT	7	1	0.0000	0.000	0.000	0.0051	S_CHR_V
	LWC	EAST SEEP	9	1	0.0000	0.000	0.000	0.0051	S_CHR_V
	LMB	MID. DRAIN.	10	2	0.0000	0.000	0.000	0.0051	S_CHR_V
	WOL	RS-3A	10	5	0.0004	0.001	0.141	0.0051	S_CHR_V

	LMB	SW2-5	10	2	0.0000	0.000	0.000	0.0051	S_CHR_V
	Unknown	SW2-6	3	1	0.0000	0.000	0.000	0.0051	S_CHR_V
	Unknown	SW2-7	4	1	0.0000	0.000	0.000	0.0051	S_CHR_V
	W4T	SW4-2	6	1	0.0000	0.000	0.000	0.0051	S_CHR_V
	LWC	SW7-3	8	1	0.0000	0.000	0.000	0.0051	S_CHR_V
	LWC	SW7-5	10	1	0.0010	0.001	0.196	0.0051	S_CHR_V
	W4T	WAG4 MS1	11	3	0.0002	0.001	0.111	0.0051	S_CHR_V
	W4T	WAG4 T2A	7	1	0.0000	0.000	0.000	0.0051	S_CHR_V
BORON	W4T	BTT	7	2	0.0826	0.101	0.185	0.5470	S_CHR_V
	LWC	EAST SEEP	9	4	0.0528	0.079	0.145	0.5470	S_CHR_V
	LMB	MID. DRAIN.	10	6	0.1654	0.201	0.367	0.5470	S_CHR_V
	WOL	RS-3A	10	3	0.0924	0.107	0.195	0.5470	S_CHR_V
	WOL	RS-3B	2	1	0.0340	0.034	0.062	0.5470	S_CHR_V
	MWC	SW2-1	1	1	0.0190	0.019	0.035	0.5470	S_CHR_V
	LMB	SW2-5	10	5	0.1890	0.237	0.434	0.5470	S_CHR_V
	Unknown	SW2-6	3	2	0.1170	0.120	0.219	0.5470	S_CHR_V
	Unknown	SW2-7	4	2	0.1397	0.141	0.259	0.5470	S_CHR_V
	W4T	SW4-2	6	3	0.1368	0.181	0.331	0.5470	S_CHR_V
	LMB	SW5-2	1	1	0.1750	0.175	0.320	0.5470	S_CHR_V
	LMB	SW5-4	6	3	0.1307	0.178	0.325	0.5470	S_CHR_V
	LWC	SW7-3	8	2	0.0743	0.087	0.160	0.5470	S_CHR_V
	LWC	SW7-5	10	4	0.0557	0.062	0.113	0.5470	S_CHR_V
	W4T	WAG4 MS1	11	4	0.1559	0.174	0.317	0.5470	S_CHR_V
	W4T	WAG4 T2A	7	5	0.1293	0.169	0.309	0.5470	S_CHR_V
	IHP	WCTRIB-3	1	1	0.1990	0.199	0.364	0.5470	S_CHR_V
CADMIUM	W4T	BTT	6	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	LMB	MID. DRAIN.	9	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	WOL	RS-3A	8	2	0.0005	0.002	1.509	0.0011	NAWQ_CHR
	LMB	SW2-5	7	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	W4T	SW4-2	5	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	LMB	SW5-4	5	1	0.0020	0.002	1.818	0.0011	NAWQ_CHR
	LWC	SW7-3	6	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	LWC	SW7-5	7	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	W4T	WAG4 MS1	9	2	0.0000	0.000	0.000	0.0011	NAWQ_CHR
	W4T	WAG4 T2A	6	1	0.0000	0.000	0.000	0.0011	NAWQ_CHR
CHROMIUM	W4T	BTT	7	1	0.0030	0.003	0.273	0.0110	NAWQ_CHR
	LWC	EAST SEEP	9	6	0.0176	0.023	2.075	0.0110	NAWQ_CHR
	LMB	MID. DRAIN.	10	1	0.0060	0.006	0.545	0.0110	NAWQ_CHR
	WOL	RS-3A	10	10	0.0784	0.084	7.648	0.0110	NAWQ_CHR
	LMB	SW2-5	10	2	0.0033	0.004	0.367	0.0110	NAWQ_CHR
	Unknown	SW2-6	3	1	0.0080	0.008	0.727	0.0110	NAWQ_CHR
	Unknown	SW2-7	4	1	0.0060	0.006	0.545	0.0110	NAWQ_CHR
	LWC	SW7-3	8	8	0.0561	0.070	6.382	0.0110	NAWQ_CHR
	LWC	SW7-5	10	2	0.0053	0.006	0.549	0.0110	NAWQ_CHR
	W4T	WAG4 MS1	11	1	0.0060	0.006	0.545	0.0110	NAWQ_CHR
	W4T	WAG4 T2A	7	1	0.0350	0.035	3.182	0.0110	NAWQ_CHR
COBALT	W4T	BTT	7	1	0.0030	0.003	0.980	0.0031	S_CHR_V

	LWC	EAST SEEP	9	6	0.0087	0.011	3.668	0.0031	S_CHR_V
	LWC	MV-1	2	1	0.0060	0.006	1.961	0.0031	S_CHR_V
	WOL	RS-3A	10	9	0.0286	0.031	10.206	0.0031	S_CHR_V
	LMB	SW2-5	10	6	0.0049	0.006	2.086	0.0031	S_CHR_V
	Unknown	SW2-6	3	1	0.0050	0.005	1.634	0.0031	S_CHR_V
	W4T	SW4-1	2	1	0.0080	0.008	2.614	0.0031	S_CHR_V
	W4T	SW4-2	6	4	0.0198	0.027	8.961	0.0031	S_CHR_V
	WOL	SW7-2	2	2	0.0940	0.347	113.252	0.0031	S_CHR_V
	LWC	SW7-3	8	5	0.0133	0.017	5.546	0.0031	S_CHR_V
	LWC	SW7-5	10	5	0.0095	0.014	4.471	0.0031	S_CHR_V
	W4T	WAG4 MS1	11	3	0.0031	0.004	1.444	0.0031	S_CHR_V
COPPER	W4T	BTT	7	2	0.0026	0.004	0.335	0.0120	NAWQ_CHR
	LWC	EAST SEEP	9	6	0.0057	0.008	0.672	0.0120	NAWQ_CHR
	UMB	MBTRIB-2A	1	1	0.0160	0.016	1.333	0.0120	NAWQ_CHR
	LMB	MID. DRAIN.	10	2	0.0015	0.002	0.201	0.0120	NAWQ_CHR
	WOL	RS-3A	10	8	0.0180	0.022	1.802	0.0120	NAWQ_CHR
	LMB	SW2-5	10	4	0.0029	0.004	0.301	0.0120	NAWQ_CHR
	Unknown	SW2-6	3	1	0.0020	0.002	0.167	0.0120	NAWQ_CHR
	Unknown	SW2-7	4	1	0.0020	0.002	0.167	0.0120	NAWQ_CHR
	W4T	SW4-2	6	2	0.0025	0.004	0.317	0.0120	NAWQ_CHR
	WOL	SW7-2	2	1	0.0250	0.025	2.083	0.0120	NAWQ_CHR
	LWC	SW7-3	8	6	0.0053	0.006	0.523	0.0120	NAWQ_CHR
	LWC	SW7-5	10	4	0.0038	0.006	0.511	0.0120	NAWQ_CHR
	HRT	SW9-1	3	1	0.0070	0.007	0.583	0.0120	NAWQ_CHR
	HRT	SW9-2	3	2	0.0090	0.009	0.750	0.0120	NAWQ_CHR
	W4T	WAG4 MS1	11	4	0.0032	0.004	0.365	0.0120	NAWQ_CHR
	W4T	WAG4 T2A	7	2	0.0027	0.004	0.362	0.0120	NAWQ_CHR
Carbon disulfide	IHP	5NNT	1	1	0.1400	0.140	15.748	0.0089	S_CHR_V
	MWC	5NST	1	1	0.0040	0.004	0.450	0.0089	S_CHR_V
	W4T	BTT	1	1	0.0000	0.000	0.000	0.0089	S_CHR_V
	LWC	EAST SEEP	1	1	0.0110	0.011	1.237	0.0089	S_CHR_V
	LMB	MBTRIB-3	1	1	0.0630	0.063	7.087	0.0089	S_CHR_V
	LMB	MID. DRAIN.	1	1	0.0160	0.016	1.800	0.0089	S_CHR_V
	LWC	MV-2	1	1	0.0000	0.000	0.000	0.0089	S_CHR_V
	UMB	MV-3	1	1	0.0010	0.001	0.112	0.0089	S_CHR_V
	WOL	RS-1	1	1	0.0250	0.025	2.812	0.0089	S_CHR_V
	WOL	RS-3B	1	1	0.2600	0.260	29.246	0.0089	S_CHR_V
	MWC	SW2-1	1	1	0.1200	0.120	13.498	0.0089	S_CHR_V
	MWC	SW2-3	2	2	0.0375	0.274	30.851	0.0089	S_CHR_V
	MWC	SW2-4	1	1	0.0410	0.041	4.612	0.0089	S_CHR_V
	LMB	SW2-5	1	1	0.2400	0.240	26.997	0.0089	S_CHR_V
	WOL	SW6-1	1	1	0.0020	0.002	0.225	0.0089	S_CHR_V
	WOL	SW6-2	1	1	0.0100	0.010	1.125	0.0089	S_CHR_V
	WOL	SW7-1	1	1	0.4100	0.410	46.119	0.0089	S_CHR_V
	WOL	SW7-2	1	1	0.0670	0.067	7.537	0.0089	S_CHR_V
	LWC	SW7-5	1	1	0.3000	0.300	33.746	0.0089	S_CHR_V
	LWC	SW7-6	1	1	0.1100	0.110	12.373	0.0089	S_CHR_V
	LWC	SW7-7	1	1	0.0430	0.043	4.837	0.0089	S_CHR_V
	LWC	SW7-8	1	1	0.0000	0.000	0.000	0.0089	S_CHR_V

	HRT	SW9-1	1	1	0.0870	0.087	9.786	0.0089	S_CHR_V
	HRT	SW9-2	2	1	0.0030	0.003	0.337	0.0089	S_CHR_V
	WOL	WAG6 MS1	1	1	0.4600	0.460	51.744	0.0089	S_CHR_V
	WOL	WAG6 MS2	1	1	0.0170	0.017	1.912	0.0089	S_CHR_V
	WOL	WAG6 MS3A	1	1	0.0020	0.002	0.225	0.0089	S_CHR_V
	WOL	WAG6 MS3B	1	1	0.0080	0.008	0.900	0.0089	S_CHR_V
	LWC	WCTRIB-1	1	1	0.0250	0.025	2.812	0.0089	S_CHR_V
	MWC	WCTRIB-2	1	1	0.0010	0.001	0.112	0.0089	S_CHR_V
	IHP	WCTRIB-4	1	1	0.0370	0.037	4.162	0.0089	S_CHR_V
	EWC	WOCET	1	1	0.0010	0.001	0.112	0.0089	S_CHR_V
	WOL	WSTRIB-1	1	1	0.0140	0.014	1.575	0.0089	S_CHR_V
Chloroform	HRT	SW9-2	2	1	0.0010	0.001	0.005	0.1880	S_CHR_V
IRON	W4T	BTT	7	4	0.1347	0.165	0.165	1.0000	NAWQ_CHR
	LWC	EAST SEEP	9	9	0.6446	0.933	0.933	1.0000	NAWQ_CHR
	UMB	MBTRIB-2A	1	1	0.2180	0.218	0.218	1.0000	NAWQ_CHR
	LMB	MBTRIB-3	2	2	0.2945	1.049	1.049	1.0000	NAWQ_CHR
	LMB	MID. DRAIN.	10	10	2.0316	3.608	3.608	1.0000	NAWQ_CHR
	LWC	MV-1	2	2	2.1000	2.163	2.163	1.0000	NAWQ_CHR
	UMB	MV-3	1	1	0.1720	0.172	0.172	1.0000	NAWQ_CHR
	WOL	RS-1	1	1	0.6010	0.601	0.601	1.0000	NAWQ_CHR
	WOL	RS-3A	10	10	7.7280	9.843	9.843	1.0000	NAWQ_CHR
	WOL	RS-3B	2	2	1.0650	1.160	1.160	1.0000	NAWQ_CHR
	MWC	SW2-1	1	1	2.3000	2.300	2.300	1.0000	NAWQ_CHR
	UMC	SW2-2	1	1	0.3940	0.394	0.394	1.0000	NAWQ_CHR
	MWC	SW2-3	1	1	0.2250	0.225	0.225	1.0000	NAWQ_CHR
	MWC	SW2-4	2	2	0.5975	1.933	1.933	1.0000	NAWQ_CHR
	LMB	SW2-5	10	7	0.3481	0.679	0.679	1.0000	NAWQ_CHR
	Unknown	SW2-6	3	3	2.8570	11.125	11.125	1.0000	NAWQ_CHR
	Unknown	SW2-7	4	4	6.8925	15.133	15.133	1.0000	NAWQ_CHR
	W4T	SW4-1	2	2	14.8810	102.762	102.762	1.0000	NAWQ_CHR
	W4T	SW4-2	6	5	2.4508	4.671	4.671	1.0000	NAWQ_CHR
	LMB	SW5-2	1	1	0.0890	0.089	0.089	1.0000	NAWQ_CHR
	LMB	SW5-4	6	6	0.4035	0.758	0.758	1.0000	NAWQ_CHR
	WOL	SW7-1	2	2	6.3750	7.606	7.606	1.0000	NAWQ_CHR
	WOL	SW7-2	2	2	0.5860	0.940	0.940	1.0000	NAWQ_CHR
	LWC	SW7-3	8	8	0.3488	0.453	0.453	1.0000	NAWQ_CHR
	LWC	SW7-5	10	10	0.8155	1.233	1.233	1.0000	NAWQ_CHR
	LWC	SW7-6	1	1	0.4310	0.431	0.431	1.0000	NAWQ_CHR
	LWC	SW7-8	1	1	0.3680	0.368	0.368	1.0000	NAWQ_CHR
	HRT	SW9-1	3	3	0.3663	0.740	0.740	1.0000	NAWQ_CHR
	HRT	SW9-2	3	3	1.8670	4.137	4.137	1.0000	NAWQ_CHR
	W4T	WAG4 MS1	11	8	0.2034	0.377	0.377	1.0000	NAWQ_CHR
	W4T	WAG4 T2A	7	7	0.4763	0.807	0.807	1.0000	NAWQ_CHR
	LWC	WCTRIB-1	2	2	0.4370	1.839	1.839	1.0000	NAWQ_CHR
	MWC	WCTRIB-2	1	1	0.1880	0.188	0.188	1.0000	NAWQ_CHR
	IHP	WCTRIB-3	1	1	0.3780	0.378	0.378	1.0000	NAWQ_CHR
	EWC	WOCET	2	2	1.0840	4.405	4.405	1.0000	NAWQ_CHR
LEAD	W4T	BTT	5	1	0.0020	0.002	0.625	0.0032	NAWQ_CHR

	LWC	EAST SEEP	7	2	0.0025	0.004	1.153	0.0032	NAWQ_CHR
	LMB	MID. DRAIN.	5	1	0.0010	0.001	0.313	0.0032	NAWQ_CHR
	WOL	RS-1	1	1	0.0030	0.003	0.938	0.0032	NAWQ_CHR
	WOL	RS-3A	6	4	0.0043	0.006	1.800	0.0032	NAWQ_CHR
	WOL	RS-3B	1	1	0.0040	0.004	1.250	0.0032	NAWQ_CHR
	MWC	SW2-1	1	1	0.0030	0.003	0.938	0.0032	NAWQ_CHR
	MWC	SW2-4	2	1	0.0080	0.008	2.500	0.0032	NAWQ_CHR
	LMB	SW2-5	6	3	0.0012	0.002	0.513	0.0032	NAWQ_CHR
	Unknown	SW2-6	1	1	0.0020	0.002	0.625	0.0032	NAWQ_CHR
	Unknown	SW2-7	2	1	0.0020	0.002	0.625	0.0032	NAWQ_CHR
	LMB	SW5-4	3	1	0.0110	0.011	3.438	0.0032	NAWQ_CHR
	WOL	SW7-2	2	1	0.0020	0.002	0.625	0.0032	NAWQ_CHR
	LWC	SW7-3	6	1	0.0030	0.003	0.938	0.0032	NAWQ_CHR
	LWC	SW7-5	8	2	0.0040	0.004	1.250	0.0032	NAWQ_CHR
	LWC	SW7-8	1	1	0.0030	0.003	0.938	0.0032	NAWQ_CHR
	W4T	WAG4 T2A	5	1	0.0010	0.001	0.313	0.0032	NAWQ_CHR
LITHIUM	W4T	SW4-2	1	1	0.1130	0.113	7.842	0.0144	SCV_NEW
MANGANESE	W4T	BTT	7	4	0.0083	0.012	0.146	0.0803	S_CHR_V
	LWC	EAST SEEP	9	9	0.2593	0.358	4.452	0.0803	S_CHR_V
	UMB	MBTRIB-2A	1	1	0.1420	0.142	1.768	0.0803	S_CHR_V
	LMB	MBTRIB-3	2	2	0.3685	0.561	6.987	0.0803	S_CHR_V
	LMB	MID. DRAIN.	10	10	1.8748	3.000	37.362	0.0803	S_CHR_V
	LWC	MV-1	2	2	3.9650	4.123	51.343	0.0803	S_CHR_V
	UMB	MV-3	1	1	0.0190	0.019	0.237	0.0803	S_CHR_V
	WOL	RS-1	1	1	1.3500	1.350	16.812	0.0803	S_CHR_V
	WOL	RS-3A	10	10	0.2344	0.311	3.871	0.0803	S_CHR_V
	WOL	RS-3B	2	2	0.0560	0.138	1.720	0.0803	S_CHR_V
	MWC	SW2-1	1	1	0.9920	0.992	12.354	0.0803	S_CHR_V
	UMC	SW2-2	1	1	0.7960	0.796	9.913	0.0803	S_CHR_V
	MWC	SW2-3	1	1	0.0930	0.093	1.158	0.0803	S_CHR_V
	MWC	SW2-4	2	2	1.5775	5.887	73.308	0.0803	S_CHR_V
	LMB	SW2-5	10	10	0.9450	1.423	17.718	0.0803	S_CHR_V
	Unknown	SW2-6	3	3	1.0000	1.563	19.459	0.0803	S_CHR_V
	Unknown	SW2-7	4	4	1.4475	1.968	24.504	0.0803	S_CHR_V
	W4T	SW4-1	2	2	2.0935	12.931	161.034	0.0803	S_CHR_V
	W4T	SW4-2	6	6	0.7535	1.061	13.209	0.0803	S_CHR_V
	LMB	SW5-2	1	1	0.0170	0.017	0.212	0.0803	S_CHR_V
	LMB	SW5-4	6	6	0.7902	1.546	19.256	0.0803	S_CHR_V
	WOL	SW7-1	2	2	6.3900	6.453	80.363	0.0803	S_CHR_V
	WOL	SW7-2	2	2	0.1270	0.253	3.154	0.0803	S_CHR_V
	LWC	SW7-3	8	3	0.0054	0.006	0.077	0.0803	S_CHR_V
	LWC	SW7-5	10	8	0.2716	0.703	8.755	0.0803	S_CHR_V
	LWC	SW7-6	1	1	0.0710	0.071	0.884	0.0803	S_CHR_V
	LWC	SW7-8	1	1	0.1260	0.126	1.569	0.0803	S_CHR_V
	HRT	SW9-1	3	3	0.2477	0.360	4.485	0.0803	S_CHR_V
	HRT	SW9-2	3	3	1.1750	2.706	33.694	0.0803	S_CHR_V
	W4T	WAG4 MS1	11	10	0.2138	0.338	4.214	0.0803	S_CHR_V
	W4T	WAG4 T2A	7	6	0.1250	0.226	2.818	0.0803	S_CHR_V
	LWC	WCTRIB-1	2	2	0.2130	1.198	14.918	0.0803	S_CHR_V

	MWC	WCTRIB-2	1	1	0.0240	0.024	0.299	0.0803	S_CHR_V
	IHP	WCTRIB-3	1	1	0.5850	0.585	7.285	0.0803	S_CHR_V
	EWC	WOCET	2	2	0.3545	2.214	27.570	0.0803	S_CHR_V
MERCURY	WOL	RS-3A	10	10	0.0009	0.001	0.833	0.0013	S_CHR_V
	MWC	SW2-1	1	1	0.0000	0.000	0.000	0.0013	S_CHR_V
	MWC	SW2-4	2	1	0.0000	0.000	0.000	0.0013	S_CHR_V
	W4T	SW4-2	4	1	0.0000	0.000	0.000	0.0013	S_CHR_V
	LWC	SW7-3	8	1	0.0000	0.000	0.000	0.0013	S_CHR_V
MOLYBDENUM	W4T	BTT	7	5	0.0612	0.114	0.479	0.2390	S_CHR_V
	LWC	EAST SEEP	9	1	0.0150	0.015	0.063	0.2390	S_CHR_V
	WOL	RS-3A	10	10	0.0483	0.052	0.216	0.2390	S_CHR_V
	W4T	SW4-2	6	1	0.0080	0.008	0.033	0.2390	S_CHR_V
	LWC	SW7-3	8	3	0.0123	0.014	0.059	0.2390	S_CHR_V
	W4T	WAG4 MS1	11	2	0.0065	0.007	0.031	0.2390	S_CHR_V
Methylene chloride	IHP	5NNT	1	1	0.0130	0.013	0.006	2.2400	S_CHR_V
	MWC	5NST	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	W4T	BTT	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	LWC	EAST SEEP	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	LMB	MID. DRAIN.	1	1	0.0010	0.001	0.000	2.2400	S_CHR_V
	LWC	MV-1	1	1	0.0010	0.001	0.000	2.2400	S_CHR_V
	LWC	MV-2	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	UMB	MV-3	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	WOL	RS-1	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	WOL	RS-3A	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	MWC	SW2-1	1	1	0.0010	0.001	0.000	2.2400	S_CHR_V
	UMC	SW2-2	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	MWC	SW2-3	2	2	0.0020	0.008	0.004	2.2400	S_CHR_V
	MWC	SW2-4	1	1	0.0010	0.001	0.000	2.2400	S_CHR_V
	WOL	SW6-1	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	WOL	SW6-2	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	WOL	SW7-2	1	1	0.0010	0.001	0.000	2.2400	S_CHR_V
	LWC	SW7-3	2	2	0.0005	0.004	0.002	2.2400	S_CHR_V
	LWC	SW7-4	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	LWC	SW7-5	1	1	0.0300	0.030	0.013	2.2400	S_CHR_V
	LWC	SW7-8	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	HRT	SW9-2	2	2	0.0010	0.001	0.000	2.2400	S_CHR_V
	W4T	WAG4 T2A	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	WOL	WAG6 MS2	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	LWC	WCTRIB-1	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	MWC	WCTRIB-2	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
	EWC	WOCET	1	1	0.0010	0.001	0.000	2.2400	S_CHR_V
	WOL	WSTRIB-1	1	1	0.0000	0.000	0.000	2.2400	S_CHR_V
NICKEL	W4T	BTT	7	6	0.0395	0.048	0.300	0.1600	NAWQ_CHR
	LWC	EAST SEEP	9	8	0.0269	0.032	0.199	0.1600	NAWQ_CHR
	LMB	MID. DRAIN.	10	1	0.0060	0.006	0.038	0.1600	NAWQ_CHR
	WOL	RS-3A	10	10	0.0970	0.103	0.645	0.1600	NAWQ_CHR
	LMB	SW2-5	10	6	0.0104	0.013	0.082	0.1600	NAWQ_CHR

	Unknown	SW2-6	3	2	0.0095	0.014	0.087	0.1600	NAWQ_CHR
	Unknown	SW2-7	4	1	0.0080	0.008	0.050	0.1600	NAWQ_CHR
	W4T	SW4-2	6	6	6.1700	8.522	53.264	0.1600	NAWQ_CHR
	LMB	SW5-4	6	2	0.0118	0.014	0.086	0.1600	NAWQ_CHR
	LWC	SW7-3	8	4	0.0253	0.028	0.175	0.1600	NAWQ_CHR
	LWC	SW7-5	10	4	0.0161	0.021	0.128	0.1600	NAWQ_CHR
	W4T	WAG4 MS1	11	10	0.0345	0.043	0.266	0.1600	NAWQ_CHR
	W4T	WAG4 T2A	7	5	0.0230	0.030	0.189	0.1600	NAWQ_CHR
SELENIUM	LWC	EAST SEEP	8	1	0.0010	0.001	0.200	0.0050	NAWQ_CHR
	WOL	RS-3A	7	1	0.0020	0.002	0.400	0.0050	NAWQ_CHR
	LWC	SW7-3	7	1	0.0030	0.003	0.600	0.0050	NAWQ_CHR
SILVER	WOL	RS-3A	10	3	0.0043	0.005	13.207	0.0004	S_CHR_V
	MWC	SW2-4	2	1	0.0030	0.003	8.333	0.0004	S_CHR_V
STRONTIUM	W4T	BTT	7	7	0.2347	0.254	0.409	0.6200	S_CHR_V
	LWC	EAST SEEP	9	9	0.1127	0.132	0.213	0.6200	S_CHR_V
	UMB	MBTRIB-2A	1	1	0.1880	0.188	0.303	0.6200	S_CHR_V
	LMB	MBTRIB-3	2	2	0.1570	0.226	0.365	0.6200	S_CHR_V
	LMB	MID. DRAIN.	10	10	0.1871	0.207	0.335	0.6200	S_CHR_V
	LWC	MV-1	2	2	0.1560	0.169	0.272	0.6200	S_CHR_V
	UMB	MV-3	1	1	0.1450	0.145	0.234	0.6200	S_CHR_V
	WOL	RS-1	1	1	0.0670	0.067	0.108	0.6200	S_CHR_V
	WOL	RS-3A	10	7	0.0144	0.017	0.028	0.6200	S_CHR_V
	WOL	RS-3B	2	2	0.0525	0.062	0.100	0.6200	S_CHR_V
	MWC	SW2-1	1	1	0.1890	0.189	0.305	0.6200	S_CHR_V
	UMC	SW2-2	1	1	0.1240	0.124	0.200	0.6200	S_CHR_V
	MWC	SW2-3	1	1	0.0670	0.067	0.108	0.6200	S_CHR_V
	MWC	SW2-4	2	2	0.2500	0.597	0.963	0.6200	S_CHR_V
	LMB	SW2-5	10	10	0.3168	0.343	0.554	0.6200	S_CHR_V
	Unknown	SW2-6	3	3	0.2220	0.231	0.372	0.6200	S_CHR_V
	Unknown	SW2-7	4	4	0.2033	0.212	0.342	0.6200	S_CHR_V
	W4T	SW4-1	2	2	0.3330	0.503	0.812	0.6200	S_CHR_V
	W4T	SW4-2	6	6	0.2592	0.286	0.461	0.6200	S_CHR_V
	LMB	SW5-2	1	1	0.2010	0.201	0.324	0.6200	S_CHR_V
	LMB	SW5-4	6	6	0.1838	0.203	0.327	0.6200	S_CHR_V
	WOL	SW7-1	2	2	0.0850	0.091	0.147	0.6200	S_CHR_V
	WOL	SW7-2	2	2	0.0265	0.036	0.058	0.6200	S_CHR_V
	LWC	SW7-3	8	8	0.0279	0.031	0.050	0.6200	S_CHR_V
	LWC	SW7-5	9	9	0.0890	0.114	0.185	0.6200	S_CHR_V
	LWC	SW7-8	1	1	0.0690	0.069	0.111	0.6200	S_CHR_V
	HRT	SW9-1	3	3	0.1050	0.115	0.186	0.6200	S_CHR_V
	HRT	SW9-2	3	3	0.1483	0.197	0.318	0.6200	S_CHR_V
	W4T	WAG4 MS1	11	10	0.1841	0.200	0.322	0.6200	S_CHR_V
	W4T	WAG4 T2A	7	7	0.1871	0.204	0.329	0.6200	S_CHR_V
	LWC	WCTRIB-1	2	2	0.1120	0.383	0.619	0.6200	S_CHR_V
	MWC	WCTRIB-2	1	1	0.0610	0.061	0.098	0.6200	S_CHR_V
	IHP	WCTRIB-3	1	1	0.2100	0.210	0.339	0.6200	S_CHR_V
	EWC	WOCET	2	2	0.0755	0.154	0.249	0.6200	S_CHR_V

Tetrachloroethene	WOL	FRENCH DR S	1	1	0.0550	0.055	0.440	0.1250	S_CHR_V
	LMB	MID. DRAIN.	1	1	0.0000	0.000	0.000	0.1250	S_CHR_V
	W4T	WAG4 T2A	1	1	0.0000	0.000	0.000	0.1250	S_CHR_V
	WOL	WAG6 MS3B	1	1	0.0010	0.001	0.008	0.1250	S_CHR_V
Trichloroethene	WOL	FRENCH DR S	1	1	1.0000	1.000	2.151	0.4650	S_CHR_V
	LMB	MID. DRAIN.	1	1	0.0010	0.001	0.002	0.4650	S_CHR_V
	HRT	SW9-2	2	1	0.0000	0.000	0.000	0.4650	S_CHR_V
	W4T	WAG4 T2A	1	1	0.0020	0.002	0.004	0.4650	S_CHR_V
	WOL	WAG6 MS2	1	1	0.0030	0.003	0.006	0.4650	S_CHR_V
VANADIUM	WOL	RS-3A	10	9	0.0217	0.027	1.388	0.0191	S_CHR_V
	LMB	SW2-5	10	1	0.0030	0.003	0.157	0.0191	S_CHR_V
	LWC	SW7-3	8	2	0.0040	0.004	0.209	0.0191	S_CHR_V
	LWC	SW7-5	9	1	0.0020	0.002	0.105	0.0191	S_CHR_V
Vinyl chloride	LMB	MID. DRAIN.	1	1	0.0010	0.001	0.011	0.0878	S_CHR_V
	W4T	SW4-2	1	1	0.0460	0.046	0.524	0.0878	S_CHR_V
	W4T	WAG4 MS1	1	1	0.0000	0.000	0.000	0.0878	S_CHR_V
	W4T	WAG4 T2A	1	1	0.0010	0.001	0.011	0.0878	S_CHR_V
ZINC	W4T	BTT	7	2	0.0118	0.016	0.149	0.1100	NAWQ_CHR
	LWC	EAST SEEP	8	5	0.0110	0.015	0.138	0.1100	NAWQ_CHR
	LMB	MID. DRAIN.	10	3	0.0053	0.006	0.052	0.1100	NAWQ_CHR
	WOL	RS-3A	9	7	0.0386	0.049	0.449	0.1100	NAWQ_CHR
	WOL	RS-3B	2	1	0.0090	0.009	0.082	0.1100	NAWQ_CHR
	MWC	SW2-4	2	1	0.0040	0.004	0.036	0.1100	NAWQ_CHR
	LMB	SW2-5	10	6	0.0168	0.024	0.220	0.1100	NAWQ_CHR
	Unknown	SW2-6	3	2	0.0110	0.017	0.153	0.1100	NAWQ_CHR
	Unknown	SW2-7	4	2	0.0305	0.067	0.605	0.1100	NAWQ_CHR
	W4T	SW4-1	2	1	0.0300	0.030	0.273	0.1100	NAWQ_CHR
	W4T	SW4-2	6	4	0.0344	0.056	0.512	0.1100	NAWQ_CHR
	LMB	SW5-4	6	3	0.0066	0.009	0.081	0.1100	NAWQ_CHR
	LWC	SW7-3	7	5	0.0281	0.031	0.283	0.1100	NAWQ_CHR
	LWC	SW7-5	8	5	0.0116	0.018	0.164	0.1100	NAWQ_CHR
	HRT	SW9-1	3	2	0.0107	0.033	0.301	0.1100	NAWQ_CHR
	HRT	SW9-2	3	3	0.1143	0.368	3.346	0.1100	NAWQ_CHR
	W4T	WAG4 MS1	11	3	0.0059	0.008	0.069	0.1100	NAWQ_CHR
	W4T	WAG4 T2A	7	3	0.0120	0.019	0.177	0.1100	NAWQ_CHR

Table B.3. Screening of aqueous concentrations of radionuclides detected in streams against screening benchmarks for aquatic life. Concentrations are pCi/L.

Radionuclide	Reach	Samples	Detects	P.L. Mean	95% UCB	Quotient	Benchmark Value	Benchmark
Cesium-137	1WC	5	5	112.62	179.30	0.004733	37882.0000	WAT_RAD
	IHP	9	9	109.87	134.53	0.003551	37882.0000	WAT_RAD
	LMB	12	1	15.90	15.90	0.000420	37882.0000	WAT_RAD
	LWC	3	2	40.10	85.62	0.002260	37882.0000	WAT_RAD
	MWC	12	12	66.95	85.18	0.002249	37882.0000	WAT_RAD
	W4T	16	3	40.31	50.19	0.001325	37882.0000	WAT_RAD
	WOL	12	12	67.33	79.17	0.002090	37882.0000	WAT_RAD
Cobalt-60	WS	7	1	31.30	31.30	0.000061	510314.000	WAT_RAD
Curium-244	1WC	2	2	0.00	0.00	0.000000	5537.0000	WAT_RAD
	IHP	1	1	0.00	0.00	0.000000	5537.0000	WAT_RAD
Plutonium-238	1WC	2	2	0.00	0.00	0.000000	5845.0000	WAT_RAD
	IHP	1	1	0.00	0.00	0.000000	5845.0000	WAT_RAD
	LMB	1	1	0.16	0.16	0.000027	5845.0000	WAT_RAD
Strontium-90	1C	2	2	477.00	1973.36	0.005694	346570.000	WAT_RAD
	1WC	4	2	87.50	212.88	0.000614	346570.000	WAT_RAD
	HRT	19	19	1057.61	1444.71	0.004169	346570.000	WAT_RAD
	IHP	3	1	196.00	196.00	0.000566	346570.000	WAT_RAD
	LMB	21	21	641.60	804.60	0.002322	346570.000	WAT_RAD
	LWC	1	1	326.00	326.00	0.000941	346570.000	WAT_RAD
	MWC	3	2	130.80	287.08	0.000828	346570.000	WAT_RAD
	NWT	2	1	96.00	96.00	0.000277	346570.000	WAT_RAD
	UMB	2	1	20.00	20.00	0.000058	346570.000	WAT_RAD
	W4T	20	20	9778.88	10681.82	0.030822	346570.000	WAT_RAD
	WOL	3	3	224.00	330.21	0.000953	346570.000	WAT_RAD
	WS	3	2	179.67	225.75	0.000651	346570.000	WAT_RAD
	1C	7	7	269.80	411.81	0.001188	346570.000	WAT_RAD
	1WC	10	8	77.56	118.79	0.000343	346570.000	WAT_RAD
	HRT	7	7	947.00	1242.22	0.003584	346570.000	WAT_RAD
	IHP	13	13	80.95	94.42	0.000272	346570.000	WAT_RAD
	LMB	32	32	532.49	643.31	0.001856	346570.000	WAT_RAD
	LWC	10	9	178.04	212.35	0.000613	346570.000	WAT_RAD
	MWC	24	24	105.43	119.69	0.000345	346570.000	WAT_RAD
	NWT	6	6	36.55	58.92	0.000170	346570.000	WAT_RAD
	UMB	4	2	0.00	0.00	0.000000	346570.000	WAT_RAD
	W4T	1	1	7168.00	7168.00	0.020683	346570.000	WAT_RAD
	WOL	12	12	194.00	213.04	0.000615	346570.000	WAT_RAD
	WS	7	7	135.79	183.74	0.000530	346570.000	WAT_RAD
Thorium-228	LMB	1	1	1.25	1.25	0.000916	1365.0000	WAT_RAD
Thorium-230	LMB	1	1	0.17	0.17	0.000080	2064.0000	WAT_RAD
Thorium-232	LMB	1	1	0.01	0.01	0.000004	2389.0000	WAT_RAD
Tritium	1C	9	9	1.15	2.03	0.000000	3445329521	WAT_RAD
	1WC	3	3	11.54	27.71	0.000000	3445329521	WAT_RAD
	BWC	2	2	1.57	6.75	0.000000	3445329521	WAT_RAD
	HRT	52	51	1784.99	2190.70	0.000001	3445329521	WAT_RAD
	IHP	16	16	8.50	12.23	0.000000	3445329521	WAT_RAD
	LMB	147	147	751.34	816.59	0.000000	3445329521	WAT_RAD
	LWC	24	24	132.94	156.69	0.000000	3445329521	WAT_RAD
	MWC	34	34	28.33	33.13	0.000000	3445329521	WAT_RAD
	NWT	3	3	0.49	1.21	0.000000	3445329521	WAT_RAD
	RAC	2	2	1.34	5.25	0.000000	3445329521	WAT_RAD
	UMB	15	15	17.62	26.87	0.000000	3445329521	WAT_RAD
	W4T	110	110	11631.42	13062.04	0.000004	3445329521	WAT_RAD
	WOL	15	15	156.62	191.31	0.000000	3445329521	WAT_RAD
	WS	10	10	49.55	115.28	0.000000	3445329521	WAT_RAD
	1C	1	1	1.68	1.68	0.000000	3445329521	WAT_RAD
	1WC	1	1	4.94	4.94	0.000000	3445329521	WAT_RAD

	HRT	1	1	1.88	1.88	0.000000	3445329521	WAT_RAD
	IHP	6	6	10.01	17.44	0.000000	3445329521	WAT_RAD
	LMB	8	8	1111.21	1514.15	0.000000	3445329521	WAT_RAD
	MWC	10	10	28.34	38.52	0.000000	3445329521	WAT_RAD
	RAC	1	1	0.81	0.81	0.000000	3445329521	WAT_RAD
	WOL	9	9	151.34	199.66	0.000000	3445329521	WAT_RAD
Uranium-235	LMB	1	1	0.03	0.03	0.000001	21833.0000	WAT_RAD
Uranium-238	LMB	1	1	0.53	0.53	0.000023	22727.0000	WAT_RAD

Table B.4. Screening of aqueous concentrations of radionuclides detected in seeps and ephemeral tributaries against screening benchmarks for aquatic life. Concentrations are pCi/L.

Radionuclide	Reach	Seep ID	Samples	Detects	P.L. Mean	95% UCB	Quotient Value	Benchmark	Benchmark
Cesium-137	LWC	SW7-4	1	1	28.50	28.50	0.00075	37882.0000	WAT_RAD
	LWC	SW7-6	2	2	304.30	529.07	0.01397	37882.0000	WAT_RAD
	LWC	WCTRIB-1	3	1	29.20	29.20	0.00077	37882.0000	WAT_RAD
	W4T	BTT	5	5	300.29	690.41	0.01823	37882.0000	WAT_RAD
	W4T	SW4-2	5	5	247.79	450.83	0.01190	37882.0000	WAT_RAD
	W4T	WAG4 T2A	4	4	254.11	401.08	0.01059	37882.0000	WAT_RAD
	WS	RS-1	1	1	35.90	35.90	0.00095	37882.0000	WAT_RAD
	WS	RS-3B	2	1	13.30	13.30	0.00035	37882.0000	WAT_RAD
	WS	SW7-2	2	1	43.20	43.20	0.00114	37882.0000	WAT_RAD
Cobalt-60	LWC	EAST SEEP	7	6	166.51	222.17	0.00044	510314.000	WAT_RAD
	LWC	SW7-3	8	8	653.45	1057.22	0.00207	510314.000	WAT_RAD
	LWC	SW7-4	1	1	179.30	179.30	0.00035	510314.000	WAT_RAD
	LWC	SW7-5	6	6	2550.38	5002.84	0.00980	510314.000	WAT_RAD
	LWC	WCTRIB-1	3	2	65.27	89.77	0.00018	510314.000	WAT_RAD
	WS	RS-3A	8	8	835.72	972.64	0.00191	510314.000	WAT_RAD
	WS	RS-3B	2	2	97.05	364.44	0.00071	510314.000	WAT_RAD
	WS	SW7-2	2	2	1172.20	2869.34	0.00562	510314.000	WAT_RAD
	WS	WS-2	2	1	111.80	111.80	0.00022	510314.000	WAT_RAD
Plutonium-238	LMB	SW5-4	1	1	0.45	0.45	0.00008	5845.0000	WAT_RAD
	LWC	SW7-3	1	1	0.02	0.02	0.00000	5845.0000	WAT_RAD
	W4T	BTT	1	1	0.03	0.03	0.00000	5845.0000	WAT_RAD
	W4T	SW4-1	1	1	0.16	0.16	0.00003	5845.0000	WAT_RAD
	W4T	SW4-2	1	1	0.00	-0.07	-0.00001	5845.0000	WAT_RAD
	W4T	WAG4 MS1	1	1	0.04	0.04	0.00001	5845.0000	WAT_RAD
	WS	RS-1	1	1	0.11	0.11	0.00002	5845.0000	WAT_RAD
	WS	RS-3A	1	1	0.16	0.16	0.00003	5845.0000	WAT_RAD
	WS	RS-3B	1	1	0.23	0.23	0.00004	5845.0000	WAT_RAD
Strontium-90	LMB	MID. DRAIN.	2	2	2333.25	2483.20	0.00717	346570.000	WAT_RAD
	LMB	SW2-5	3	3	163422.33	176320.66	0.50876	346570.000	WAT_RAD
	LWC	EAST SEEP	3	1	68.00	68.00	0.00020	346570.000	WAT_RAD
	Unknown	SW2-6	1	1	564388.00	564388.00	1.62850	346570.000	WAT_RAD
	Unknown	SW2-7	2	2	186311.50	672088.38	1.93926	346570.000	WAT_RAD
	W4T	BTT	1	1	19733.00	19733.00	0.05694	346570.000	WAT_RAD
	W4T	SW4-2	1	1	13100.00	13100.00	0.03780	346570.000	WAT_RAD
	W4T	WAG4 MS1	2	2	11123.00	21250.26	0.06132	346570.000	WAT_RAD
	W4T	WAG4 T2A	1	1	9138.00	9138.00	0.02637	346570.000	WAT_RAD
	WOL	WAG6 MS3	1	1	248.00	248.00	0.00072	346570.000	WAT_RAD
	WS	WS-1	1	1	196.00	196.00	0.00057	346570.000	WAT_RAD
	LMB	MID. DRAIN.	3	3	1516.67	1835.79	0.00530	346570.000	WAT_RAD
	LMB	SW5-4	2	2	355176.00	854612.69	2.46592	346570.000	WAT_RAD

	UMC	SW2-2	1	1	562.00	562.00	0.00162	346570.000	WAT_RAD
	W4T	WAG4 MS1	3	3	10214.67	12498.47	0.03606	346570.000	WAT_RAD
	W4T	WAG4 T2A	3	3	7481.83	8923.30	0.02575	346570.000	WAT_RAD
	WS	RS-3A	4	4	5.54	8.05	0.00002	346570.000	WAT_RAD
	WS	RS-3B	2	2	28.70	115.83	0.00033	346570.000	WAT_RAD
	WOL	WAG6 MS3	1	1	280.00	280.00	0.00081	346570.000	WAT_RAD
	WS	WS-1	3	3	138.97	210.84	0.00061	346570.000	WAT_RAD
	WS	WS-2	2	2	159.50	206.85	0.00060	346570.000	WAT_RAD
	WS	WS-3	2	2	196.50	395.38	0.00114	346570.000	WAT_RAD
	WS	WSTRIB-1	3	3	156.20	257.66	0.00074	346570.000	WAT_RAD
Thorium-228	LMB	SW5-4	1	1	0.68	0.68	0.00050	1365.0000	WAT_RAD
	LWC	SW7-3	1	1	1.04	1.04	0.00076	1365.0000	WAT_RAD
	W4T	BTT	1	1	2.35	2.35	0.00172	1365.0000	WAT_RAD
	W4T	SW4-1	1	1	0.95	0.95	0.00070	1365.0000	WAT_RAD
	W4T	SW4-2	1	1	1.30	1.30	0.00095	1365.0000	WAT_RAD
	W4T	WAG4 MS1	1	1	3.50	3.50	0.00256	1365.0000	WAT_RAD
	WS	RS-1	1	1	0.00	0.00	0.00000	1365.0000	WAT_RAD
	WS	RS-3A	1	1	0.00	0.00	0.00000	1365.0000	WAT_RAD
	WS	RS-3B	1	1	0.00	0.00	0.00000	1365.0000	WAT_RAD
Thorium-230	LMB	SW5-4	1	1	0.08	0.08	0.00004	2064.0000	WAT_RAD
	LWC	SW7-3	1	1	0.12	0.12	0.00006	2064.0000	WAT_RAD
	W4T	BTT	1	1	0.04	0.04	0.00002	2064.0000	WAT_RAD
	W4T	SW4-1	1	1	0.12	0.12	0.00006	2064.0000	WAT_RAD
	W4T	SW4-2	1	1	0.14	0.14	0.00007	2064.0000	WAT_RAD
	W4T	WAG4 MS1	1	1	0.08	0.08	0.00004	2064.0000	WAT_RAD
	WS	RS-1	1	1	0.12	0.12	0.00006	2064.0000	WAT_RAD
	WS	RS-3A	1	1	0.21	0.21	0.00010	2064.0000	WAT_RAD
	WS	RS-3B	1	1	0.09	0.09	0.00004	2064.0000	WAT_RAD
Thorium-232	LMB	SW5-4	1	1	0.04	0.04	0.00002	2389.0000	WAT_RAD
	LWC	SW7-3	1	1	0.02	0.02	0.00001	2389.0000	WAT_RAD
	W4T	BTT	1	1	0.00	-0.01	-0.00000	2389.0000	WAT_RAD
	W4T	SW4-1	1	1	0.01	0.01	0.00000	2389.0000	WAT_RAD
	W4T	SW4-2	1	1	0.03	0.03	0.00001	2389.0000	WAT_RAD
	W4T	WAG4 MS1	1	1	0.04	0.04	0.00002	2389.0000	WAT_RAD
	WS	RS-1	1	1	0.00	0.00	0.00000	2389.0000	WAT_RAD
	WS	RS-3A	1	1	0.20	0.20	0.00008	2389.0000	WAT_RAD
	WS	RS-3B	1	1	0.04	0.04	0.00002	2389.0000	WAT_RAD
Tritium	EWC	WOCET	2	2	0.81	2.96	0.00000	3445329521	WAT_RAD
	IHP	WCTRIB-3	2	2	103.19	273.12	0.00000	3445329521	WAT_RAD
	LMB	MBTRIB-3	3	3	2.51	3.35	0.00000	3445329521	WAT_RAD
	LMB	MID. DRAIN.	10	10	7387.80	8140.39	0.00000	3445329521	WAT_RAD
	LMB	SW2-5	10	10	9420.15	10890.74	0.00000	3445329521	WAT_RAD
	LMB	SW5-2	2	2	20.20	42.42	0.00000	3445329521	WAT_RAD
	LMB	SW5-4	7	7	4792.71	5825.63	0.00000	3445329521	WAT_RAD
	LWC	EAST SEEP	10	10	24.81	30.86	0.00000	3445329521	WAT_RAD
	LWC	MV-1	1	1	1.80	1.80	0.00000	3445329521	WAT_RAD
	LWC	SW7-3	4	4	21.46	29.73	0.00000	3445329521	WAT_RAD

	LWC	SW7-5	3	3	55.73	159.07	0.00000	3445329521	WAT_RAD
	LWC	SW7-6	2	2	3.58	4.05	0.00000	3445329521	WAT_RAD
	LWC	SW7-8	1	1	8.26	8.26	0.00000	3445329521	WAT_RAD
	LWC	WCTRIB-1	3	3	9.53	20.67	0.00000	3445329521	WAT_RAD
	MWC	SW2-1	1	1	11.38	11.38	0.00000	3445329521	WAT_RAD
	MWC	SW2-3	1	1	6.08	6.08	0.00000	3445329521	WAT_RAD
	MWC	SW2-4	2	2	1028.85	1667.49	0.00000	3445329521	WAT_RAD
	MWC	WCTRIB-2	1	1	2.60	2.60	0.00000	3445329521	WAT_RAD
	NRT	SW9-1	1	1	2.72	2.72	0.00000	3445329521	WAT_RAD
	NRT	SW9-2	1	1	0.90	0.90	0.00000	3445329521	WAT_RAD
	UMB	MBTRIB-1	2	2	1.25	4.41	0.00000	3445329521	WAT_RAD
	UMB	MBTRIB-2A	3	3	56.20	171.54	0.00000	3445329521	WAT_RAD
	UMB	MBTRIB-2B	3	3	0.59	1.63	0.00000	3445329521	WAT_RAD
	UMB	MV-3	1	1	0.00	-0.13	-0.00000	3445329521	WAT_RAD
	UMC	SW2-2	1	1	3.91	3.91	0.00000	3445329521	WAT_RAD
	Unknown	SPD	2	2	10454.50	15975.88	0.00000	3445329521	WAT_RAD
	Unknown	SW2-6	4	4	2441.75	2999.32	0.00000	3445329521	WAT_RAD
	Unknown	SW2-7	7	7	2491.00	2734.15	0.00000	3445329521	WAT_RAD
	W4T	BTT	7	7	29.98	38.14	0.00000	3445329521	WAT_RAD
	W4T	SW4-1	2	2	204.68	1370.98	0.00000	3445329521	WAT_RAD
	W4T	SW4-2	7	7	17.48	21.73	0.00000	3445329521	WAT_RAD
	W4T	WAG4 MS1	10	10	7446.35	11140.71	0.00000	3445329521	WAT_RAD
	W4T	WAG4 T2A	7	7	6054.14	8853.05	0.00000	3445329521	WAT_RAD
	WS	RS-1	1	1	15.27	15.27	0.00000	3445329521	WAT_RAD
	WS	RS-3A	4	4	37.98	49.66	0.00000	3445329521	WAT_RAD
	WS	RS-3B	2	2	12.57	41.64	0.00000	3445329521	WAT_RAD
	LWC	SW7-1	1	1	26.30	26.30	0.00000	3445329521	WAT_RAD
	LWC	SW7-2	2	2	8.38	9.96	0.00000	3445329521	WAT_RAD
	WOL	WAG6 MS2	3	3	2538.50	3616.08	0.00000	3445329521	WAT_RAD
	WOL	WAG6 MS3	1	1	2314.00	2314.00	0.00000	3445329521	WAT_RAD
	WOL	WAG6 MS3B	3	3	2618.00	3287.14	0.00000	3445329521	WAT_RAD
	WS	WS-1	3	3	15.22	29.34	0.00000	3445329521	WAT_RAD
	WS	WS-2	2	2	22.98	97.04	0.00000	3445329521	WAT_RAD
	WS	WS-3	2	2	10.65	12.63	0.00000	3445329521	WAT_RAD
	WS	WSTRIB-1	3	3	20.57	50.85	0.00000	3445329521	WAT_RAD
	W4T	SW4-2	1	1	17.77	17.77	0.00000	3445329521	WAT_RAD
	W4T	WAG4 MS1	3	3	9344.67	25014.93	0.00001	3445329521	WAT_RAD
	W4T	WAG4 T2A	1	1	12000.00	12000.00	0.00000	3445329521	WAT_RAD
	WS	WS-3	1	1	6.57	6.57	0.00000	3445329521	WAT_RAD
Uranium-235	LMB	SW5-4	1	1	0.01	0.01	0.00000	21833.0000	WAT_RAD
	LWC	SW7-3	1	1	9.97	9.97	0.00046	21833.0000	WAT_RAD
	W4T	BTT	1	1	5.32	5.32	0.00024	21833.0000	WAT_RAD
	W4T	SW4-1	1	1	0.01	0.01	0.00000	21833.0000	WAT_RAD
	W4T	SW4-2	1	1	0.06	0.06	0.00000	21833.0000	WAT_RAD
	W4T	WAG4 MS1	1	1	0.68	0.68	0.00003	21833.0000	WAT_RAD
	WS	RS-1	1	1	0.01	0.01	0.00000	21833.0000	WAT_RAD
	WS	RS-3A	1	1	6.22	6.22	0.00028	21833.0000	WAT_RAD
	WS	RS-3B	1	1	0.52	0.52	0.00002	21833.0000	WAT_RAD
Uranium-238	LMB	SW5-4	1	1	0.02	0.02	0.00000	22727.0000	WAT_RAD

LWC	SW7-3	1	1	76.30	76.30	0.00336	22727.0000	WAT_RAD
W4T	BTT	1	1	84.20	84.20	0.00370	22727.0000	WAT_RAD
W4T	SW4-1	1	1	2.43	2.43	0.00011	22727.0000	WAT_RAD
W4T	SW4-2	1	1	0.41	0.41	0.00002	22727.0000	WAT_RAD
W4T	WAG4 MS1	1	1	13.00	13.00	0.00057	22727.0000	WAT_RAD
WS	RS-1	1	1	0.18	0.18	0.00001	22727.0000	WAT_RAD
WS	RS-3A	1	1	64.20	64.20	0.00282	22727.0000	WAT_RAD
WS	RS-3B	1	1	6.64	6.64	0.00029	22727.0000	WAT_RAD

Table B.5. Screening of aqueous concentrations of chemicals (including radionuclides) detected in sediments against screening benchmarks for benthic invertebrates (Hull and Suter 1996). All concentrations are mg/L. See Table 4.1 for definitions of benchmarks.

Chemical	Benchmark	Reach	Samples	Detects	P.L. Mean	Maximum	Quotient	Benchmark Value
2-Methylnaphthalene	ER_L	IHP	5	2	0.03	0.030830	0.440423	0.070000
		LWC	7	1	0.08	0.083000	1.185714	0.070000
2-Methylnaphthalene	ER_M	IHP	5	2	0.03	0.030830	0.046014	0.670000
		LWC	7	1	0.08	0.083000	0.123881	0.670000
2-Methylnaphthalene	REG_IV	IHP	5	2	0.03	0.030830	0.093423	0.330000
		LWC	7	1	0.08	0.083000	0.251515	0.330000
2-Methylnaphthalene	SED_PEL	IHP	5	2	0.03	0.030830	0.153381	0.201000
		LWC	7	1	0.08	0.083000	0.412935	0.201000
2-Methylnaphthalene	SED_TEL	IHP	5	2	0.03	0.030830	1.526219	0.020200
		LWC	7	1	0.08	0.083000	4.108911	0.020200
4-Methylphenol	AET	IHP	5	1	0.22	0.220000	0.328358	0.670000
AM-241	SED_RAD	IHP	5	5	1.99	3.115066	0.000764	4076.000000
		LMB	5	1	0.13	0.130000	0.000032	4076.000000
		LWC	4	4	2.65	7.968475	0.001955	4076.000000
		MWC	2	2	2.95	4.528438	0.001111	4076.000000
Acenaphthene	EPASQC_A	IHP	5	2	0.08	0.187724	0.144403	1.300000
		LWC	7	2	0.06	0.125011	0.096163	1.300000
		MWC	4	1	0.54	0.540000	0.415385	1.300000
Acenaphthene	ER_L	IHP	5	2	0.08	0.187724	11.732762	0.016000
		LWC	7	2	0.06	0.125011	7.813207	0.016000
		MWC	4	1	0.54	0.540000	33.750000	0.016000
Acenaphthene	ER_M	IHP	5	2	0.08	0.187724	0.375448	0.500000
		LWC	7	2	0.06	0.125011	0.250023	0.500000
		MWC	4	1	0.54	0.540000	1.080000	0.500000
Acenaphthene	REG_IV	IHP	5	2	0.08	0.187724	0.568861	0.330000
		LWC	7	2	0.06	0.125011	0.378822	0.330000
		MWC	4	1	0.54	0.540000	1.636364	0.330000
Acenaphthene	SED_PEL	IHP	5	2	0.08	0.187724	2.111633	0.088900
		LWC	7	2	0.06	0.125011	1.406201	0.088900
		MWC	4	1	0.54	0.540000	6.074241	0.088900
Acenaphthene	SED_TEL	IHP	5	2	0.08	0.187724	27.976779	0.006710
		LWC	7	2	0.06	0.125011	18.630598	0.006710
		MWC	4	1	0.54	0.540000	80.476902	0.006710

Anthracene	EQPSQB_A	IHP	5	2	0.13	0.325262	1084.205837	0.000300
		LWC	7	2	0.06	0.095920	319.734751	0.000300
		MWC	4	2	0.28	0.706312	2354.373817	0.000300
Anthracene	ER_L	IHP	5	2	0.13	0.325262	3.826609	0.085000
		LWC	7	2	0.06	0.095920	1.128476	0.085000
		MWC	4	2	0.28	0.706312	8.309555	0.085000
Anthracene	ER_M	IHP	5	2	0.13	0.325262	0.295693	1.100000
		LWC	7	2	0.06	0.095920	0.087200	1.100000
		MWC	4	2	0.28	0.706312	0.642102	1.100000
Anthracene	REG_IV	IHP	5	2	0.13	0.325262	0.985642	0.330000
		LWC	7	2	0.06	0.095920	0.290668	0.330000
		MWC	4	2	0.28	0.706312	2.140340	0.330000
Anthracene	SED_PEL	IHP	5	2	0.13	0.325262	1.327599	0.245000
		LWC	7	2	0.06	0.095920	0.391512	0.245000
		MWC	4	2	0.28	0.706312	2.882907	0.245000
Anthracene	SED_TEL	IHP	5	2	0.13	0.325262	6.935218	0.046900
		LWC	7	2	0.06	0.095920	2.045212	0.046900
		MWC	4	2	0.28	0.706312	15.059960	0.046900
Antimony	ER_L	IHP	3	2	0.51	0.918798	0.459399	2.000000
		LMB	5	5	0.92	1.052792	0.526396	2.000000
		LWC	3	3	0.99	1.442676	0.721338	2.000000
		MWC	2	2	0.58	0.732844	0.366422	2.000000
Antimony	ER_M	IHP	3	2	0.51	0.918798	0.036752	25.000000
		LMB	5	5	0.92	1.052792	0.042112	25.000000
		LWC	3	3	0.99	1.442676	0.057707	25.000000
		MWC	2	2	0.58	0.732844	0.029314	25.000000
Antimony	REG_IV	IHP	3	2	0.51	0.918798	0.076566	12.000000
		LMB	5	5	0.92	1.052792	0.087733	12.000000
		LWC	3	3	0.99	1.442676	0.120223	12.000000
		MWC	2	2	0.58	0.732844	0.061070	12.000000
Aroclor-1254	EQPSQB_A	IHP	5	3	0.25	0.449889	2.646404	0.170000
		LWC	7	1	0.05	0.047000	0.276471	0.170000
Aroclor-1254	ER_L	IHP	5	3	0.25	0.449889	19.560381	0.023000
		LWC	7	1	0.05	0.047000	2.043478	0.023000
Aroclor-1254	ER_M	IHP	5	3	0.25	0.449889	2.499382	0.180000
		LWC	7	1	0.05	0.047000	0.261111	0.180000
Aroclor-1260	EQPSQB_A	IHP	5	5	0.22	0.381206	0.000347	1099.000000
		LMB	4	1	0.04	0.038000	0.000035	1099.000000
		LWC	7	3	0.07	0.152737	0.000139	1099.000000

		MWC	4	4	0.23	0.525667	0.000478	1099.000000
Aroclor-1260	ER_L	IHP	5	5	0.22	0.381206	16.574153	0.023000
		LMB	4	1	0.04	0.038000	1.652174	0.023000
		LWC	7	3	0.07	0.152737	6.640733	0.023000
		MWC	4	4	0.23	0.525667	22.855074	0.023000
Aroclor-1260	ER_M	IHP	5	5	0.22	0.381206	2.117808	0.180000
		LMB	4	1	0.04	0.038000	0.211111	0.180000
		LWC	7	3	0.07	0.152737	0.848538	0.180000
		MWC	4	4	0.23	0.525667	2.920371	0.180000
Arsenic	ER_L	IHP	3	3	4.40	8.860352	1.080531	8.200000
		LMB	5	5	5.04	7.292707	0.889355	8.200000
		LWC	3	3	4.40	8.821955	1.075848	8.200000
		MWC	2	2	5.80	15.270627	1.862272	8.200000
Arsenic	ER_M	IHP	3	3	4.40	8.860352	0.126576	70.000000
		LMB	5	5	5.04	7.292707	0.104182	70.000000
		LWC	3	3	4.40	8.821955	0.126028	70.000000
		MWC	2	2	5.80	15.270627	0.218152	70.000000
Arsenic	LEL_MOE	IHP	3	3	4.40	8.860352	1.476725	6.000000
		LMB	5	5	5.04	7.292707	1.215451	6.000000
		LWC	3	3	4.40	8.821955	1.470326	6.000000
		MWC	2	2	5.80	15.270627	2.545105	6.000000
Arsenic	REG_IV	IHP	3	3	4.40	8.860352	1.107544	8.000000
		LMB	5	5	5.04	7.292707	0.911588	8.000000
		LWC	3	3	4.40	8.821955	1.102744	8.000000
		MWC	2	2	5.80	15.270627	1.908828	8.000000
Arsenic	SED_PEL	IHP	3	3	4.40	8.860352	0.212989	41.600001
		LMB	5	5	5.04	7.292707	0.175305	41.600001
		LWC	3	3	4.40	8.821955	0.212066	41.600001
		MWC	2	2	5.80	15.270627	0.367082	41.600001
Arsenic	SED_TEL	IHP	3	3	4.40	8.860352	1.223806	7.240000
		LMB	5	5	5.04	7.292707	1.007280	7.240000
		LWC	3	3	4.40	8.821955	1.218502	7.240000
		MWC	2	2	5.80	15.270627	2.109203	7.240000
Barium	REG_V_L	IHP	3	3	102.77	196.451396	9.822570	20.000000
		LMB	5	5	358.20	681.723747	34.086187	20.000000
		LWC	3	3	197.33	297.160025	14.858001	20.000000
		MWC	2	2	118.00	130.627503	6.531375	20.000000
Barium	REG_V_M	IHP	3	3	102.77	196.451396	3.274190	60.000000
		LMB	5	5	358.20	681.723747	11.362062	60.000000
		LWC	3	3	197.33	297.160025	4.952667	60.000000
		MWC	2	2	118.00	130.627503	2.177125	60.000000

Benzo(a)anthracene	EQPSQB_A	IHP	5	4	0.23	0.546377	5.059042	0.108000
		LWC	7	1	0.03	0.032000	0.296296	0.108000
		MWC	4	2	0.60	0.995223	9.215028	0.108000
Benzo(a)anthracene	ER_L	IHP	5	4	0.23	0.546377	2.101448	0.260000
		LWC	7	1	0.03	0.032000	0.123077	0.260000
		MWC	4	2	0.60	0.995223	3.827781	0.260000
Benzo(a)anthracene	ER_M	IHP	5	4	0.23	0.546377	0.341485	1.600000
		LWC	7	1	0.03	0.032000	0.020000	1.600000
		MWC	4	2	0.60	0.995223	0.622014	1.600000
Benzo(a)anthracene	REG_IV	IHP	5	4	0.23	0.546377	1.655686	0.330000
		LWC	7	1	0.03	0.032000	0.096970	0.330000
		MWC	4	2	0.60	0.995223	3.015827	0.330000
Benzo(a)anthracene	SED_PEL	IHP	5	4	0.23	0.546377	0.788422	0.693000
		LWC	7	1	0.03	0.032000	0.046176	0.693000
		MWC	4	2	0.60	0.995223	1.436108	0.693000
Benzo(a)anthracene	SED_TEL	IHP	5	4	0.23	0.546377	7.304499	0.074800
		LWC	7	1	0.03	0.032000	0.427807	0.074800
		MWC	4	2	0.60	0.995223	13.305121	0.074800
Benzo(a)pyrene	EQPSQB_A	IHP	5	4	0.20	0.395901	2.827864	0.140000
		LWC	7	3	0.08	0.126524	0.903744	0.140000
		MWC	4	3	0.47	0.954074	6.814816	0.140000
Benzo(a)pyrene	ER_L	IHP	5	4	0.20	0.395901	0.920700	0.430000
		LWC	7	3	0.08	0.126524	0.294242	0.430000
		MWC	4	3	0.47	0.954074	2.218777	0.430000
Benzo(a)pyrene	ER_M	IHP	5	4	0.20	0.395901	0.247438	1.600000
		LWC	7	3	0.08	0.126524	0.079078	1.600000
		MWC	4	3	0.47	0.954074	0.596296	1.600000
Benzo(a)pyrene	REG_IV	IHP	5	4	0.20	0.395901	1.199700	0.330000
		LWC	7	3	0.08	0.126524	0.383406	0.330000
		MWC	4	3	0.47	0.954074	2.891134	0.330000
Benzo(a)pyrene	SED_PEL	IHP	5	4	0.20	0.395901	0.518874	0.763000
		LWC	7	3	0.08	0.126524	0.165825	0.763000
		MWC	4	3	0.47	0.954074	1.250425	0.763000
Benzo(a)pyrene	SED_TEL	IHP	5	4	0.20	0.395901	4.458344	0.088800
		LWC	7	3	0.08	0.126524	1.424821	0.088800
		MWC	4	3	0.47	0.954074	10.744080	0.088800
CM-244	SED_RAD	IHP	2	2	4.70	13.539252	0.001223	11069.000000
		LMB	5	3	0.94	1.691524	0.000153	11069.000000
		LWC	2	2	0.04	0.143677	0.000013	11069.000000

		MWC	2	2	4.50	6.394125	0.000578	11069.000000
CO-60	SED_RAD	IHP	5	5	17.92	30.732834	0.003559	8635.000000
		LMB	7	7	134.34	167.739634	0.019426	8635.000000
		LWC	6	6	92.48	163.816332	0.018971	8635.000000
		MWC	3	3	24.75	45.289069	0.005245	8635.000000
CS-137	SED_RAD	IHP	5	5	2160.77	3717.668177	0.157348	23627.000000
		LMB	7	4	66.85	79.050725	0.003346	23627.000000
		LWC	6	4	398.81	1236.907825	0.052351	23627.000000
		MWC	3	3	2693.45	3940.916070	0.166797	23627.000000
Cadmium	ER_L	IHP	3	3	0.85	1.681006	1.400838	1.200000
		LMB	5	5	0.29	0.324491	0.270410	1.200000
		LWC	3	3	0.29	0.334604	0.278836	1.200000
		MWC	2	2	1.65	1.965688	1.638073	1.200000
Cadmium	ER_M	IHP	3	3	0.85	1.681006	0.175105	9.600000
		LMB	5	5	0.29	0.324491	0.033801	9.600000
		LWC	3	3	0.29	0.334604	0.034855	9.600000
		MWC	2	2	1.65	1.965688	0.204759	9.600000
Cadmium	LEL_MOE	IHP	3	3	0.85	1.681006	2.801677	0.600000
		LMB	5	5	0.29	0.324491	0.540819	0.600000
		LWC	3	3	0.29	0.334604	0.557673	0.600000
		MWC	2	2	1.65	1.965688	3.276146	0.600000
Cadmium	REG_IV	IHP	3	3	0.85	1.681006	1.681006	1.000000
		LMB	5	5	0.29	0.324491	0.324491	1.000000
		LWC	3	3	0.29	0.334604	0.334604	1.000000
		MWC	2	2	1.65	1.965688	1.965688	1.000000
Cadmium	SED_PEL	IHP	3	3	0.85	1.681006	0.399289	4.210000
		LMB	5	5	0.29	0.324491	0.077076	4.210000
		LWC	3	3	0.29	0.334604	0.079478	4.210000
		MWC	2	2	1.65	1.965688	0.466909	4.210000
Cadmium	SED_TEL	IHP	3	3	0.85	1.681006	2.486695	0.676000
		LMB	5	5	0.29	0.324491	0.480017	0.676000
		LWC	3	3	0.29	0.334604	0.494976	0.676000
		MWC	2	2	1.65	1.965688	2.907822	0.676000
Chromium VI	ER_L	IHP	3	3	56.50	81.452355	1.005585	81.000000
		LMB	5	5	92.76	134.772940	1.663863	81.000000
		LWC	3	3	36.90	40.547061	0.500581	81.000000
		MWC	2	2	48.95	62.524566	0.771908	81.000000
Chromium VI	ER_M	IHP	3	3	56.50	81.452355	0.220141	370.000000
		LMB	5	5	92.76	134.772940	0.364251	370.000000
		LWC	3	3	36.90	40.547061	0.109587	370.000000
		MWC	2	2	48.95	62.524566	0.168985	370.000000

Chrysene	ER_L	IHP	5	5	0.25	0.526580	1.385738	0.380000
		LWC	7	1	0.04	0.035000	0.092105	0.380000
		MWC	4	2	0.34	0.771989	2.031550	0.380000
Chrysene	ER_M	IHP	5	5	0.25	0.526580	0.188064	2.800000
		LWC	7	1	0.04	0.035000	0.012500	2.800000
		MWC	4	2	0.34	0.771989	0.275710	2.800000
Chrysene	REG_IV	IHP	5	5	0.25	0.526580	1.595698	0.330000
		LWC	7	1	0.04	0.035000	0.106061	0.330000
		MWC	4	2	0.34	0.771989	2.339360	0.330000
Chrysene	SED_PEL	IHP	5	5	0.25	0.526580	0.622436	0.846000
		LWC	7	1	0.04	0.035000	0.041371	0.846000
		MWC	4	2	0.34	0.771989	0.912516	0.846000
Chrysene	SED_TEL	IHP	5	5	0.25	0.526580	4.875745	0.108000
		LWC	7	1	0.04	0.035000	0.324074	0.108000
		MWC	4	2	0.34	0.771989	7.148045	0.108000
Copper	ER_L	IHP	3	3	35.43	79.478143	2.337592	34.000000
		LMB	5	5	23.38	30.480170	0.896476	34.000000
		LWC	3	3	29.73	66.341745	1.951228	34.000000
		MWC	2	2	139.00	290.530036	8.545001	34.000000
Copper	ER_M	IHP	3	3	35.43	79.478143	0.294363	270.000000
		LMB	5	5	23.38	30.480170	0.112890	270.000000
		LWC	3	3	29.73	66.341745	0.245710	270.000000
		MWC	2	2	139.00	290.530036	1.076037	270.000000
Copper	REG_IV	IHP	3	3	35.43	79.478143	2.838505	28.000000
		LMB	5	5	23.38	30.480170	1.088578	28.000000
		LWC	3	3	29.73	66.341745	2.369348	28.000000
		MWC	2	2	139.00	290.530036	10.376073	28.000000
Copper	SED_PEL	IHP	3	3	35.43	79.478143	0.735909	108.000000
		LMB	5	5	23.38	30.480170	0.282224	108.000000
		LWC	3	3	29.73	66.341745	0.614275	108.000000
		MWC	2	2	139.00	290.530036	2.690093	108.000000
Copper	SED_TEL	IHP	3	3	35.43	79.478143	4.250168	18.700000
		LMB	5	5	23.38	30.480170	1.629956	18.700000
		LWC	3	3	29.73	66.341745	3.547687	18.700000
		MWC	2	2	139.00	290.530036	15.536365	18.700000
Di-n-butylphthalate	EQPSQB_A	IHP	5	4	0.28	0.449471	0.010676	42.100000
		LWC	7	2	0.36	0.578466	0.013740	42.100000
		MWC	4	2	0.22	0.564621	0.013411	42.100000
Di-n-octylphthalate	EQPSQB_A	LMB	5	1	0.06	0.055000	0.000000	7800000.000000

Dibenz(a,h)anthracene	ER_L	IHP	5	1	0.24	0.240000	3.809524	0.063000
		MWC	4	1	0.10	0.100500	1.595238	0.063000
Dibenz(a,h)anthracene	ER_M	IHP	5	1	0.24	0.240000	0.923077	0.260000
		MWC	4	1	0.10	0.100500	0.386538	0.260000
Dibenz(a,h)anthracene	REG_IV	IHP	5	1	0.24	0.240000	0.727273	0.330000
		MWC	4	1	0.10	0.100500	0.304545	0.330000
Dibenz(a,h)anthracene	SED_PEL	IHP	5	1	0.24	0.240000	1.777778	0.135000
		MWC	4	1	0.10	0.100500	0.744444	0.135000
Dibenz(a,h)anthracene	SED_TEL	IHP	5	1	0.24	0.240000	38.585210	0.006220
		MWC	4	1	0.10	0.100500	16.157557	0.006220
Dibenzofuran	EQPSQB_A	IHP	5	1	0.07	0.067000	0.029258	2.290000
		LWC	7	2	0.16	0.362266	0.158195	2.290000
		MWC	4	1	0.43	0.430000	0.187773	2.290000
Fluoranthene	EPASQC_A	IHP	5	5	0.49	0.990234	0.159715	6.200000
		LMB	5	1	0.11	0.110000	0.017742	6.200000
		LWC	7	3	0.12	0.212802	0.034323	6.200000
		MWC	4	3	0.48	1.218625	0.196552	6.200000
Fluoranthene	ER_L	IHP	5	5	0.49	0.990234	1.650391	0.600000
		LMB	5	1	0.11	0.110000	0.183333	0.600000
		LWC	7	3	0.12	0.212802	0.354670	0.600000
		MWC	4	3	0.48	1.218625	2.031041	0.600000
Fluoranthene	ER_M	IHP	5	5	0.49	0.990234	0.194164	5.100000
		LMB	5	1	0.11	0.110000	0.021569	5.100000
		LWC	7	3	0.12	0.212802	0.041726	5.100000
		MWC	4	3	0.48	1.218625	0.238946	5.100000
Fluoranthene	REG_IV	IHP	5	5	0.49	0.990234	2.605880	0.380000
		LMB	5	1	0.11	0.110000	0.289474	0.380000
		LWC	7	3	0.12	0.212802	0.560005	0.380000
		MWC	4	3	0.48	1.218625	3.206907	0.380000
Fluoranthene	SED_PEL	IHP	5	5	0.49	0.990234	0.662808	1.494000
		LMB	5	1	0.11	0.110000	0.073628	1.494000
		LWC	7	3	0.12	0.212802	0.142438	1.494000
		MWC	4	3	0.48	1.218625	0.815679	1.494000
Fluoranthene	SED_TEL	IHP	5	5	0.49	0.990234	8.763137	0.113000
		LMB	5	1	0.11	0.110000	0.973451	0.113000
		LWC	7	3	0.12	0.212802	1.883203	0.113000
		MWC	4	3	0.48	1.218625	10.784288	0.113000
Fluorene	ER_L	IHP	5	2	0.09	0.197724	10.406536	0.019000
		LWC	7	2	0.21	0.478767	25.198283	0.019000

Fluorene	ER_M	IHP	5	2	0.09	0.197724	0.366156	0.540000
		LWC	7	2	0.21	0.478767	0.886606	0.540000
Fluorene	REG_IV	IHP	5	2	0.09	0.197724	0.599164	0.330000
		LWC	7	2	0.21	0.478767	1.450810	0.330000
Fluorene	SED_PEL	IHP	5	2	0.09	0.197724	1.373085	0.144000
		LWC	7	2	0.21	0.478767	3.324773	0.144000
Fluorene	SED_TEL	IHP	5	2	0.09	0.197724	9.326612	0.021200
		LWC	7	2	0.21	0.478767	22.583366	0.021200
Iron	LEL_MOE	IHP	3	3	21133.33	29098.586823	0.969953	30000.000000
		LMB	5	5	49080.00	67472.093481	2.249070	30000.000000
		LWC	3	3	40600.00	68827.869767	2.294262	30000.000000
		MWC	2	2	21850.00	32899.065151	1.096636	30000.000000
Iron	SEL_MOE	IHP	3	3	21133.33	29098.586823	0.727465	40000.000000
		LMB	5	5	49080.00	67472.093481	1.686802	40000.000000
		LWC	3	3	40600.00	68827.869767	1.720697	40000.000000
		MWC	2	2	21850.00	32899.065151	0.822477	40000.000000
Lead	ER_L	IHP	3	3	35.03	64.883115	1.380492	47.000000
		LMB	5	5	13.70	19.143937	0.407318	47.000000
		LWC	3	3	15.77	22.827828	0.485698	47.000000
		MWC	2	2	71.80	121.678637	2.588907	47.000000
Lead	ER_M	IHP	3	3	35.03	64.883115	0.297629	218.000000
		LMB	5	5	13.70	19.143937	0.087816	218.000000
		LWC	3	3	15.77	22.827828	0.104715	218.000000
		MWC	2	2	71.80	121.678637	0.558159	218.000000
Lead	REG_IV	IHP	3	3	35.03	64.883115	3.089672	21.000000
		LMB	5	5	13.70	19.143937	0.911616	21.000000
		LWC	3	3	15.77	22.827828	1.087039	21.000000
		MWC	2	2	71.80	121.678637	5.794221	21.000000
Lead	SED_PEL	IHP	3	3	35.03	64.883115	0.579314	112.000000
		LMB	5	5	13.70	19.143937	0.170928	112.000000
		LWC	3	3	15.77	22.827828	0.203820	112.000000
		MWC	2	2	71.80	121.678637	1.086416	112.000000
Lead	SED_TEL	IHP	3	3	35.03	64.883115	2.148447	30.200000
		LMB	5	5	13.70	19.143937	0.633905	30.200000
		LWC	3	3	15.77	22.827828	0.755888	30.200000
		MWC	2	2	71.80	121.678637	4.029094	30.200000
Manganese	LEL_MOE	IHP	3	3	803.33	1650.715184	3.588511	460.000000
		LMB	5	5	3211.20	6021.788706	13.090845	460.000000
		LWC	3	3	1760.00	2289.905652	4.978056	460.000000
		MWC	2	2	747.00	1018.491315	2.214112	460.000000

Manganese	SEL_MOE	IHP	3	3	803.33	1650.715184	1.487131	1110.000000
		LMB	5	5	3211.20	6021.788706	5.425035	1110.000000
		LWC	3	3	1760.00	2289.905652	2.062978	1110.000000
		MWC	2	2	747.00	1018.491315	0.917560	1110.000000
Mercury	ER_L	IHP	3	3	2.03	4.072683	27.151220	0.150000
		LMB	5	5	0.12	0.142359	0.949060	0.150000
		LWC	3	3	0.17	0.199085	1.327235	0.150000
		MWC	2	2	4.60	5.862750	39.085002	0.150000
Mercury	ER_M	IHP	3	3	2.03	4.072683	5.736173	0.710000
		LMB	5	5	0.12	0.142359	0.200506	0.710000
		LWC	3	3	0.17	0.199085	0.280402	0.710000
		MWC	2	2	4.60	5.862750	8.257395	0.710000
Mercury	REG_IV	IHP	3	3	2.03	4.072683	40.726831	0.100000
		LMB	5	5	0.12	0.142359	1.423590	0.100000
		LWC	3	3	0.17	0.199085	1.990852	0.100000
		MWC	2	2	4.60	5.862750	58.627503	0.100000
Mercury	SED_PEL	IHP	3	3	2.03	4.072683	5.851556	0.696000
		LMB	5	5	0.12	0.142359	0.204539	0.696000
		LWC	3	3	0.17	0.199085	0.286042	0.696000
		MWC	2	2	4.60	5.862750	8.423491	0.696000
Mercury	SED_TEL	IHP	3	3	2.03	4.072683	31.328332	0.130000
		LMB	5	5	0.12	0.142359	1.095069	0.130000
		LWC	3	3	0.17	0.199085	1.531425	0.130000
		MWC	2	2	4.60	5.862750	45.098080	0.130000
Naphthalene	EQPSQB_A	IHP	5	2	0.04	0.047791	0.117423	0.407000
		LWC	7	1	0.03	0.031000	0.076167	0.407000
Naphthalene	ER_L	IHP	5	2	0.04	0.047791	0.298694	0.160000
		LWC	7	1	0.03	0.031000	0.193750	0.160000
Naphthalene	ER_M	IHP	5	2	0.04	0.047791	0.022758	2.100000
		LWC	7	1	0.03	0.031000	0.014762	2.100000
Naphthalene	REG_IV	IHP	5	2	0.04	0.047791	0.144821	0.330000
		LWC	7	1	0.03	0.031000	0.093939	0.330000
Naphthalene	SED_PEL	IHP	5	2	0.04	0.047791	0.122228	0.391000
		LWC	7	1	0.03	0.031000	0.079284	0.391000
Naphthalene	SED_TEL	IHP	5	2	0.04	0.047791	1.381245	0.034600
		LWC	7	1	0.03	0.031000	0.895954	0.034600
Nickel	ER_L	IHP	3	3	45.90	145.505469	6.928832	21.000000
		LMB	5	5	38.30	42.993937	2.047330	21.000000
		LWC	3	3	30.23	43.938960	2.092331	21.000000

		MWC	2	2	25.55	30.916689	1.472223	21.000000
Nickel	ER_M	IHP	3	3	45.90	145.505469	2.819873	51.600000
		LMB	5	5	38.30	42.993937	0.833216	51.600000
		LWC	3	3	30.23	43.938960	0.851530	51.600000
		MWC	2	2	25.55	30.916689	0.599161	51.600000
Nickel	REG_IV	IHP	3	3	45.90	145.505469	6.961984	20.900000
		LMB	5	5	38.30	42.993937	2.057126	20.900000
		LWC	3	3	30.23	43.938960	2.102343	20.900000
		MWC	2	2	25.55	30.916689	1.479267	20.900000
Nickel	SED_PEL	IHP	3	3	45.90	145.505469	3.399660	42.800001
		LMB	5	5	38.30	42.993937	1.004531	42.800001
		LWC	3	3	30.23	43.938960	1.026611	42.800001
		MWC	2	2	25.55	30.916689	0.722353	42.800001
Nickel	SED_TEL	IHP	3	3	45.90	145.505469	9.151287	15.900000
		LMB	5	5	38.30	42.993937	2.704021	15.900000
		LWC	3	3	30.23	43.938960	2.763457	15.900000
		MWC	2	2	25.55	30.916689	1.944446	15.900000
PCB, total	EQPSQB_A	IHP	5	5	0.74	1.108107	0.054001	20.520000
		LMB	4	1	0.43	0.428000	0.020858	20.520000
		LWC	7	4	0.38	0.462140	0.022521	20.520000
		MWC	4	4	0.65	1.079672	0.052616	20.520000
PCB, total	ER_L	IHP	5	5	0.74	1.108107	48.178552	0.023000
		LMB	4	1	0.43	0.428000	18.608696	0.023000
		LWC	7	4	0.38	0.462140	20.093043	0.023000
		MWC	4	4	0.65	1.079672	46.942239	0.023000
PCB, total	ER_M	IHP	5	5	0.74	1.108107	6.156148	0.180000
		LMB	4	1	0.43	0.428000	2.377778	0.180000
		LWC	7	4	0.38	0.462140	2.567444	0.180000
		MWC	4	4	0.65	1.079672	5.998175	0.180000
PCB, total	REG_IV	IHP	5	5	0.74	1.108107	33.578991	0.033000
		LMB	4	1	0.43	0.428000	12.969697	0.033000
		LWC	7	4	0.38	0.462140	14.004242	0.033000
		MWC	4	4	0.65	1.079672	32.717318	0.033000
PCB, total	SED_PEL	IHP	5	5	0.74	1.108107	5.862998	0.189000
		LMB	4	1	0.43	0.428000	2.264550	0.189000
		LWC	7	4	0.38	0.462140	2.445185	0.189000
		MWC	4	4	0.65	1.079672	5.712548	0.189000
PCB, total	SED_TEL	IHP	5	5	0.74	1.108107	51.301235	0.021600
		LMB	4	1	0.43	0.428000	19.814815	0.021600
		LWC	7	4	0.38	0.462140	21.395370	0.021600
		MWC	4	4	0.65	1.079672	49.984791	0.021600

PU-238	SED_RAD	IHP	5	5	0.31	0.440587	0.000017	26272.000000
		LMB	5	2	1.10	1.534837	0.000058	26272.000000
		LWC	4	4	0.37	1.178685	0.000045	26272.000000
		MWC	2	2	0.86	1.139119	0.000043	26272.000000
PU-239/40	SED_RAD	IHP	5	5	5.59	8.759958	0.000313	27975.000000
		LWC	4	4	18.64	59.758823	0.002136	27975.000000
		MWC	2	2	5.30	7.194125	0.000257	27975.000000
Pentachlorophenol	AET	IHP	5	1	0.03	0.029000	0.080556	0.360000
Phenanthrene	EPASQC_A	IHP	5	5	0.31	0.654559	0.363644	1.800000
		LMB	5	1	0.07	0.065000	0.036111	1.800000
		LWC	7	2	0.37	0.818758	0.454866	1.800000
		MWC	4	3	0.93	2.517209	1.398450	1.800000
Phenanthrene	ER_L	IHP	5	5	0.31	0.654559	2.727328	0.240000
		LMB	5	1	0.07	0.065000	0.270833	0.240000
		LWC	7	2	0.37	0.818758	3.411493	0.240000
		MWC	4	3	0.93	2.517209	10.488372	0.240000
Phenanthrene	ER_M	IHP	5	5	0.31	0.654559	0.436372	1.500000
		LMB	5	1	0.07	0.065000	0.043333	1.500000
		LWC	7	2	0.37	0.818758	0.545839	1.500000
		MWC	4	3	0.93	2.517209	1.678140	1.500000
Phenanthrene	REG_IV	IHP	5	5	0.31	0.654559	1.983511	0.330000
		LMB	5	1	0.07	0.065000	0.196970	0.330000
		LWC	7	2	0.37	0.818758	2.481086	0.330000
		MWC	4	3	0.93	2.517209	7.627907	0.330000
Phenanthrene	SED_PEL	IHP	5	5	0.31	0.654559	1.203233	0.544000
		LMB	5	1	0.07	0.065000	0.119485	0.544000
		LWC	7	2	0.37	0.818758	1.505070	0.544000
		MWC	4	3	0.93	2.517209	4.627223	0.544000
Phenanthrene	SED_TEL	IHP	5	5	0.31	0.654559	7.549696	0.086700
		LMB	5	1	0.07	0.065000	0.749712	0.086700
		LWC	7	2	0.37	0.818758	9.443578	0.086700
		MWC	4	3	0.93	2.517209	29.033556	0.086700
Pyrene	ER_L	IHP	5	5	0.39	0.831804	1.260309	0.660000
		LMB	5	1	0.09	0.086000	0.130303	0.660000
		LWC	7	3	0.08	0.132275	0.200416	0.660000
		MWC	4	4	0.67	1.499339	2.271726	0.660000
Pyrene	ER_M	IHP	5	5	0.39	0.831804	0.319925	2.600000
		LMB	5	1	0.09	0.086000	0.033077	2.600000
		LWC	7	3	0.08	0.132275	0.050875	2.600000
		MWC	4	4	0.67	1.499339	0.576669	2.600000

Pyrene	REG_IV	IHP	5	5	0.39	0.831804	2.520618	0.330000
		LMB	5	1	0.09	0.086000	0.260606	0.330000
		LWC	7	3	0.08	0.132275	0.400832	0.330000
		MWC	4	4	0.67	1.499339	4.543453	0.330000
Pyrene	SED_PEL	IHP	5	5	0.39	0.831804	0.594996	1.398000
		LMB	5	1	0.09	0.086000	0.061516	1.398000
		LWC	7	3	0.08	0.132275	0.094617	1.398000
		MWC	4	4	0.67	1.499339	1.072489	1.398000
Pyrene	SED_TEL	IHP	5	5	0.39	0.831804	5.436627	0.153000
		LMB	5	1	0.09	0.086000	0.562092	0.153000
		LWC	7	3	0.08	0.132275	0.864540	0.153000
		MWC	4	4	0.67	1.499339	9.799604	0.153000
Silver	ER_L	IHP	3	3	7.37	21.870242	21.870242	1.000000
		LMB	5	5	0.29	0.324491	0.324491	1.000000
		LWC	3	3	0.29	0.332266	0.332266	1.000000
		MWC	2	2	24.05	31.310814	31.310814	1.000000
Silver	ER_M	IHP	3	3	7.37	21.870242	5.910876	3.700000
		LMB	5	5	0.29	0.324491	0.087700	3.700000
		LWC	3	3	0.29	0.332266	0.089802	3.700000
		MWC	2	2	24.05	31.310814	8.462382	3.700000
Silver	REG_IV	IHP	3	3	7.37	21.870242	10.935121	2.000000
		LMB	5	5	0.29	0.324491	0.162246	2.000000
		LWC	3	3	0.29	0.332266	0.166133	2.000000
		MWC	2	2	24.05	31.310814	15.655407	2.000000
Silver	SED_PEL	IHP	3	3	7.37	21.870242	12.356069	1.770000
		LMB	5	5	0.29	0.324491	0.183329	1.770000
		LWC	3	3	0.29	0.332266	0.187721	1.770000
		MWC	2	2	24.05	31.310814	17.689726	1.770000
Silver	SED_TEL	IHP	3	3	7.37	21.870242	29.836617	0.733000
		LMB	5	5	0.29	0.324491	0.442690	0.733000
		LWC	3	3	0.29	0.332266	0.453297	0.733000
		MWC	2	2	24.05	31.310814	42.715979	0.733000
TH-228	SED_RAD	IHP	5	5	1.44	1.759990	0.000101	17450.000000
		LMB	5	5	1.14	1.602714	0.000092	17450.000000
		LWC	4	4	6.03	6.720305	0.000385	17450.000000
		MWC	1	1	1.50	1.500000	0.000086	17450.000000
TH-230	SED_RAD	IHP	5	5	1.01	1.144154	0.000004	306208.000000
		LMB	5	5	0.84	1.173528	0.000004	306208.000000
		LWC	4	4	1.06	1.192956	0.000004	306208.000000
		MWC	1	1	0.88	0.880000	0.000003	306208.000000
TH-232	SED_RAD	IHP	5	5	1.17	1.253080	0.000049	25440.000000

		LMB	5	5	1.14	1.575231	0.000062	25440.000000
		LWC	4	4	1.28	1.517579	0.000060	25440.000000
		MWC	1	1	1.10	1.100000	0.000043	25440.000000
TOTAL RADIO-STRONTIUM	SED_RAD	IHP	5	5	47.58	89.007899	0.005099	17455.000000
		LMB	5	4	28.63	55.535909	0.003182	17455.000000
		LWC	4	3	6.25	13.833095	0.000793	17455.000000
		MWC	2	2	25.50	72.853136	0.004174	17455.000000
U-233/4	SED_RAD	IHP	5	5	2.85	4.177064	0.000464	9001.000000
		LMB	5	5	0.81	1.135598	0.000126	9001.000000
		LWC	2	2	6.95	16.736315	0.001859	9001.000000
		MWC	2	2	4.75	9.485314	0.001054	9001.000000
U-235	SED_RAD	IHP	5	5	0.10	0.161824	0.000018	9207.000000
		LMB	5	5	0.08	0.130476	0.000014	9207.000000
		LWC	2	2	0.07	0.254756	0.000028	9207.000000
		MWC	2	2	0.08	0.282697	0.000031	9207.000000
U-238	SED_RAD	IHP	5	5	1.83	2.767581	0.000331	8351.000000
		LMB	5	5	0.80	1.077611	0.000129	8351.000000
		LWC	2	2	0.24	0.708531	0.000085	8351.000000
		MWC	2	2	1.70	2.331375	0.000279	8351.000000
Zinc	ER_L	IHP	3	3	197.50	393.402164	2.622681	150.000000
		LMB	5	5	399.00	554.862641	3.699084	150.000000
		LWC	3	3	70.27	88.289810	0.588599	150.000000
		MWC	2	2	811.00	1423.433897	9.489559	150.000000
Zinc	ER_M	IHP	3	3	197.50	393.402164	0.959517	410.000000
		LMB	5	5	399.00	554.862641	1.353324	410.000000
		LWC	3	3	70.27	88.289810	0.215341	410.000000
		MWC	2	2	811.00	1423.433897	3.471790	410.000000
Zinc	REG_IV	IHP	3	3	197.50	393.402164	5.785326	68.000000
		LMB	5	5	399.00	554.862641	8.159745	68.000000
		LWC	3	3	70.27	88.289810	1.298380	68.000000
		MWC	2	2	811.00	1423.433897	20.932851	68.000000
Zinc	SED_PEL	IHP	3	3	197.50	393.402164	1.451669	271.000000
		LMB	5	5	399.00	554.862641	2.047464	271.000000
		LWC	3	3	70.27	88.289810	0.325793	271.000000
		MWC	2	2	811.00	1423.433897	5.252524	271.000000
Zinc	SED_TEL	IHP	3	3	197.50	393.402164	3.172598	124.000000
		LMB	5	5	399.00	554.862641	4.474699	124.000000
		LWC	3	3	70.27	88.289810	0.712015	124.000000
		MWC	2	2	811.00	1423.433897	11.479306	124.000000
bis(2-Ethylhexyl)phthalate	EQPSQB_A	IHP	5	5	0.30	0.481422	0.000001	890000.000000
		LMB	5	3	0.11	0.163751	0.000000	890000.000000

		LWC	7	5	0.16	0.314450	0.000000.	890000.000000
		MWC	4	4	0.96	2.226516	0.000003	890000.000000
bis(2-Ethylhexyl)phthalate	SED_PEL	IHP	5	5	0.30	0.481422	0.181875	2.647000
		LMB	5	3	0.11	0.163751	0.061863	2.647000
		LWC	7	5	0.16	0.314450	0.118795	2.647000
		MWC	4	4	0.96	2.226516	0.841147	2.647000
bis(2-Ethylhexyl)phthalate	SED_TEL	IHP	5	5	0.30	0.481422	2.645178	0.182000
		LMB	5	3	0.11	0.163751	0.899729	0.182000
		LWC	7	5	0.16	0.314450	1.727748	0.182000
		MWC	4	4	0.96	2.226516	12.233605	0.182000

Table B.6. Comparison of above-background, maximum-detected soil contaminant concentrations to screening benchmarks for toxicity to soil invertebrates.

Reach	Chemical	Mean Conc. (mg/kg)	Maximum detect. conc. (mg/kg)	Earthworm benchmark (mg/kg)	Hazard Quotient
IHP	Cadmium	1.211	1.5	20	0.08
	Chromium VI[2]	48.93	71.60	0.4	**200**
	Copper	28.19	45.1	50	0.9
	Fluorene	0.38	0.14	30	0.005
	Lead	59.39	111	500	0.2
	Mercury	17.33	76.4	0.1	**800**
	Nickel	53.63	310	200	**2**
	Zinc	95.92	159	200	0.8
LWOC	Cadmium	0.8325	1	20	0.05
	Chromium VI[2]	55.45	95.30	0.4	**200**
	Lead	35.3	50.4	500	0.1
	Mercury	2.958	5.1	0.1	**50**
	N-Nitrosodiphenylamine [1]	0.4275	0.42	20	0.021
	Selenium	1.075	1.3	70	0.02
	Zinc	104.4	190	200	1
MWOC	Cadmium	0.825	0.86	20	0.04
	Mercury	1.555	2.5	0.1	**30**
	Selenium	1.23	1.6	70	0.02
	Zinc	83.75	123	200	0.6
LMBC/	Cadmium	0.93	1.1	20	0.06
	Mercury	0.506	2	0.1	**20**
	Selenium	0.902	1.3	70	0.02

Boldface type indicates exceedence of benchmark.

[1] Background concentration assumed to be zero.

[2] Concentrations of Chromium VI are compared to benchmarks for total chromium.

Table B.7. Comparison of above-background, maximum-detected soil contaminant concentrations to screening benchmarks for toxicity to plants.

Reach	Chemical	Mean Conc. (mg/kg)	Maximum detect. conc. (mg/kg)	Benchmark (mg/kg)	Hazard Quotient
IHP	Barium	180.27778	268	500	0.5
	Boron [1]	6.4055556	10.2	0.5	20
	Cadmium	1.2111111	1.5	3	0.5
	Chromium VI[3]	48.93	71.60	1	70
	Copper	28.188889	45.1	100	0.5
	Di-n-butyl phthalate [2]	0.1494	0.11	200	0.0006
	Lead	59.394444	111	50	2
	Lithium [1]	26.844444	41.4	2	20
	Manganese	1260.1111	4150	500	8
	Mercury	17.33	76.4	0.3	300
	Molybdenum [1]	4.2722222	5.2	2	3
	Nickel	53.627778	310	30	10
	PCB, total [2]	1.0866	2.194	40	0.05
	Silver	6.6	15.2	2	8
	Thallium	0.8483333	0.91	1	0.9
	Tin	10.522222	12.8	50	0.3
	Zinc	95.916667	159	50	3
LWOC	Boron [1]	9.75	10.2	0.5	20
	Cadmium	0.8325	1	3	0.3
	Chromium VI[3]	55.45	95.30	1	100
	Di-n-butyl phthalate [2]	0.18975	0.17	200	0.0009
	Lead	35.3	50.4	50	1
	Lithium [1]	13.95	16.2	2	8
	Manganese	969.25	1280	500	3
	Mercury	2.9575	5.1	0.3	20
	Molybdenum [1]	3.6	3.8	2	2
	PCB, total [2]	0.5115	0.736	40	0.02
	Selenium	1.075	1.3	1	1
	Silver	3.7	6.8	2	3
	Tin	6.95	7.3	50	0.1
	Zinc	104.35	190	50	4
MWOC	Boron [1]	10.45	10.9	0.5	20
	Cadmium	0.825	0.86	3	0.3
	Di-n-butyl phthalate [2]	0.042	0.049	200	0.0002
	Lithium [1]	11.2	13	2	7
	Mercury	1.555	2.5	0.3	8
	Molybdenum [1]	3.85	4	2	2
	PCB, total [2]	0.633	0.94	40	0.02
	Selenium	1.23	1.6	1	2

	Silver	2.5	3.9	2	**2**
	Tin	7.4	7.7	50	0.2
	Zinc	83.75	123	50	**2**
LMBC/	**Antimony**	10.66	12.1	5	**2**
	Barium	220.6	409	500	0.8
	Boron [1]	6.36	9.4	0.5	**20**
	Cadmium	0.93	1.1	3	0.4
	Di-n-butyl phthalate [2]	0.1635714	0.42	200	0.002
	Lead	16.36	18.8	50	0.4
	Lithium [1]	20.02	25.9	2	**10**
	Manganese	4502	9400	500	**20**
	Mercury	0.506	2	0.3	**7**
	Molybdenum [1]	5.56	7.3	2	**4**
	PCB, total [2]	0.3752857	0.315	40	0.008
	Selenium	0.902	1.3	1	**1**
	Silver	1.208	1.4	2	0.7
	Thallium	1.11	1.4	1	**1**
	Tin	8.78	11.3	50	0.2

Boldface type indicates exceedence of benchmark.
[1] Background concentration not available.
[2] Background concentration assumed to be zero.
[3] Concentrations of Chromium VI are compared to benchmarks for total chromium.

Table B.8. Comparison of above-background, maximum-detected contaminant concentrations in seeps or springs to screening benchmarks for toxicity to plants in solution.

Reach	Seep	Chemical	Mean conc. (mg/kg)	Maximum detect conc. (mg/kg)	Benchmark (mg/kg)	Hazard Quotient
EWC	WOCET	ALUMINUM	1.071	1.5	0.2	8
	WOCET	IRON	1.084	1.61	10	0.2
	WOCET	MANGANESE	0.3545	0.649	4	0.2
HRT	SW9-1	IRON	0.3663	0.621	10	0.06
	SW9-1	MANGANESE	0.2477	0.311	4	0.08
	SW9-2	ALUMINUM	0.858	1.46	0.2	7
	SW9-2	IRON	1.867	3.37	10	0.3
	SW9-2	MANGANESE	1.175	2.18	4	0.5
	SW9-2	ZINC	0.1143	0.288	0.4	0.7
IHP	WCTRIB-3	BORON [1]	0.199	0.199	1	0.2
	WCTRIB-3	IRON	0.378	0.378	10	0.04
	WCTRIB-3	MANGANESE	0.585	0.585	4	0.1
	SW2-2	IRON	0.394	0.394	10	0.04
	SW2-2	MANGANESE	0.796	0.796	4	0.2
LMB	MBTRIB-3	IRON	0.2945	0.414	10	0.04
	MBTRIB-3	MANGANESE	0.3685	0.399	4	0.1
	MID. DRAIN.	BORON [1]	0.1939	0.274	1	0.3
	MID. DRAIN.	IRON	2.0316	8.61	10	0.9
	MID. DRAIN.	MANGANESE	1.8748	4.74	4	1
	SW2-5	BORON [1]	0.215	0.336	1	0.3
	SW2-5	IRON	0.3486	1.54	10	0.2

	SW2-5	MANGANESE	0.945	3.06	4	0.7
	SW5-2	BORON [1]	0.175	0.175	1	0.2
	SW5-2	IRON	0.089	0.089	10	0.009
	SW5-4	BORON [1]	0.1457	0.234	1	0.2
	SW5-4	IRON	0.4035	1.11	10	0.1
	SW5-4	MANGANESE	0.7902	2.62	4	0.7
LWC	EAST SEEP	**ALUMINUM**	0.8376	2.41	0.2	10
	EAST SEEP	ARSENIC	0.0275	0.004	0.001	4
	EAST SEEP	BORON [1]	0.08756	0.14	1	0.1
	EAST SEEP	CHROMIUM	0.015	0.033	0.05	0.7
	EAST SEEP	IRON	0.6446	1.7	10	0.2
	EAST SEEP	MANGANESE	0.2593	0.552	4	0.1
	EAST SEEP	MOLYBDENUM [1]	0.01467	0.015	0.5	0.03
	EAST SEEP	NICKEL	0.02767	0.04	0.2	0.2
	MV-1	IRON	2.1	2.11	10	0.2
	MV-1	MANGANESE	3.965	3.99	4	1
	SW7-3	**ALUMINUM**	0.452	0.775	0.2	4
	SW7-3	BORON [1]	0.08713	0.101	1	0.1
	SW7-3	**CHROMIUM**	0.056	0.091	0.05	2
	SW7-3	IRON	0.3488	0.693	10	0.07
	SW7-3	MOLYBDENUM [1]	0.014	0.017	0.5	0.03
	SW7-5	**ALUMINUM**	0.8017	2.19	0.2	10
	SW7-5	BORON [1]	0.0951	0.077	1	0.08
	SW7-5	IRON	0.8155	2.73	10	0.3
	SW7-5	MANGANESE	0.2711	2.35	4	0.6
	SW7-6	**ALUMINUM**	0.761	0.761	0.2	4
	SW7-6	IRON	0.431	0.431	10	0.04
	SW7-8	ALUMINUM	0.412	0.412	0.2	2
	SW7-8	IRON	0.368	0.368	10	0.04
	SW7-8	MANGANESE	0.126	0.126	4	0.03
	WCTRIB-1	**ALUMINUM**	0.572	0.957	0.2	5
	WCTRIB-1	IRON	0.437	0.659	10	0.07

	WCTRIB-1	MANGANESE	0.213	0.369	4	0.09
MWC	SW2-1	BORON [1]	0.019	0.019	1	0.02
	SW2-1	IRON	2.3	2.3	10	0.2
	SW2-1	MANGANESE	0.992	0.992	4	0.2
	SW2-3	IRON	0.225	0.225	10	0.02
	SW2-4	IRON	0.5975	0.809	10	0.08
	SW2-4	MANGANESE	1.5775	2.26	4	0.6
	SW2-4	SILVER [1]	0.003	0.003	0.1	0.03
	WCTRIB-2	IRON	0.188	0.188	10	0.02
UMB	MBTRIB-2A	IRON	0.218	0.218	10	0.02
	MV-3	IRON	0.172	0.172	10	0.02
Unknown	SW2-6	BORON [1]	0.133	0.118	1	0.1
	SW2-6	IRON	2.857	8.52	10	0.9
	SW2-6	MANGANESE	1	1.36	4	0.3
	SW2-7	BORON [1]	0.1465	0.141	1	0.1
	SW2-7	IRON	6.8925	17	10	2
	SW2-7	MANGANESE	1.4475	1.9	4	0.5
W4T	BTT	BORON [1]	0.1126	0.113	1	0.1
	BTT	IRON	0.1414	0.202	10	0.02
	BTT	MOLYBDENUM [1]	0.06743	0.171	0.5	0.3
	BTT	NICKEL	0.04114	0.051	0.2	0.3
	SW4-1	ARSENIC	0.004	0.006	0.001	6
	SW4-1	IRON	14.881	28.8	10	3
	SW4-1	MANGANESE	2.0935	3.81	4	1
	SW4-2	BORON [1]	0.1547	0.231	1	0.2
	SW4-2	IRON	2.4103	7.06	10	0.7
	SW4-2	LITHIUM [1]	0.113	0.113	3	0.04
	SW4-2	MANGANESE	0.7535	1.23	4	0.3
	SW4-2	MOLYBDENUM	0.01467	0.008	0.5	0.02

	SW4-2	NICKEL	6.17	9.46	0.2	50
	WAG4 MS1	ALUMINUM	0.1535	1.02	0.2	5
	WAG4 MS1	BERYLLIUM	0.000909	0.002	0.5	0.004
	WAG4 MS1	BORON [1]	0.1735	0.196	1	0.2
	WAG4 MS1	IRON	0.1947	1.12	10	0.1
	WAG4 MS1	MANGANESE	0.2095	0.644	4	0.2
	WAG4 MS1	MOLYBDENUM [1]	0.01418	0.007	0.5	0.01
	WAG4 MS1	NICKEL	0.03364	0.067	0.2	0.3
	WAG4 T2A	ALUMINUM	0.4713	1	0.2	5
	WAG4 T2A	BORON [1]	0.1456	0.206	1	0.2
	WAG4 T2A	CHROMIUM	0.008	0.035	0.05	1
	WAG4 T2A	IRON	0.4763	1.43	10	0.1
	WAG4 T2A	MANGANESE	0.1254	0.41	4	0.1
WOL	RS-1	IRON	0.601	0.601	10	0.06
	RS-1	MANGANESE	1.35	1.35	4	0.3
	RS-3A	ALUMINUM	10.012	17.7	0.2	90
	RS-3A	ARSENIC	0.01688	0.024	0.001	20
	RS-3A	BORON [1]	0.1521	0.118	1	0.1
	RS-3A	CHROMIUM	0.078	0.096	0.05	2
	RS-3A	COPPER	0.0194	0.028	0.03	0.9
	RS-3A	IRON	7.728	13.9	10	1
	RS-3A	MANGANESE	0.2344	0.531	4	0.1
	RS-3A	MOLYBDENUM [1]	0.0483	0.056	0.5	0.1
	RS-3A	NICKEL	0.097	0.108	0.2	0.5
	RS-3A	SILVER [1]	0.0046	0.006	0.1	0.06
	RS-3A	VANADIUM	0.022	0.034	0.2	0.2
	RS-3B	ALUMINUM	1.345	1.42	0.2	7
	RS-3B	BORON [1]	0.077	0.034	1	0.03
	RS-3B	IRON	1.065	1.08	10	0.1
	SW7-1	IRON	6.375	6.57	10	0.7
	SW7-1	MANGANESE	6.39	6.4	4	2
	SW7-2	ALUMINUM	0.574	0.652	0.2	3

	SW7-2	**COBALT**	0.094	0.134	0.06	**2**
	SW7-2	COPPER	0.015	0.025	0.03	0.8
	SW7-2	IRON	0.586	0.642	10	0.06
	FRENCH DR S	TETRACHLOROETHENE	0.055	0.055	10	0.006
	WAG6 MS3B	TETRACHLOROETHENE	0.001	0.001	10	0.0001

Boldface type indicates exceedence of benchmark.
[1] Background concentration not available.

Appendix C

DATA TABLES FOR RISKS TO WILDLIFE

Table C.1. Point Estimates of Contaminant Exposure of Mink to Fish from White Oak Creek.

Location	Contaminant	Dietary Exposure (mg/kg/d)	NOAEL HQ	LOAEL HQ
HINDSCR[1]	Mercury	0.005	0.33	0.20
NTK0.2	Mercury	0.010	0.64	0.38
WCK3.5	Mercury	0.014	0.91	0.55
WCK2.9	Mercury	0.023	1.51	0.91
MEK0.2	Mercury	0.007	0.45	0.27
WCK2.3	Mercury	0.015	0.98	0.59
WOL	Mercury	0.009	0.58	0.35
WCK0.9	Mercury	0.006	0.37	0.22
WCK0.3	Mercury	0.010	0.64	0.38
HINDSCR[1]	PCB-1260	0.003	0.02	0.00
NTK0.2	PCB-1260	0.049	0.35	0.07
WCK3.5	PCB-1260	0.080	0.57	0.12
WCK2.9	PCB-1260	0.093	0.66	0.13
MEK0.2	PCB-1260	0.039	0.28	0.06
WCK2.3	PCB-1260	0.099	0.70	0.14
WOL	PCB-1260	0.129	0.92	0.19
WCK0.9	PCB-1260	0.052	0.37	0.08
WCK0.3	PCB-1260	0.058	0.41	0.08

[1]Reference location.

Table C.2. Point Estimates of Contaminant Exposure of Belted Kingfisher to Fish from White Oak Creek.

Location	Contaminant	Dietary Exposure	NOAEL HQ	LOAEL HQ
HINDSCR [1]	Mercury	0.033	5.54	0.52
NTK0.2	Mercury	0.065	10.80	1.01
WCK3.5	Mercury	0.092	15.41	1.44
WCK2.9	Mercury	0.154	25.60	2.40
MEK0.2	Mercury	0.046	7.69	0.72
WCK2.3	Mercury	0.100	16.66	1.56
WOL	Mercury	0.059	9.83	0.92
WCK0.9	Mercury	0.038	6.26	0.59
WCK0.3	Mercury	0.065	10.77	1.01
HINDSCR [1]	PCB-1260	0.022	0.12	0.01
NTK0.2	PCB-1260	0.335	1.86	0.19
WCK3.5	PCB-1260	0.543	3.02	0.30
WCK2.9	PCB-1260	0.630	3.50	0.35
MEK0.2	PCB-1260	0.263	1.46	0.15
WCK2.3	PCB-1260	0.668	3.71	0.37
WOL	PCB-1260	0.875	4.86	0.49
WCK0.9	PCB-1260	0.354	1.97	0.20
WCK0.3	PCB-1260	0.391	2.17	0.22

[1]Reference location.

Table C.3. Summary Statistics for Soil-Biota Uptake Factors

Contaminant	Media	Detects	Mean	Standard Error	UCL95	Maximum	Minimum
Aluminum	Browse	12	0.004	0.001	0.007	0.016	0.001
Americium-241	Browse	4	1.875	0.346	2.553	2.489	0.894
Arsenic	Browse	6	0.008	0.002	0.012	0.015	0.001
Barium	Browse	12	0.090	0.021	0.131	0.241	0.010
Beryllium	Browse	1	0.002	0.000	0.000	0.002	0.002
Cadmium	Browse	8	1.158	0.761	2.650	5.951	0.002
Calcium	Browse	12	1.717	0.376	2.455	4.257	0.117
Chromium	Browse	12	0.024	0.005	0.033	0.065	0.001
Cobalt	Browse	12	0.003	0.001	0.005	0.010	0.001
Copper	Browse	12	0.305	0.071	0.443	0.864	0.001
Iron	Browse	12	0.001	0.000	0.002	0.002	0.000
Lead	Browse	12	0.007	0.002	0.011	0.022	0.000
Lithium	Browse	10	0.005	0.001	0.008	0.010	0.000
Magnesium	Browse	10	0.980	0.198	1.368	2.350	0.489
Manganese	Browse	10	0.118	0.049	0.215	0.414	0.015
Mercury	Browse	9	0.040	0.010	0.059	0.086	0.007
Nickel	Browse	12	0.051	0.018	0.085	0.200	0.001
Plutonium-239/240	Browse	1	1.800	0.000	0.000	1.800	1.800
Potassium	Browse	10	6.596	1.062	8.677	12.285	2.744
Selenium	Browse	3	0.409	0.395	1.184	1.200	0.011
Silver	Browse	1	0.001	0.000	0.000	0.001	0.001
Sodium	Browse	11	0.352	0.060	0.470	0.693	0.011
Uranium	Browse	1	0.000	0.000	0.000	0.000	0.000
Vanadium	Browse	1	0.026	0.000	0.000	0.026	0.026
Zinc	Browse	12	0.365	0.094	0.550	1.203	0.004
Aluminum	Canopy	12	0.006	0.001	0.009	0.016	0.000
Americium-241	Canopy	6	2.774	1.493	5.700	10.194	0.748
Arsenic	Canopy	6	0.017	0.006	0.029	0.039	0.001
Barium	Canopy	12	0.153	0.045	0.241	0.471	0.010
Beryllium	Canopy	5	0.017	0.010	0.036	0.055	0.002
Cadmium	Canopy	7	0.136	0.083	0.299	0.621	0.003
Calcium	Canopy	12	2.511	0.505	3.501	5.808	0.081
Chromium	Canopy	12	0.033	0.011	0.055	0.147	0.001
Cobalt	Canopy	12	0.003	0.001	0.004	0.009	0.001
Copper	Canopy	12	0.118	0.021	0.160	0.258	0.001
Curium-244	Canopy	1	1.067	0.000	0.000	1.067	1.067
Iron	Canopy	12	0.003	0.001	0.006	0.019	0.000
Lead	Canopy	12	0.032	0.015	0.062	0.177	0.000
Lithium	Canopy	10	0.016	0.011	0.037	0.113	0.000
Magnesium	Canopy	10	1.147	0.206	1.550	2.615	0.443
Manganese	Canopy	10	0.177	0.068	0.310	0.733	0.015

Table 6.3 (Continued)

Contaminant	Media	Detects	Mean	Standard Error	UCL95	Maximum	Minimum
Mercury	Canopy	9	0.044	0.012	0.068	0.128	0.009
Nickel	Canopy	12	0.076	0.026	0.126	0.248	0.003
Plutonium-239/240	Canopy	2	4.025	1.175	6.328	5.200	2.850
Potassium	Canopy	10	3.205	0.581	4.345	5.691	0.288
Selenium	Canopy	4	0.024	0.006	0.035	0.040	0.017
Silver	Canopy	3	0.020	0.010	0.040	0.036	0.001
Sodium	Canopy	11	0.336	0.059	0.452	0.700	0.012
Uranium	Canopy	1	0.001	0.000	0.000	0.001	0.001
Zinc	Canopy	12	0.216	0.043	0.301	0.521	0.019
Aluminum	Herbacious	12	0.019	0.004	0.027	0.050	0.002
Americium-241	Herbacious	3	1.497	0.394	2.269	2.178	0.813
Arsenic	Herbacious	11	0.015	0.002	0.018	0.023	0.007
Barium	Herbacious	12	0.096	0.016	0.126	0.188	0.019
Beryllium	Herbacious	6	0.014	0.003	0.019	0.020	0.004
Cadmium	Herbacious	8	0.202	0.096	0.390	0.709	0.013
Calcium	Herbacious	12	0.725	0.179	1.076	1.983	0.024
Chromium	Herbacious	12	0.043	0.007	0.057	0.081	0.002
Cobalt	Herbacious	12	0.007	0.001	0.010	0.014	0.002
Copper	Herbacious	12	0.137	0.028	0.191	0.316	0.001
Curium-244	Herbacious	1	1.093	0.000	0.000	1.093	1.093
Iron	Herbacious	12	0.009	0.002	0.012	0.022	0.001
Lead	Herbacious	12	0.017	0.004	0.025	0.052	0.000
Lithium	Herbacious	10	0.015	0.003	0.020	0.029	0.002
Magnesium	Herbacious	10	0.681	0.124	0.923	1.481	0.244
Manganese	Herbacious	10	0.027	0.007	0.040	0.080	0.011
Mercury	Herbacious	8	0.031	0.008	0.045	0.067	0.005
Nickel	Herbacious	12	0.026	0.008	0.043	0.103	0.001
Plutonium-239/240	Herbacious	2	4.200	0.800	5.768	5.000	3.400
Potassium	Herbacious	10	3.971	1.054	6.036	13.008	1.517
Selenium	Herbacious	2	0.012	0.002	0.015	0.014	0.011
Silver	Herbacious	3	0.006	0.005	0.016	0.016	0.001
Sodium	Herbacious	11	0.364	0.064	0.490	0.707	0.013
Thallium	Herbacious	1	0.006	0.000	0.000	0.006	0.006
Uranium	Herbacious	1	0.002	0.000	0.000	0.002	0.002
Vanadium	Herbacious	4	0.041	0.005	0.050	0.052	0.030
Zinc	Herbacious	12	0.367	0.071	0.507	0.769	0.016
Aluminum	Small Mammal	9	0.003	0.000	0.004	0.005	0.001
Americium-241	Small Mammal	5	1.484	0.400	2.268	2.889	0.735
Arsenic	Small Mammal	9	0.004	0.001	0.006	0.008	0.001

Table 6.3 (Continued)

Contaminant	Media	Detects	Mean	Standard Error	UCL95	Maximum	Minimum
Barium	Small Mammal	9	0.030	0.008	0.045	0.075	0.004
Cadmium	Small Mammal	6	0.069	0.051	0.168	0.320	0.004
Calcium	Small Mammal	9	3.610	1.141	5.846	9.378	0.243
Chromium	Small Mammal	9	0.044	0.023	0.088	0.221	0.001
Cobalt	Small Mammal	9	0.006	0.002	0.010	0.020	0.003
Copper	Small Mammal	9	0.313	0.076	0.461	0.749	0.001
Curium-244	Small Mammal	1	2.693	0.000	0.000	2.693	2.693
Iron	Small Mammal	9	0.004	0.001	0.005	0.006	0.001
Lead	Small Mammal	9	0.015	0.006	0.027	0.047	0.000
Lithium	Small Mammal	8	0.007	0.004	0.015	0.033	0.001
Magnesium	Small Mammal	7	0.484	0.085	0.651	0.916	0.308
Manganese	Small Mammal	7	0.003	0.001	0.005	0.006	0.002
Mercury	Small Mammal	7	0.282	0.146	0.569	1.085	0.009
Nickel	Small Mammal	9	0.070	0.021	0.112	0.196	0.003
PCB-1260	Small Mammal	8	1.831	0.676	3.157	5.220	0.072
Plutonium-239/240	Small Mammal	2	2.267	0.467	3.181	2.733	1.800
Potassium	Small Mammal	7	2.967	0.494	3.935	5.112	1.812
Selenium	Small Mammal	7	0.162	0.021	0.204	0.263	0.098
Silver	Small Mammal	1	0.000	0.000	0.000	0.000	0.000
Sodium	Small Mammal	8	5.275	1.201	7.630	10.223	0.269
Uranium	Small Mammal	2	0.000	0.000	0.000	0.000	0.000
Zinc	Small Mammal	9	0.868	0.197	1.254	1.863	0.016
Aluminum	Earthworm	20	0.053	0.010	0.073	0.197	0.008

Table 6.3 (Continued)

Contaminant	Media	Detects	Mean	Standard Error	UCL95	Maximum	Minimum
Americium-241	Earthworm	4	1.970	0.601	3.148	3.644	0.800
Aroclor-1254	Earthworm	3	0.470	0.154	0.772	0.625	0.162
Aroclor-1260	Earthworm	13	4.256	1.778	7.740	22.500	0.000
Arsenic	Earthworm	17	0.243	0.070	0.380	0.909	0.006
Barium	Earthworm	20	0.088	0.016	0.119	0.310	0.005
Beryllium	Earthworm	10	0.296	0.170	0.628	1.429	0.000
BetaParticle	Earthworm	6	0.078	0.036	0.148	0.240	0.004
CO-60	Earthworm	1	0.000			0.000	0.000
CS-137	Earthworm	5	0.005	0.003	0.011	0.015	0.000
Cadmium	Earthworm	14	6.004	3.018	11.919	44.553	0.253
Calcium	Earthworm	20	0.689	0.157	0.997	2.513	0.023
Chromium	Earthworm	19	2.087	0.710	3.479	11.416	0.065
Cobalt	Earthworm	17	0.139	0.021	0.181	0.321	0.031
Copper	Earthworm	20	0.538	0.266	1.060	5.498	0.002
Curium-244	Earthworm	4	0.587	0.162	0.905	0.886	0.152
Iron	Earthworm	20	0.038	0.006	0.049	0.100	0.006
K-40	Earthworm	6	0.139	0.040	0.217	0.269	0.056
Lead	Earthworm	19	0.171	0.107	0.381	2.087	0.000
Lithium	Earthworm	12	0.083	0.024	0.131	0.253	0.008
Magnesium	Earthworm	18	0.220	0.031	0.281	0.539	0.069
Manganese	Earthworm	18	0.060	0.009	0.077	0.127	0.012
Mercury	Earthworm	15	1.909	1.068	4.002	16.250	0.030
Molybdenum	Earthworm	2	1.939	0.153	2.238	2.091	1.786
Nickel	Earthworm	14	2.551	0.635	3.796	7.802	0.038
Plutonium-239	Earthworm	1	2.500			2.500	2.500
Potassium	Earthworm	18	3.016	0.535	4.064	8.372	0.567
Selenium	Earthworm	14	1.798	0.922	3.606	13.733	0.301
Silver	Earthworm	10	4.527	2.027	8.500	19.500	0.001
Sodium	Earthworm	19	20.976	7.285	35.254	122.388	0.146
Strontium	Earthworm	2	0.212	0.066	0.342	0.278	0.146
Thallium	Earthworm	2	0.000	0.000	0.000	0.000	0.000
Total Radio Strontium	Earthworm	1	0.169			0.169	0.169
Uranium	Earthworm	2	0.033	0.030	0.092	0.063	0.003
Vanadium	Earthworm	6	0.039	0.014	0.067	0.088	0.000
Zinc	Earthworm	20	2.419	0.518	3.435	7.305	0.032

Table C.4. Life history parameters for the short-tailed shrew (*Blarina brevicauda*)

Parameter	Value[a]	Comments	Reference
Body Weight	0.015 ± 0.00078 kg	New Hampshire (field)	Schlessinger and Potter 1974
Food Consumption Rate	0.01 kg/d	larch sawfly diet (lab)	Buckner 1964
	0.00795 ± 0.00017 kg/d	mealworm diet (lab)	Barrett and Stueck 1976
	mean = 0.009 kg/d		
Water Consumption Rate	0.223 ml/g bw/d		Chew 1951
	0.033 L/d	assuming a 0.015 kg bw	
Soil Consumption Rate	13% of diet		Talmage and Walton 1993
	0.00117 kg/d	assuming diet of 0.009 kg/d	
Diet Composition	earthworms 31.4% slugs/snails 27.1% soil/litter invert 13.2% fungi 8.4% misc. animals 8.1% coleoptera 5.9% vegetation 5.4%	percent volume in diet in summer in New York	Whitaker and Ferraro 1963
Home Range	0.39 ± 0.036 ha	Manitoba bog	Buckner 1966
Habitat Requirements	broad and variable but requires >50% herbaceous cover		Miller and Getz 1977
	forest, wetlands, and grasslands. most abundant in hardwood forests with deep litter and humus.		van Zyll de Jong 1983
Population Density	2.3 /ha - winter 5.2 /ha - spring 9.3 /ha -summer 8.1 /ha - fall	Illinois - alfalfa, tallgrass, and bluegrass; means derived from graph.	Getz 1989
	2.5-45/ha	Depending on habitat	
Behavior	nocturnal, semifossorial, spends little time above surface		George et al. 1986
	active year-round - does not hibernate		EPA 1993a

Parameter	Value[a]	Comments	Reference
Other	appear to be unpalatable to most predators due to lateral gland		van Zyll de Jong 1983

[a] Suggested values for use in exposure assessment are in bold.

Table C.5. Life history parameters for the white-footed mouse (*Peromyscus leucopus*)

Parameter	Value[a]	Comments	Reference
Body Weight	**0.022** kg		Green and Millar 1987
Food Consumption Rate	**0.0034** kg/d	lab study	Green and Millar 1987
Water Consumption Rate	**0.0066** L/d	nonreproductive ♀ (lab)	Oswald et al. 1993
Soil Consumption Rate	<2%		Beyer et al. 1994
	0.000068 kg/d	assuming diet of 0.0034 kg/d and a 2% soil consumption rate	
Diet Composition	omnivorous and opportunistic		
	arthropods - 57% seeds, fruit, vegetation - 34%	Virginia	Wolff et al. 1985
	arthropods - 30% seeds, fruit, vegetation - 67%	Indiana	Whitaker 1966
	arthropods - 50% seeds, fruit, vegetation - 48%	Illinois	Batzli 1977
Home Range	**0.059** ha	mean:♂+♀; Virginia, mixed deciduous forest	Wolff 1985
Habitat Requirements	wooded, brushy areas; sometimes open areas		Burt and Grossenheider 1976
Population Density	6 - 57 /ha	Virginia, mixed deciduous forest	Wolff 1985
Behavior	while semi-arboreal, spends most of time on ground.		Lackey et al. 1985
	primarily nocturnal		
	enters torpor to reduce metabolic demands in winter and during food stress		EPA 1993a

[a] Suggested values for use in exposure assessment are in bold.

Table C.6. Life history parameters for white-tailed deer (*Odocoileus virginianus*)

Parameter	Value[a]	Comments	Reference
Body Weight	68 kg (♂) 45 kg (♀) 56.5 kg (mean♂+♀)		Smith 1991
Food Consumption Rate	1.74 kg/d		Mautz et al. 1976
Water Consumption Rate	3.7 L/d	Estimated using allometric equation[b] assuming 56.5 kg bw	Calder and Braun 1983
Soil Consumption Rate	<2%		Beyer et al. 1994
	0.0348 kg/d	assuming 2% soil and 1.74 kg/d food consumption rates	
Diet Composition	exclusively herbivorous		
	diet diverse and variable, depends on availability.		Martin et al. 1951
	major foods: - buds and twigs of trees and shrubs - grasses and forbs (summer) - mast and fruits (fall)		Smith 1991
Home Range	59 - 520 ha		Marchinton and Hirth 1984
Habitat Requirements	uses a wide variety of habitats; favors forest-field-farmland mosaic; population density directly related to number and distribution of forest openings		Smith 1991
Population Density	0.06 /ha	eastern mixed deciduous forest - Tennessee	Barber 1984
	0.39 - 0.78 /ha	oak-hickory forest - midwest	Torgerson and Porath 1984
	0.1704/ha	(calculated based upon 2000 deer on the ORR and available habitat)	J. Evans (pers. comm., 1995)
Behavior	generally crepuscular		Smith 1991
	active year-round; does not hibernate		

[a] Suggested values for use in exposure assessment are in bold.

[b] Allometric equation for estimation of water consumption by mammals is:

$$W=0.099(bw)^{0.90}$$

where: W = water consumption (L/d)

bw = body weight (kg)

Table C.7. Life history parameters for red fox (*Vulpes fulva*)

Parameter	Value[a]	Comments	Reference
Body Weight	5.25 ± 0.18 kg (♂) 4.13 ± 0.11 kg (♀)	Illinois	Storm et al. 1976
	4.82 ± 0.081 kg (♂) 3.94 ± 0.079 kg (♀)	Iowa	
	4.5 kg	mean ♂+♀ for both Illinois and Iowa	
Food Consumption Rate	0.596 kg/d	see calculation below[b]	Vogtsberger and Barret 1973
	0.31 kg/d	0.069 g/g/d for nonbreeding adult times 4.5 kg bw	Sargent 1978
	0.45 kg/d	mean of both estimates	
Water Consumption Rate	**0.38** L/d	Estimated using allometric equation[c]; assuming 4.5 kg bw	Calder and Braun 1983
Soil Consumption Rate	2.8%		Beyer et al. 1994
	0.0126 kg/d	assuming diet of 0.45 kg/d	
Diet Composition	mammals - 68.8% birds - 12.0% plants - 10.4% insects - 0.9% misc. - 5.5%	Maryland, Appalachian region	Hockman and Chapman 1983
Home Range	699 ± 137 ha (♀ spring)	Minnesota - forest, field, swamp	Sargent 1972
	717 ha (♂ all year) 96 ha (♀ all year)	Wisconsin - multiple habitats	Ables 1969
Habitat Requirements	wide and diverse - occur in many habitats		EPA 1993a
	prefer mixture of forest and open habitat		Burt and Grossenheider 1976
Population Density	0.046 - 0.077 /ha	"good fox range" in North America	EPA 1993a
Behavior	active year round - does not hibernate		EPA 1993a

[a] Suggested values for use in exposure assessment are in bold.

[b] The following parameters were presented by Vogtsberger and Barret (1973):

food ingestion	=	223 kcal/kg bw/d
energy content of vertebrate food	=	5.606 kcal/g dry wt.
wet-dry weight conversion	=	1 g wet wt = 0.3 g dry wt

therefore:

223 kcal/kg bw/d x 4.5 kg bw = 1003.5 kcal/d

1003.5 kcal/d x 1g dry wt./5.606 kcal = 179 g dry/d

179 g dry/d x 1 g wet/0.3 g dry (wet-dry conversion) = 596 g/d

[c] Allometric equation for estimation of water consumption by mammals is:

$$W=0.099(bw)^{0.90}$$

where: W = water consumption (L/d)
bw = body weight (kg)

Table C.8. Life History parameters for red-tailed hawks (*Buteo jamaicensis*)

Parameter	Value[a]	Comments	Reference
Body Weight	1.028 kg (♂) 1.224 kg (♀) **1.126** kg (mean♂+♀)		Dunning 1984
Food Consumption Rate	**0.109** kg/d		Craighead and Craighead 1969
Water Consumption Rate	**0.064** L/d	Estimated using allometric equation[b]; assuming 1.126 kg bw	Calder and Braun 1983
Soil Consumption Rate	while some soil attached to prey may be ingested, amount is assumed to negligible		
Diet Composition	predominantly small mammals		EPA 1993a
	small mammal - 78.5 % bird - 8.5 % snake - 13.0 %	Oregon - pasture and wheat fields	Janes 1984
Home Range	233 ha	Oregon - pasture and wheat fields	Janes 1984
	1936 ha (957 - 2465 ha range)	Colorado - prairie-pinyon/juniper woodland; mean of 4 birds; 95% ellipse and systematic relocation	Anderson and Rongstad 1989
Habitat Requirements	use wide range of habitats. prefer landscapes containing mixture of oldfields, wetlands and pasture for foraging with trees interspersed for perching and nesting		EPA 1993a DeGraaf et al. 1981
Population Density	0.03 - >0.005 pairs/ha		EPA 1993a
Behavior	territorial throughout year		Brown and Amadon 1968[b]
	northerly populations migrate; those in the south do not		National Geographic Society 1987

[a] Suggested values for use in exposure assessment are in bold.

[a] Allometric equation for estimation of water consumption by birds is:

$$W=0.059(bw)^{0.67}$$

where: W = water consumption (L/d)
bw = body weight (kg)

Table C.9. Life history parameters for mink

Parameter	Value	Comments	Reference
Body Weight	1.0 kg (mean ♂+♀)		EPA 1993b
Food Consumption Rate	0.137 kg/d (mean ♂+♀)		Bleavins and Aulerich 1981
Water Consumption Rate	0.099 L/d	estimated using allometric equation[a] assuming 1.0 kg bw	Calder and Braun 1983
Diet Composition	Diverse diet includes: mammals, fish, aquatic invertebrates, amphibians, and birds		Hamilton 1940, Sealander 1943, Korschgen 1958, Burgess and Bider 1980 Alexander 1977
	Proportion of aquatic prey (fish, amphibians, inverts, etc.) = 0.546±0.21	Proportion represents means of values from five studies	
	fish sizes: 0-10 cm=72% 11-20 cm=28%		
Home Range	2.63 km (♂) 1.85 km (♀)	stream - Sweden	Gerell 1970
	770 ha (♂)	prairie potholes, Manitoba	Arnold and Fritzell 1987
		range size and shape depends on habitat - linear along streams, circular in marshes	EPA 1993a.
Habitat Requirements	aquatic habitats - streams, lakes, marshes;		Burt and Grossenheider 1976
Population Density	0.03 - 0.085 /ha	river - Montana	Mitchell 1961
	0.6/km	river - Michigan	EPA 1993a
Behavior	nocturnal active year-round, does not hibernate		EPA 1993a

[a] Allometric equation for estimation of water consumption by mammals is:

$$W=0.099(bw)^{0.90}$$

where: W = water consumption (L/d)
bw = body weight (kg)

Table C.10. Life history parameters for belted kingfisher

Parameter	Value	Comments	Reference
Body Weight	0.148 kg		Dunning 1984
Food Consumption Rate	50% bw		Alexander 1977
	0.075 kg/d	assuming 0.148 kg bw	
Water Consumption Rate	0.016 L/d	estimated using allometric equation[a] assuming 0.148 kg bw	Calder and Braun 1983
Soil Consumption Rate	as a piscivore, assumed to be negligible		
Diet Composition	Cyprinids - 76.4% other fish - 10.2% crayfish - 13.3%	Ohio - creek	Davis 1982
	lizards, small snakes, frogs, salamanders, and insects may be consumed if fish are unavailable		Landrum et al. 1993
Home Range	1.03 km (breeding) 0.39 km (non-breeding)	Ohio - creek	Davis 1982
	2.19 km (breeding)	Pennsylvania - stream summer	Brooks and Davis 1987
Habitat Requirements	uses a diverse aquatic habitats (stream, river, lake, marsh, coastline)		Brooks and Davis 1987
	require high vertical banks composed of >75% sand and <7% clay for nest construction		
	prefer relatively clear waters free of thick vegetation		Bent 1940.
Population Density	0.11 - 0.19 pairs/km shore	Pennsylvania - stream summer	Brooks and Davis 1987
Behavior	while most migrate from northern parts of range, some may stay in areas where water remains ice-free		Bent 1940.

[a] Allometric equation for estimation of water consumption by birds is:

$$W=0.059(bw)^{0.67}$$

where: W = water consumption (L/d)
bw = body weight (kg)

Table C.11. Life History Parameters for the Wild Turkey (*Meleagris gallopavo*)

Parameter	Value[a]	Comments	Reference
Body Weight	7.400 kg (♂) 4.222 kg (♀) **5.8 kg** (mean♂+♀)		Dunning 1984
Food Consumption Rate	13.6 g/lb bw/d **0.174** kg/d	 assuming 5.8 kg bw	Korschgen 1967
Water Consumption Rate	**0.19** L/d	estimated using allometric equation[c] assuming 5.8 kg bw	Calder and Braun 1983
Soil Consumption Rate	9.3 % **0.0162** kg/d	 assuming 0.174 kg/d food consumption rates	Beyer et al. 1994
Diet Composition	plant material (mast, fruit, seeds, some foliage) - 90.3% animal material (insects, crayfish, snails, salamanders) - 9.7 %		Korschgen 1967
Home Range	150 - 190 ha		Pough 1951[b]
Habitat Requirements	mast-producing woodlands with associated fields and abundant water		Schorger 1966[b]
Population Density	0.03 /ha 0.06 - 0.076 /ha **0.0426 /ha** (calculated based on @ 500 turkey observed on ORR and suitable habitat)	West Virginia in 'ideal' habitat Oak Ridge Reservation	Uhling 1950[b] Pough 1951[b] Personal Communication, Jim Evans 1995
Behavior	forage primarily on the ground roost in trees at night year-round resident; does not migrate		National Geographic Society 1987

[a] Suggested values for use in exposure assessment are in bold.

[b] Cited in DeGraaf et al. 1981.

[c] Allometric equation for estimation of water consumption for birds is:

$$WIR = 0.059(BW)^{0.67}$$

where:

WIR= water ingestion rate (L water/individual/day).

Table C.12. Point Estimates of Contaminant Exposure for Short-tailed Shrews in WAG2.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.007	0.00	0.00
MWC	Acetone	0.011	0.00	0.00
IHP	Aluminum	2816.097	1226.96	122.70
LMB	Aluminum	3187.367	1388.72	138.87
LWC	Aluminum	1649.656	718.75	71.87
MWC	Aluminum	2302.725	1003.29	100.33
backg	Aluminum	6078.748	2648.48	264.85
LMB	Antimony	0.917	0.40	0.04
MWC	Antimony	0.086	0.58	0.06
backg	Antimony	0.166	1.12	0.11
LMB	Aroclor-1248	0.002	0.05	0.01
IHP	Aroclor-1254	0.897	13.42	1.34
LMB	Aroclor-1254	0.028	0.42	0.04
IHP	Aroclor-1260	2.190	32.76	3.28
LWC	Aroclor-1260	2.098	31.39	3.14
MWC	Aroclor-1260	10.206	152.70	15.27
IHP	Arsenic	1.918	12.80	1.28
LMB	Arsenic	3.194	21.31	2.13
MWC	Arsenic	0.002	0.01	0.00
backg	Arsenic	3.981	26.57	2.66
IHP	Barium	32.507	2.75	0.75
LMB	Barium	53.811	4.55	1.24
LWC	Barium	21.347	1.80	0.49
MWC	Barium	27.967	2.36	0.64
backg	Barium	36.051	3.05	0.83
IHP	Benzo(a)pyrene	0.027	0.02	0.00
LWC	Benzo(a)pyrene	0.012	0.01	0.00
MWC	Benzo(a)pyrene	0.009	0.01	0.00
backg	Beryllium	0.168	0.12	
IHP	Beryllium	0.645	0.44	
LMB	Beryllium	0.558	0.38	
LWC	Beryllium	0.456	0.31	
MWC	Beryllium	0.594	0.41	
IHP	Boron	0.685	0.01	0.00
LMB	Boron	0.869	0.01	0.00
LWC	Boron	0.792	0.01	0.00
MWC	Boron	1.126	0.02	0.01
IHP	Cadmium	9.444	31.59	3.16
LMB	Cadmium	8.043	26.90	2.69
LWC	Cadmium	7.000	23.41	2.34
MWC	Cadmium	7.564	25.30	2.53

Table 12 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
backg	Cadmium	3.200	10.70	1.07
IHP	Chloroform	0.004	0.00	0.00
MWC	Chloroform	0.002	0.00	0.00
backg	Chromium	110.474	15.32	3.83
IHP	Chromium	127.246	17.65	4.41
LMB	Chromium	88.251	12.24	3.06
LWC	Chromium	198.547	27.54	6.88
MWC	Chromium	215.309	29.87	7.46
IHP	Copper	24.044	0.72	0.56
LMB	Copper	18.564	0.56	0.43
LWC	Copper	24.379	0.73	0.56
MWC	Copper	68.843	2.06	1.59
backg	Copper	27.183	0.81	0.63
backg	Cyanide	0.038	0.00	
IHP	Di-n-butylphthalate	0.009	0.00	0.00
LMB	Di-n-butylphthalate	0.020	0.00	0.00
LWC	Di-n-butylphthalate	0.014	0.00	0.00
MWC	Di-n-butylphthalate	0.007	0.00	0.00
IHP	Lead	24.109	1.37	0.14
LMB	Lead	5.833	0.33	0.03
LWC	Lead	15.684	0.89	0.09
MWC	Lead	27.456	1.56	0.16
backg	Lead	13.513	0.77	0.08
IHP	Lithium	4.986	0.24	0.12
LMB	Lithium	3.945	0.19	0.10
LWC	Lithium	2.463	0.12	0.06
MWC	Lithium	3.530	0.17	0.09
backg	Manganese	0.462	0.00	0.00
IHP	Manganese	241.392	1.25	0.39
LMB	Manganese	1021.870	5.28	1.64
LWC	Manganese	170.370	0.88	0.27
MWC	Manganese	141.617	0.73	0.23
IHP	Mercury	85.769	1219.52	243.90
LMB	Mercury	3.296	46.86	9.37
LWC	Mercury	13.084	186.03	37.21
MWC	Mercury	18.647	265.13	53.03
backg	Mercury	1.471	20.91	4.18
LMB	Methylene chloride	0.002	0.00	0.00
MWC	Methylene chloride	0.000	0.00	0.00
IHP	Molybdenum	6.425	20.78	2.08

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LMB	Molybdenum	10.608	34.31	3.43
LWC	Molybdenum	5.352	17.31	1.73
MWC	Molybdenum	6.818	22.05	2.21
IHP	Nickel	266.737	3.03	1.52
LMB	Nickel	100.067	1.14	0.57
LWC	Nickel	49.278	0.56	0.28
MWC	Nickel	119.102	1.35	0.68
backg	Nickel	136.708	1.56	0.78
IHP	Selenium	1.355	14.99	1.50
LMB	Selenium	2.505	27.72	2.77
LWC	Selenium	2.965	32.81	3.28
MWC	Selenium	7.994	88.45	8.85
backg	Selenium	2.924	32.35	3.24
IHP	Strontium	6.628	0.01	
LMB	Strontium	5.660	0.01	
LWC	Strontium	3.257	0.01	
MWC	Strontium	7.717	0.01	
IHP	Thallium	0.067	4.08	0.41
LMB	Thallium	0.113	6.88	0.69
LWC	Thallium	0.063	3.84	0.38
MWC	Thallium	0.082	4.98	0.50
backg	Thallium	0.068	4.13	0.41
IHP	Tin	0.869	0.03	0.02
LMB	Tin	0.846	0.03	0.02
LWC	Tin	0.566	0.02	0.01
MWC	Tin	0.725	0.03	0.02
IHP	Vanadium	3.551	8.29	0.83
LMB	Vanadium	4.729	11.04	1.10
LWC	Vanadium	2.402	5.61	0.56
MWC	Vanadium	3.431	8.01	0.80
backg	Vanadium	9.032	21.08	2.11
IHP	Zinc	242.420	0.69	0.34
LMB	Zinc	165.616	0.47	0.24
LWC	Zinc	380.413	1.08	0.54
MWC	Zinc	709.220	2.02	1.01
backg	Zinc	257.140	0.73	0.37
LMB	bis(2-Ethylhexyl)phthalate	0.020	0.00	0.00
LWC	bis(2-Ethylhexyl)phthalate	0.008	0.00	0.00
MWC	bis(2-Ethylhexyl)phthalate	0.016	0.00	0.00

[a] Biota estimates = UCL soil x UCL uptake factor.

Table C.13. Point Estimates of Contaminant Exposure for White-footed Mice in WAG 2.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.001	0.00	0.00
MWC	Acetone	0.002	0.00	0.00
IHP	Aluminum	249.575	119.67	11.97
LMB	Aluminum	282.459	135.43	13.54
LWC	Aluminum	146.194	70.10	7.01
MWC	Aluminum	204.066	97.84	9.78
backg	Aluminum	538.693	258.29	25.83
LMB	Antimony	0.040	0.02	0.00
MWC	Antimony	0.012	0.09	0.01
backg	Antimony	0.019	0.14	0.01
LMB	Aroclor-1248	0.000	0.00	0.00
IHP	Aroclor-1254	0.104	1.71	0.17
LMB	Aroclor-1254	0.003	0.05	0.01
IHP	Aroclor-1260	0.279	4.59	0.46
LWC	Aroclor-1260	0.267	4.40	0.44
MWC	Aroclor-1260	1.299	21.40	2.14
IHP	Arsenic	0.212	1.56	0.16
LMB	Arsenic	0.353	2.59	0.26
MWC	Arsenic	0.000	0.00	0.00
backg	Arsenic	0.440	3.23	0.32
IHP	Barium	4.791	0.45	0.12
LMB	Barium	7.930	0.74	0.20
LWC	Barium	3.145	0.29	0.08
MWC	Barium	4.121	0.38	0.10
backg	Barium	5.312	0.49	0.13
IHP	Benzo(a)pyrene	0.001	0.00	0.00
LWC	Benzo(a)pyrene	0.000	0.00	0.00
MWC	Benzo(a)pyrene	0.000	0.00	0.00
backg	Beryllium	0.007	0.01	
IHP	Beryllium	0.075	0.06	
LMB	Beryllium	0.065	0.05	
LWC	Beryllium	0.053	0.04	
MWC	Beryllium	0.069	0.05	
IHP	Boron	0.037	0.00	0.00
LMB	Boron	0.046	0.00	0.00
LWC	Boron	0.031	0.00	0.00
MWC	Boron	0.053	0.00	0.00
IHP	Cadmium	1.247	4.58	0.46
LMB	Cadmium	1.061	3.90	0.39
LWC	Cadmium	0.924	3.40	0.34
MWC	Cadmium	0.999	3.67	0.37

Table12 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
backg	Cadmium	0.422	1.55	0.16
IHP	Chloroform	0.001	0.00	0.00
MWC	Chloroform	0.000	0.00	0.00
backg	Chromium	14.099	2.15	0.54
IHP	Chromium	16.240	2.48	0.62
LMB	Chromium	11.264	1.72	0.43
LWC	Chromium	25.340	3.87	0.97
MWC	Chromium	27.480	4.19	1.05
IHP	Copper	3.360	0.11	0.09
LMB	Copper	2.594	0.09	0.07
LWC	Copper	3.407	0.11	0.09
MWC	Copper	9.621	0.32	0.24
backg	Copper	3.799	0.13	0.10
backg	Cyanide	0.002	0.00	
IHP	Di-n-butylphthalate	0.000	0.00	0.00
LMB	Di-n-butylphthalate	0.001	0.00	0.00
LWC	Di-n-butylphthalate	0.001	0.00	0.00
MWC	Di-n-butylphthalate	0.000	0.00	0.00
IHP	Lead	2.712	0.17	0.02
LMB	Lead	0.656	0.04	0.00
LWC	Lead	1.764	0.11	0.01
MWC	Lead	3.089	0.19	0.02
backg	Lead	1.521	0.10	0.01
IHP	Lithium	0.469	0.02	0.01
LMB	Lithium	0.371	0.02	0.01
LWC	Lithium	0.232	0.01	0.01
MWC	Lithium	0.332	0.02	0.01
backg	Manganese	0.063	0.00	0.00
IHP	Manganese	23.641	0.13	0.04
LMB	Manganese	100.080	0.57	0.18
LWC	Manganese	16.688	0.09	0.03
MWC	Manganese	13.871	0.08	0.02
IHP	Mercury	10.927	170.97	34.20
LMB	Mercury	0.420	6.57	1.31
LWC	Mercury	1.667	26.08	5.22
MWC	Mercury	2.375	37.17	7.43
backg	Mercury	0.188	2.94	0.59
LMB	Methylene chloride	0.000	0.00	0.00
MWC	Methylene chloride	0.000	0.00	0.00
IHP	Molybdenum	0.796	2.83	0.28

Table12 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LMB	Molybdenum	1.314	4.68	0.47
LWC	Molybdenum	0.663	2.36	0.24
MWC	Molybdenum	0.845	3.01	0.30
IHP	Nickel	33.937	0.42	0.21
LMB	Nickel	12.732	0.16	0.08
LWC	Nickel	6.270	0.08	0.04
MWC	Nickel	15.153	0.19	0.09
backg	Nickel	17.395	0.22	0.11
IHP	Selenium	0.171	2.08	0.21
LMB	Selenium	0.316	3.85	0.39
LWC	Selenium	0.374	4.56	0.46
MWC	Selenium	1.009	12.28	1.23
backg	Selenium	0.369	4.49	0.45
IHP	Strontium	0.698	0.00	
LMB	Strontium	0.601	0.00	
LWC	Strontium	0.354	0.00	
MWC	Strontium	0.811	0.00	
IHP	Thallium	0.003	0.18	0.02
LMB	Thallium	0.004	0.30	0.03
LWC	Thallium	0.003	0.17	0.02
MWC	Thallium	0.003	0.22	0.02
backg	Thallium	0.003	0.18	0.02
IHP	Tin	0.034	0.00	0.00
LMB	Tin	0.034	0.00	0.00
LWC	Tin	0.022	0.00	0.00
MWC	Tin	0.029	0.00	0.00
IHP	Vanadium	0.366	0.94	0.09
LMB	Vanadium	0.487	1.25	0.12
LWC	Vanadium	0.247	0.63	0.06
MWC	Vanadium	0.353	0.91	0.09
backg	Vanadium	0.931	2.39	0.24
IHP	Zinc	34.870	0.11	0.05
LMB	Zinc	23.823	0.07	0.04
LWC	Zinc	54.719	0.17	0.09
MWC	Zinc	102.015	0.32	0.16
backg	Zinc	36.984	0.12	0.06
LMB	bis(2-Ethylhexyl)phthalate	0.001	0.00	0.00
LWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00
MWC	bis(2-Ethylhexyl)phthalate	0.001	0.00	0.00

[a] Biota estimates = UCL soil x UCL uptake factor.

Table C.14. Point Estimates of Contaminant Exposure for White-tailed Deer in WAG 2.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.000	0.00	0.00
MWC	Acetone	0.000	0.00	0.00
IHP	Aluminum	24.289	82.91	8.29
LMB	Aluminum	27.482	93.81	9.38
LWC	Aluminum	14.226	48.56	4.86
MWC	Aluminum	19.856	67.77	6.78
backg	Aluminum	52.415	178.91	17.89
LMB	Antimony	0.008	0.03	0.00
MWC	Antimony	0.003	0.14	0.01
backg	Antimony	0.004	0.22	0.02
LMB	Aroclor-1248	0.000	0.00	0.00
IHP	Aroclor-1254	0.001	0.12	0.01
LMB	Aroclor-1254	0.000	0.00	0.00
IHP	Aroclor-1260	0.000	0.03	0.00
LWC	Aroclor-1260	0.000	0.03	0.00
MWC	Aroclor-1260	0.001	0.16	0.02
IHP	Arsenic	0.008	0.40	0.04
LMB	Arsenic	0.013	0.67	0.07
MWC	Arsenic	0.000	0.00	0.00
backg	Arsenic	0.016	0.84	0.08
IHP	Barium	1.234	0.82	0.22
LMB	Barium	2.042	1.35	0.37
LWC	Barium	0.809	0.54	0.15
MWC	Barium	1.061	0.70	0.19
backg	Barium	1.367	0.91	0.25
IHP	Benzo(a)pyrene	0.000	0.00	0.00
LWC	Benzo(a)pyrene	0.000	0.00	0.00
MWC	Benzo(a)pyrene	0.000	0.00	0.00
backg	Beryllium	0.001	0.01	
IHP	Beryllium	0.002	0.01	
LMB	Beryllium	0.001	0.01	
LWC	Beryllium	0.001	0.01	
MWC	Beryllium	0.002	0.01	
IHP	Boron	0.008	0.00	0.00
LMB	Boron	0.009	0.00	0.00
LWC	Boron	0.006	0.00	0.00
MWC	Boron	0.011	0.00	0.00
IHP	Cadmium	0.045	1.18	0.12
LMB	Cadmium	0.038	1.00	0.10
LWC	Cadmium	0.034	0.88	0.09
MWC	Cadmium	0.036	0.95	0.09
backg	Cadmium	0.016	0.42	0.04

Table14 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Chloroform	0.000	0.00	0.00
MWC	Chloroform	0.000	0.00	0.00
backg	Chromium	0.108	0.12	0.03
IHP	Chromium	0.124	0.13	0.03
LMB	Chromium	0.086	0.09	0.02
LWC	Chromium	0.193	0.21	0.05
MWC	Chromium	0.209	0.23	0.06
IHP	Copper	0.293	0.07	0.05
LMB	Copper	0.226	0.05	0.04
LWC	Copper	0.297	0.07	0.05
MWC	Copper	0.838	0.20	0.15
backg	Copper	0.332	0.08	0.06
backg	Cyanide	0.000	0.00	
IHP	Di-n-butylphthalate	0.000	0.00	0.00
LMB	Di-n-butylphthalate	0.000	0.00	0.00
LWC	Di-n-butylphthalate	0.000	0.00	0.00
MWC	Di-n-butylphthalate	0.000	0.00	0.00
IHP	Lead	0.127	0.06	0.01
LMB	Lead	0.031	0.01	0.00
LWC	Lead	0.082	0.04	0.00
MWC	Lead	0.144	0.06	0.01
backg	Lead	0.072	0.03	0.00
IHP	Lithium	0.041	0.02	0.01
LMB	Lithium	0.032	0.01	0.01
LWC	Lithium	0.020	0.01	0.00
MWC	Lithium	0.029	0.01	0.01
backg	Manganese	0.014	0.00	0.00
IHP	Manganese	12.328	0.50	0.15
LMB	Manganese	52.187	2.11	0.65
LWC	Manganese	8.699	0.35	0.11
MWC	Manganese	7.232	0.29	0.09
IHP	Mercury	0.082	9.11	1.82
LMB	Mercury	0.003	0.35	0.07
LWC	Mercury	0.013	1.39	0.28
MWC	Mercury	0.018	1.98	0.40
backg	Mercury	0.002	0.18	0.04
LMB	Methylene chloride	0.000	0.00	0.00
MWC	Methylene chloride	0.000	0.00	0.00
IHP	Molybdenum	0.003	0.07	0.01
LMB	Molybdenum	0.005	0.12	0.01

Table14 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LWC	Molybdenum	0.002	0.06	0.01
MWC	Molybdenum	0.003	0.07	0.01
IHP	Nickel	0.362	0.03	0.02
LMB	Nickel	0.136	0.01	0.01
LWC	Nickel	0.067	0.01	0.00
MWC	Nickel	0.162	0.01	0.01
backg	Nickel	0.188	0.02	0.01
IHP	Selenium	0.008	0.69	0.07
LMB	Selenium	0.015	1.28	0.13
LWC	Selenium	0.017	1.51	0.15
MWC	Selenium	0.047	4.06	0.41
backg	Selenium	0.017	1.51	0.15
IHP	Strontium	0.021	0.00	
LMB	Strontium	0.022	0.00	
LWC	Strontium	0.020	0.00	
MWC	Strontium	0.023	0.00	
IHP	Thallium	0.001	0.25	0.03
LMB	Thallium	0.001	0.43	0.04
LWC	Thallium	0.000	0.24	0.02
MWC	Thallium	0.001	0.31	0.03
backg	Thallium	0.001	0.26	0.03
IHP	Tin	0.007	0.00	0.00
LMB	Tin	0.007	0.00	0.00
LWC	Tin	0.004	0.00	0.00
MWC	Tin	0.006	0.00	0.00
IHP	Vanadium	0.034	0.62	0.06
LMB	Vanadium	0.045	0.83	0.08
LWC	Vanadium	0.023	0.42	0.04
MWC	Vanadium	0.033	0.60	0.06
backg	Vanadium	0.087	1.59	0.16
IHP	Zinc	1.636	0.04	0.02
LMB	Zinc	1.117	0.02	0.01
LWC	Zinc	2.564	0.06	0.03
MWC	Zinc	4.781	0.11	0.05
backg	Zinc	1.744	0.04	0.02
LMB	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00
LWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00
MWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00

[a]: Biota estimates=UCL soil x UCL uptake factor.

Table C.15. Point Estimates of Contaminant Exposure for Red Fox in WAG 2.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.000	0.00	0.00
MWC	Acetone	0.000	0.00	0.00
IHP	Aluminum	88.024	159.61	15.96
LMB	Aluminum	99.626	180.65	18.07
LWC	Aluminum	51.563	93.50	9.35
MWC	Aluminum	71.975	130.51	13.05
backg	Aluminum	190.001	344.53	34.45
LMB	Antimony	0.033	0.06	0.01
MWC	Antimony	0.003	0.09	0.01
backg	Antimony	0.006	0.18	0.02
LMB	Aroclor-1248	0.000	0.01	0.00
IHP	Aroclor-1254	0.016	0.17	0.03
LMB	Aroclor-1254	0.000	0.01	0.00
IHP	Aroclor-1260	0.151	1.57	0.32
LWC	Aroclor-1260	0.145	1.51	0.31
MWC	Aroclor-1260	0.705	7.33	1.49
IHP	Arsenic	0.043	1.18	0.12
LMB	Arsenic	0.071	1.97	0.20
MWC	Arsenic	0.000	0.00	0.00
backg	Arsenic	0.088	2.46	0.25
IHP	Barium	1.923	0.68	0.18
LMB	Barium	3.184	1.12	0.30
LWC	Barium	1.261	0.44	0.12
MWC	Barium	1.654	0.58	0.16
backg	Barium	2.131	0.75	0.20
IHP	Benzo(a)pyrene	0.001	0.00	0.00
LWC	Benzo(a)pyrene	0.000	0.00	0.00
MWC	Benzo(a)pyrene	0.000	0.00	0.00
backg	Beryllium	0.006	0.02	
IHP	Beryllium	0.012	0.03	
LMB	Beryllium	0.010	0.03	
LWC	Beryllium	0.008	0.02	
MWC	Beryllium	0.011	0.03	
IHP	Boron	0.025	0.00	0.00
LMB	Boron	0.031	0.00	0.00
LWC	Boron	0.028	0.00	0.00
MWC	Boron	0.041	0.00	0.00
IHP	Cadmium	0.194	2.70	0.27
LMB	Cadmium	0.166	2.30	0.23
LWC	Cadmium	0.144	2.01	0.20
MWC	Cadmium	0.156	2.17	0.22

Table 15 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
backg	Cadmium	0.066	0.92	0.09
IHP	Chloroform	0.000	0.00	0.00
MWC	Chloroform	0.000	0.00	0.00
backg	Chromium	2.088	1.21	0.30
IHP	Chromium	2.405	1.39	0.35
LMB	Chromium	1.668	0.96	0.24
LWC	Chromium	3.752	2.17	0.54
MWC	Chromium	4.069	2.35	0.59
IHP	Copper	1.817	0.23	0.17
LMB	Copper	1.403	0.17	0.13
LWC	Copper	1.842	0.23	0.18
MWC	Copper	5.204	0.65	0.50
backg	Copper	2.053	0.26	0.20
backg	Cyanide	0.001	0.00	
IHP	Di-n-butylphthalate	0.000	0.00	0.00
LMB	Di-n-butylphthalate	0.001	0.00	0.00
LWC	Di-n-butylphthalate	0.001	0.00	0.00
MWC	Di-n-butylphthalate	0.000	0.00	0.00
IHP	Lead	0.663	0.16	0.02
LMB	Lead	0.160	0.04	0.00
LWC	Lead	0.431	0.10	0.01
MWC	Lead	0.755	0.18	0.02
backg	Lead	0.372	0.09	0.01
IHP	Lithium	0.166	0.03	0.02
LMB	Lithium	0.131	0.03	0.01
LWC	Lithium	0.082	0.02	0.01
MWC	Lithium	0.117	0.02	0.01
backg	Manganes	0.018	0.00	0.00
IHP	Manganese	11.836	0.25	0.08
LMB	Manganese	50.104	1.08	0.33
LWC	Manganese	8.353	0.18	0.06
MWC	Manganese	6.943	0.15	0.05
IHP	Mercury	2.926	284.05	170.50
LMB	Mercury	0.112	10.92	6.55
LWC	Mercury	0.446	43.33	26.01
MWC	Mercury	0.636	61.75	37.06
backg	Mercury	0.050	4.87	2.92
LMB	Methylene chloride	0.000	0.00	0.00
MWC	Methylene chloride	0.000	0.00	0.00
IHP	Molybdenum	0.102	1.37	0.14

Table 15 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LMB	Molybdenum	0.168	2.26	0.23
LWC	Molybdenum	0.085	1.14	0.11
MWC	Molybdenum	0.108	1.45	0.15
IHP	Nickel	5.220	0.25	0.12
LMB	Nickel	1.959	0.09	0.05
LWC	Nickel	0.965	0.05	0.02
MWC	Nickel	2.331	0.11	0.06
backg	Nickel	2.677	0.13	0.06
IHP	Selenium	0.038	1.76	0.18
LMB	Selenium	0.071	3.25	0.33
LWC	Selenium	0.084	3.86	0.39
MWC	Selenium	0.226	10.39	1.04
backg	Selenium	0.083	3.81	0.38
IHP	Strontium	0.140	0.00	
LMB	Strontium	0.122	0.00	
LWC	Strontium	0.075	0.00	
MWC	Strontium	0.162	0.00	
IHP	Thallium	0.002	0.61	0.06
LMB	Thallium	0.004	1.03	0.10
LWC	Thallium	0.002	0.57	0.06
MWC	Thallium	0.003	0.74	0.07
backg	Thallium	0.002	0.62	0.06
IHP	Tin	0.031	0.00	0.00
LMB	Tin	0.030	0.00	0.00
LWC	Tin	0.020	0.00	0.00
MWC	Tin	0.026	0.00	0.00
IHP	Vanadium	0.102	0.99	0.10
LMB	Vanadium	0.136	1.32	0.13
LWC	Vanadium	0.069	0.67	0.07
MWC	Vanadium	0.098	0.96	0.10
backg	Vanadium	0.259	2.52	0.25
IHP	Zinc	15.871	0.19	0.09
LMB	Zinc	10.844	0.13	0.06
LWC	Zinc	24.910	0.29	0.15
MWC	Zinc	46.438	0.55	0.27
backg	Zinc	16.825	0.20	0.10
LMB	bis(2-Ethylhexyl)phthalate	0.001	0.00	0.00
LWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00
MWC	bis(2-Ethylhexyl)phthalate	0.001	0.00	0.00

[a] Biota estimates=UCL soil x UCL uptake factor.

Table C.16. Point Estimates of Contaminant Exposure Hawk.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.000		
MWC	Acetone	0.000		
IHP	Aluminum	8.089	0.07	0.18
LMB	Aluminum	9.145	0.08	0.21
LWC	Aluminum	4.736	0.04	0.11
MWC	Aluminum	6.608	0.06	0.15
backg	Aluminum	17.444	0.16	0.39
LMB	Antimony	0.001	0.00	0.00
MWC	Antimony	0.002		
backg	Antimony	0.003		
LMB	Aroclor-1248	0.000		
IHP	Aroclor-1254	0.000	0.00	0.00
LMB	Aroclor-1254	0.000	0.00	0.00
IHP	Aroclor-1260	0.142	0.79	0.08
LWC	Aroclor-1260	0.136	0.75	0.08
MWC	Aroclor-1260	0.660	3.67	0.37
IHP	Arsenic	0.004	0.00	0.00
LMB	Arsenic	0.006	0.00	0.00
MWC	Arsenic	0.000	0.00	0.00
backg	Arsenic	0.008	0.00	0.00
IHP	Barium	0.947	0.05	0.02
LMB	Barium	1.568	0.08	0.04
LWC	Barium	0.622	0.03	0.01
MWC	Barium	0.815	0.04	0.02
backg	Barium	1.050	0.05	0.03
IHP	Benzo(a)pyrene	0.000		
LWC	Benzo(a)pyrene	0.000		
MWC	Benzo(a)pyrene	0.000		
backg	Beryllium	0.000		
IHP	Beryllium	0.000		
LMB	Beryllium	0.000		
LWC	Beryllium	0.000		
MWC	Beryllium	0.000		
IHP	Boron	0.003	0.00	0.00
LMB	Boron	0.003	0.00	0.00
LWC	Boron	0.000	0.00	0.00
MWC	Boron	0.002	0.00	0.00
IHP	Cadmium	0.021	0.01	0.00
LMB	Cadmium	0.018	0.01	0.00
LWC	Cadmium	0.016	0.01	0.00
MWC	Cadmium	0.017	0.01	0.00

Table16 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
backg	Cadmium	0.008	0.01	0.00
IHP	Chloroform	0.000		
MWC	Chloroform	0.000		
backg	Chromium	0.438	0.44	0.09
IHP	Chromium	0.504	0.50	0.10
LMB	Chromium	0.350	0.35	0.07
LWC	Chromium	0.786	0.79	0.16
MWC	Chromium	0.853	0.85	0.17
IHP	Copper	1.501	0.03	0.02
LMB	Copper	1.159	0.02	0.02
LWC	Copper	1.522	0.03	0.02
MWC	Copper	4.301	0.09	0.07
backg	Copper	1.696	0.04	0.03
backg	Cyanide	0.000		
IHP	Di-n-butylphthalate	0.000	0.00	0.00
LMB	Di-n-butylphthalate	0.000	0.00	0.00
LWC	Di-n-butylphthalate	0.000	0.00	0.00
MWC	Di-n-butylphthalate	0.000	0.00	0.00
IHP	Lead	0.204	0.18	0.02
LMB	Lead	0.049	0.04	0.00
LWC	Lead	0.132	0.12	0.01
MWC	Lead	0.232	0.20	0.02
backg	Lead	0.115	0.10	0.01
IHP	Lithium	0.045		
LMB	Lithium	0.035		
LWC	Lithium	0.022		
MWC	Lithium	0.032		
backg	Manganes	0.012	0.00	
IHP	Manganese	0.903	0.00	
LMB	Manganese	3.822	0.00	
LWC	Manganese	0.639	0.00	
MWC	Manganese	0.530	0.00	
IHP	Mercury	1.904	317.34	29.75
LMB	Mercury	0.073	12.20	1.14
LWC	Mercury	0.290	48.40	4.54
MWC	Mercury	0.414	68.99	6.47
backg	Mercury	0.033	5.44	0.51
LMB	Methylene chloride	0.000		
MWC	Methylene chloride	0.000		
IHP	Molybdenum	0.000	0.00	0.00

Table16 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LMB	Molybdenum	0.000	0.00	0.00
LWC	Molybdenum	0.000	0.00	0.00
MWC	Molybdenum	0.000	0.00	0.00
IHP	Nickel	1.222	0.02	0.01
LMB	Nickel	0.459	0.01	0.00
LWC	Nickel	0.226	0.00	0.00
MWC	Nickel	0.546	0.01	0.01
backg	Nickel	0.628	0.01	0.01
IHP	Selenium	0.012	0.02	0.01
LMB	Selenium	0.022	0.04	0.02
LWC	Selenium	0.026	0.05	0.03
MWC	Selenium	0.070	0.14	0.07
backg	Selenium	0.026	0.05	0.03
IHP	Strontium	0.006		
LMB	Strontium	0.009		
LWC	Strontium	0.012		
MWC	Strontium	0.006		
IHP	Thallium	0.000		
LMB	Thallium	0.000		
LWC	Thallium	0.000		
MWC	Thallium	0.000		
backg	Thallium	0.000		
IHP	Tin	0.000	0.00	0.00
LMB	Tin	0.000	0.00	0.00
LWC	Tin	0.000	0.00	0.00
MWC	Tin	0.000	0.00	0.00
IHP	Vanadium	0.000	0.00	
LMB	Vanadium	0.000	0.00	
LWC	Vanadium	0.000	0.00	
MWC	Vanadium	0.000	0.00	
backg	Vanadium	0.001	0.00	
IHP	Zinc	13.754	0.95	0.10
LMB	Zinc	9.397	0.65	0.07
LWC	Zinc	21.587	1.49	0.16
MWC	Zinc	40.244	2.78	0.31
backg	Zinc	14.577	1.01	0.11
LMB	bis(2-Ethylhexyl)phthalate	0.000	0.00	
LWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	
MWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	

[a] Biota estimates=UCL soil x UCL uptake factor.

Table C.17. Point Estimates of Contaminant Exposoure for Wild Turkey in WAG 2.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.000		
MWC	Acetone	0.000		
IHP	Aluminum	75.241	0.69	1.69
LMB	Aluminum	85.165	0.78	1.91
LWC	Aluminum	44.077	0.40	0.99
MWC	Aluminum	61.527	0.56	1.38
backg	Aluminum	162.420	1.48	3.65
LMB	Antimony	0.032	0.00	0.00
MWC	Antimony	0.001		
backg	Antimony	0.003		
LMB	Aroclor-1248	0.000		
IHP	Aroclor-1254	0.008	0.05	0.00
LMB	Aroclor-1254	0.000	0.00	0.00
IHP	Aroclor-1260	0.012	0.07	0.01
LWC	Aroclor-1260	0.011	0.06	0.01
MWC	Aroclor-1260	0.055	0.30	0.03
IHP	Arsenic	0.029	0.01	0.00
LMB	Arsenic	0.049	0.01	0.00
MWC	Arsenic	0.000	0.00	0.00
backg	Arsenic	0.061	0.01	0.00
IHP	Barium	2.096	0.10	0.05
LMB	Barium	3.470	0.17	0.08
LWC	Barium	1.371	0.07	0.03
MWC	Barium	1.803	0.09	0.04
backg	Barium	2.320	0.11	0.06
IHP	Benzo(a)pyrene	0.001		
LWC	Benzo(a)pyrene	0.000		
MWC	Benzo(a)pyrene	0.000		
backg	Beryllium	0.006		
IHP	Beryllium	0.008		
LMB	Beryllium	0.007		
LWC	Beryllium	0.006		
MWC	Beryllium	0.007		
IHP	Boron	0.022	0.00	0.00
LMB	Boron	0.029	0.00	0.00
LWC	Boron	0.028	0.00	0.00
MWC	Boron	0.038	0.00	0.00
IHP	Cadmium	0.060	0.04	0.00
LMB	Cadmium	0.051	0.03	0.00
LWC	Cadmium	0.044	0.03	0.00
MWC	Cadmium	0.048	0.03	0.00

Table 17 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
backg	Cadmium	0.020	0.01	0.00
IHP	Chloroform	0.000		
MWC	Chloroform	0.000		
backg	Chromium	0.735	0.73	0.15
IHP	Chromium	0.847	0.85	0.17
LMB	Chromium	0.587	0.59	0.12
LWC	Chromium	1.321	1.32	0.26
MWC	Chromium	1.433	1.43	0.29
IHP	Copper	0.344	0.01	0.01
LMB	Copper	0.265	0.01	0.00
LWC	Copper	0.349	0.01	0.01
MWC	Copper	0.985	0.02	0.02
backg	Copper	0.389	0.01	0.01
backg	Cyanide	0.001		
IHP	Di-n-butylphthalate	0.000	0.00	0.00
LMB	Di-n-butylphthalate	0.001	0.01	0.00
LWC	Di-n-butylphthalate	0.001	0.00	0.00
MWC	Di-n-butylphthalate	0.000	0.00	0.00
IHP	Lead	0.438	0.39	0.04
LMB	Lead	0.106	0.09	0.01
LWC	Lead	0.285	0.25	0.03
MWC	Lead	0.499	0.44	0.04
backg	Lead	0.246	0.22	0.02
IHP	Lithium	0.133		
LMB	Lithium	0.105		
LWC	Lithium	0.066		
MWC	Lithium	0.094		
backg	Manganes	0.007	0.00	
IHP	Manganese	22.130	0.02	
LMB	Manganese	93.679	0.10	
LWC	Manganese	15.613	0.02	
MWC	Manganese	12.981	0.01	
IHP	Mercury	0.563	93.82	8.80
LMB	Mercury	0.022	3.61	0.34
LWC	Mercury	0.086	14.33	1.34
MWC	Mercury	0.122	20.40	1.91
backg	Mercury	0.010	1.62	0.15
LMB	Methylene chloride	0.000		
MWC	Methylene chloride	0.000		
IHP	Molybdenum	0.042	0.01	0.00

Table 17 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LMB	Molybdenum	0.069	0.02	0.00
LWC	Molybdenum	0.035	0.01	0.00
MWC	Molybdenum	0.045	0.01	0.00
IHP	Nickel	1.953	0.03	0.02
LMB	Nickel	0.733	0.01	0.01
LWC	Nickel	0.361	0.00	0.00
MWC	Nickel	0.872	0.01	0.01
backg	Nickel	1.001	0.01	0.01
IHP	Selenium	0.009	0.02	0.01
LMB	Selenium	0.016	0.03	0.02
LWC	Selenium	0.019	0.04	0.02
MWC	Selenium	0.051	0.10	0.05
backg	Selenium	0.019	0.04	0.02
IHP	Strontium	0.089		
LMB	Strontium	0.076		
LWC	Strontium	0.044		
MWC	Strontium	0.104		
IHP	Thallium	0.002		
LMB	Thallium	0.004		
LWC	Thallium	0.002		
MWC	Thallium	0.003		
backg	Thallium	0.002		
IHP	Tin	0.031	0.00	0.00
LMB	Tin	0.030	0.00	0.00
LWC	Tin	0.020	0.00	0.00
MWC	Tin	0.026	0.00	0.00
IHP	Vanadium	0.090	0.01	
LMB	Vanadium	0.119	0.01	
LWC	Vanadium	0.061	0.01	
MWC	Vanadium	0.087	0.01	
backg	Vanadium	0.228	0.02	
IHP	Zinc	2.375	0.16	0.02
LMB	Zinc	1.622	0.11	0.01
LWC	Zinc	3.726	0.26	0.03
MWC	Zinc	6.946	0.48	0.05
backg	Zinc	2.521	0.17	0.02
LMB	bis(2-Ethylhexyl)phthalate	0.001	0.00	
LWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	
MWC	bis(2-Ethylhexyl)phthalate	0.001	0.00	

[a] Biota estimates = UCL soil x UCL uptake factor.

Table C.18. Point Estimates of Contaminant Exposure of Mink to Small Mammals in WAG2.

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
IHP	Acetone	0.000	0.00	0.00
MWC	Acetone	0.000	0.00	0.00
IHP	Aluminum	5.216	6.49	0.65
LMB	Aluminum	5.885	7.33	0.73
LWC	Aluminum	3.050	3.80	0.38
MWC	Aluminum	4.254	5.30	0.53
backg	Aluminum	11.229	13.98	1.40
LMB	Antimony	0.002	0.00	0.00
MWC	Antimony	0.004	0.07	0.01
backg	Antimony	0.006	0.11	0.01
LMB	Aroclor-1248	0.000	0.00	0.00
IHP	Aroclor-1254	0.000	0.00	0.00
LMB	Aroclor-1254	0.000	0.00	0.00
IHP	Aroclor-1260	0.091	0.65	0.13
LWC	Aroclor-1260	0.087	0.62	0.13
MWC	Aroclor-1260	0.424	3.03	0.62
IHP	Arsenic	0.002	0.05	0.00
LMB	Arsenic	0.004	0.08	0.01
MWC	Arsenic	0.000	0.00	0.00
backg	Arsenic	0.005	0.10	0.01
IHP	Barium	0.611	0.15	0.04
LMB	Barium	1.011	0.24	0.07
LWC	Barium	0.404	0.10	0.03
MWC	Barium	0.526	0.13	0.03
backg	Barium	0.680	0.16	0.04
IHP	Benzo(a)pyrene	0.000	0.00	0.00
LWC	Benzo(a)pyrene	0.000	0.00	0.00
MWC	Benzo(a)pyrene	0.000	0.00	0.00
backg	Beryllium	0.000	0.00	
IHP	Beryllium	0.000	0.00	
LMB	Beryllium	0.000	0.00	
LWC	Beryllium	0.000	0.00	
MWC	Beryllium	0.000	0.00	
IHP	Boron	0.005	0.00	0.00
LMB	Boron	0.005	0.00	0.00
LWC	Boron	0.000	0.00	0.00
MWC	Boron	0.004	0.00	0.00
IHP	Cadmium	0.014	0.13	0.01
LMB	Cadmium	0.012	0.11	0.01
LWC	Cadmium	0.010	0.10	0.01
MWC	Cadmium	0.011	0.10	0.01

Table18 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
backg	Cadmium	0.006	0.05	0.01
IHP	Chloroform	0.000	0.00	0.00
MWC	Chloroform	0.000	0.00	0.00
backg	Chromium	0.282	0.11	0.03
IHP	Chromium	0.324	0.13	0.03
LMB	Chromium	0.225	0.09	0.02
LWC	Chromium	0.505	0.20	0.05
MWC	Chromium	0.548	0.22	0.05
IHP	Copper	0.965	0.08	0.06
LMB	Copper	0.745	0.06	0.05
LWC	Copper	0.979	0.08	0.06
MWC	Copper	2.764	0.24	0.18
backg	Copper	1.091	0.09	0.07
backg	Cyanide	0.000	0.00	
IHP	Di-n-butylphthalate	0.000	0.00	0.00
LMB	Di-n-butylphthalate	0.000	0.00	0.00
LWC	Di-n-butylphthalate	0.000	0.00	0.00
MWC	Di-n-butylphthalate	0.000	0.00	0.00
IHP	Lead	0.131	0.02	0.00
LMB	Lead	0.032	0.01	0.00
LWC	Lead	0.085	0.01	0.00
MWC	Lead	0.149	0.02	0.00
backg	Lead	0.074	0.01	0.00
IHP	Lithium	0.029	0.00	0.00
LMB	Lithium	0.023	0.00	0.00
LWC	Lithium	0.014	0.00	0.00
MWC	Lithium	0.020	0.00	0.00
backg	Manganes	0.021	0.00	0.00
IHP	Manganese	0.582	0.01	0.00
LMB	Manganese	2.465	0.04	0.01
LWC	Manganese	0.414	0.01	0.00
MWC	Manganese	0.343	0.01	0.00
IHP	Mercury	1.223	81.56	48.93
LMB	Mercury	0.047	3.13	1.88
LWC	Mercury	0.187	12.44	7.46
MWC	Mercury	0.266	17.73	10.64
backg	Mercury	0.021	1.42	0.85
LMB	Methylene chloride	0.000	0.00	0.00
MWC	Methylene chloride	0.000	0.00	0.00
IHP	Molybdenum	0.000	0.00	0.00

Table18 (Continued)

Location	Contaminant	Total Exposure[a]	NOAEL HQ	LOAEL HQ
LMB	Molybdenum	0.000	0.00	0.00
LWC	Molybdenum	0.000	0.00	0.00
MWC	Molybdenum	0.000	0.00	0.00
IHP	Nickel	0.785	0.03	0.01
LMB	Nickel	0.295	0.01	0.00
LWC	Nickel	0.145	0.00	0.00
MWC	Nickel	0.351	0.01	0.01
backg	Nickel	0.406	0.01	0.01
IHP	Selenium	0.008	0.24	0.02
LMB	Selenium	0.014	0.45	0.04
LWC	Selenium	0.017	0.53	0.05
MWC	Selenium	0.045	1.43	0.14
backg	Selenium	0.017	0.53	0.05
IHP	Strontium	0.010	0.00	
LMB	Strontium	0.015	0.00	
LWC	Strontium	0.021	0.00	
MWC	Strontium	0.010	0.00	
IHP	Thallium	0.000	0.00	0.00
LMB	Thallium	0.000	0.00	0.00
LWC	Thallium	0.000	0.00	0.00
MWC	Thallium	0.000	0.00	0.00
backg	Thallium	0.000	0.00	0.00
IHP	Tin	0.000	0.00	0.00
LMB	Tin	0.000	0.00	0.00
LWC	Tin	0.000	0.00	0.00
MWC	Tin	0.000	0.00	0.00
IHP	Vanadium	0.000	0.00	0.00
LMB	Vanadium	0.000	0.00	0.00
LWC	Vanadium	0.000	0.00	0.00
MWC	Vanadium	0.000	0.00	0.00
backg	Vanadium	0.002	0.01	0.00
IHP	Zinc	8.840	0.07	0.04
LMB	Zinc	6.039	0.05	0.02
LWC	Zinc	13.870	0.11	0.06
MWC	Zinc	25.859	0.21	0.11
backg	Zinc	9.380	0.08	0.04
LMB	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00
LWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00
MWC	bis(2-Ethylhexyl)phthalate	0.000	0.00	0.00

[a] Biota estimates = UCL soil x UCL uptake factor.

Table C.19. Results of Monte Carlo Simulation of Exposure for wildlife in WAG 2

Species	Analyte	Mean	STD	80th Percen.	%>NOAEL	%>LOAEL
Short-tailed Shrew	Aroclor 1260	0.624	0.265	0.823	> 95%	35-40%
	Arsenic	0.976	0.177	1.126	> 95%	< 5%
	Barium	20.617	2.437	22.551	> 95%	< 5%
	Cadmium	3.475	0.856	4.222	> 95%	70%
	Chromium	56.165	11.929	65.749	> 95%	> 95%
	Copper	9.414	2.423	11.387	< 5%	< 5%
	Manganese	214.645	51.290	258.606	65%	< 5%
	Mercury	6.753	4.272	9.921	> 95%	> 95%
	Molybdenum	5.362	0.351	5.661	< 5%	< 5%
	Nickel	48.614	15.456	60.623	< 5%	< 5%
	Selenium	1.093	0.297	1.335	> 95%	75%
	Vanadium	2.341	0.175	2.486	> 95%	< 5%
	Zinc	134.327	24.675	154.142	< 5%	< 5%
White-footed Mice	Aroclor 1260	0.084	0.041	0.117	70%	< 5%
	Chromium	7.054	1.482	8.246	60-65%	< 5%
	Mercury	0.856	0.546	1.264	> 95%	80-85%
	Selenium	0.135	0.037	0.165	90-95%	< 5%
Red Fox	Aroclor 1260	0.049	0.022	0.066	< 5%	< 5%
	Mercury	0.241	0.126	0.337	> 95%	65-70 %
	Selenium	0.034	0.006	0.039	> 95%	< 5%
Mink[1]	Mercury	0.011	0.005	0.015	~ 20%	< 5%
Mink[2]	Mercury	0.098	0.061	0.145	> 95%	90-95%
White-tailed Deer	Mercury	0.010	0.004	0.013	55-60%	< 5%
Belted Kingfisher[1]	Mercury	0.072	0.011	0.080	> 95%	70-75%
Red-tailed Hawk	Mercury	0.153	0.092	0.229	> 95%	80-85%
Wild Turkey	Mercury	0.055	0.028	0.075	> 95%	30-35%

[1] Exposure through consumption of fish only.
[2] Exposure through consumption of small mammals, vegetation, invertegrates, and soil.

Table C.20. Experimental Information for Derivation of Mammalian NOAEL's and LOAEL's

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation
Acetone	NA	rat	10[2] 90 d.	50[2] 90 d.	liver, kidney damage	EPA 1986c
Aluminum	AlCl3	mouse	1.93[1] 3 gen.	19.3 3 gen.	reproduction	Ondreicka et al. 1966
Antimony	potassium tartrate	mouse	0.125 lifetime	1.25 lifetime	reproduction	Schroeder et al. 1968
Aroclor-1248	NA	rhesus monkey	0.01[1] 14 mo.	0.1 14 mo.	reproduction	Barsotti et al. 1976
Aroclor-1254	NA	mink	0.14 4.5 mo.	0.69 4.5 mo.	reproduction	Aulerich and Ringer 1977
Arsenic	As+3	mouse	0.126[1] 3 gen.	1.26 3 gen.	reproduction	Schroeder and Mitchner 1971
Barium	chloride	rat	5.1 16 mo.		growth, hypertension	Perry et al. 1983
Barium	chloride	rat		19.8[2] 10 d.	mortality	Borzelleca et al. 1988
Benzene	NA	mouse	26.36[1] 6-12 d, gest.	263.6 6-12 d, gest.	reproduction	Nawrot and Staples 1979
Benzo(a)pyrene	NA	mouse	1[1] 7-16 d, gest	10 7-16 d, gest	reproduction	Mackenzie and Angevine 1981
Beryllium	sulfate	rat	0.66 1126 d.		longevity/ wt. loss	Schroeder and Mitchner 1975

Table 6.20 (Continued)

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation
Bis(2-ethylhexyl) phthalate	NA	mouse	18.3 105 d.	183 105 d.	reproduction	Lamb et al. 1987
Boron	boric acid, borax	rat	28 3 gen.	93.6 3 gen.	reproduction	Weir and Fisher 1972
Cadmium	$CdCl_2$	mouse	2.518 2 gen.	0.1913 2 gen.	reproduction	Schroeder and Mitchner 1971
Chloroform	NA	rat	15[2] 13 wk.	41[2] 13 wk.	liver, kidney, gonad cond.	Palmer et al. 1979
Chromium	Cr^{+6}	rat	3.28 1 yr.		wt. loss, food consumption	Mackenzie et al. 1958
Chromium	Cr^{+6}	rat		13.14[2] 3 mo.	Mortality	Steven et al. 1976
Copper	sulfate	mink	11.71 1 yr.	15.14 1 yr.	reproduction	Aulerich et al. 1982
Cyanide	potassium cyanide	rat	68.7 gest. lact.		reproduction	Tewe and Maner 1981
1,2 Dichloroethene	NA	mouse	45.2[2] 90 d.		body, organ weight, blood chem. hepatic function	Palmer et al. 1979
Di-n-butylphthalate	NA	mouse	550 105 d.	1833 105 d.	reproduction	Lamb et al. 1987
Lead	acetate	rat	8 3 gen.	80 3 gen.	reproduction	Azar et al. 1973
Lithium	carbonate	rat	9.4 gest.	18.8 gest.	reproduction	Marathe and Thomas 1986

Table 6.20 (Continued)

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation
Manganese	oxide	rat	88 224 d., gest.	284 224 d., gest.	reproduction	Laskey et al. 1982
Mercury	methyl	mink	0.015[2] 93 d.	93 d.	mortality	Wobeser et al. 1976
Mercury	methyl	rat	3 gen.	0.16 3 gen.	reproduction	Verschuuren et al. 1976
Methylene Chloride	NA	rat	5.85 2 yr	50 2 yr	Liver Histology	NCA 1982
Molybdenum	molybdate	mouse	0.26[1] 3 gen.	2.6 3 gen.	reproduction	Schroeder and Mitchner 1971
Nickel	sulfate	rat	40 3 gen.	80 3 gen.	reproduction	Ambrose et al. 1976
Selenium	selenate	mouse	0.075[1] 3 gen.	0.75 3 gen.	reproduction	Schroeder and Mitchner 1971
Strontium	chloride	rat	263 3 yr.	3 yr.	body weight, bone changes	Skoryna 1981
1,1,2,2-Tetrachloroethene	NA	mouse	1.4[2] 6 wk.	7[2] 6 wk.	Hepatotoxicity	Buben and O'Flaherty 1985
Thallium	sulfate	rat	0.0074[1,2] 60 d.	0.074[1,2] 60 d.	reproduction	Formigli et al. 1986
Tin	(TBTO)	mouse	23.4 6-15 d, gest.	35 6-15 d, gest.	reproduction	Davis et al. 1987
Trichloroethene	NA	mouse	0.7[1,2] 6 wk.	7[2] 6 wk.	hepatotoxicity	Buben and O'Flaherty 1985

Table 6.20 (Continued)

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation
1,1,1 Trichloroethane	NA	mouse	1000 3 gen.	3 gen.	reproduction	Lane et al. 1982
Vanadium	NaVO3	rat	0.21[1] 60 d. + gest.	2.1 60 d. + gest.	reproduction	Domingo et al. 1986
Vinyl chloride	NA	rat	0.17[1] lifetime	1.7 lifetime	longevity, mortality	Feron et al. 1981
Zinc	oxide	rat	160 gest.	320 gest.	reproduction	Schlicker and Cox 1968

[1] Estimated NOAEL: LOAEL to NOAEL factor of 10 applied.
[2] Estimated NOAEL: subchronic to chronic factor of 10 applied.

Table C.21. Estimated NOAELs and LOAELs for Mammalian Endpoints.

Contaminant	Estimated NOAEL's					Estimated LOAEL's				
	Shrew	Mouse	Mink	Fox	Deer	Shrew	Mouse	Mink	Fox	Deer
Acetone	21.978	19.972	7.692	5.281	2.806	109.892	99.858	38.458	26.405	14.028
Aluminum	2.295	2.086	0.803	0.551	0.293	22.952	20.856	8.032	5.515	2.930
Antimony	0.149	0.135	0.052	0.036	0.019	1.487	1.351	0.520	0.357	0.190
Aroclor 1248	0.043	0.039	0.015	0.010	0.005	0.427	0.388	0.150	0.103	0.055
Aroclor 1254	0.067	0.061	0.140	0.096	0.009	0.668	0.607	0.690	0.474	0.085
Arsenic	0.150	0.136	0.052	0.036	0.019	1.498	1.362	0.524	0.360	0.191
Barium	11.835	10.754	4.142	2.844	1.511	43.517	39.544	15.229	10.456	5.555
Benzo(a)pyrene	1.189	1.081	0.416	0.286	0.152	11.892	10.806	4.162	2.857	1.518
Beryllium	1.451	1.318	0.508	0.349	0.185					
Bis(2-ethylhexyl)phthalate	21.763	19.775	7.616	5.229	2.778	217.625	197.753	76.161	52.290	27.779
Boron	61.539	55.920	21.536	14.787	7.855	205.717	186.933	71.993	49.430	26.259
Cadmium	0.299	0.272	0.105	0.072	0.038	2.994	2.721	1.048	0.719	0.382
Chloroform	32.967	29.957	11.537	7.922	4.208	90.111	81.883	31.536	21.652	11.503
Chromium (Cr+6)	7.209	6.551	2.523	1.732	0.920	28.879	26.243	10.107	6.939	3.686
Copper	33.432	30.380	11.700	8.033	4.267	43.262	39.312	15.140	10.395	5.522
Cyanide	141.890	128.941	49.659	34.095	18.113					
1,2-Dichloroethene	53.752	48.844	18.811	12.915	6.861					
Di-n-butyl phthalate	654.066	594.341	228.899	157.157	83.490	2179.822	1980.776	762.858	523.761	278.249
Lead	17.583	15.977	6.153	4.225	2.244	175.826	159.772	61.533	42.248	22.444
Lithium	20.660	18.773	7.230	4.964	2.637	41.319	37.546	14.460	9.928	5.274
Manganese	193.409	175.749	67.686	46.473	24.688	624.140	567.191	218.441	149.980	79.676
Methylmercury	0.070	0.064	0.015	0.010	0.009	0.352	0.320	0.123	0.085	0.045
Methylene Chloride	12.857	11.683	4.500	3.089	1.641	109.892	99.858	38.458	26.405	14.028
Molybdenum	0.309	0.281	0.108	0.074	0.039	3.092	2.810	1.082	0.743	0.395
Nickel	87.913	79.886	30.766	21.124	11.222	175.826	159.772	61.533	42.248	22.444
Selenium (Sodium selenite)	0.090	0.082	0.032	0.022	0.012	0.904	0.821	0.316	0.217	0.115
Strontium	578.029	525.250	202.289	138.890	73.785					

1,1,2,2-Tetrachloroethene	1.665	1.513	0.583	0.400	0.213	8.324	7.564	2.913	2.000	1.063
Thallium	0.016	0.015	0.006	0.004	0.002	0.164	0.149	0.058	0.039	0.021
Tin	27.828	25.287	9.739	6.686	3.552	41.622	37.822	14.566	10.001	5.313
1,1,1-Trichloroethane	1235.930	1123.080	432.530	296.970	157.760					
Trichloroethene	0.832	0.756	0.291	0.200	0.106	8.324	7.564	2.913	2.000	1.063
Vanadium	0.428	0.389	0.150	0.103	0.055	4.285	3.894	1.500	1.030	0.547
Vinyl Chloride	0.374	0.340	0.131	0.090	0.048	3.736	3.395	1.308	0.898	0.477
Zinc	351.653	319.544	123.066	84.496	44.888	703.306	639.088	246.131	168.992	89.776

Table C.22 Estimated NOAEL's and LOAEL's for Avian Endpoints

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation	Estimated NOAEL (mg/kg/d)	Estimated LOAEL (mg/kg/d)
Aluminum	$Al_2(SO_4)_3$	ringed dove	109.7 4 mo.		reproduction	Carriere et al. 1986	109.7	
Aluminum	chloride	day-old white leghorn chicks	2 wks.	44.5[2] 2 wks.	mortality	Storer and Nelson 1968		44.5
Aroclor 1254	NA	Ring-necked pheasant	0.18[2] 17 wk	1.8 17 wk	reproduction	Dahlgren et al. 1972	0.18	1.8
Arsenic	arsenite	mallard duck	5.14 128d	12.84 128d	mortality	USFWS 1964	5.14	12.84
Arsenic	Paris Green	brown-headed cowbird	2.46 7 mo.	7.38 7 mo.	mortality	USFWS 1969	2.46	7.38
Barium	hydroxide	1-day old chicks	20.8[2] 4 wks.	41.7[2] 4 wks.	mortality	Johnson et al. 1960	20.8	41.7
bis(2-ethylhexyl) Phthalate	NA	ringed dove	1.1 4 wks.	4 wks.	reproduction	Peakall 1974	1.1	
Boron	boric acid	mallard duck	28.8 3 wks. prior, during, 3 wks. post reprod.	100 3 wks.prior, during, 3 wks. post reprod.	reproduction	Smith and Anders 1989	28.8	100
Cadmium	$CdCl_2$	mallard duck	1.45 90 d	20 90 d	reproduction	White and Finley 1978	1.45	20

Table 6.22 (Continued)

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation	Estimated NOAEL (mg/kg/d)	Estimated LOAEL (mg/kg/d)
Chromium	Cr^{+3}	black duck	1 10 mo.	5 10 mo.	reproduction	Haseltine et al., unpubl. data	1	5
Copper	oxide	chicken	33.2 10 wk	46.97 10 wk	growth/ mortality	Mehring et al. 1960	33.2	46.97
Di-n-butylphthalate	NA	ringed dove	0.11[1] 4 wks.	1.1 4 wks.	reproduction	Peakall 1974	0.11	
Lead	metal	American Kestrel	3.85 7 mo.		reproduction	Pattee 1984	3.85	
Lead	acetate	Japanese quail		11.3 12 wk	reproduction	Edens et al. 1976		11.3
Manganese	oxide	Japanese quail	977 75 d.	75 d.	growth, aggresiveness	Laskey and Edens 1985	977	
Mercury	methyl	mallard duck	0.0064[2] 3 gen.	0.064 3 gen.	reproduction	Heinz 1979	0.0064	0.064
Molybdenum	sodium Mo	chicken	3.5[1] 21 d.	35.3 21 d.	reproduction	Lepore and Miller 1965	3.5	35.3
Nickel	sulfate	mallard duck	77.4 90 d	107 90 d	mortality, growth, behavior	Cain and Pafford 1981	77.4	107
Selenium	selenite	mallard duck	0.5 10 wk	1.0 10 wk	reproduction	Heinz et al. 1987	0.5	1.0
Tin	(TBTO)	Japanese quail	6.8 6 wks.	16.9 6 wks.	reproduction	Schlatterer et al. 1993	6.8	16.9

Table 6.22 (Continued)

Contaminant	Form	Test Species	NOAEL (mg/kg/d) and Duration	LOAEL (mg/kg/d) and Duration	Endpoint	Citation	Estimated NOAEL (mg/kg/d)	Estimated LOAEL (mg/kg/d)
Vanadium	vanadyl sulfate	mallard duck	11.4 12 wks.	12 wks.	mortality, body weight, blood chem.	White and Dieter 1978	11.4	
Zinc	zinc sulfate	chicken	14.5 44 wk	130.9 44 wk	reproduction	Stahl et al. 1990	14.5	1309

[1] Estimated NOAEL: LOAEL to NOAEL factor of 10 applied.
[2] Estimated NOAEL: subchronic to chronic factor of 10 applied.

Table C.23 Water Benchmamark Values for Wildlife Endpoints

Contaminant	Estimated NOAEL's							Estimated LOAEL's						
	Shrew	Mouse	Mink	Fox	Deer	Kingfisher	Hawk	Shrew	Mouse	Mink	Fox	Deer	Kingfisher	Hawk
Acetone	99.90	66.57	77.69	62.54	42.84			499.51	332.86	388.47	312.69	214.20		
Aluminum	10.43	6.95	8.11	6.53	4.47	1014.70	1930.03	104.33	69.52	81.13	65.31	44.74	411.63	782.92
Antimony	0.68	0.45	0.53	0.42	0.29			6.76	4.50	5.26	4.23	2.90		
Aroclor 1248	0.19	0.13	0.15	0.12	0.08			1.94	1.29	1.51	1.22	0.83		
Aroclor 1254	0.30	0.20	1.41	1.14	0.13	1.67	3.17	3.08	2.02	6.97	5.61	1.30	16.65	31.67
Arsenic(Sodium Arsenite)	0.68	0.45	0.53	0.43	0.29	47.50	90.34	6.81	4.54	5.30	4.26	2.92	118.77	225.90
Barium	53.80	35.85	41.84	33.68	23.07	192.40	365.95	197.81	131.81	153.83	123.83	84.83	385.73	733.66
Benzo(a)pyrene	5.41	3.60	4.20	3.38	2.32			54.06	36.02	42.04	33.84	23.18		
Beryllium	6.59	4.39	5.13	4.13	2.83									
Bis(2-ethylhexyl)phthalate	98.92	65.92	76.93	61.92	42.42	10.18	19.35	989.21	659.18	769.30	619.23	424.20		
Boron	279.72	186.40	217.54	175.11	119.95	266.40	506.70	935.08	623.11	727.21	585.36	400.99	925.00	1759.38
Cadmium	0.08	0.05	0.06	0.05	0.03	13.41	25.51	0.10	0.07	0.08	0.06	0.04	185.00	351.88
Carbon Tetrachloride	159.84	106.52	124.31	100.06	68.55									
Chloroform	149.85	99.86	116.54	93.81	64.26			409.60	272.94	318.54	256.41	175.65		
Chromium (Cr+3)	27343.00	18220.70	21264.60	17116.70	11725.50	9.25	17.59						46.25	87.97
Chromium (Cr+6)	32.77	21.84	25.48	20.51	14.05			131.27	87.48	102.09	82.18	56.29		
Copper	151.96	101.27	118.18	95.13	65.17	434.75	826.91	196.64	131.04	152.93	123.10	84.33	570.73	1085.53
1,2-Dichloroethene	244.33	162.81	190.01	152.95	104.78									
Di-n-butyl phthalate	2973.03	1981.14	2312.11	1861.07	1274.92	1.02	1.94	9908.28	6602.58	7705.64	6202.44	4248.94	10.18	19.35
Lead (Metal)	79.92	53.26	62.15	50.03	34.27	35.61	67.74							
Lead (Acetate)						10.45	19.88	799.21	532.57	621.54	500.31	342.73	104.53	198.81
Lithium	93.91	62.58	73.03	58.79	40.27			187.82	125.16	146.06	117.57	80.54		
Manganese	879.13	585.83	683.70	550.34	377.00	9037.30	17189.10	2837.20	1890.64	2206.48	1776.08	1216.68		
Methylmercury	0.32	0.21	0.15	0.12	0.14	0.06	0.11	1.60	1.07	1.24	1.00	0.69	0.59	1.13
Methylene Chloride	58.44	38.94	45.45	36.59	25.06			499.51	332.86	388.47	312.69	214.20		
Molybdenum	1.41	0.94	1.09	0.88	0.60	32.38	61.58	14.05	9.37	10.93	8.80	6.03	326.53	621.06
Nickel	399.61	266.29	310.77	250.15	171.36	715.95	1361.76	799.21	532.57	621.54	500.31	342.73	989.75	1882.53
Selenium(Sodium Selenite)	0.41	0.27	0.32	0.26	0.18	4.63	8.80	4.11	2.74	3.20	2.57	1.76	9.25	17.59
Strontium	2627.41	1750.84	2043.32	1644.75	1126.71									
1,1,2,2-Tetrachloroethene	7.57	5.04	5.89	4.74	3.25			37.84	25.21	29.43	23.69	16.23		
Thallium	0.08	0.05	0.06	0.05	0.03			0.75	0.50	0.58	0.47	0.32		

Tin	126.49	84.29	98.37	79.18	54.24	62.90	119.64	189.19	126.07	147.13	118.43	1.13	156.33	297.33
1,1,1-Trichloroethane	5617.86	3743.60	4368.99	3516.75	2409.04									
Trichloroethene	3.78	2.52	2.94	2.37	1.62			37.84	25.21	29.43	23.69	16.23		
Vanadium	1.95	1.30	1.52	1.22	0.84	105.45	200.57	19.48	12.98	15.15	12.19	8.35		
Vinyl Chloride	1.70	1.13	1.32	1.06	0.73			16.98	11.32	13.21	10.63	7.23		
Zinc	1598.42	1065.15	1243.09	1000.61	685.45	134.13	255.11	3196.84	2130.29	2486.17	2001.22	1370.90	1211.75	2304.78
Zirconium	9.41	6.27	7.32	5.89	4.03									

Table C.24 Contaminant concentrations (mg/kg) found in Kingfisher egg shells and feathers found on the ORR.

Matrix	Burrow [a]	As	Cd	Se	Pb	Hg	^{60}Co (pCi/g)	^{137}Cs (pCi/g)
egg shell	CRD	0.135	<0.0333[b]	1.58	2.0	<0.020	<7.45	<9.09
egg shell	WOC	0.0536	0.0583	1.41	5.31	0.182	<1.89	58.1 _ 1.7
feathers	CRU	0.074	0.0132	5.72	0.657	1.03	<0.21	<0.18
feathers	CRU	0.0449	<0.0102	6.54	1.42	1.01	<0.18	<0.19
feathers	CRU	0.052	<0.010	5.72	1.67	1.04	<0.17	<0.18
feathers	CRU	0.0755	0.0755	6.83	1.91	0.726	<0.25	<0.16

[a] CRD = Clinch River downstream of WOL Embayment; WOC = White Oak Creek downstream of WCK 3.5; CRU = Clinch River upstream of Oak Ridge Reservation.

[b] Less than values are below minimum detection limit.

Table C.25. Contaminant concentrations in tissues of the three kingfishers found on the ORR

Bird No.	Watershed and Location	Organ	^{137}Cs (pCi/g)	Cd (mg/kg)[a]	Pb (mg/kg)a	Se (mg/kg)	Hg (mg/kg)
1	East Fork Poplar Creek, Lake Reality	whole body	<2				
		feathers		ND	2.67	5.38	13.9
		kidney		4.04	ND	5.81	8.65
		liver		0.95	ND	2.71	3.69
		heart		ND	ND	1.25	1.1
		muscle		ND	ND	ND	0.572
2	East Fork Poplar Creek	feathers		7.21	1.86	5.63	4.55
		kidney		0.40	ND	3.14	1.46
		liver		0.23	ND	3.45	0.955
		heart		ND	ND	2.01	0.594
		muscle	3	ND	ND	1.04	0.805
3	White Oak Creek, Bldg. 4505	whole body	13,690				
		feathers		0.34	4.88	7.29	2.72
		kidney	69	1.53	0.42	6.01	26.8
		liver	76	0.90	0.40	7.5	17.6
		heart	81	ND	ND	2.2	9.52
		muscle	151	ND	0.58	1.84	6.34

[a]ND= Nondetect: As- <0.40 mg/kg, Cd- <0.20 mg/kg, Pb- <0.40 mg/kg, and Se-<0.40 mg/kg.

Table C.26 Estimated Densities of Wildlife Populations within WAG 2

Endpoint	Population Density[1]	Units	Amount of Suitable Habitat	Units	Estimated Population Size[1]
Short-tailed Shrew	23	ha	60.56	ha	1393
White-footed Mouse	57	ha	60.62	ha	3455
White-tailed Deer	0.1704	ha	60.62	ha	10
Red Fox	0.077	ha	60.62	ha	5
Red-Tailed Hawk	0.03	ha	60.62	ha	2
Wild Turkey	0.0426	ha	60.62	ha	3
Mink	0.6	stream km	6.4	stream km	4
Belted Kingfisher	0.4	stream km	6.4	stream km	3

[1]Number of individuals

Table 6.27. Summary of the number of individuals of wildlife endpoints estimated to be experiencing adverse effects in WAG 2

Species	Analyte	%>LOAEL	Number in Area	Number Adversely Affected	Percent Adversely Affected
Short-tailed Shrew	Aroclor 1260	35-40%	1393	488-557	35-40%
	Arsenic	< 5%	1393	0	0%
	Barium	< 5%	1393	0	0%
	Cadmium	70%	1393	975	70%
	Chromium	> 95%	1393	1393	100%
	Copper	< 5%	1393	0	0%
	Manganese	< 5%	1393	0	0%
	Mercury	> 95%	1393	1393	100%
	Molybdenum	< 5%	1393	0	0%
	Nickel	< 5%	1393	0	0%
	Selenium	75%	1393	1045	75%
	Vanadium	< 5%	1393	0	0%
	Zinc	< 5%	1393	0	0%
White-footed Mice	Aroclor 1260	< 5%	3455	0	0%
	Chromium	< 5%	3455	0	0%
	Mercury	80-85%	3455	3455	100%
	Selenium	< 5%	3455	0	0%
Red Fox	Aroclor 1260	< 5%	5	0	0%
	Mercury	65-70 %	5	3	60%
	Selenium	< 5%	5	0	0%
Mink[1]	Mercury	< 5%	4	0	0%
Mink[2]	Mercury	90-95%	4	4	100%
White-tailed Deer	Mercury	< 5%	10	0	0%
Belted Kingfisher[1]	Mercury	70-75%	3	2	66%
Red-tailed Hawk	Mercury	80-85%	2	2	100%
Wild Turkey	Mercury	30-35%	3	1	33%

[1] Exposure through consumption of fish only.
[2] Exposure through consumption of small mammals, vegetation, invertegrates, and soil.

Table 6.28. NOAEL hazard quotients for water contaminants in White Oak Creek reaches.

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
1C	ALUMINUM	0.503	0.048	0.072	0.062	0.077	0.112	0.000	0.000	0.000
1WC	ALUMINUM	0.613	0.059	0.088	0.076	0.094	0.137	0.000	0.001	0.000
BWC	ALUMINUM	0.196	0.019	0.028	0.024	0.030	0.044	0.000	0.000	0.000
HRT	ALUMINUM	0.178	0.017	0.026	0.022	0.027	0.040	0.000	0.000	0.000
NWT	ALUMINUM	0.481	0.046	0.069	0.059	0.074	0.108	0.000	0.000	0.000
RAC	ALUMINUM	0.843	0.081	0.121	0.104	0.129	0.188	0.000	0.001	0.000
UMB	ALUMINUM	0.306	0.029	0.044	0.038	0.047	0.068	0.000	0.000	0.000
W4T	ALUMINUM	0.491	0.047	0.071	0.061	0.075	0.110	0.000	0.000	0.000
WOL	ALUMINUM	1.102	0.106	0.159	0.136	0.169	0.246	0.000	0.001	0.001
WOL	ALUMINUM	0.455	0.044	0.065	0.056	0.070	0.102	0.000	0.000	0.000
HRT	ANTIMONY	0.019	0.028	0.042	0.036	0.045	0.066			
HRT	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
UMB	ARSENIC	0.002	0.003	0.004	0.004	0.005	0.007	0.000	0.000	0.000
W4T	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
WOL	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
WOL	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
HRT	Acetone	0.001	0.000	0.000	0.000	0.000	0.000			
UMB	Acetone	0.003	0.000	0.000	0.000	0.000	0.000			
W4T	Acetone	0.002	0.000	0.000	0.000	0.000	0.000			
WOL	Acetone	0.003	0.000	0.000	0.000	0.000	0.000			
1C	BARIUM	0.046	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
1WC	BARIUM	0.04	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
BWC	BARIUM	0.26	0.005	0.007	0.006	0.008	0.011	0.000	0.001	0.001
HRT	BARIUM	0.063	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
NWT	BARIUM	0.044	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
RAC	BARIUM	0.029	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
UMB	BARIUM	0.065	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
W4T	BARIUM	0.204	0.004	0.006	0.005	0.006	0.009	0.000	0.001	0.001
WOL	BARIUM	0.051	0.001	0.001	0.001	0.002	0.002	0.000	0.000	0.000
WOL	BARIUM	0.075	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
1C	BORON	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HRT	BORON	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UMB	BORON	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W4T	BORON	0.226	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
WOL	BORON	0.207	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
WOL	BORON	0.24	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
W4T	CADMIUM	0.001	0.013	0.019	0.016	0.020	0.029	0.000	0.000	0.000
HRT	CHROMIUM	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UMB	CHROMIUM	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
W4T	CHROMIUM	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	CHROMIUM	0.019	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001

Table 6.28 (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
1C	COPPER	0.0037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1WC	COPPER	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HRT	COPPER	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UMB	COPPER	0.0149	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W4T	COPPER	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	COPPER	0.0081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	COPPER	0.0039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1C	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BWC	LEAD	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W4T	LEAD	0.0021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	LEAD	0.0033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1C	MANGANESE	0.0339	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1WC	MANGANESE	0.0227	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BWC	MANGANESE	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HRT	MANGANESE	0.0509	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NWT	MANGANESE	0.1486	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RAC	MANGANESE	5.3231	0.006	0.009	0.008	0.010	0.014	0.000	0.001	0.000
UMB	MANGANESE	0.0745	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W4T	MANGANESE	1.3784	0.002	0.002	0.002	0.003	0.004	0.000	0.000	0.000
WOL	MANGANESE	0.1769	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	MANGANESE	3.2234	0.004	0.006	0.005	0.006	0.009	0.000	0.000	0.000
RAC	MOLYBDENUM	0.012	0.009	0.013	0.011	0.014	0.020	0.000	0.000	0.000
W4T	MOLYBDENUM	0.0195	0.014	0.021	0.018	0.022	0.032	0.000	0.001	0.000
RAC	Methylene chloride	0.002	0.000	0.000	0.000	0.000	0.000			
W4T	NICKEL	0.0152	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	NICKEL	0.0141	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1C	STRONTIUM	0.0952	0.000	0.000	0.000	0.000	0.000			
1WC	STRONTIUM	0.1335	0.000	0.000	0.000	0.000	0.000			
BWC	STRONTIUM	0.036	0.000	0.000	0.000	0.000	0.000			
HRT	STRONTIUM	0.1074	0.000	0.000	0.000	0.000	0.000			
NWT	STRONTIUM	0.1691	0.000	0.000	0.000	0.000	0.000			
RAC	STRONTIUM	0.2323	0.000	0.000	0.000	0.000	0.000			
UMB	STRONTIUM	0.1997	0.000	0.000	0.000	0.000	0.000			
W4T	STRONTIUM	0.2301	0.000	0.000	0.000	0.000	0.000			
WOL	STRONTIUM	0.1048	0.000	0.000	0.000	0.000	0.000			
WOL	STRONTIUM	0.1164	0.000	0.000	0.000	0.000	0.000			
RAC	Trichloroethene	0.001	0.000	0.000	0.000	0.000	0.001			
W4T	Trichloroethene	0.001	0.000	0.000	0.000	0.000	0.001			
UMB	VANADIUM	0.002	0.001	0.002	0.001	0.002	0.002	0.000	0.000	0.000

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
WOL	VANADIUM	0.0038	0.002	0.003	0.003	0.003	0.005	0.000	0.000	0.000
1C	ZINC	0.0283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1WC	ZINC	0.2617	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.001
HRT	ZINC	0.0065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UMB	ZINC	0.114	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
W4T	ZINC	0.0127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	ZINC	0.0528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WOL	ZINC	0.0152	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W4T	cis-1,2-Dichloroethene	0.0029	0.000	0.000	0.000	0.000	0.000			

Table C.29. NOAEL hazard quotients for water contaminants in White Oak Creek seeps.

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
WOCET	ALUMINUM	3.7796	0.362	0.544	0.466	0.579	0.845	0.001	0.004	0.002
MBTRIB-3	ALUMINUM	0.7349	0.070	0.106	0.091	0.113	0.164	0.000	0.001	0.000
MID. DRAIN.	ALUMINUM	0.1081	0.010	0.016	0.013	0.017	0.024	0.000	0.000	0.000
SW2-5	ALUMINUM	0.0977	0.009	0.014	0.012	0.015	0.022	0.000	0.000	0.000
SW5-2	ALUMINUM	0.078	0.007	0.011	0.010	0.012	0.017	0.000	0.000	0.000
SW5-4	ALUMINUM	0.0508	0.005	0.007	0.006	0.008	0.011	0.000	0.000	0.000
EAST SEEP	ALUMINUM	1.2622	0.121	0.182	0.156	0.193	0.282	0.000	0.001	0.001
MV-1	ALUMINUM	0.2748	0.026	0.040	0.034	0.042	0.061	0.000	0.000	0.000
SW7-3	ALUMINUM	0.548	0.053	0.079	0.068	0.084	0.122	0.000	0.001	0.000
SW7-5	ALUMINUM	1.1221	0.108	0.161	0.138	0.172	0.251	0.000	0.001	0.001
SW7-6	ALUMINUM	0.761	0.073	0.109	0.094	0.117	0.170	0.000	0.001	0.000
SW7-8	ALUMINUM	0.412	0.039	0.059	0.051	0.063	0.092	0.000	0.000	0.000
WCTRIB-1	ALUMINUM	0.957	0.092	0.138	0.118	0.147	0.214	0.000	0.001	0.000
SW2-1	ALUMINUM	0.186	0.018	0.027	0.023	0.028	0.042	0.000	0.000	0.000
WCTRIB-2	ALUMINUM	0.194	0.019	0.028	0.024	0.030	0.043	0.000	0.000	0.000
SW9-2	ALUMINUM	1.7906	0.172	0.258	0.221	0.274	0.400	0.001	0.002	0.001
MV-3	ALUMINUM	0.162	0.016	0.023	0.020	0.025	0.036	0.000	0.000	0.000
SW2-6	ALUMINUM	0.2012	0.019	0.029	0.025	0.031	0.045	0.000	0.000	0.000
SW2-7	ALUMINUM	0.038	0.004	0.005	0.005	0.006	0.008	0.000	0.000	0.000
BTT	ALUMINUM	0.0401	0.004	0.006	0.005	0.006	0.009	0.000	0.000	0.000
SW4-2	ALUMINUM	0.0415	0.004	0.006	0.005	0.006	0.009	0.000	0.000	0.000
WAG4 MS1	ALUMINUM	0.3133	0.030	0.045	0.039	0.048	0.070	0.000	0.000	0.000
WAG4 T2A	ALUMINUM	0.7102	0.068	0.102	0.088	0.109	0.159	0.000	0.001	0.000
RS-1	ALUMINUM	0.298	0.029	0.043	0.037	0.046	0.067	0.000	0.000	0.000
RS-3A	ALUMINUM	12.7297	1.220	1.831	1.569	1.949	2.845	0.004	0.013	0.007
RS-3B	ALUMINUM	1.8185	0.174	0.262	0.224	0.278	0.406	0.001	0.002	0.001
SW7-2	ALUMINUM	1.0665	0.102	0.153	0.131	0.163	0.238	0.000	0.001	0.001
SW4-1	ANTIMONY	0.045	0.067	0.100	0.086	0.106	0.155			
MID. DRAIN.	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
EAST SEEP	ARSENIC	0.003	0.004	0.007	0.006	0.007	0.010	0.000	0.000	0.000
MV-1	ARSENIC	0.002	0.003	0.004	0.004	0.005	0.007	0.000	0.000	0.000
SW7-3	ARSENIC	0.003	0.004	0.007	0.006	0.007	0.010	0.000	0.000	0.000
SW2-6	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
SW2-7	ARSENIC	0.001	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
SW4-1	ARSENIC	0.006	0.009	0.013	0.011	0.014	0.021	0.000	0.000	0.000
RS-3A	ARSENIC	0.0202	0.030	0.044	0.038	0.047	0.069	0.000	0.000	0.000
WOCET	Acetone	0.009	0.000	0.000	0.000	0.000	0.000			
5NNT	Acetone	0.008	0.000	0.000	0.000	0.000	0.000			
MV-1	Acetone	0.001	0.000	0.000	0.000	0.000	0.000			
MV-2	Acetone	0.003	0.000	0.000	0.000	0.000	0.000			
SW7-5	Acetone	0.014	0.000	0.000	0.000	0.000	0.000			

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
SW2-1	Acetone	0.011	0.000	0.000	0.000	0.000	0.000			
SW2-4	Acetone	0.014	0.000	0.000	0.000	0.000	0.000			
WCTRIB-2	Acetone	0.002	0.000	0.000	0.000	0.000	0.000			
SW2-2	Acetone	0.001	0.000	0.000	0.000	0.000	0.000			
SW6-1	Acetone	0.003	0.000	0.000	0.000	0.000	0.000			
WOCET	BARIUM	0.1121	0.002	0.003	0.003	0.003	0.005	0.000	0.001	0.000
WCTRIB-3	BARIUM	0.062	0.001	0.002	0.001	0.002	0.003	0.000	0.000	0.000
MBTRIB-3	BARIUM	0.1328	0.002	0.004	0.003	0.004	0.006	0.000	0.001	0.000
MID. DRAIN.	BARIUM	0.1126	0.002	0.003	0.003	0.003	0.005	0.000	0.001	0.000
SW2-5	BARIUM	0.3012	0.006	0.008	0.007	0.009	0.013	0.000	0.002	0.001
SW5-2	BARIUM	0.064	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
SW5-4	BARIUM	0.127	0.002	0.004	0.003	0.004	0.006	0.000	0.001	0.000
EAST SEEP	BARIUM	0.036	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
MV-1	BARIUM	0.16	0.003	0.004	0.004	0.005	0.007	0.000	0.001	0.000
SW7-3	BARIUM	0.0219	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000
SW7-5	BARIUM	0.0704	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
SW7-6	BARIUM	0.049	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
SW7-8	BARIUM	0.03	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
WCTRIB-1	BARIUM	0.13974	0.003	0.004	0.003	0.004	0.006	0.000	0.001	0.000
SW2-1	BARIUM	0.084	0.002	0.002	0.002	0.002	0.004	0.000	0.000	0.000
SW2-3	BARIUM	0.038	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
SW2-4	BARIUM	0.32395	0.006	0.009	0.008	0.010	0.014	0.001	0.002	0.001
WCTRIB-2	BARIUM	0.038	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
SW9-1	BARIUM	0.14653	0.003	0.004	0.004	0.004	0.006	0.000	0.001	0.000
SW9-2	BARIUM	0.28725	0.005	0.008	0.007	0.009	0.012	0.000	0.001	0.001
MBTRIB-2A	BARIUM	0.05	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
MV-3	BARIUM	0.049	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
SW2-2	BARIUM	0.104	0.002	0.003	0.002	0.003	0.005	0.000	0.001	0.000
SW2-6	BARIUM	0.16817	0.003	0.005	0.004	0.005	0.007	0.000	0.001	0.000
SW2-7	BARIUM	0.14008	0.003	0.004	0.003	0.004	0.006	0.000	0.001	0.000
BTT	BARIUM	0.30888	0.006	0.009	0.007	0.009	0.013	0.000	0.002	0.001
SW4-1	BARIUM	0.3623	0.007	0.010	0.009	0.011	0.016	0.001	0.002	0.001
SW4-2	BARIUM	0.42776	0.008	0.012	0.010	0.013	0.019	0.001	0.002	0.001
WAG4 MS1	BARIUM	0.15379	0.003	0.004	0.004	0.005	0.007	0.000	0.001	0.000
WAG4 T2A	BARIUM	0.10552	0.002	0.003	0.003	0.003	0.005	0.000	0.001	0.000
RS-1	BARIUM	0.036	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
RS-3A	BARIUM	0.0612	0.001	0.002	0.001	0.002	0.003	0.000	0.000	0.000
RS-3B	BARIUM	0.029	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
SW7-1	BARIUM	0.07831	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
SW7-2	BARIUM	0.032	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
SW7-5	BERYLLIUM	0.001	0.000	0.000	0.000	0.000	0.000			
WAG4 MS1	BERYLLIUM	0.00057	0.000	0.000	0.000	0.000	0.000			
RS-3A	BERYLLIUM	0.00072	0.000	0.000	0.000	0.000	0.000			
WCTRIB-3	BORON	0.199	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
MID. DRAIN.	BORON	0.20051	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
SW2-5	BORON	0.23719	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
SW5-2	BORON	0.175	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
SW5-4	BORON	0.17771	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
EAST SEEP	BORON	0.07909	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
SW7-3	BORON	0.08738	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
SW7-5	BORON	0.06204	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
SW2-1	BORON	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-6	BORON	0.11992	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000
SW2-7	BORON	0.14148	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
BTT	BORON	0.10128	0.000	0.001	0.000	0.001	0.001	0.000	0.000	0.000
SW4-2	BORON	0.18083	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.000
WAG4 MS1	BORON	0.17358	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
WAG4 T2A	BORON	0.16904	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
RS-3A	BORON	0.10653	0.000	0.001	0.000	0.001	0.001	0.000	0.000	0.000
RS-3B	BORON	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW5-4	CADMIUM	0.002	0.025	0.038	0.032	0.040	0.059	0.000	0.000	0.000
RS-3A	CADMIUM	0.00166	0.021	0.031	0.027	0.033	0.049	0.000	0.000	0.000
MID. DRAIN.	CHROMIUM	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
SW2-5	CHROMIUM	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EAST SEEP	CHROMIUM	0.023	0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.001
SW7-3	CHROMIUM	0.07	0.002	0.003	0.003	0.003	0.005	0.002	0.008	0.004
SW7-5	CHROMIUM	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
SW2-6	CHROMIUM	0.008	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000
SW2-7	CHROMIUM	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
BTT	CHROMIUM	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 MS1	CHROMIUM	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
WAG4 T2A	CHROMIUM	0.035	0.001	0.002	0.001	0.002	0.002	0.001	0.004	0.002
RS-3A	CHROMIUM	0.084	0.003	0.004	0.003	0.004	0.006	0.003	0.009	0.005
MID. DRAIN.	COPPER	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-5	COPPER	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EAST SEEP	COPPER	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-3	COPPER	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-5	COPPER	0.00613	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW9-1	COPPER	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW9-2	COPPER	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
MBTRIB-2A	COPPER	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-6	COPPER	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-7	COPPER	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BTT	COPPER	0.00403	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW4-2	COPPER	0.0038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 MS1	COPPER	0.00438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 T2A	COPPER	0.00434	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RS-3A	COPPER	0.02162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-2	COPPER	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW9-2	Chloroform	0.001	0.000	0.000	0.000	0.000	0.000			
MID. DRAIN.	LEAD	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-5	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW5-4	LEAD	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EAST SEEP	LEAD	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-3	LEAD	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-5	LEAD	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-8	LEAD	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-1	LEAD	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-4	LEAD	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-6	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-7	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BTT	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 T2A	LEAD	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RS-1	LEAD	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RS-3A	LEAD	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RS-3B	LEAD	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-2	LEAD	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW4-2	LITHIUM	0.113	0.001	0.002	0.002	0.002	0.003			
WOCET	MANGANESE	2.2139	0.003	0.004	0.003	0.004	0.006	0.000	0.000	0.000
WCTRIB-3	MANGANESE	0.585	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
MBTRIB-3	MANGANESE	0.5611	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
MID. DRAIN.	MANGANESE	3.0002	0.003	0.005	0.004	0.005	0.008	0.000	0.000	0.000
SW2-5	MANGANESE	1.4228	0.002	0.002	0.002	0.003	0.004	0.000	0.000	0.000
SW5-2	MANGANESE	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW5-4	MANGANESE	1.5463	0.002	0.003	0.002	0.003	0.004	0.000	0.000	0.000
EAST SEEP	MANGANESE	0.3575	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000
MV-1	MANGANESE	4.1228	0.005	0.007	0.006	0.007	0.011	0.000	0.000	0.000
SW7-3	MANGANESE	0.0062	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-5	MANGANESE	0.703	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
SW7-6	MANGANESE	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
SW7-8	MANGANESE	0.126	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCTRIB-1	MANGANESE	1.1979	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
SW2-1	MANGANESE	0.992	0.001	0.002	0.001	0.002	0.003	0.000	0.000	0.000
SW2-3	MANGANESE	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-4	MANGANESE	5.8866	0.007	0.010	0.009	0.011	0.016	0.000	0.001	0.000
WCTRIB-2	MANGANESE	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW9-1	MANGANESE	0.3602	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000
SW9-2	MANGANESE	2.7056	0.003	0.005	0.004	0.005	0.007	0.000	0.000	0.000
MBTRIB-2A	MANGANESE	0.142	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MV-3	MANGANESE	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-2	MANGANESE	0.796	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000
SW2-6	MANGANESE	1.5626	0.002	0.003	0.002	0.003	0.004	0.000	0.000	0.000
SW2-7	MANGANESE	1.9677	0.002	0.003	0.003	0.004	0.005	0.000	0.000	0.000
BTT	MANGANESE	0.0117	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW4-1	MANGANESE	12.9311	0.015	0.022	0.019	0.024	0.034	0.000	0.001	0.001
SW4-2	MANGANESE	1.0607	0.001	0.002	0.002	0.002	0.003	0.000	0.000	0.000
WAG4 MS1	MANGANESE	0.3384	0.000	0.001	0.000	0.001	0.001	0.000	0.000	0.000
WAG4 T2A	MANGANESE	0.2263	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
RS-1	MANGANESE	1.35	0.002	0.002	0.002	0.002	0.004	0.000	0.000	0.000
RS-3A	MANGANESE	0.3108	0.000	0.001	0.000	0.001	0.001	0.000	0.000	0.000
RS-3B	MANGANESE	0.1381	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-1	MANGANESE	6.4531	0.007	0.011	0.009	0.012	0.017	0.000	0.001	0.000
SW7-2	MANGANESE	0.2533	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
RS-3A	MERCURY	0.0011	0.003	0.005	0.007	0.009	0.008	0.006	0.019	0.010
EAST SEEP	MOLYBDENUM	0.015	0.011	0.016	0.014	0.017	0.025	0.000	0.000	0.000
SW7-3	MOLYBDENUM	0.0142	0.010	0.015	0.013	0.016	0.024	0.000	0.000	0.000
BTT	MOLYBDENUM	0.1145	0.081	0.122	0.105	0.130	0.190	0.001	0.004	0.002
SW4-2	MOLYBDENUM	0.008	0.006	0.009	0.007	0.009	0.013	0.000	0.000	0.000
WAG4 MS1	MOLYBDENUM	0.0074	0.005	0.008	0.007	0.008	0.012	0.000	0.000	0.000
RS-3A	MOLYBDENUM	0.0517	0.037	0.055	0.047	0.059	0.086	0.000	0.002	0.001
WOCET	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			
5NNT	Methylene chloride	0.013	0.000	0.000	0.000	0.000	0.001			
MID. DRAIN.	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			
MV-1	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			
SW7-3	Methylene chloride	0.0037	0.000	0.000	0.000	0.000	0.000			
SW7-5	Methylene chloride	0.03	0.001	0.001	0.001	0.001	0.001			
SW2-1	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			
SW2-3	Methylene chloride	0.0083	0.000	0.000	0.000	0.000	0.000			
SW2-4	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			
SW9-2	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
SW7-2	Methylene chloride	0.001	0.000	0.000	0.000	0.000	0.000			
MID. DRAIN.	NICKEL	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-5	NICKEL	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW5-4	NICKEL	0.0138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EAST SEEP	NICKEL	0.0319	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-3	NICKEL	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-5	NICKEL	0.0206	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-6	NICKEL	0.0139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-7	NICKEL	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BTT	NICKEL	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW4-2	NICKEL	8.5222	0.021	0.032	0.027	0.034	0.050	0.004	0.012	0.006
WAG4 MS1	NICKEL	0.0426	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 T2A	NICKEL	0.0303	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RS-3A	NICKEL	0.1031	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
EAST SEEP	SELENIUM	0.001	0.002	0.004	0.003	0.004	0.006	0.000	0.000	0.000
SW7-3	SELENIUM	0.003	0.007	0.011	0.009	0.012	0.017	0.000	0.001	0.000
RS-3A	SELENIUM	0.002	0.005	0.007	0.006	0.008	0.011	0.000	0.000	0.000
WOCET	STRONTIUM	0.154	0.000	0.000	0.000	0.000	0.000			
WCTRIB-3	STRONTIUM	0.21	0.000	0.000	0.000	0.000	0.000			
MBTRIB-3	STRONTIUM	0.226	0.000	0.000	0.000	0.000	0.000			
MID. DRAIN.	STRONTIUM	0.207	0.000	0.000	0.000	0.000	0.000			
SW2-5	STRONTIUM	0.343	0.000	0.000	0.000	0.000	0.000			
SW5-2	STRONTIUM	0.201	0.000	0.000	0.000	0.000	0.000			
SW5-4	STRONTIUM	0.203	0.000	0.000	0.000	0.000	0.000			
EAST SEEP	STRONTIUM	0.132	0.000	0.000	0.000	0.000	0.000			
MV-1	STRONTIUM	0.169	0.000	0.000	0.000	0.000	0.000			
SW7-3	STRONTIUM	0.031	0.000	0.000	0.000	0.000	0.000			
SW7-5	STRONTIUM	0.114	0.000	0.000	0.000	0.000	0.000			
SW7-8	STRONTIUM	0.069	0.000	0.000	0.000	0.000	0.000			
WCTRIB-1	STRONTIUM	0.383	0.000	0.000	0.000	0.000	0.000			
SW2-1	STRONTIUM	0.189	0.000	0.000	0.000	0.000	0.000			
SW2-3	STRONTIUM	0.067	0.000	0.000	0.000	0.000	0.000			
SW2-4	STRONTIUM	0.597	0.000	0.000	0.000	0.000	0.001			
WCTRIB-2	STRONTIUM	0.061	0.000	0.000	0.000	0.000	0.000			
SW9-1	STRONTIUM	0.115	0.000	0.000	0.000	0.000	0.000			
SW9-2	STRONTIUM	0.197	0.000	0.000	0.000	0.000	0.000			
MBTRIB-2A	STRONTIUM	0.188	0.000	0.000	0.000	0.000	0.000			
MV-3	STRONTIUM	0.145	0.000	0.000	0.000	0.000	0.000			
SW2-2	STRONTIUM	0.124	0.000	0.000	0.000	0.000	0.000			
SW2-6	STRONTIUM	0.231	0.000	0.000	0.000	0.000	0.000			

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
SW2-7	STRONTIUM	0.212	0.000	0.000	0.000	0.000	0.000			
BTT	STRONTIUM	0.254	0.000	0.000	0.000	0.000	0.000			
SW4-1	STRONTIUM	0.503	0.000	0.000	0.000	0.000	0.000			
SW4-2	STRONTIUM	0.286	0.000	0.000	0.000	0.000	0.000			
WAG4 MS1	STRONTIUM	0.2	0.000	0.000	0.000	0.000	0.000			
WAG4 T2A	STRONTIUM	0.204	0.000	0.000	0.000	0.000	0.000			
RS-1	STRONTIUM	0.067	0.000	0.000	0.000	0.000	0.000			
RS-3A	STRONTIUM	0.017	0.000	0.000	0.000	0.000	0.000			
RS-3B	STRONTIUM	0.062	0.000	0.000	0.000	0.000	0.000			
SW7-1	STRONTIUM	0.091	0.000	0.000	0.000	0.000	0.000			
SW7-2	STRONTIUM	0.036	0.000	0.000	0.000	0.000	0.000			
FRENCH DR S	Tetrachloroethene	0.055								
WAG6 MS3B	Tetrachloroethene	0.001								
MID. DRAIN.	Trichloroethene	0.001	0.000	0.000	0.000	0.000	0.001			
WAG4 T2A	Trichloroethene	0.002	0.001	0.001	0.001	0.001	0.001			
FRENCH DR S	Trichloroethene	1	0.264	0.397	0.340	0.422	0.616			
WAG6 MS2	Trichloroethene	0.003	0.001	0.001	0.001	0.001	0.002			
SW2-5	VANADIUM	0.003	0.002	0.002	0.002	0.002	0.004	0.000	0.000	0.000
SW7-3	VANADIUM	0.004	0.002	0.003	0.003	0.003	0.005	0.000	0.000	0.000
SW7-5	VANADIUM	0.002	0.001	0.002	0.001	0.002	0.002	0.000	0.000	0.000
RS-3A	VANADIUM	0.0265	0.014	0.020	0.017	0.022	0.032	0.000	0.000	0.000
MID. DRAIN.	Vinyl chloride	0.001	0.001	0.001	0.001	0.001	0.001			
SW4-2	Vinyl chloride	0.046	0.027	0.041	0.035	0.043	0.063			
WAG4 T2A	Vinyl chloride	0.001	0.001	0.001	0.001	0.001	0.001			
MID. DRAIN.	ZINC	0.00574	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-5	ZINC	0.02417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW5-4	ZINC	0.00887	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EAST SEEP	ZINC	0.01518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-3	ZINC	0.03116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW7-5	ZINC	0.01799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-4	ZINC	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW9-1	ZINC	0.03314	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW9-2	ZINC	0.36805	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.001
SW2-6	ZINC	0.01684	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW2-7	ZINC	0.06653	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BTT	ZINC	0.01643	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW4-1	ZINC	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SW4-2	ZINC	0.05635	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 MS1	ZINC	0.00762	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WAG4 T2A	ZINC	0.01943	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 6.29. (Continued)

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
RS-3A	ZINC	0.04944	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RS-3B	ZINC	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MID. DRAIN.	cis-1,2-Dichloroethene	0.005	0.000	0.000	0.000	0.000	0.000			
SW4-1	cis-1,2-Dichloroethene	0.047	0.000	0.000	0.000	0.000	0.000			
SW4-2	cis-1,2-Dichloroethene	0.066	0.000	0.000	0.000	0.000	0.001			
WAG4 MS1	cis-1,2-Dichloroethene	0.002	0.000	0.000	0.000	0.000	0.000			
WAG4 T2A	cis-1,2-Dichloroethene	0.014	0.000	0.000	0.000	0.000	0.000			
FRENCH DR S	cis-1,2-Dichloroethene	0.14	0.001	0.001	0.001	0.001	0.001			
WAG6 MS2	cis-1,2-Dichloroethene	0.001	0.000	0.000	0.000	0.000	0.000			
WAG6 MS3B	cis-1,2-Dichloroethene	0.001	0.000	0.000	0.000	0.000	0.000			

Table C.30. LOAEL hazard quotients for water contaminants in White Oak Creek seeps.

Location	Contaminant	95% UCL	Shrew	Mouse	Mink	Fox	Deer	Turkey	Kingfisher	Hawk
RS-3A	ALUMINUM	12.7297	0.122	0.183	0.157	0.195	0.285	0.009	0.031	0.016

Table C.31. Radionuclide-specific ground and water dose coefficients and radiation energies (Eckerman and Ryman 1993).

Radionuclide [a]	Dose coefficients		Half lives (d)		Energies (MeV/nt)		
	DFgrd 0-5 (Sv m3/s Bq)	DFwater (Sv m3/s Bq)	rad. 1/2 life	biol. 1/2 life	alpha	beta	gamma
Americium-241	2.18e-19	1.88e-18	1.58e+05	2.00e+04	5.48e+00	5.20e-02	3.30e-02
Cesium-137	3.07e-21	1.49e-20	1.10e+04	1.15e+02	0.00e+00	1.87e-01	0.00e+00
Barium-137m	1.09e-17	6.26e-17	1.77e-03	6.50e+01	0.00e+00	6.50e-02	5.97e-01
Cobalt-60	4.45e-17	2.74e-16	1.92e+03	9.50e+00	0.00e+00	9.70e-02	2.50e+00
Curium-244	6.74e-22	1.15e-20	6.61e+03	2.40e+04	5.80e+00	9.00e-03	2.00e-03
Plutonium-238	7.60e-22	1.14e-20	3.20e+04	6.50e+04	5.49e+00	1.10e-02	2.00e-03
Plutonium-239/240	9.47e-22	1.04e-20	2.39e+06	6.50e+04	5.15e+00	9.00e-03	1.00e-03
Strontium-90	2.95e-21	1.46e-20	1.06e+04	4.00e+03	0.00e+00	1.96e-01	0.00e+00
Yttrium-90	8.31e-20	3.63e-19	2.67e+00	1.40e+04	0.00e+00	9.35e-01	0.00e+00
Technetium-99	5.74e-22	3.14e-21	7.77e+07	1.00e+00	0.00e+00	1.01e-01	0.00e+00
Thorium-228	3.14e-20	2.05e-19	6.98e+02	5.70e+04	5.40e+00	2.10e-02	3.00e-03
Radium-224	1.78e-19	1.03e-18	3.66e+00	8.10e+03	5.67e+00	2.00e-03	1.00e-02
Radon-220	7.08e-21	4.03e-20	6.44e-04	0.00e+00	6.29e+00	0.00e+00	0.00e+00
Polonium-216	3.07e-22	1.80e-21	1.74e-06	3.00e+01	6.78e+00	0.00e+00	0.00e+00
Lead-212	2.53e-18	1.52e-17	4.43e-01	1.46e+03	0.00e+00	1.76e-01	1.48e-01
Bismuth-212	3.34e-18	2.00e-17	4.20e-02	5.00e+00	2.17e+00	4.72e-01	1.86e-01
Thallium-208	5.79e-17	3.84e-16	2.13e-03	5.00e+00	0.00e+00	5.98e-01	3.38e+00
Polonium-212	0.00e+00	0.00e+00	3.53e-12	3.00e+01	8.79e+00	0.00e+00	0.00e+00
Thorium-230	5.22e-21	3.94e-20	2.81e+07	5.70e+04	4.67e+00	1.50e-02	2.00e-03
Thorium-232	2.36e-21	1.99e-20	5.13e+12	5.70e+04	4.00e+00	1.20e-02	1.00e-03
Radium-228	0.00e+00	0.00e+00	2.10e+03	8.10e+03	0.00e+00	1.70e-02	0.00e+00
Actinium-228	1.73e-17	1.04e-16	2.55e-01	2.40e+04	0.00e+00	4.75e-01	9.71e-01
Uranium-233/234	3.56e-21	2.70e-20	5.79e+07	1.00e+02	4.79e+00	9.50e-03	1.50e-03
Uranium-235	2.65e-18	1.59e-17	2.57e+11	1.00e+02	4.40e+00	4.90e-02	1.56e-01
Thorium-231	1.59e-19	1.18e-18	1.06e+00	5.70e+04	0.00e+00	1.65e-01	2.60e-02
Uranium-238	5.45e-22	7.95e-21	1.63e+12	1.00e+02	4.19e+00	1.00e-02	1.00e-03
Thorium-234	1.07e-19	7.64e-19	2.41e+01	5.70e+04	0.00e+00	6.00e-02	9.00e-03
Protactinium-234m	2.70e-19	1.52e-18	8.13e-04	4.10e+04	0.00e+00	8.22e-01	1.20e-02

Protactinium-234	3.41e-17	2.03e-16	2.79e-01	4.10e+04	0.00e+00	4.94e-01	1.92e+00
[a] Indented radionuclides are short-lived daughter products of the parent radionuclides.							

Table C.32. Literature-derived bioaccumulation factors for mammals (MammBAF) and Oak Ridge Reservation-specific soil-to-tissue uptake factors for plants (browse, canopy, and herbaceous vegetation), earthworms, and small mammals (MammUF) used in estimation of dose rates in the White Oak Creek radiological assessment.

Radionuclide	Browse		Canopy		Herb		Earthworm		MammBAF		MammUF		Fish BCF (L/g)
Americium-241	2.49e+00	m	5.70e+00	m	2.18e+00	m	3.15e+00	m	2.00e-03	1	2.2682	m	0.03
Cesium-137	1.37e-02	1	1.37e-02	1	1.37e-02	1	1.00e+01	p	1.00e+01	1			2
Barium-137m	1.31e-01	e	2.41e-01	e	1.26e-01	e	1.19e-01	e	1.00e-02	1	0.045	e	0.004
Cobalt-60	5.00e-03	e	4.40e-03	e	9.90e-03	e	0.00e+00	e	5.00e-03	1	0.0099	e	0.3
Curium-244	1.09e+00	s	1.07e+00	m	1.09e+00	m	8.86e-01	m	1.00e-03	1	2.6933	m	0.03
Plutonium-238	1.80e+00	s	5.20e+00	s	5.00e+00	s	2.50e+00	s	5.00e-04	1	2.7333	s	0.03
Plutonium-239/240	1.80e+00	m	5.20e+00	m	5.00e+00	m	2.50e+00	m	5.00e-04	1	2.7333	m	0.03
Strontium-90	2.05e-01	1	2.05e-01	1	2.05e-01	1	1.69e-01	m	5.00e+00	1			0.06
Yttrium-90	1.00e-03	1	1.00e-03	1	1.00e-03	1	5.00e-02	p	5.00e-02	1			0.03
Technetium-99	2.08e+02	1	2.08e+02	1	2.08e+02	1	2.08e+02	p	5.00e-05	1			0.02
Thorium-228	1.37e-04	1	1.37e-04	1	1.37e-04	1	5.00e-03	p	5.00e-03	1			0.1
Radium-224	9.30e-03	1	9.30e-03	1	9.30e-03	1	5.00e-02	p	5.00e-02	1			0.05
Radon-220													
Polonium-216	9.12e-05	1	9.12e-05	1	9.12e-05	1	2.50e-01	p	2.50e-01	1			0.05
Lead-212	1.08e-02	e	6.15e-02	e	2.54e-02	e	3.81e-01	e	2.00e-02	1	0.0267	e	0.3
Bismuth-212	8.75e-03	1	8.75e-03	1	8.75e-03	1	2.00e-02	p	2.00e-02	1			0.01
Thallium-208	5.80e-03	s	5.80e-03	s	5.80e-03	e	0.00e+00	e	2.00e+00	1			
Polonium-212	9.12e-05	1	9.12e-05	1	9.12e-05	1	2.50e-01	p	2.50e-01	1			0.05
Thorium-230	1.37e-04	1	1.37e-04	1	1.37e-04	1	5.00e-03	p	5.00e-03	1			0.1
Thorium-232	1.37e-04	1	1.37e-04	1	1.37e-04	1	5.00e-03	p	5.00e-03	1			0.1
Radium-228	9.30e-03	1	9.30e-03	1	9.30e-03	1	5.00e-02	p	5.00e-02	1			0.05
Actinium-228	8.75e-04	1	8.75e-04	1	8.75e-04	1	1.25e-03	p	1.25e-03	1			
Uranium-233/234	1.00e-04	e	6.00e-04	e	1.50e-03	e	6.30e-02	e	1.50e-02	1	0.0003	e	0.01
Uranium-235	1.00e-04	e	6.00e-04	e	1.50e-03	e	6.30e-02	e	1.50e-02	1	0.0003	e	0.01
Thorium-231	1.37e-04	1	1.37e-04	1	1.37e-04	1	5.00e-03	p	5.00e-03	1			0.1
Uranium-238	1.00e-04	e	6.00e-04	e	1.50e-03	e	6.30e-02	e	1.50e-02	1	0.0003	e	0.01
Thorium-234	1.37e-04	1	1.37e-04	1	1.37e-04	1	5.00e-03	p	5.00e-03	1			0.1
Protactinium-234m	2.00e-03	1	2.00e-03	1	2.00e-03	1	2.00e-03	p	5.00e-08	1			0.01

Protactinium-234	2.00e-03	l	2.00e-03	l	2.00e-03	l	2.00e-03	p	5.00e-08	l			0.01

m = Uptake factor measured for given radionuclide
s = Assumed uptake is same as that for related isotope for which measured value was available
e = Uptake factor for elemental form used for radionuclide
l = Literature value from IAEA (1994), NCRP (1989), or Baes et al. (1984). Literature biotransfer factors (d/kg) have been converted to unitless uptake factors assuming a cow ingestion rate of 50 kg wet food/d.
p = Uptake factor for earthworms was unavailable. Used the larger of the herbaceous plant and small mammal values.
See Sec. 6.1 for further discussion of derivation of uptake factors.

Table C.33. Overall dose rates from internal and external exposures for plants, earthworms, and terrestrial wildlife exposed to radionuclides in soil at WAG2 Intermediate Holding Pond (IHP).

Receptor	Dose rate (pCi/g)	Primary contributors (% of total dose rate)	
Plants	4340	Plutonium-239/240	(66.6%)
		Cesium-137	(17.1%)
		Americium-241	(10.7%)
		Plutonium-238	(3.0%)
Earthworms	2850	Plutonium-239/240	(43.9%)
		Cesium-137	(26.0%)
		Americium-241	(22.5%)
		Plutonium-238	(2.3%)
Short-tailed shrew	2283	Plutonium-239/240	(60.1%)
		Americium-241	(20.3%)
		Cesium-137	(8.7%)
		Curium-244	(7.1%)
White-footed mouse	2177	Plutonium-239/240	(63.0%)
		Americium-241	(21.2%)
		Curium-244	(7.4%)
		Cesium-137	(4.7%)
Wild turkey	150	Cesium-137	(91.3%)
White-tailed deer	84	Cesium-137	(91.4%)
Red fox	326	Cesium-137	(94.6%)
Red-tailed hawk	283	Cesium-137	(94.0%)
Mink	180	Cesium-137	(95.3%)
Belted kingfisher[1]	64	Cesium-137	(98.7%)

[1] Kingfisher dose rate estimate is based on external exposures to radionuclides in soil. Water-related exposures (water and fish ingestion) will be added when water data become available.

Table C.34. Overall dose rates from internal and external exposures for plants, earthworms, and terrestrial wildlife exposed to radionuclides in soil at WAG2 Middle White Oak Creek (MWC).

Receptor	Dose rate (pCi/g)	Primary contributors (% of total dose rate)	
Plants	1400	Plutonium-239/240	(83.1%)
		Americium-241	(9.8%)
		Plutonium-238	(3.0%)
Earthworms	800	Plutonium-239/240	(62.9%)
		Americium-241	(23.7%)
		Cesium-137	(4.0%)
Short-tailed shrew	734	Plutonium-239/240	(75.0%)
		Americium-241	(18.6%)
		Plutonium-238	(3.3%)
White-footed mouse	723	Plutonium-239/240	(76.1%)
		Americium-241	(18.8%)
		Plutonium-238	(3.4%)
Wild turkey	11	Cesium-137	(53.8%)
White-tailed deer	5	Cesium-137	(63.4%)
Red fox	17	Cesium-137	(77.3%)
Red-tailed hawk	14	Cesium-137	(81.2%)
Mink	9	Cesium-137	(84.3%)
Belted kingfisher[1]	3	Cesium-137	(93.4%)

[1] Kingfisher dose rate estimate is based on external exposures to radionuclides in soil. Water-related exposures (water and fish ingestion) will be added when water data become available.

Table C.35. Overall dose rates from internal and external exposures for plants, earthworms, and terrestrial wildlife exposed to radionuclides in soil at WAG2 Lower White Oak Creek (LWC).

Receptor	Dose rate (pCi/g)	Primary contributors (% of total dose rate)	
Plants	1350	Plutonium-239/240	(74.0%)
		Americium-241	(12.2%)
		Cesium-137	(8.1%)
Earthworms	846	Plutonium-239/240	(51.4%)
		Americium-241	(27.2%)
		Cesium-137	(13.0%)
Short-tailed shrew	739	Plutonium-239/240	(64.3%)
		Americium-241	(22.4%)
		Curium-244	(6.2%)
White-footed mouse	722	Plutonium-239/240	(65.8%)
		Americium-241	(22.9%)
		Curium-244	(6.3%)
Wild turkey	24	Cesium-137	(84.2%)
White-tailed deer	13	Cesium-137	(85.6%)
Red fox	49	Cesium-137	(92.9%)
Red-tailed hawk	42	Cesium-137	(93.7%)
Mink	27	Cesium-137	(94.3%)
Belted kingfisher[1]	10	Cesium-137	(95.7%)

[1] Kingfisher dose rate estimate is based on external exposures to radionuclides in soil. Water-related exposures (water and fish ingestion) will be added when water data become available.

Table C.36. Overall dose rates from internal and external exposures for plants, earthworms, and terrestrial wildlife exposed to radionuclides in soil at WAG2 Lower Melton Branch (LMB).

Receptor	Dose rate (pCi/g)	Primary contributors (% of total dose rate)	
Plants	3010	Plutonium-239/240	(66.6%)
		Cesium-137	(17.1%)
		Americium-241	(10.7%)
		Plutonium-238	(3.0%)
Earthworms	3050	Strontium-90	(92.1%)
		Americium-241	(2.1%)
Short-tailed shrew	622	Strontium-90	(58.3%)
		Curium-244	(26.7%)
		Americium-241 (7.5%)	
White-footed mouse	498	Strontium-90	(49.7%)
		Curium-244	(33.4%)
		Americium-241 (9.4%)	
Wild turkey	366	Strontium-90	(96.2%)
White-tailed deer	275	Strontium-90	(96.9%)
Red fox	1087	Strontium-90	(97.6%)
Red-tailed hawk	1235	Strontium-90	(98.4%)
Mink	568	Strontium-90	(97.3%)
Belted kingfisher[1]	9	Cesium-137	(47.3%)
		Cobalt-60	(37.5%)

[1] Kingfisher dose rate estimate is based on external exposures to radionuclides in soil. Water-related exposures (water and fish ingestion) will be added when water data become available.