

**Attachment 17c
OB/OD Unit**

Ecological Risk Assessment

For

**Tooele Army Depot-North Area
Tooele, Utah**

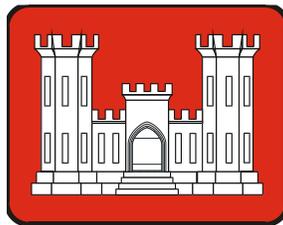
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prepared by

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1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

The Tooele Army Depot-North Area (TEAD-N) submitted Attachment 26-OB/OD Risk Assessment and Risk Management to the Utah Department of Environmental Quality (UDEQ) in April 2002. Attachment 26 was submitted to support modification (September 2005) of the Resource, Conservation and Recovery Act (RCRA) Permit to include Module VI for the Open Burning (OB) and Open Detonation (OD) Unit at TEAD-N. The Permit also includes static firing (SF) that is conducted at the OB/OD Unit.

Changes in operational needs for TEAD-N warrant the evaluation of modified OB/OD treatment limits (from those specified in the initial Permit). Also, additional OB/OD emission factor test data are now available. Therefore, the ecological risk assessment included in Attachment 26 of the Permit Application has been updated in the sections that follow and re-titled as Attachment 17C. These risk results have been used for the development of the TEAD-N OB/OD Risk Management Plan (RMP).

The revised screening level ecological risk assessment (SLERA) is summarized in the sections that follow as an addendum to (but not as a replacement for) Attachment 26B. Emphasis has been on documenting revisions to the risk assessment approach and scenarios as well as interpretation of the risk assessment results through use of refinement analyses.

1.2 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

Ecological risk assessment (ERA) is a process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors. An ERA is similar to a human health risk assessment except that it addresses effects on ecological receptors such as plants, wildlife, and aquatic biota rather than humans and domesticated plants and animals. The SLERA follows a protocol developed specifically for hazardous waste combustion facilities by the U.S. Environmental Protection Agency (USEPA) Office of Solid Waste (USEPA, 1999). The stressors considered in SLERA are chemical substances potentially emitted by operation of the OB/OD Unit.

A SLERA is an initial stage in the ERA process that relies primarily on published data and simplifying assumptions to estimate the potential risk from a large number of chemical substances potentially emitted from a hazardous waste combustion facility. The USEPA SLERA protocol (SLERAP) for hazardous waste combustion facilities (USEPA, 1999) encourages the use of reasonable, not theoretical worst-case, assumptions when evaluating potential risk in a SLERA. It also encourages use of site-specific data in lieu of simplifying assumptions whenever the data are available. If the SLERA indicates that additional site-specific data must be collected to evaluate the potential risk from certain chemical substances, then those substances can be retained as chemicals of potential ecological concern (COPECs) and evaluated in a subsequent baseline ERA (sometimes termed Phase II ERA). The following updated SLERA follows the same SLERAP

followed by the initial SLERA using updated air dispersion modeling results and therefore still constitutes a revised SLERA rather than a baseline ERA.

The U.S. Army Environmental Center (AEC) completed a sitewide ERA for TEAD-N in 1997. The sitewide ERA evaluated potential ecological risks associated with 56 solid waste management units (SWMUs) and two areas of concern (AOCs) identified on TEAD-N under RCRA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). One of the SWMUs evaluated in the sitewide ERA is SWMU 1, the Main Demolition Area, which is the area containing the OB/OD Unit. Both the initial SLERA prepared in 2002 and the following updated SLERA are independent of the sitewide ERA. The assessment of SWMU 1 in the sitewide ERA was based on soil samples collected in the immediate vicinity of the OB/OD Unit and served to evaluate the ecological impact resulting from contamination originating from past operations in the area. In contrast, the initial and updated SLERA reports are based on estimated contamination levels based on emissions from operation of the OB/OD Unit. The SLERA reports serve to evaluate the ecological impact resulting from continued operation of the OB/OD Unit.

2.0 PROBLEM FORMULATION

Problem formulation establishes the exposure setting used as the basis for exposure analysis and risk characterization. It typically includes (1) characterization of the exposure setting, including identification of the ecological habitats that are potentially exposed; (2) development of food webs representative of the habitats being evaluated; (3) selection of assessment endpoints; and (4) identification of measurement endpoints (USEPA, 1999). Habitats in the vicinity of TEAD-N are broadly described in Section 2.1. Habitats at specific locations evaluated in the SLERA are described in Section 2.2. A conceptual site model illustrating food webs and potential exposure pathways is discussed in Section 2.3. Assessment endpoints are addressed in Section 2.4, and measurement endpoints identified for the ERA are discussed in Section 2.5.

2.1 REGIONAL ECOLOGICAL DESCRIPTION

The following description is summarized from data in the site-wide ERA, and is the same regional ecological description used in the initial SLERA in 2002. TEAD-N is located in a region classified as cold semi-desert, characterized by sagebrush (*Artemisia tridentata*) and saltbush (*Atriplex polycarpa*). Plants must be capable of surviving low precipitation and high evaporation rates as well as alkaline and saline soils. Ecological habitats on TEAD-N consist of areas supporting disturbed sagebrush vegetation intermixed with areas of grassland and a few localized riparian/wetland habitats. Cattle grazing is currently permitted on TEAD-N, and grazing has substantially influenced vegetation throughout much of the installation.

An ephemeral stream, Box Elder Wash, traverses the area containing the OB/OD Unit. Box Elder Wash flows only after heavy rain or when rapidly melting snowpacks in mountains west of TEAD-N contribute large volumes of runoff to the upper reach of the stream. Box Elder Wash was analyzed in the initial SLERA as a terrestrial rather than aquatic habitat. Box Elder Wash was not selected as an evaluation location for the updated SLERA.

The region containing TEAD-N is inhabited by a variety of invertebrates, birds, mammals, reptiles, and amphibians. Common invertebrates include grasshoppers, beetles, butterflies and moths, ants, spiders, and the Mormon cricket (*Anabrus simplex*). Outbreaks of Mormon crickets and various grasshopper species are not uncommon. Among birds, raptors such as eagles, hawks, falcons, and owls occur frequently because of the abundance of small mammals that serve as prey. Few other bird species favor the region. Common large mammals include the mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and coyote (*Canis latrans*). Coyote populations tend to vary cyclically in response to the populations of jackrabbits, which are their preferred prey. When jackrabbit populations are low, the coyotes subsist on small rodents, which are plentiful most of the time.

Among reptiles, snakes and lizards are common throughout the region. Amphibians are generally scarce due to the limited occurrence of water. The Great Basin spadefoot toad (*Spea intermontana*) is supported by temporary bodies of water that form following infrequent rainfalls, as are occasional salamanders.

2.2 LOCATIONS SELECTED FOR EVALUATION

Eight locations have been selected for quantitative analysis of potential ecological risk in the SLERA, as follows:

- Location 1: Open Burn (OB) Area (within OB/OD Unit);
- Location 2: Open Detonation (OD) Area (within OB/OD Unit);
- Location 3: Static Firing (SF) Area (within OB/OD Unit);
- Location 4: Southwest OB/OD Unit Boundary;
- Location 5: Northeast OB/OD Unit Boundary;
- Location 6: Location on TEAD-N Boundary with Highest Modeled Exposure to OB/OD Unit Emissions (i.e., Locations 4 and 6 are collocated based on dispersion/risk remodeling);
- Location 7: Grantsville Reservoir (outside of TEAD-N); and
- Location 8: Rush Lake (outside of TEAD-N).

Locations 1, 2, and 3 are upland habitats situated directly where operational activities associated with the OB/OD unit take place. Although they likely once supported the annual grassland and disturbed sagebrush habitats typical throughout the regional landscape, they have been highly disturbed by site operations and support only bare ground with sparse ruderal (weedy) vegetation at this time. Although not generally conducive to wildlife, they may be infrequently visited by some small mammals (e.g., mice and voles) and birds (e.g., starlings and sparrows) tolerant of disturbed lands. They may also be infrequently visited by foraging larger mammals (e.g., foxes) and birds (e.g., hawks and kestrels) during periods of operational inactivity. There is no perennial surface water within a mile of these locations, although dry washes carrying ephemeral flow following heavy rainfall are present. Most notable is Box Elder Wash, which traverses the operational area. Such dry washes may at times provide drinking water for terrestrial wildlife but do not contain surface water long enough to allow for the establishment of an aquatic food chain.

Locations 4, 5, and 6 are upland habitats that support the annual grassland and disturbed sagebrush habitats typical of TEAD-N and the surrounding landscape. They do not consist of undisturbed sagebrush vegetation typical of uplands in the region prior to settlement but instead reflect an extended history of disturbance by heavy livestock grazing and, more recently, site activities. Several fences and roads pass close to each location, and noise from OB, OD, and SF activities as well as vehicular traffic is present. The locations support a terrestrial food chain generally typical of the surrounding region. There is no perennial surface water within a mile of these locations, although dry washes carrying ephemeral flow following heavy rainfall are present. Such dry washes may at times provide drinking water for terrestrial wildlife but do not contain surface water long enough to allow for the establishment of an aquatic food chain.

Grantsville Reservoir (Location 7) is a manmade reservoir with a surface area of approximately 88 acres and a maximum depth of approximately 63 feet (UDEQ, 2007). It is located approximately 1 mile west of TEAD-N and serves as a source of irrigation water. Water is diverted into the reservoir from an upstream reach of Box Elder Wash and from other stream channels that flow down the mountains on the west side of the Tooele Valley. The reservoir's shorelines are abrupt, and there is at most a very narrow fringe of emergent wetland vegetation bordering the open waters of the reservoir. The reservoir can be assumed to support an aquatic food chain typical of perennial man-made waterbodies of substantial depth. The Utah Division of Wildlife Resources regularly stocks Grantsville Reservoir with rainbow trout (*Oncorhynchus mykiss*) in the spring and fall (UDEQ, 2007).

Rush Lake (Location 8) is a natural impoundment of a southern tributary to the Great Salt Lake. It is irregular in shape with a surface area of approximately 80 acres (variable) and a maximum depth of approximately 5.6 feet (variable) (UDEQ, 2007). It is located approximately 3 miles south of TEAD-N. Portions of Rush Lake dry out during periods without rainfall. Rush Lake lacks an outlet and displays some properties typical of a Great Basin playa. Great Basin playas are areas that accumulate surface runoff and inflow from streams but that lack a surface outlet. Incoming water accumulates during infrequent rainfall events and then evaporates, exposing a salt-encrusted soil surface (Trimble, 1989). Rush Lake can be assumed to support an aquatic food chain during periods of extended wetness, although the food chain disappears when the lake dries out. In 1986, during a wet period, the lake reportedly supported Utah chub (*Gila atraria*), carp (*Cyprinus carpio*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), channel catfish (*Ictalurus punctatus*), yellow perch (*Perca flavescens*), black crappie (*Pomoxis nigromaculatus*), and black bullhead (*Ictalurus melas*) (UDEQ, 2007).

For purposes of the SLERA, Locations 1 through 6 are assumed to be naturally vegetated upland habitats lacking surface water. Locations 7 and 8 (Rush Lake and Grantsville Reservoir) are assumed to be aquatic habitats capable of supporting emergent and/or submerged vegetation, benthic macroinvertebrates, and small fish. However, the fact that Rush Lake may periodically dry out and may contain hypersaline water could at times preclude or limit the occurrence of aquatic biota.

2.3 EXPOSURE PATHWAYS AND CONCEPTUAL SITE MODEL

Stressors: The stressors considered in the SLERA consist of chemical constituents derived from operation of the OB/OD Unit (including OB, OD, and SF operations). The site operations release chemical constituents into the air, where the constituents can be carried over the surrounding landscape and deposited onto the soil surface. Contaminated soil can be resuspended by the wind as fugitive dust, which can then be redeposited elsewhere on the landscape. Rainfall can also cause contaminated soil to become suspended as sediment in surface runoff. Surface runoff tends to carry the contaminated sediment into streams and other waterways.

Receptors: The receptors considered in the SLERA consist of plants and animals other than crops and domesticated livestock. For terrestrial plants, aquatic plants, soil invertebrates, benthic

invertebrates, and fish, the SLERA considers potential impacts to the overall communities present at each affected location. For terrestrial wildlife, the SLERA considers separately specific functional feeding guilds for mammals and birds. The functional feeding guilds include herbivorous mammals and birds that feed exclusively or predominantly on plants, carnivorous mammals and birds that feed exclusively or predominantly on other animals, and omnivorous mammals and birds that feed on plants as well as on invertebrates and other animals.

Pathways: Table 2-1 is a conceptual site model illustrating pathways by which the receptors discussed above may be exposed to chemical constituents derived from operation of the OB/OD Unit. A complete exposure pathway consists of (1) a source of contaminants that can be released to the environment, (2) a route of contaminant transport to an environmental medium, and (3) a mechanism by which a receptor can be exposed to a contaminated medium.

The SLERA assumes that the only source of chemical contamination (the stressors) is operation of the OB/OD Unit, including OB, OD, and SF operations, as well as operation of a deactivation furnace. Each of these operations emits chemicals into the air. Movement of the air carries the chemicals into the surrounding landscape. Ultimately, airborne chemicals are deposited onto the soils, surface water, and sediments in the landscape (the exposure media). Receptors are exposed to the chemicals through direct contact with contaminated media, ingestion (or inhalation) of the media, or ingestion of other receptors that have accumulated the chemicals from the media into their tissues (a process termed bioaccumulation). For example, a herbivorous mammal inhabiting a terrestrial landscape (Locations 1 through 6) can be exposed to soil-borne contamination not only by ingesting the soil but also by ingesting plants that have translocated chemicals from the soil into foliage or fruit. Carnivorous mammals and birds are particularly susceptible to high dietary exposure levels because they ingest prey organisms that have accumulated high levels of chemicals through their food sources.

2.4 ASSESSMENT ENDPOINTS

Assessment endpoints are defined in the SLERAP as explicit expressions of environmental values that are to be protected (USEPA, 1999). Assessment endpoints are typically defined broadly for a SLERA but can be narrowed in focus should a baseline ERA be necessary. For this SLERA, the assessment endpoints consist of the general welfare of broad categories of ecological receptors inhabiting the landscape on and in the vicinity of TEAD-N, including:

- Terrestrial Plants (Locations 1 through 6),
- Soil Invertebrates (e.g., earthworms, microorganisms) (Locations 1 through 6),
- Aquatic Plants (e.g., phytoplankton, emergent plants) (Locations 7 and 8),
- Aquatic Invertebrates (e.g. benthic macroinvertebrates) (Locations 7 and 8),
- Fish (Locations 7 and 8),
- Herbivorous Mammals (All Locations),
- Omnivorous Mammals (All Locations),
- Carnivorous Mammals (All Locations),
- Herbivorous Birds (All Locations),
- Omnivorous Birds (All Locations), and
- Carnivorous Birds (All Locations).

2.5 MEASURES OF EFFECT (MEASUREMENT ENDPOINTS)

Measures of effect (formerly termed measurement endpoints) are measurable characteristics that are related to the assessment endpoints and that can be used to assess potential impacts to the assessment endpoints. The SLERA uses exposure point concentrations as the measures of effect for assessment endpoints corresponding to receptors that directly inhabit potentially contaminated media. These include terrestrial plants, soil invertebrates, aquatic plants, aquatic invertebrates, and fish. Exposure point concentrations are the concentrations (measured or estimated) of the chemicals in affected media at each location. The affected media are soil at Locations 1 through 6 and surface water and sediment at Locations 7 and 8. The exposure point concentrations are estimated using dispersion modeling for Locations 4 through 8 and measured from soil samples collected at the OB, OD, and SF facilities (Locations 1 through 3). The SLERA uses estimated doses received by each functional feeding guild as the measures of effect for assessment endpoints corresponding to mammals and birds.

Table 2-2 presents the assessment endpoints and corresponding measures of effect for each exposure pathway evaluated quantitatively in the SLERA.

Table 2-1. Conceptual site model: exposure pathways

Source	Release mechanism	Exposure medium	Exposure mechanism	Receptors						
				Terrestrial plants	Soil invertebrates	Aquatic plants	Benthic invertebrates	Fish	Mammals	Birds
Open Burning, Open Detonation, Static Firing, and Operation of Deactivation Furnace (as an onsite source that contributes to local background)	Emissions into the Air	Air	Inhalation						L1 – L6	L1 – L6
			Direct Contact	L1 – L6	L1 – L6				L1 – L6	L1 – L6
		Soil	Direct Contact	L1 – L6	L1 – L6				L1 – L6	L1 – L6
			Ingestion Food Chain						L1 – L6	L1 – L6
		Surface Water	Direct Contact			L7, L8	L7, L8	L7, L8	L7, L8	L7, L8
			Ingestion Food Chain					L7, L8	L7, L8	L7, L8
		Sediment	Direct Contact			L7, L8	L7, L8	L7, L8	L7, L8	L7, L8
			Ingestion					L7, L8	L7, L8	L7, L8
			Food Chain					L7, L8	L7, L8	L7, L8

Notes:

1. Locations: L1 – OB Area; L2 – OD Area; L3 – SF Area; L4 – Southwest OB/OD Area Boundary; L5 – Northeast OB/OD Area Boundary; L6 – TEAD-N Boundary; L7 – Grantsville Reservoir; and L8 – Rush Lake.
2. Data in a cell indicates a theoretically complete exposure pathway.
3. Bold data in a cell indicates an exposure pathway that is accounted for quantitatively in the exposure calculations performed as part of the SLERA.

Table 2-2. Ecological Endpoints, Exposure Pathways, and Risk Calculations

Location (habitat type)	Assessment endpoint	Measurement endpoint	Exposure	Materials ingested	Risk calculation
Locations at OB, OD, and SF Sites	Terrestrial Plants (TL 1)	Community	Direct Contact with Soil	N/A	ESQ = EPC in Soil/TRV (TRV from Table E-5)
	Soil Invertebrates (TL 1)	Community	Direct Contact with Soil	N/A	ESQ = EPC in Soil/TRV (TRV from Table E-6)
Habitat: Upland Grassland/Scrub	Herbivorous Mammals (TL 2)	Deer Mouse	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Food Chain: Terrestrial	Omnivorous Mammals (TL 3)	White-Footed Mouse	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil Invertebrates ● Soil
Location 1: OB Site	Carnivorous Mammals (TL 4)	Red Fox	Ingestion	<ul style="list-style-type: none"> ● TL 3 Prey ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
Location 2: OD Site	Herbivorous Birds (TL 2)	Mourning Dove	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
Location 3: SF Site	Omnivorous Birds (TL 3)	Western Meadowlark	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil Invertebrates ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
	Carnivorous Birds (TL 4)	American Kestrel	Ingestion	<ul style="list-style-type: none"> ● TL 3 Prey ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-8)

Table 2-2 (Continued)

Location (habitat type)	Assessment endpoint	Measurement endpoint	Exposure	Materials ingested	Risk calculation
Locations on Borders of OB/OD Area and TEAD-N	Terrestrial Plants (TL 1)	Community	Direct Contact with Soil	N/A	ESQ = EPC in Soil/TRV (TRV from Table E-5)
	Soil Invertebrates (TL 1)	Community	Direct Contact with Soil	N/A	ESQ = EPC in Soil/TRV (TRV from Table E-6)
Habitat: Upland Grassland/Scrub	Herbivorous Mammals (TL 2)	Deer Mouse	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
Food Chain: Terrestrial	Omnivorous Mammals (TL 3)	White-Footed Mouse	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil Invertebrates ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
Location 4: SW OB/OD Boundary	Carnivorous Mammals (TL 4)	Red Fox	Ingestion	<ul style="list-style-type: none"> ● TL 3 Prey ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
Location 5: NE OB/OD Boundary	Herbivorous Birds (TL 2)	Mourning Dove	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
Location 6: Maximum Modeled Deposition on TEAD-N Boundary	Omnivorous Birds (TL 3)	Western Meadowlark	Ingestion	<ul style="list-style-type: none"> ● Terrestrial Plants ● Soil Invertebrates ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
	Carnivorous Birds (TL 4)	American Kestrel	Ingestion	<ul style="list-style-type: none"> ● TL 3 Prey ● Soil 	ESQ = Ingested Dose/TRV (TRV from Table E-8)

Table 2-2 (Continued)

Location (habitat type)	Assessment endpoint	Measurement endpoint	Exposure	Materials ingested	Risk calculation
Location 7: Grantsville Reservoir	Aquatic Plants (TL 1)	Community	Direct Contact with Surface Water	N/A	ESQ = EPC in Water/TRV (TRV from Table E-1)
			Direct Contact with Sediments	N/A	ESQ = EPC in Sediment/TRV (TRV from Table E-3)
Habitat: Perennial Man-Made Open Deepwater with marshy fringe	Benthic Invertebrates (TL 1)	Community	Direct Contact with Surface Water	N/A	ESQ = EPC in Water/TRV (TRV from Table E-1)
			Direct Contact with Sediments	N/A	ESQ = EPC in Sediment/TRV (TRV from Table E-3)
Food Chain: Aquatic	Fish (TL 2)	Community	Direct Contact with Surface Water	N/A	ESQ = EPC in Water/TRV (TRV from Table E-1)
	Herbivorous Mammals (TL 2)	Muskrat	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Omnivorous Mammals (TL 3)	Short-Tailed Shrew	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Benthic Invertebrates ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Carnivorous Mammals (TL 4)	Mink	Ingestion	<ul style="list-style-type: none"> ● TL 3 Prey ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Herbivorous Birds (TL 2)	Canvasback	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
	Omnivorous Birds (TL 3)	Mallard	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Benthic Invertebrates ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
	Piscivorous Birds (TL 4)	Spotted Sandpiper	Ingestion	<ul style="list-style-type: none"> ● Fish ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-8)

Table 2-2 (Continued)

Location (habitat type)	Assessment endpoint	Measurement endpoint	Exposure	Materials ingested	Risk calculation
Location 8: Rush Lake	Aquatic Plants (TL 1)	Community	Direct Contact with Surface Water	N/A	ESQ = EPC in Water/TRV (TRV from Table E-1)
Habitat: Intermittently Flooded Wetland and Shallow Water	Benthic Invertebrates (TL 1)	Community	Direct Contact with Sediments	N/A	ESQ = EPC in Sediment/TRV (TRV from Table E-3)
Food Chain: Aquatic	Fish (TL 2)	Community	Direct Contact with Surface Water	N/A	ESQ = EPC in Water/TRV (TRV from Table E-1)
	Herbivorous Mammals (TL 2)	Muskrat	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Omnivorous Mammals (TL 3)	Short-Tailed Shrew	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Benthic Invertebrates ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Carnivorous Mammals (TL 4)	Mink	Ingestion	<ul style="list-style-type: none"> ● TL 3 Prey ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-7)
	Herbivorous Birds (TL 2)	Canvasback	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
	Omnivorous Birds (TL 3)	Mallard	Ingestion	<ul style="list-style-type: none"> ● Aquatic Plants ● TL 2 Prey ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-8)
	Piscivorous Birds (TL 4)	Spotted Sandpiper	Ingestion	<ul style="list-style-type: none"> ● Fish ● Surface Water ● Sediment 	ESQ = Ingested Dose/TRV (TRV from Table E-8)

TL: Trophic Level; ESQ: Ecological Screening Quotient; TRV: Toxicity Reference Value; EPC: Exposure Point Concentration
The TRV Tables referenced in the table are in Appendix E of *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*, EPA530-D-99-001A.

3.0 EXPOSURE ASSESSMENT

Exposure is quantification of the contact between the receptors and stressors. EcoRiskView, a commercially-developed computer program, was used to calculate exposures commensurate with the SLERAP (USEPA, August 1999) in the SLERA. The exposure calculations involved (1) quantifying the dispersion of chemicals from the OB/OD Unit to the locations under consideration; and (2) quantifying the doses of chemicals ingested by those receptors whose primary exposure pathway is ingestion rather than direct exposure. EcoRiskView was used to calculate estimated concentrations of each chemical in soil at Locations 4, 5, and 6 and in surface water and sediment at Locations 7 and 8. Concentrations in soil at the OB, OD and SF units (Locations 1, 2, and 3) were determined directly by laboratory analysis of soil samples collected on April 25, 2006 rather than estimated using EcoRiskView (U.S. Army, July 2006).

For measurement endpoints involving exposure through ingestion of chemicals, EcoRiskView calculated estimated doses based on the ingestion rates shown in Table 3-1. The dose calculations used the media concentrations estimated by dispersion modeling (for Locations 4 through 8) and the soil concentrations obtained from laboratory analysis (for Locations 1 through 3).

EcoRiskView performed the exposure calculations using the default values for bioconcentration factors (BCF values) included in the SLERAP. However, in the absence of default BCFs for certain energetic compounds, values were obtained from other sources. Table 3-2 presents the non-default BCF values used in the exposure calculations for this SLERA.

Additionally, alternate BCF values for sediment-to-sediment invertebrate contaminant concentration estimation of dioxin and furan compounds were identified and proposed for use. The SLERAP guidance utilizes a BCF value for sediment-to-sediment invertebrate transfer that was calculated using a regression equation based on octanol-water partition coefficients. This regression equation was derived from a study using *Daphnia* (a water flea). BCF values by definition describe the relationship between a concentration found in an organism and a concentration found in water and may not be applicable for sediment-to-sediment invertebrate transfer. A biota sediment accumulation factor (BSAF) is a more appropriate representation of potential organism contaminant concentrations based on sediment concentrations.

A literature review was performed to identify BSAF values that could be used to estimate benthic invertebrate contaminant concentrations from sediment concentrations. A number of sources for BSAF values were identified including USEPA publications and databases maintained by the United States Army Corps of Engineers (USACE, 2003). Following communications with the State of Utah Department of Environmental Quality (UDEQ, 2007), it was concluded that empirically-derived BSAF values from the USACE BSAF database were appropriate for use in the assessment. Congener-specific BSAF values obtained from this database were used in the analysis, and for conservatism, the highest BSAF value for each congener was used (Table 3-3).

Table 3-1. Ingestion rates for wildlife species selected as measurement endpoints screening level ecological risk assessment.

Species	Feeding guild	Body weight (kg)	Food ingestion rate^a (kg WW/kg BW-day)	Water ingestion rate (L/kg BW-day)	Soil/sediment ingestion rate (kg DW/kg BW-day)
Deer Mouse	Herbivorous Mammals (at Locations 1, 2, and 3)	1.48E-02	5.99E-01	1.51E-01	1.44E-03
White-Footed Mouse	Omnivorous Mammals (at Locations 1, 2, and 3)	1.00E-02	6.14E-01	1.52E-01	2.70E-03
Red Fox	Carnivorous Mammals (at Locations 1, 2, and 3)	3.94E0	1.68E-01	8.63E-02	1.51E-03
Mourning Dove	Herbivorous Birds (at Locations 1, 2, and 3)	1.50E-01	3.49E-01	1.09E-01	7.01E-03
Western Meadowlark	Omnivorous Birds (at Locations 1, 2, and 3)	9.00E-02	4.21E-01	1.31E-01	1.39E-02
American Kestrel	Carnivorous Birds (at Locations 1, 2, and 3)	1.00E-01	4.02E-01	1.25E-01	1.39E-03
Muskrat	Herbivorous Mammals (at Locations 4 and 5)	1.09E0	2.67E-01	9.82E-02	6.41E-04
Short-Tailed Shrew	Omnivorous Mammals (at Locations 4 and 5)	1.50E-02	6.20E-01	1.51E-01	1.36E-02
Mink	Carnivorous Mammals (at Locations 4 and 5)	9.74E-01	2.16E-01	9.93E-02	1.93E-03
Canvasback	Herbivorous Birds (at Locations 4 and 5)	7.70E-01	1.99E-01	6.43E-02	1.82E-03
Mallard	Omnivorous Birds (at Locations 4 and 5)	1.04E0	1.79E-01	5.82E-02	3.18E-03
Spotted Sandpiper	Carnivorous Shorebirds (at Locations 4 and 5)	4.00E-02	5.69E-01	1.74E-01	4.15E-02

^aThe EcoRiskView model calculates exposure for omnivorous and carnivorous receptors using alternative diet scenarios, e.g., a 100 percent plant (herbivorous) diet, a 100 percent invertebrate diet, a 100 percent meat (carnivorous) diet, or an “equivalent diet” consisting of equal proportions of each food type in the receptor’s diet.

Table 3-2. Non-Default Energetic Bioconcentration Factors Used in Screening Level

Chemical	Soil to Plant BCF
RDX	0.43
HMX	14
TNT	4.23

BCF - Bioconcentration factor

Source:

US Army Corp of Engineers, 2004. Toxicity and Metabolites of 2,4,6-Trinitrotoluene (TNT) in Plants and Worms from Exposure to Aged Soil. ERDC/EL TR-04-18. October.

Table 3-3. Biota Sediment Accumulation Factors for Dioxins and Furans

Dioxin and furans	Biota-sediment accumulation factor
1,2,3,4,6,7,8-HpCDD	1.268
1,2,3,4,6,7,8-HpCDF	0.885
1,2,3,4,7,8,9-HpCDF	0.944
1,2,3,4,7,8-HxCDD	0.784
1,2,3,4,7,8-HxCDF	0.88
1,2,3,6,7,8-HxCDD	6
1,2,3,6,7,8-HxCDF	0.71
1,2,3,7,8,9-HxCDD	0.395
1,2,3,7,8,9-HxCDF	0.527
2,3,4,6,7,8-HxCDF	1.462
1,2,3,7,8-PECDD	4
1,2,3,7,8-PECDF	2
2,3,4,7,8-PECDF	3
2,3,7,8-TCDD	12
2,3,7,8-TCDF	7.45
OCDD	1.377
OCDF	0.854

Maximum congener-specific biota-sediment accumulation factors (BSAFs) were used.

HpCDD - heptachlorodibenzo-p-dioxin

HPCDF - heptachlorodibenzofurans

HxCDD - hexachlorodibenzo-p-dioxin

HxCDF - hexachlorodibenzofuran

OCDD - octachlorodibenzodioxin

OCDF - octachlorodibenzofuran

PECDD - pentachlorodibenzo-p-dioxin

PECDF - pentachlorodibenzofuran

TCDD - tetrachlorodibenzo-p-dioxin

TCDF - tetrachlorodibenzofuran

Source: The US Army Engineer Research and Development Center, Waterways Experiment Station, Environmental Laboratory (CEERD-EP-R). Biota-Sediment Accumulation Factor Database Last update: May 3, 2006.

<http://el.ercd.usace.army.mil/bsaf/bsaf.html>

4.0 ECOLOGICAL EFFECTS (TOXICITY) ASSESSMENT

The SLERA uses toxicity reference values (TRVs) corresponding to the measurement endpoints as measures of the toxicity of individual chemicals emitted from the OB/OD Unit. For measurement endpoints corresponding to receptors that directly inhabit affected media, the TRV values represent the highest exposure point concentrations reported in the scientific literature to not result in adverse effects to the receptors. For measurement endpoints corresponding to doses, the TRV values represent no observed adverse effect level (NOAEL) doses. NOAEL doses are the highest doses reported in the scientific literature to not result in adverse effects to the receptors. Table 4-1 lists the TRV values used in the SLERA.

Non-default TRV values obtained from the literature were used for certain compounds when they were not available in the guidance. The non-default TRV values and the sources for those values are indicated in Table 4-2.

The SLERAP, and hence the “default” setting of EcoRiskView, contains TRVs for only one dioxin or furan, the 2,3,7,8 congener of CDD. To generate ecological risk data on a wider range of chemical constituents potentially associated with OB/OD operations, TRVs for other dioxins and furans were estimated by using toxicity equivalency factors (TEF values) developed by the World Health Organization (WHO) and included in Chapter 2 of the SLERAP. The estimated TRVs were entered manually into EcoRiskView before performing the analysis.

Table 4-1. Toxicity reference values used in the screening level ecological risk assessment
Note: All TRVs are from Appendix E of the Screening Level Ecological Risk Assessment Protocol (USEPA, 1999)

Analyte	Plant	Soil invertebrate	Freshwater	Sediment	Mammal	Bird
	TRV basis: conc. in soil (dry weight)	TRV basis: conc. in soil (dry weight)	TRV basis: conc. in surface water	TRV basis: conc. in sediment (dwt.)	TRV basis: ingested dose	TRV basis: ingested dose
	mg/kg (inorganics) µg/kg (organics)	mg/kg (inorganics) µg/kg (organics)	mg/L (inorganics) µg/L (organics)	mg/kg (inorganics) µg/kg (organics)	mg/kg BW/day (in) µg/kg BW/day (org)	mg/kg BW/day (in) µg/kg BW/day (org)
Aluminum	5		0.087	14,000	1.93	100
Antimony	0.5		0.03	64.0	0.066	
Arsenic	1	0.25	0.15	6.0	1.25	2.46
Barium	5		0.004	20	0.51	20.8
Benzene						
Benzo(b)fluoranthene	1,200	25,000	0.027	37		0.14
Benzo(k)fluoranthene	1,200	25,000	0.027	37		0.14
Beryllium	0.1		0.00066		0.66	
Cadmium	0.2	10	0.0022	0.6	0.0252	1.45
Carbon Tetrachloride						
Chlorine						
Chloroethane						
Chloroform			28	59.4	60,000	
Chromium (III)				26		
Chromium (VI)	0.018	0.2	0.011		3.5	1.0
Copper	1.0	32.0	0.009	16	12.0	46.97
Cyanide			0.0052	0.1	24	0.04
Dibenzo(a,h)-anthracene	1,200	25,000	0.027	10	2	0.39
Diethyl phthalate						
1,3-Dinitrobenzene		2,260	26	21.4	1,051	0.422
2,4-Dinitrotoluene			23	46.9	700	
2,6-Dinitrotoluene			60	100.6	400	
Ethylbenzene						
Hexachlorobenzene			3.68	20	1,600	225
Hydrogen Chloride						
Lead	4.6	100	0.0025	31	0.0375	0.025
Mercuric Chloride	0.349	2.5	0.00077	0.2	1.01	3.25
Methyl Chloride						
Methyl Mercury		2.5	0.0000028	0.2	0.032	0.0064
Methylene Chloride						
Nickel	25	100	0.052	16	50	65
Nitrobenzene		2,260	270	1285.2		
Pentachloro-phenol	1,730	10,000	15	7,000	300	4,030
Selenium	0.05	7.7	0.005	0.1	0.076	0.5

Table 4-1 (Continued)

Analyte	Plant	Soil invertebrate	Freshwater	Sediment	Mammal	Bird
	TRV basis: conc. in soil (dry weight)	TRV basis: conc. in soil (dry weight)	TRV basis: conc. in surface water	TRV basis: conc. in sediment (dry weight)	TRV basis: ingested dose	TRV basis: ingested dose
	mg/kg(inorganic) µg/kg (organics)	mg/kg(inorganics) µg/kg (organics)	mg/L (inorganics) µg/L (organics)	mg/kg (inorganics) µg/kg (organics)	mg/kg BW/day (in) µg/kg BW/day (org)	mg/kg BW/day (in) µg/kg BW/day (org)
Silver	0.02		0.00012	4.5	0.375	178
Styrene						
2,3,7,8-TetraCDD		500	0.0000038	0.41	0.001	0.01
PCE						
Thallium (I)	0.01		0.004		0.0131	0.35
Toluene						
1,3,5(sym)tri-nitrobenzene						
2,4,6-Trinitrotoluene						
Vinyl Chloride			3,880	1722.7	170	
Zinc	0.9	199	0.118	110	10.4	130.9

Note: A space indicates that no TRV is available from Appendix E of USEPA, 1999. For purposes of units in the table, mercuric chloride and methyl mercury are considered to be inorganic.

TRV - toxicity reference value

ug/L - micrograms per liter

ug/kg - micrograms per kilogram

mg/kg BW-day milligrams per kilogram body weight per day

Table 4-2. Non-Default TRVs Used in Ecological Effects Assessment

Analyte	TRVs					
	ug/L		ug/kg		mg/kg BW-day	
	Fresh Water	Fresh Sediment	Plant	Soil invertebrate	Mammal	Bird
RDX	1870 ^a	10 ^b	100000 ^b		1.19 ^c	3.65 ^c
HMX	330 ^b	5 ^b			1 ^c	9 ^c
2,4 -DNT	SLERAP	SLERAP	80000 ^{b,d}		0.67 ^c	0.01 ^c
2,6-DNT	SLERAP	SLERAP	80000 ^{b,d}		0.7 ^c	0.01 ^{c,e}
TNT	90 ^a	90 ^b	30000 ^b	140000 ^b	0.2 ^c	0.07 ^c
Trinitrobenzene	111 ^{a,b}	9600 ^{g,h}		20000 ^{g,i}	2.68 ^c	
Nitroglycerin					3.0 ^c	
Trivalent chromium					2737 ^j	1 ^j

TRV - toxicity reference value

SLERAP - available in SLERAP guidance

ug/L - micrograms per liter

ug/kg - micrograms per kilogram

mg/kg BW-day milligrams per kilogram

body weight per day

a - ENSR, 2005 (USEPA indicated that there was an error in the document so the chronic benchmark should be 1.87 mg/L instead of 3.07 mg/L.

b - Talmage, et al., 1999

c - USACHPPM

d - Based on 2-Amino, 4,6-Dinitrotoluene

e - Based on 2,4-Dinitrotoluene

f - Oak Ridge National Laboratory (ORNL) Aquatic Benchmarks (Suter and Tsao, 1996)

g - Based on 1,2,4-Trinitrobenzene

h - Jones, et al., 1997

I - Efroymsen, et al., 1997

j - Sample, et al., 1996

5.0 RISK CHARACTERIZATION

Risk characterization in the SLERA consists of calculating ecological screening quotients (ESQs, often referred to as hazard quotients, HQs) for each chemical evaluated, for each group of receptors corresponding to one of the assessment endpoints. An ESQ less than 1.0 indicates that there is little or no potential for adverse risk to the corresponding assessment endpoint. An ESQ equal to or greater than 1.0 indicates that there is a potential for adverse risk to the corresponding assessment endpoint. The ESQ values represent the values used to quantify exposure (exposure point concentrations or doses) divided by the corresponding TRV. The last column in Table 2-2 indicates the ESQ calculation performed for each assessment endpoint addressed in the SLERA.

The ESQs were calculated using the EcoRiskView computer program that was used to estimate exposure levels. The EcoRiskView is a commercial model that is based on the Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities (USEPA, August 1999). The TRV values from USEPA, 1999 (as well as supplemental TRVs), are programmed into EcoRiskView, which automatically divides the estimated exposure level by the corresponding TRV. The results are discussed below. EcoRiskView output files are presented in Appendix A. Values for site-specific setting parameters were the same as used for IRAP (i.e., for the human health risk assessment) and included in Appendix A.

Location 1 (OB Area): Table 5-1 presents the ESQ values calculated for Location 1, the OB Area. Only those ESQ values greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Aluminum,
- Arsenic,
- Barium,
- Beryllium,
- Cadmium,
- Chromium (hexavalent),
- Copper,
- 2,4-Dinitrotoluene,
- Lead,
- Selenium,
- Silver, and
- Zinc.

All of the COPCs are metals except for one explosive, 2,4-dinitrotoluene. The highest ESQ was 1,878 for exposure of terrestrial plants to aluminum in soil. The highest ESQ for mammals was 670 for exposure of omnivorous mammals to aluminum in a diet consisting entirely of soil invertebrates. The highest ESQ for birds was 91 for exposure of omnivorous birds to 2,4-dinitrotoluene in a diet consisting entirely of soil invertebrates. The highest ESQ for soil invertebrates was 61 for exposure to hexavalent chromium in soil.

Location 2 (OD Area): Table 5-2 presents the ESQ values calculated for Location 2, the OD Area. Only those ESQs greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Aluminum,
- Arsenic,
- Barium,
- Beryllium,
- Cadmium,
- Chromium (hexavalent),
- Copper,
- Lead,
- 2,4,6-Trinitrotoluene, and
- Zinc.

All of the COPCs are metals except for one explosive, 2,4,6-Trinitrotoluene. The highest ESQ was 579 for exposure of terrestrial plants to copper in soil. The highest ESQ for mammals was 177 for exposure of omnivorous mammals to aluminum in a diet consisting entirely of soil invertebrates. The highest ESQ for birds was 21 for exposure of omnivorous birds to 2,4,6-Trinitrotoluene in a diet consisting entirely of terrestrial plants. The highest ESQ for soil invertebrates was 61 for exposure to hexavalent chromium in soil.

Location 3 (SF Area): Table 5-3 presents the ESQ values calculated for Location 3, the SF Area. Only those ESQs greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Aluminum,
- Arsenic,
- Barium,
- Beryllium,
- Cadmium,
- Chromium (hexavalent),
- Copper,
- 2,4-Dinitrotoluene,
- 1,2,3,4,6,7,8-HeptaCDD.
- Lead,
- Nickel
- Selenium, and
- Zinc.

All of the COPCs are metals except for one explosive, 2,4-dinitrotoluene, and one dioxin, 1,2,3,4,6,7,8-heptaCDD. The highest ESQ was 1,050 for exposure of terrestrial plants to hexavalent chromium in soil. The highest ESQ for mammals was 349 for exposure of omnivorous mammals to aluminum in a diet consisting entirely of soil invertebrates. The highest ESQ for birds

was 52 for exposure of omnivorous birds to 2,4-dinitrotoluene in a diet consisting entirely of soil invertebrates. The highest ESQ for soil invertebrates was 24 for exposure to arsenic in soil.

Location 4 (Southwest OB/OD Area Boundary): Table 5-4 presents the ESQ values calculated for Location 4, the southwest boundary of the OB/OD Area. Only those ESQ values greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Cadmium,
- Hexachlorobenzene
- Lead,
- Thallium, and
- Zinc.

All of the COPCs are metals except for one SVOC, hexachlorobenzene. The highest ESQ was 19 for exposure of carnivorous birds to hexachlorobenzene in a diet consisting entirely of omnivorous birds or omnivorous mammals. The highest ESQ for mammals was 16 for exposure of omnivorous mammals to lead in a diet consisting entirely of terrestrial plants. The highest ESQ for terrestrial plants was 6 for exposure to thallium in soil. No ESQ greater than or equal to 1 was found for soil invertebrates.

Location 5 (Northeast OB/OD Area Boundary): Table 5-5 presents the ESQ values calculated for Location 5, the northeast boundary of the OB/OD Area. Only those ESQ values greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Cadmium,
- Hexachlorobenzene
- Lead,
- Thallium, and
- Zinc.

All of the COPCs are metals except for one SVOC, hexachlorobenzene. The highest ESQ was 27 for exposure of carnivorous birds to hexachlorobenzene in a diet consisting entirely of omnivorous birds or omnivorous mammals. The highest ESQ for mammals was 15 for exposure of omnivorous mammals to cadmium in a diet consisting entirely of soil invertebrates. The highest ESQ for terrestrial plants was 14 for exposure to thallium in soil. No ESQ greater than or equal to 1 was found for soil invertebrates.

Location 6 (TEAD-N Boundary): Table 5-6 presents the ESQs calculated for Location 6, the location of maximum deposition on the TEAD-N boundary predicted by air dispersion modeling. Only those ESQs greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Cadmium,
- Hexachlorobenzene
- Lead,
- Thallium, and
- Zinc.

All of the COPCs are metals except for one SVOC, hexachlorobenzene. The highest ESQ was 19 for exposure of carnivorous birds to hexachlorobenzene in a diet consisting entirely of omnivorous birds or omnivorous mammals. The highest ESQ for mammals was 14 for exposure of omnivorous and herbivorous mammals to lead in a diet consisting entirely of terrestrial plants. The highest ESQ for terrestrial plants was 6 for exposure to thallium in soil. No ESQ greater than or equal to 1 was found for soil invertebrates.

The maximum ESQ value for Location 4 (Southwest OB/OD Area Boundary) occurs at the maximum ESQ location for Location 6 (TEAD-N boundary). Based on dispersion/deposition modeling results the ESQ values for other locations along the TEAD-N boundary, excluding the Southwest OB/OD Unit boundary, are less than 1.0.

Location 7 (Grantsville Reservoir): No ESQ values greater than 1.0 were found for any of the aquatic food chain receptor analyzed for Grantsville Reservoir (Table 5-7). Terrestrial food chain receptors were not analyzed at Grantsville Reservoir.

Location 8 (Rush Lake): Table 5-8 presents the ESQs calculated for Location 8, Rush Lake. Only those ESQs greater than 1.0 (hence indicative of possible risk to the corresponding category of ecological receptors) are presented. COPCs for which the program calculated an ESQ equal to or greater than 1.0 for at least one feeding guild and diet type (or exposure medium) include:

- Benzo(b)fluoranthene,
- Benzo(k)fluoranthene,
- Lead, and
- Thallium

Benzo(b)fluoranthene and benzo(k)fluoranthene are SVOCs and lead and thallium are metals. The highest ESQ was 2.6 for exposure of omnivorous mammals to lead in a diet consisting entirely of benthic invertebrates. The highest ESQ for birds was 1.3 for exposure of omnivorous birds to benzo(k)fluoranthene in a diet consisting entirely of benthic invertebrates. No ESQ greater than or equal to 1 was found for terrestrial plants or soil invertebrates.

Table 5-1. ECOLOGICAL SCREENING QUOTIENT LOCATION 1: OPN BURN (OB) AREA SCREENING-LEVEL

isk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Terrestrial Plant	Soil	1.87800E+3
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Omnivorous Mammal	Soil Invertebrate	6.70339E+2
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Omnivorous Mammal	EQDIET	3.42455E+2
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Mammal	Omnivorous Bird	9.72570E+1
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Mammal	Omnivorous Bird	9.72570E+1
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Mammal	EQDIET	5.23018E+1
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Omnivorous Mammal	Terrestrial Plant	1.45702E+1
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Omnivorous Bird	Soil Invertebrate	1.00022E+1
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Herbivorous Mammal	EQDIET	8.40488E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Herbivorous Mammal	Terrestrial Plant	8.40488E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Mammal	Herbivorous Bird	7.34658E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Mammal	Herbivorous Mammal	7.34658E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Omnivorous Bird	EQDIET	5.66321E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Bird	Omnivorous Bird	4.28278E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Bird	Omnivorous Bird	4.28278E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Carnivorous Bird	EQDIET	2.20665E+0
OB-1	ShrubScrub	WEB_01	OB Area	Aluminum	Omnivorous Bird	Terrestrial Plant	1.32419E+0
OB-1	ShrubScrub	WEB_01	OB Area	Arsenic	Soil Invertebrate	Soil	2.87600E+1
OB-1	ShrubScrub	WEB_01	OB Area	Arsenic	Terrestrial Plant	Soil	7.19000E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Omnivorous Mammal	Soil Invertebrate	5.37612E+1
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Terrestrial Plant	Soil	3.98000E+1
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Omnivorous Mammal	EQDIET	2.95636E+1
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Carnivorous Mammal	Omnivorous Bird	7.80002E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Carnivorous Mammal	Omnivorous Bird	7.80002E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Omnivorous Mammal	Terrestrial Plant	5.36598E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Herbivorous Mammal	EQDIET	4.76898E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Herbivorous Mammal	Terrestrial Plant	4.76898E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Carnivorous Mammal	EQDIET	4.19461E+0
OB-1	ShrubScrub	WEB_01	OB Area	Barium	Omnivorous Bird	Soil Invertebrate	1.01911E+0
OB-1	ShrubScrub	WEB_01	OB Area	Beryllium	Terrestrial Plant	Soil	6.20000E+0
OB-1	ShrubScrub	WEB_01	OB Area	Cadmium	Terrestrial Plant	Soil	1.17000E+1
OB-1	ShrubScrub	WEB_01	OB Area	Cadmium	Omnivorous Mammal	Soil Invertebrate	1.38561E+0
OB-1	ShrubScrub	WEB_01	OB Area	Chromium, hexavalent	Terrestrial Plant	Soil	6.77778E+2

Table 5-1. ECOLOGICAL SCREENING QUOTIENT LOCATION 1: OPN BURN (OB) AREA SCREENING-LEVEL

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
OB-1	ShrubScrub	WEB_01	OB Area	Chromium, hexavalent	Soil Invertebrate	Soil	6.10000E+1
OB-1	ShrubScrub	WEB_01	OB Area	Copper	Terrestrial Plant	Soil	1.75000E+2
OB-1	ShrubScrub	WEB_01	OB Area	Copper	Soil Invertebrate	Soil	5.46875E+0
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Omnivorous Bird	Soil Invertebrate	9.10853E+1
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Omnivorous Bird	EQDIET	5.08008E+1
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Carnivorous Bird	Omnivorous Bird	4.31227E+1
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Carnivorous Bird	Omnivorous Bird	4.31227E+1
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Carnivorous Bird	EQDIET	2.16096E+1
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Omnivorous Bird	Terrestrial Plant	1.05164E+1
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Herbivorous Bird	EQDIET	8.40419E+0
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Herbivorous Bird	Terrestrial Plant	8.40419E+0
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Omnivorous Mammal	Soil Invertebrate	1.88029E+0
OB-1	ShrubScrub	WEB_01	OB Area	Dinitrotoluene, 2,4-	Omnivorous Mammal	EQDIET	1.04098E+0
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Terrestrial Plant	Soil	3.52174E+2
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Omnivorous Bird	Soil Invertebrate	3.80342E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Omnivorous Bird	EQDIET	3.06104E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Omnivorous Bird	Terrestrial Plant	2.31866E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Soil Invertebrate	Soil	1.62000E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Herbivorous Bird	EQDIET	1.27516E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Herbivorous Bird	Terrestrial Plant	1.27516E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Carnivorous Bird	Omnivorous Bird	1.06383E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Carnivorous Bird	Omnivorous Bird	1.06375E+1
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Carnivorous Bird	EQDIET	6.31552E+0
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Omnivorous Mammal	Soil Invertebrate	4.27680E+0
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Omnivorous Mammal	EQDIET	2.74748E+0
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Carnivorous Bird	Herbivorous Mammal	1.99355E+0
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Carnivorous Bird	Herbivorous Bird	1.99274E+0
OB-1	ShrubScrub	WEB_01	OB Area	Lead	Omnivorous Mammal	Terrestrial Plant	1.21816E+0
OB-1	ShrubScrub	WEB_01	OB Area	Selenium	Terrestrial Plant	Soil	1.14400E+1
OB-1	ShrubScrub	WEB_01	OB Area	Selenium	Omnivorous Mammal	Soil Invertebrate	1.03698E+0
OB-1	ShrubScrub	WEB_01	OB Area	Silver	Terrestrial Plant	Soil	2.69500E+1
OB-1	ShrubScrub	WEB_01	OB Area	Zinc	Terrestrial Plant	Soil	1.37778E+2

Table 5-1. ECOLOGICAL SCREENING QUOTIENT LOCATION 1: OPN BURN (OB) AREA SCREENING-LEVEL

Notes:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed.

ESQ - Environmental Screening Quotient

OB - Open Burn

TABLE 5-2. ECOLOGICAL SCREENING QUOTIENTS LOCATION 2: OPEN DETONATION (OD) AREA

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Terrestrial Plant	Soil	4.96000E+2
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Omnivorous Mammal	Terrestrial Invertebrate	1.77044E+2
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Omnivorous Mammal	EQDIET	9.04459E+1
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Mammal	Omnivorous Bird	2.56866E+1
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Mammal	Omnivorous Mammal	2.56866E+1
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Mammal	EQDIET	1.38135E+1
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Omnivorous Mammal	Terrestrial Plant	3.84814E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Omnivorous Bird	Terrestrial Invertebrate	2.64170E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Herbivorous Mammal	EQDIET	2.21982E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Herbivorous Mammal	Terrestrial Plant	2.21982E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Mammal	Herbivorous Bird	1.94031E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Mammal	Herbivorous Mammal	1.94031E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Omnivorous Bird	EQDIET	1.49571E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Bird	Omnivorous Bird	1.13113E+0
OD-1	ShrubScrub	WEB_01	OD Area	Aluminum	Carnivorous Bird	Omnivorous Mammal	1.13113E+0
OD-1	ShrubScrub	WEB_01	OD Area	Arsenic	Soil Invertebrate	Soil	2.33200E+1
OD-1	ShrubScrub	WEB_01	OD Area	Arsenic	Terrestrial Plant	Soil	5.83000E+0
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Omnivorous Mammal	Terrestrial Invertebrate	2.34766E+1
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Terrestrial Plant	Soil	1.73800E+1
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Omnivorous Mammal	EQDIET	1.29099E+1
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Carnivorous Mammal	Omnivorous Bird	3.40614E+0
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Carnivorous Mammal	Omnivorous Mammal	3.40614E+0
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Omnivorous Mammal	Terrestrial Plant	2.34323E+0
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Herbivorous Mammal	EQDIET	2.08253E+0
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Herbivorous Mammal	Terrestrial Plant	2.08253E+0
OD-1	ShrubScrub	WEB_01	OD Area	Barium	Carnivorous Mammal	EQDIET	1.83172E+0
OD-1	ShrubScrub	WEB_01	OD Area	Beryllium	Terrestrial Plant	Soil	3.76000E+0

TABLE 5-2. ECOLOGICAL SCREENING QUOTIENTS LOCATION 2: OPEN DETONATION (OD) AREA

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
OD-1	ShrubScrub	WEB_01	OD Area	Cadmium	Terrestrial Plant	Soil	2.98000E+1
OD-1	ShrubScrub	WEB_01	OD Area	Cadmium	Omnivorous Mammal	Terrestrial Invertebrate	3.52915E+0
OD-1	ShrubScrub	WEB_01	OD Area	Cadmium	Omnivorous Mammal	EQDIET	1.85255E+0
OD-1	ShrubScrub	WEB_01	OD Area	Cadmium	Omnivorous Bird	Terrestrial Invertebrate	1.71837E+0
OD-1	ShrubScrub	WEB_01	OD Area	Chromium, hexavalent	Terrestrial Plant	Soil	4.78889E+2
OD-1	ShrubScrub	WEB_01	OD Area	Chromium, hexavalent	Soil Invertebrate	Soil	4.31000E+1
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Terrestrial Plant	Soil	5.79000E+2
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Soil Invertebrate	Soil	1.80938E+1
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Omnivorous Mammal	Terrestrial Plant	1.55230E+0
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Herbivorous Mammal	EQDIET	1.45676E+0
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Herbivorous Mammal	Terrestrial Plant	1.45676E+0
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Omnivorous Mammal	EQDIET	1.43380E+0
OD-1	ShrubScrub	WEB_01	OD Area	Copper	Omnivorous Mammal	Terrestrial Invertebrate	1.31529E+0
OD-1	ShrubScrub	WEB_01	OD Area	Lead	Terrestrial Plant	Soil	1.03478E+1
OD-1	ShrubScrub	WEB_01	OD Area	Lead	Omnivorous Bird	Terrestrial Invertebrate	1.11755E+0
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Omnivorous Bird	Terrestrial Plant	2.10357E+1
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Herbivorous Bird	EQDIET	1.65743E+1
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Herbivorous Bird	Terrestrial Plant	1.65743E+1
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Omnivorous Bird	EQDIET	1.18483E+1
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Omnivorous Mammal	Terrestrial Plant	9.56036E+0
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Herbivorous Mammal	EQDIET	9.24680E+0
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Herbivorous Mammal	Terrestrial Plant	9.24680E+0
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Omnivorous Mammal	EQDIET	4.87063E+0
OD-1	ShrubScrub	WEB_01	OD Area	Trinitrotoluene, 2,4,6-	Omnivorous Bird	Terrestrial Invertebrate	2.66086E+0
OD-1	ShrubScrub	WEB_01	OD Area	Zinc	Terrestrial Plant	Soil	1.23333E+2

Notes:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed

ESQ - Environmental Screening Quotient

OD - Open Detonation

TABLE 5-3. ECOLOGICAL SCREENING QUOTIENTS LOCATION 3: STATIC FIRING (SF) SITE

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Terrestrial Plant	Soil	9.78000E+2
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Omnivorous Mammal	Soil Invertebrate	3.49090E+2
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Omnivorous Mammal	EQDIET	1.78339E+2
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Mammal	Omnivorous Bird	5.06482E+1
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Mammal	Omnivorous Mammal	5.06482E+1
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Mammal	EQDIET	2.72370E+1
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Omnivorous Mammal	Terrestrial Plant	7.58766E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Omnivorous Bird	Soil Invertebrate	5.20883E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Herbivorous Mammal	EQDIET	4.37698E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Herbivorous Mammal	Terrestrial Plant	4.37698E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Mammal	Herbivorous Bird	3.82585E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Mammal	Herbivorous Mammal	3.82585E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Omnivorous Bird	EQDIET	2.94921E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Bird	Omnivorous Bird	2.23033E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Bird	Omnivorous Mammal	2.23033E+0
SF-1	ShrubScrub	WEB_01	SF Area	Aluminum	Carnivorous Bird	EQDIET	1.14915E+0
SF-1	ShrubScrub	WEB_01	SF Area	Arsenic	Soil Invertebrate	Soil	2.38400E+1
SF-1	ShrubScrub	WEB_01	SF Area	Arsenic	Terrestrial Plant	Soil	5.96000E+0
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Omnivorous Mammal	Soil Invertebrate	3.34995E+1
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Terrestrial Plant	Soil	2.48000E+1
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Omnivorous Mammal	EQDIET	1.84215E+1
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Carnivorous Mammal	Omnivorous Bird	4.86031E+0
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Carnivorous Mammal	Omnivorous Mammal	4.86031E+0
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Omnivorous Mammal	Terrestrial Plant	3.34362E+0
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Herbivorous Mammal	EQDIET	2.97162E+0
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Herbivorous Mammal	Terrestrial Plant	2.97162E+0
SF-1	ShrubScrub	WEB_01	SF Area	Barium	Carnivorous Mammal	EQDIET	2.61373E+0
SF-1	ShrubScrub	WEB_01	SF Area	Beryllium	Terrestrial Plant	Soil	2.81000E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Terrestrial Plant	Soil	8.85000E+1
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Omnivorous Mammal	Soil Invertebrate	1.04809E+1

TABLE 5-3. ECOLOGICAL SCREENING QUOTIENTS LOCATION 3: STATIC FIRING (SF) SITE

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Omnivorous Mammal	EQDIET	5.50169E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Omnivorous Bird	Soil Invertebrate	5.10322E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Omnivorous Bird	EQDIET	2.74868E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Carnivorous Bird	Omnivorous Bird	2.38442E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Carnivorous Bird	Omnivorous Mammal	2.37242E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Soil Invertebrate	Soil	1.77000E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Carnivorous Mammal	Omnivorous Bird	1.46133E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Carnivorous Mammal	Omnivorous Mammal	1.45406E+0
SF-1	ShrubScrub	WEB_01	SF Area	Cadmium	Carnivorous Bird	EQDIET	1.20059E+0
SF-1	ShrubScrub	WEB_01	SF Area	Chromium, hexavalent	Terrestrial Plant	Soil	1.05000E+3
SF-1	ShrubScrub	WEB_01	SF Area	Chromium, hexavalent	Soil Invertebrate	Soil	9.45000E+1
SF-1	ShrubScrub	WEB_01	SF Area	Copper	Terrestrial Plant	Soil	2.45000E+2
SF-1	ShrubScrub	WEB_01	SF Area	Copper	Soil Invertebrate	Soil	7.65625E+0
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Omnivorous Bird	Soil Invertebrate	5.20300E+1
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Omnivorous Bird	EQDIET	2.90186E+1
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Carnivorous Bird	Omnivorous Bird	2.46327E+1
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Carnivorous Bird	Omnivorous Mammal	2.46327E+1
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Carnivorous Bird	EQDIET	1.23439E+1
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Omnivorous Bird	Terrestrial Plant	6.00718E+0
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Herbivorous Bird	EQDIET	4.80067E+0
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Herbivorous Bird	Terrestrial Plant	4.80067E+0
SF-1	ShrubScrub	WEB_01	SF Area	Dinitrotoluene, 2,4-	Omnivorous Mammal	Soil Invertebrate	1.07407E+0
SF-1	ShrubScrub	WEB_01	SF Area	HeptaCDD, 1,2,3,4,6,7,8-	Carnivorous Mammal	Omnivorous Bird	4.04467E+0
SF-1	ShrubScrub	WEB_01	SF Area	HeptaCDD, 1,2,3,4,6,7,8-	Omnivorous Mammal	Soil Invertebrate	2.46440E+0
SF-1	ShrubScrub	WEB_01	SF Area	HeptaCDD, 1,2,3,4,6,7,8-	Carnivorous Mammal	Omnivorous Mammal	2.11767E+0
SF-1	ShrubScrub	WEB_01	SF Area	HeptaCDD, 1,2,3,4,6,7,8-	Carnivorous Mammal	EQDIET	1.81933E+0
SF-1	ShrubScrub	WEB_01	SF Area	HeptaCDD, 1,2,3,4,6,7,8-	Omnivorous Mammal	EQDIET	1.29615E+0

TABLE 5-3. ECOLOGICAL SCREENING QUOTIENTS LOCATION 3: STATIC FIRING (SF) SITE

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
SF-1	ShrubScrub	WEB_01	SF Area	HeptaCDD, 1,2,3,4,6,7,8-	Carnivorous Mammal	Herbivorous Bird	1.04399E+0
SF-1	ShrubScrub	WEB_01	SF Area	Lead	Terrestrial Plant	Soil	2.28261E+1
SF-1	ShrubScrub	WEB_01	SF Area	Lead	Omnivorous Bird	Soil Invertebrate	2.46518E+0
SF-1	ShrubScrub	WEB_01	SF Area	Lead	Omnivorous Bird	EQDIET	1.98401E+0
SF-1	ShrubScrub	WEB_01	SF Area	Lead	Omnivorous Bird	Terrestrial Plant	1.50284E+0
SF-1	ShrubScrub	WEB_01	SF Area	Lead	Soil Invertebrate	Soil	1.05000E+0
SF-1	ShrubScrub	WEB_01	SF Area	Nickel	Terrestrial Plant	Soil	2.47600E+0
SF-1	ShrubScrub	WEB_01	SF Area	Selenium	Terrestrial Plant	Soil	7.92000E+0
SF-1	ShrubScrub	WEB_01	SF Area	Zinc	Terrestrial Plant	Soil	2.98889E+2
SF-1	ShrubScrub	WEB_01	SF Area	Zinc	Soil Invertebrate	Soil	1.35176E+0

Notes:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed

ESQ - Environmental Screening Quotient

SF - Static Fire

TABLE 5-4. ECOLOGICAL SCREENING QUOTIENTS LOCATION 4: SOUTH-WEST OB/OD BOUNDARY

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.56885E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.52485E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.48756E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.48756E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.30034E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.30034E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	7.85023E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	7.62742E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	1.86130E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	1.86130E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	9.30649E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	6.78671E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plant	Soil	6.29568E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	6.18824E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	4.05106E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plant	Soil	3.33281E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	3.09417E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plant	Soil	1.44413E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	1.31541E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	1.26959E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	1.26959E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	1.26914E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	1.09386E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	1.09386E+0

TABLE 5-4. ECOLOGICAL SCREENING QUOTIENTS LOCATION 4: SOUTH-WEST OB/OD BOUNDARY

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.60154E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.55662E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.51855E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.51855E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.32743E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.32743E+1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	8.01378E+0
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	7.78632E+0

Notes:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed

ESQ - Environmental Screening Quotient

S/W - South and West

OB - Open Burn

OD - Open Detonation

SF - Static Fire

TABLE 5-5. ECOLOGICAL SCREENING QUOTIENTS LOCATON 5: NORTH-EAST OB/OD BOUNDARY

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	9.06778E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	8.81344E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	8.59793E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	8.59793E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	7.51582E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	7.51582E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	4.53734E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	4.40855E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	2.70652E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	2.70652E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	1.50220E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plant	Soil	1.39351E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.35326E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	8.99836E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	8.96677E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plant	Soil	7.37696E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	4.49925E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plant	Soil	3.19649E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	2.91158E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	2.81016E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	2.81016E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	2.10769E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	2.08409E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.07207E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.01395E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	1.96471E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.96471E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	1.84547E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	1.71743E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.71743E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	1.59059E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	1.59059E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.46563E+0

TABLE 5-5. ECOLOGICAL SCREENING QUOTIENTS LOCATON 5: NORTH-EAST OB/OD BOUNDARY

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.22766E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	1.07510E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.03682E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.00739E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.23893E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.20418E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.17473E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.17473E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.02688E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.02688E+1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	6.19934E+0
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	6.02338E+0

Notes:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed

ESQ - Environmental Screening Quotient

N/E - North and East

OB - Open Burn

OD - Open Detonation

SF - Static Fire

TABLE 5-6. ECOLOGICAL SCREENING QUOTIENTS TOOELE ARMY DEPOT-NORTH BOUNDARY

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.48992E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.44813E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.41272E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.41272E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.23492E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.23492E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	7.45525E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	7.24365E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	1.86130E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	1.86130E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	9.30649E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Invertebrate	6.67941E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plant	Soil	6.19614E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Terrestrial Invertebrate	6.18824E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	3.98701E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plant	Soil	3.28011E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	3.09417E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plant	Soil	1.42129E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	1.29461E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Terrestrial Invertebrate	1.26914E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	1.24952E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	1.24952E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	1.09386E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	1.09386E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.32958E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.29229E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.26069E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.26069E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.10202E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.10202E+1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	6.65295E+0
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	6.46412E+0

TABLE 5-6. ECOLOGICAL SCREENING QUOTIENTS TOOELE ARMY DEPOT-NORTH BOUNDARY (MAXIMUM DEPOSITION)

Note:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed

ESQ - Environmental Screening Quotient

TEAD-N - Tooele Army Depot-North

OB - Open Burn

OD - Open

Detonation

TABLE 5-8. ECOLOGICAL SCREENING QUOTIENTS LOCATION 8: RUSH LAKE

Risk Receptor	Food Web	Food Web ID	Source	COPC	Guild	Diet Type or Exposure Media	ESQ
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	2.58959E+0
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.42822E+0
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.11445E+0
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Planktivorous Fish	1.35960E+0
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Benthic Invertebrate	1.34706E+0
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Benthic Invertebrate	1.27375E+0
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	2.59176E+0
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.42942E+0
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.11538E+0

Notes:

COPC - Contaminant of potential concern

Diet Type or Exposure Media - All food items are eaten exclusively unless noted as EQDIET. EQDIET or equivalent diet represents species eating each component of its diet in equal amounts. For community receptors, affected media is listed

ESQ - Environmental Screening Quotient

OB - Open Burn

OD - Open Detonation

SF - Static Fire

6.0 REFINEMENT ANALYSIS

6.1 REFINEMENT OF SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

At this point, the SLERA has been completed. The ecological risk assessment process includes a series of scientific/management decision points (SMDPs) (USEPA, 1997). The first SMDP occurs at the end of Step 2 (Screening Level Exposure Estimate and Risk Calculation), and requires the risk managers to evaluate and approve or redirect the work up to that point and determine whether the risk assessment will continue into Step 3. Since the SLERA indicates a potential for adverse effects, a more thorough assessment is warranted. Therefore, the risk assessment process is proceeding into Step 3 (Baseline Risk Assessment Problem Formulation) and associated refinement analyses.

Because the OB, OD, and SF areas are considered impacted, as agreed to by the State of Utah Department of Environmental Quality, this refinement analysis only considers the potential risks associated with the Southwest OB/OD Area Boundary, Northeast OB/OD Area Boundary, TEAD-N boundary, and Rush Lake. Grantsville Reservoir is not included because no ESQs greater than 1.0 were estimated for this receptor location. Tables 5-4 through 5-8 present the ESQs for these areas. The highest levels of estimated risk were found at the northeast OB/OD boundary followed by the southwest OB/OD and TEAD-N boundaries. Seven contaminants generated ESQs greater than or equal to 1.0 including:

- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Hexachlorobenzene
- Cadmium
- Lead
- Thallium
- Zinc

The highest ESQs ($2.71E+01$) are found at the northeast OB/OD boundary and associated with hexachlorobenzene. The next highest levels of potential risk ($ESQ = 1.86E+02$) were also associated with exposure to hexachlorobenzene at the TEAD-N boundary and the southwest OB/OD boundary. These potential risks are all associated with carnivorous birds ingesting omnivorous birds and mammals.

6.1.1 General Approach

The baseline ecological risk assessment begins with a more balanced evaluation of the conservativeness inherent in the first two steps of the risk assessment process (USEPA, 1997). The initial phase of Step 3 is typically known as Step 3A, and consists of a refinement of the conservative exposure assumptions in order to more realistically estimate potential risks to plants, invertebrates, and wildlife receptors. Examples of factors typically considered during Step 3A include toxicological evaluation of COPCs, exposure estimation methods, background concentrations, and habitat quality (USEPA, 1997). The objective of the Step 3 refinement is to

better define those chemicals that contribute to potentially unacceptable levels of ecological risk, and to identify and eliminate from further consideration those chemicals that were initially selected as COPCs because of the use of very conservative assumptions.

6.1.2 Assessment and Measurement Endpoints

As previously discussed in the SLERA, the site-specific assessment endpoints are the protection of the following groups of receptors from adverse effects of site-related contaminants on growth, survival, and reproduction:

- soil invertebrates
- terrestrial plants
- benthic invertebrates
- aquatic organisms including fish, plants, and invertebrates
- herbivorous birds
- herbivorous mammals
- omnivorous birds
- omnivorous mammals
- carnivorous birds
- carnivorous mammals

As indicated in USEPA guidance (USEPA, 1997), it is not practical to directly evaluate risks to all of the individual components of the ecosystem. Instead, assessment endpoints focus the risk assessment on particular components of the ecosystem that will tend to yield the highest risks; this should provide protection for endpoints that have lower risks.

Threshold oral toxicity values for reptiles and amphibians are not available for most chemicals. Consequently, amphibians, and reptiles were not selected as assessment endpoints.

Measurement endpoints for terrestrial plants, soil invertebrates, benthic invertebrates, and aquatic organisms in Step 3A of the baseline ecological risk assessment are the same as those in the screening level assessment: chemical concentrations in surface soil, sediment, and surface water that are associated with adverse effects on growth, survival, and reproduction of soil invertebrates and benthic and aquatic organisms. The measurement endpoints are represented by the ecological screening values (ESVs) for surface soil, sediment, and surface water specified by the SLERAP guidance (USEPA, 1999) and included in the EcoRisk View model. In the refinement analysis, additional guidelines were used where applicable. Concentrations of COPCs were compared to alternate (usually less conservative) guidelines in Step 3A. The use of guidelines that are less conservative than the default values in the model/SLERAP Guidance provides balance to the conservative screening-level assessment.

As indicated on Table 5-8, none of the chemicals with ESQs greater than 1.0 in Rush Lake were for the benthic invertebrate or aquatic organism guilds; they were only for birds and mammals. Therefore, impacts to benthic invertebrates and aquatic organisms are not expected so a Step 3A refinement was not conducted for these receptors.

For evaluation of potential risk to soil invertebrates, plants, birds, and mammals, modeled soil concentrations were compared to available USEPA Ecological Soil Screening Levels (Eco-SSLs) (USEPA, 2005a, b, 2007a, b). Eco-SSLs are concentrations of contaminants in soil that are protective of ecological receptors that commonly come into contact with and/or consume biota that live in or on soil. Eco-SSLs are derived separately for four groups of ecological receptors: plants, soil invertebrates, birds, and mammals. As such, these values are presumed to provide adequate protection of terrestrial ecosystems. Eco-SSLs are derived to be protective of the conservative end of the exposure and effects species distribution, and are intended to be applied at the screening stage of an ecological risk assessment.

In addition to the Eco-SSLs, Canadian Soil Quality Guidelines (SQGs) (CCME, 2004) were used when available. SQGs are derived using toxicological data to determine the threshold level on key receptors. Exposure from direct soil contact is the primary derivation procedure for environmental guidelines for agricultural, residential/parkland, commercial and industrial land uses. Another procedure, exposure from contaminated soil and food ingestion, may be considered for certain land uses if there are adequate data. Protection of groundwater for both livestock watering use and transport to nearby surface water bodies with freshwater life are considered using a fate and transport model for certain chemicals. The lowest-value result for all applicable procedures is considered the environmental soil quality guideline.

As previously discussed, the use of alternate screening guidelines provides perspective when evaluating default analyses that are typically based on conservative assumptions. Additionally, many of the ESVs used in the SLERAP guidance and the EcoRisk View model have been replaced by newer screening values.

As in the SLERA, adverse impacts on survival, growth, and reproduction of birds and mammals were evaluated by comparing estimated ingested doses of contaminants in surface water, sediment, and food items to threshold oral toxicity values.

6.1.3 Affected Habitats

As discussed in Section 6.1, potential ecological risks were estimated for all modeled locations except Grantsville Reservoir. The affected habitats are therefore the terrestrial shrub/scrub habitats found at the northeast OB/OD boundary, the southwest OB/OD boundary, and the TEAD-N boundary and the aquatic habitat found at Rush Lake.

6.1.4 Step 3A Risk Characterization and Discussion

Several chemicals that were modeled in surface soil, sediment, and surface water were initially retained as ecological COPCs because their chemical concentrations exceeded ESVs. Additionally, chemicals were retained as COPCs when risk was identified through food chain modeling. The remainder of this section discusses soil COPCs as related to terrestrial invertebrates and plants and COPCs that pose risk to avian and mammalian wildlife via the food chain. It should be noted that all COPCs were included in refinement analyses regardless of whether their selection was based on direct-toxicity or food chain effects. This was done to check the SLERA EcoRisk View model results against more current screening criteria and guidelines.

6.1.4.1 Potential Risk to Plants

COPCs identified in surface soil for terrestrial plants included cadmium, thallium, and zinc (see Tables 5-4, 5-5, and 5-6). No other analytes had ESQs greater than 1.0 for plants, and no analytes had ESQs greater than 1.0 for soil invertebrates. Therefore, adverse impacts to soil invertebrates from analytes in soil are not expected so further evaluation of risks to soil invertebrates is not included in this section. Tables 6-1, 6-2, and 6-3 show the comparisons of soil concentrations predicted by the EcoRisk View model and the Eco-SSLs and Canadian SQGs for the northeast boundary, southwest boundary and TEAD-N boundary respectively for chemicals with ESQs greater than 1. Because these tables will also be used in the Step 3A refinement for mammals and birds, the results for hexachlorobenzene and lead are also presented on the table, but they are not discussed in this section.

The SLERA re-evaluation of cadmium, thallium, and zinc risks to plants are discussed below.

Cadmium

The concentrations of cadmium in soil predicted by the EcoRisk View model are less than the applicable Eco-SSLs (USEPA, 2005a) for plants (32 mg/kg) as well as the Canadian SQG (10 mg/kg) at all terrestrial receptor locations including the maximum modeled concentration of cadmium in soil at the northeast OB/OD boundary (0.64 mg/kg). Emissions from the OD unit are the source of cadmium at all locations. As such, little to no risk is anticipated for terrestrial plant exposure from exposure to modeled cadmium concentrations in soil.

Thallium

No Eco-SSLs are currently available for thallium. The Canadian SQG for thallium is 1.4 mg/kg. Oak Ridge National Laboratories (Efroymson et al, 1997) developed an ESV of 1.0 mg/kg associated with phytotoxicity for thallium in soil. Soil concentrations of thallium predicted by the EcoRisk View model do not exceed the SQG at any terrestrial receptor locations. The predicted concentrations of thallium in soil are: northeast OB/OD boundary 0.14 mg/kg, southwest OB/OD boundary 0.063 mg/kg, and TEAD-N boundary 0.062 mg/kg. Consequently, no potential risk to terrestrial plants is anticipated from exposure to the thallium concentrations in soil predicted by the EcoRisk View model.

Zinc

The concentrations of zinc in soil predicted by the EcoRisk View model are less than the applicable Eco-SSL (USEPA, 2007b) for plants (160 mg/kg) and the Canadian SQG (200 mg/kg) at the northeast OB/OD boundary, southwest OB/OD boundary, and TEAD-N boundary terrestrial receptor locations. Consequently, no potential risk to terrestrial plants is anticipated from exposure to the zinc concentrations in soil predicted by the EcoRisk View model.

Summary and Conclusions: Surface Soil

Chemicals initially selected as COPCs for plants in the screening process were further evaluated to determine the likelihood that concentrations in surface soil predicted by the EcoRisk View model pose potential risk to plants. No chemicals were initially selected as COPCs for soil invertebrates in the screening process. Based on comparisons of modeled soil concentrations with alternate ecological soil screening levels, COPCs demonstrated little to no potential risk to plants at any unit based on the soil concentrations predicted by the model.

6.1.4.2 Potential Risk to Aquatic and Benthic Organisms

Benthic invertebrates and aquatic organisms including fish and aquatic vegetation represent different assessment endpoints, and the measurement endpoints used to evaluate risks to these assessment endpoints are different. As indicated on Table 5-8, none of the chemicals with ESQs greater than 1.0 were for the benthic invertebrate or aquatic organism guilds; they were only for birds and mammals. Therefore, impacts to benthic invertebrates and aquatic organisms are not expected so a Step 3A refinement was not conducted for these receptors.

6.1.4.3 Potential Risk to Wildlife via the Food Chain

Food-chain modeling was conducted as part of the SLERA reevaluation to evaluate potential risks to representative avian and mammalian receptors through diet. The food-chain modeling used exposure assumptions, bioconcentration factors, and toxicity reference values included with the EcoRisk View model except where modified as previously discussed in the SLERA. The following sections discuss the results of the reevaluation by chemical group.

Semivolatile Organic Compounds

As indicated in Tables 5-4, 5-5, and 5-6, concentrations of hexachlorobenzene in soil resulted in ESQs greater than 1.0 for carnivorous and omnivorous birds and mammals. Hexachlorobenzene is a semivolatile organic compound that was retained as a COPC. The highest ESQs were associated with carnivorous birds consuming omnivorous birds and mammals at terrestrial receptor locations. Risks to omnivorous birds and mammals were through consumption of soil, plants, and soil invertebrates (EQDIET).

Hexachlorobenzene is a persistent chemical that adsorbs strongly to soil and sediment. It is relatively stable in the environment and is resistant to hydrolysis, photolysis, and oxidation, with relatively no metabolism by microorganisms. Due to its high affinity for organic carbon, hexachlorobenzene will accumulate in sediments. Soil invertebrates will take up hexachlorobenzene directly from these media although studies have shown it is cleared from their systems. For higher-trophic-level receptors, indirect (food chain) exposure is anticipated to be the most significant pathway because hexachlorobenzene is resistant to metabolism and is very soluble in fat. The major toxic effect that has been observed across all species tested is porphyria (USEPA, 1999).

There is limited information regarding Hexachlorobenzene toxicity to avian and mammalian receptors. The SLERAP guidance and consequently the EcoRisk View model use TRVs based on NOAELs. The avian NOAEL in the guidance is 0.225 mg/kg body weight per day (mg/kg BW-day) based on acute effects to quail given a dose of 22.5 mg/kg BW-day. An uncertainty factor of 0.01 was added due to the fact the study did not have a chronic endpoint. A Lowest Observed Adverse Effect Level (LOAEL) was not referenced but is typically estimated as ten times the NOAEL or 2.25 mg/kg BW-day for avian receptors. The mammalian TRV for Hexachlorobenzene of 1.6 mg/kg BW-day is based on the NOAEL in a study in rats with a chronic endpoint. The NOAEL is the TRV as no uncertainty factors were applied. An estimated LOAEL from this study would be equal to 16 mg/kg BW-day. The use of a LOAEL value as the TRV compared to a NOAEL in risk calculations should therefore decrease the predicted level of potential risk by an order of magnitude. There is uncertainty in the application of this factor to calculate a LOAEL as it is not based on empirical data.

Equations and factors used by the SLERAP guidance were reviewed to understand how bioconcentration of hexachlorobenzene is modeled. Appendix C of the guidance includes media-to-receptor bioconcentration factors (BCFs). A review of the appendix indicated that the BCF used to estimate soil invertebrate exachlorobenzene tissue concentrations was derived using a regression equation based on hexachlorobenzene's octanol-water partition coefficient. The regression equation was developed in a paper titled "Bioaccumulation Potential of Polycyclic Aromatic Hydrocarbons in *Daphnia Pulex*" (Southworth et al., 1978) based on a water only exposure. This resulted in a BCF of 2,296. The same equation was used to develop the sediment-to-benthic invertebrate BCF.

As discussed in the SLERA, BCF values by definition describe the relationship between a concentration found in an organism and a concentration found in water and may not be applicable for soil-to-soil invertebrate transfer. A review of the literature was performed to identify empirically derived values but only limited information was found. A biota sediment accumulation factor (BSAF) value for exachlorobenzene was identified through the BSAF databases maintained by the United States Army Corps of Engineers (USACE, 2003). Although the database was not operating, staff provided printouts of BASF data for hexachlorobenzene. A review of this information showed a range of BSAF for invertebrates from 0.512 in a study that used the polychaete worm *Neanthes virens* (Clam Worm) to 5.0 from a study of the burrowing crab *Chasmagnathus granulata*. For fish, the highest BSAF was 53.7 identified in the Common Carp *Cyprinus carpio*. While these species may not be associated with the habitats studied, they do illustrate the potential overestimation of risk from exposure to hexachlorobenzene due the BCF used by the model for this (and other) compounds. An additional BSAF of 0.9 was identified in The Incidence and Severity of Sediment Contamination in the Waters of the United States (USEPA, 2004). The highest BSAF found in the literature is two orders of magnitude less than the default BCF used in the analysis.

No specific information was identified with empirically derived hexachlorobenzene biota accumulation factors for soil invertebrates. However, the low BSAFs for sediment indicate that the soil BCF of 2,296 is also likely overestimated by at least two orders of magnitude resulting in potential overestimation of tissue concentration and resultant ecological risk from consumption of soil invertebrates.

It appears therefore that the SLERAP guidance and the EcoRisk View model overestimate potential risks from hexachlorobenzene through the food chain due to an overestimation of tissue concentrations in prey items consumed by upper trophic level receptors. The hexachlorobenzene soil concentrations are also much lower than the interim Canadian SQGs. For these reasons, risks mammals and birds from hexachlorobenzene in the soil is not expected.

As indicated in Table 5-8, concentrations of benzo(b)fluoranthene and benzo(k)fluoranthene in Rush Lake resulted in ESQs slightly greater than 1.0 (<1.4) for omnivorous birds consuming benthic invertebrates. Tables 6-4 and 6-5 present the modeled surface water and sediment concentrations for these PAHs. As can be seen from the tables, the surface water (<0.00004 µg/L) and sediment (<0.05 µg/kg) concentrations are extremely low. The fact that these low concentrations are resulting in ESQs greater than 1.0 indicates that the food chain models in the SLERAP are very conservative. The SLERAP guidance provides sediment-to-benthic invertebrate BCFs of 1.61 for both of these PAHs, based on using the BCF of benzo(a)pyrene as a surrogate. These levels are about 5 times greater than the BSAFs (0.29) listed in USEPA (2004).

Also, the TRV for birds of 0.14 µg/kg-day appears to be extremely low. As noted in the Eco SSL document for PAHs (USEPA, 2007a), the literature search for avian toxicity data identified 5,478 papers with possible toxicity data for either avian or mammalian species. Of these papers, 5,432 papers were rejected and of the remaining papers, two contained data for avian test species; one for low molecular weight (LMW) PAHs and one for high molecular weight (HMW) PAHs. However, there were not enough data to derive TRVs for either class of PAHs. The NOAEL for the one study for LMW PAHs was 1,653 mg/kg-day, and the NOAEL for the one study for HMW PAHs was 2 mg/kg-day. This NOAEL is several orders of magnitude greater than the TRV for birds of 0.00014 mg/kg-day which used from the SLERAP guidance.

In summary, PAHs are anticipated to represent negligible risk to avian receptors through the food chain. This is because the EQSs just slightly exceeded 1.0, even though the tissue concentrations are likely overestimated and the TRV appears to be extremely conservative and probably not realistic. This is supported by the fact that the EQSs were greater than 1.0 even though the PAH levels in surface water and sediment were very low. For these reasons, under a more realistic food chain model scenario, the EQSs would be less than 1.0 and adverse risks to birds would not be expected.

Metals

As indicated in Table 5-5, concentrations of thallium in soil resulted in ESQs greater than 1.0 (but <1.5) for omnivorous mammals. No avian or mammalian USEPA Eco-SSLs are available for thallium. However, there is a Canadian SQG (1 mg/kg) based on risks to mammals and birds. The maximum detected thallium concentration in soil (0.14 mg/kg) is less than the Canadian SQG (see Tables 6-1 through 6-3). The SLERAP guidance Appendix C lists a soil-to-soil invertebrate BCF of 0.22 for thallium, which is the arithmetic mean of the recommended BCFs for arsenic, cadmium, chromium, copper, lead, inorganic mercury, nickel, and zinc, which have empirical data available. USEPA (2000) has published a list of important bioaccumulative compounds. Thallium is not included on this list so potential food chain effects are considered minimal so the BCF of

0.22 is likely overestimating tissue concentrations in the food chain model. For these reasons, it is not likely that adverse risks to mammals from thallium are occurring.

Concentrations of lead and zinc in soil predicted by the EcoRisk View model were much lower than their Eco-SSLs indicating little to no potential risk for avian and mammalian receptors through food chain exposures. The maximum concentration of cadmium in soil (0.64 mg/kg) estimated by the EcoRisk View model at the Northeast OB/OD boundary was greater than the mammalian Eco-SSL (0.36 mg/kg) indicating potential risk to mammalian receptors through food chain exposure. However, the 0.36 mg/kg Eco SSL is based on using conservative exposure parameters (i.e., ingestion rates) and using the NOAEL as the TRV.

The TRVs for cadmium used by the SLERAP guidance were reviewed and compared with the NOAEL and LOAEL information used in the derivation of the Eco-SSLs to evaluate any potential changes since the guidance was first published. The mammalian TRV for cadmium used in the SLERAP guidance of 0.0252 mg/kgBW-day is based on a chronic study with mice. The TRV was calculated from a LOAEL of 2.52 mg/kgBW-day and an uncertainty factor of 0.01. The Eco-SSL document for cadmium included 145 studies to develop the mammalian TRV. Although the geometric mean of the NOAEL values for reproduction and growth was calculated at 1.86 mg cadmium/kg bw/day, this value was higher than the lowest bounded LOAEL for reproduction, growth, or mortality results and the TRV was set to 0.770 mg cadmium/kg bw/day. The geometric mean of the LOAEL values from the study is 6.90 mg/kg BW-day. Based on this information, it appears that the SLERAP guidance and the model may overestimate potential risk to mammals from food chain exposure to cadmium by at least an order of magnitude.

For the reasons listed above, and because the maximum soil concentration of cadmium (0.64 mg/kg) is less than twice the Eco SSL, under a more realistic food chain model scenario (i.e., average exposure factors), and using the more updated NOAEL as the TRV, the ESQs would be much less than 1.0 and adverse risks to mammals would not be expected.

6.1.4.4 Summary and Conclusions Risks Through Food Chain

There is uncertainty in the level of potential risk from exposure to hexachlorobenzene through the food chain. The amount of avian and mammalian toxicity data is limited and there is uncertainty regarding how the model predicts tissue concentrations in prey and predator. It appears that potential risks associated with food chain exposure to hexachlorobenzene are overestimated.

Little to no risk is expected for avian and mammalian receptors through food chain exposure to the modeled concentration of PAHs.

There is uncertainty regarding potential risks from exposure to thallium through the food chain. It appears that the SLERAP guidance and the EcoRisk View model used a very conservative BCF and potentially overestimates risk. Thallium is not considered bioaccumulative by USEPA so potential risks through the food chain are most likely minimal. Also, the maximum concentration is less than the Canadian SQG

Based on a comparison of modeled lead and zinc concentrations and the avian and mammalian Eco-SSLs, no risk from exposure to lead or zinc through the food chain is anticipated.

The SLERAP guidance and EcoRisk View model also appears to overestimate potential risks to mammals through food chain exposure to cadmium. The use of a more current USEPA TRV or calculation at the LOAEL level would result in ESQs less than or equal to 1.0.

The food chain models assumed that 100 percent of the receptors' diets came from contaminated areas. The exposure point concentrations of COPCs estimated by the EcoRisk View model were also assumed to be present throughout the home range of the receptors. In reality, these assumptions may only hold true for small ecological receptors with limited mobility. As such, potential risks to upper level trophic receptors such as carnivores that have a large home range may be overestimated.

Terrestrial receptor locations including the northeast and southwest OB/OD boundaries and the TEAD-N boundary are on the periphery of the OB/OD Area that contains the OB, OD, and SF sites. While habitat quality is most certainly better than at the OB/OD areas, they still may be impacted by site operations as well as local development occurring outside of the site boundaries. This may affect the degree to which ecological receptors frequent these locations and the amount of time they may actually be exposed to site contaminants.

TABLE 6-1. COMPARISON OF NORTHEAST OB/OD BOUNDARY MODELED SOIL CONCENTRATIONS TO ECOLOGICAL SOIL SCREENING LEVELS, TEAD-N RISK REEVALUATION AND REFINEMENT

Risk Receptor	Food Web	Food Web ID	Source	COPC	Soil Concentration (mg/kg)	Ecological Soil Screening levels (mg/kg dry weight in soil)			Canadian SQG	
						Plants	Wildlife		Plants/ Invertebrates ¹	Mammals/ Birds
							Avian	Mammal		
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	6.39E-01	32	0.77	0.36	10	3.8
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	2.09E-03	NA	NA	NA	0.05 ²	0.05 ²
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	1.12E-02	120	11	56	300	70
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	1.48E-03	120	11	56	300	70
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	8.88E-03	120	11	56	300	70
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	1.39E-01	NA	NA	NA	1.4	1
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	6.64E+00	160	46	79	200	640

USEPA ECO SSLs = USEPA Ecological Surface Soil Screening Levels

Canadian SQG = Canadian Soil Quality Guidelines

Bold = No Screening Value Available

Shaded and Bold = Concentration exceeds lowest of all Eco SSLs or SQG

NA = Not Available

1 - This Canadian SQG is based on the lower of the plant or invertebrate values

2 - interim criteria (CCME, 1991) used when soil quality guidelines based on the CCME soil protocol (CCME, 1996; 2006) have not yet been developed for a given chemical

TABLE 6-2. COMPARISON OF SOUTHWEST OB/OD BOUNDARY MODELED SOIL CONCENTRATIONS TO ECOLOGICAL SOIL SCREENING LEVELS, TEAD-N RISK REEVALUATION AND REFINEMENT

Risk Receptor	Food Web	Food Web ID	Source	COPC	Soil Concentration (mg/kg)	Ecological Soil Screening levels (mg/kg dry weight in soil)			Canadian SQG	
						Plants	Wildlife		Plants/ Invertebrates ¹	Mammals/ Birds
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	2.89E-01	32	0.77	0.36	10	3.8
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	1.44E-03	NA	NA	NA	0.05 ²	0.05 ²
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	1.07E-02	120	11	56	300	70
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	6.71E-04	120	11	56	300	70
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	1.15E-02	120	11	56	300	70
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	6.30E-02	NA	NA	NA	1.4	1
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	3.00E+00	160	46	79	200	640

USEPA ECO SSLs = USEPA Ecological Surface Soil Screening Levels

Canadian SQG = Canadian Soil Quality Guidelines

Bold = No Screening Value Available

Shaded and Bold = Concentration exceeds lowest of all Eco SSLs or SQG

NA = Not Available

1 - This Canadian SQG is based on the lower of the plant or invertebrate values

2 - interim criteria (CCME, 1991) used when soil quality guidelines based on the CCME soil protocol (CCME, 1996; 2006) have not yet been developed for a given chemical

TABLE 6-3, COMPARISON OF TEAD-N BOUNDARY MODELED SOIL CONCENTRATIONS TO ECOLOGICAL SOIL SCREENING VALUES, TEAD-N RISK REEVALUATION AND REFINEMENT

Risk Receptor	Food Web	Food Web ID	Source	COPC	Soil Concentration (mg/kg)	Ecological Soil Screening level (mg/kg dry weight in soil)			Canadian SQG	
						Plants	Wildlife		Plants/ Invertebrates ¹	Mammals/ Birds
							Avian	Mammal		
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	2.84E-01	32	0.77	0.36	10	3.8
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	1.44E-03	NA	NA	NA	0.05 ²	0.05 ²
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	1.07E-02	120	11	56	300	70
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	6.61E-04	120	11	56	300	70
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	9.53E-03	120	11	56	300	70
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	6.20E-02	NA	NA	NA	1.4	1
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	2.95E+00	160	46	79	200	640

USEPA ECO SSLs = USEPA Ecological Surface Soil Screening Levels

Canadian SQG = Canadian Soil Quality Guidelines

Bold = No Screening Value Available

Shaded and Bold = Concentration exceeds lowest of all Eco SSLs or SQG

NA = Not Available

1 - This Canadian SQG is based on the lower of the plant or invertebrate values

2 - interim criteria (CCME, 1991) used when soil quality guidelines based on the CCME soil protocol (CCME, 1996; 2006) have not yet been developed for a given chemical

**TABLE 6-4. RUSH LAKE MODELED SURFACE WATER CONCENTRATIONS,
TEAD-N RISK REEVALUATION AND REFINEMENT**

Risk Receptor	Food Web	Food Web ID	Source	COPC	Surface Water Concentration (µg/L)
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	2.98E-05
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	3.16E-05
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	2.69E-01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Lead	2.22E-02
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	2.69E-01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	8.25E-03

**TABLE 6-5. RUSH LAKE MODELED SEDIMENT CONCENTRATIONS,
TEAD-N RISK REEVALUATION AND REFINEMENT**

Risk Receptor	Food Web	Food Web ID	Source	COPC	Sediment Concentration (µg/kg)
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	0.04
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	0.04
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	10.60
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Lead	1.35
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	10.15
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	0.03

7.0 UNCERTAINTY ANALYSIS

The following sources of uncertainty are associated with the exposure assessment (Section 3).

1. Input Values in Air Dispersion Modeling (Locations 4-8 only). The concentrations of COPCs in environmental media at Locations 4 through 8 were estimated by air dispersion modeling rather than direct measurement. The modeling requires input of quantitative assumptions regarding the generation of COPCs in emissions from OB, OD, and SF activities; wind direction; precipitation; movement of COPCs in media, and other factors related to generation and movement of COPCs. The input parameters were purposefully set conservatively to overestimate rather than underestimate risk. Reducing this source of uncertainty would require collecting media samples from Locations 4 through 8 for laboratory analysis. COPC concentrations in surface soils at Locations 1, 2, and 3 (the OB, OD, and SF sites themselves) were measured by such direct sampling and hence not subject to this source of uncertainty.
2. Uncertainty in Media Sampling (Locations 1-3 only): It is assumed that the COPC concentrations found in the surface soil samples collected at Locations 1, 2, and 3 (the OB, OD, and SF Sites) are representative of concentrations in surface soils over those sites. The samples were collected from soil directly underlying the three activities and hence can be expected to conservatively overestimate risk for the sites overall.
3. Home Range (All Locations): The calculations for mammal and bird exposure assume that those receptors obtain 100 percent of their diet from areas subject to maximum levels of site-related contamination. Locations 1 through 6 constitute areas of maximum deposition rather than landscape-wide averages. The 100-percent site exposure assumption is generally valid for small receptors such as mice and shrews whose home ranges, as represented by the deer mouse and short-tail shrew, are generally less than an acre (USEPA, 1993). However, larger and more mobile receptors typically have home ranges of several hundred acres and thus obtain only a fraction of their total diets from contaminated sites. For example, the home range data reported for the red fox is between 140 and 8,500 acres and the home range data reported for the mallard is between 90 and 1,500 acres (USEPA, 1993). Not accounting for home range can substantially overestimate risk for such receptors.
4. Uncertainty Associated with Soil Sample Non-Detects (Locations 1-3 only): EcoRiskView calculated ESQ values only for those COPCs detected in the soil samples collected on April 25, 2006. There is a slight possibility that the analytical methods could have failed to detect concentrations of one or more COPCs high enough to pose ecological risk. This risk could be addressed by calculating ESQ values based on exposure to the method detection limits for the non-detected COPCs. However, considering the ability of modern analytical methods to detect COPC concentrations capable of posing significant risk to ecological receptors, calculating ESQ values based on method detection limits was determined to be unnecessary.

5. Uncertainty Associated with Background Concentrations: The absence of a site-wide background data set results in uncertainty regarding whether some of the modeled contaminant concentrations are greater than or less than regional conditions.
6. Uncertainty in Emission factors: An initial refinement analysis was previously performed based on the 95% UCL emission factors. However, these results were considered non-applicable because of statistical limitations as discussed in Attachment 17a. Therefore, to show the range of potential risks, a brief evaluation of the ESQs calculated using the 95% UCL emission factors as compared to the ESQs calculated using mean emission factors is included as Appendix B.

The following sources of uncertainty are associated with the ecological effects (toxicity) assessment (Section 4).

1. Use of TRV (All Locations): The TRV values used in calculating the ESQs (both those programmed by default into EcoRiskView and those entered into EcoRiskView from alternate sources) are based on published literature reports of test organisms exposed to measured concentrations of COPCs in controlled laboratory settings. They may not necessarily reflect the actual responses of onsite organisms under site environmental conditions. Different species under different conditions may be either more or less sensitive to exposure to a given quantity of a chemical. Uncertainty underlying TRV values can either overstate or understate risk. Reducing this source of uncertainty would require conducting toxicity tests where organisms collected from the site are grown in media collected from the site spiked with measured concentrations of each COPC (a process termed toxicity testing).
2. Bioavailability (All Locations): The calculations assume that 100 percent of the chemicals available in the surface soils are bioavailable, i.e., in a form capable of eliciting a toxic response from ecological receptors. In fact, most COPCs are charged or electrically polarized and can become bound to charged surfaces that naturally occur on soil particles. COPC molecules are not capable of eliciting a toxic response from receptors when bound to the soil. Assuming 100 percent bioavailability can substantially overstate risk. Reducing this source of uncertainty would require conducting toxicity tests (described above), preferably under site conditions (*in situ* toxicity tests). There is no information regarding surface water hardness that affects toxicity of several metal COPCs. Concentrations of dissolved metals were not estimated in surface water. Instead, the surface water data are concentrations of total metals. This creates some uncertainty in the evaluation of potential risks to aquatic life since concentrations of dissolved metals more closely approximate the bioavailable fraction of metals in the water column than concentrations of total metals (USEPA, 1996).
3. Assessment Endpoints: Data for investigating toxicity to reptiles and amphibians from oral ingestion of contaminants are sparse. Thus, potential risks via the food chain were not evaluated for reptiles and amphibians.

Another important source of uncertainty is the fact that the SLERAP process does not account for possible cumulative, synergistic, or antagonistic effects from the presence of multiple COPCs in the same medium. Human health risk assessments sometimes try to account for the cumulative response of a single receptor to multiple COPCs by summing HQ values for groups of COPCs known to affect humans using similar physiological mechanisms. If the summed HQ value, termed a hazard index (HI), exceeds 1.0, the assessment may conclude that potential risk exists from exposure to that group of COPCs. However, the physiology of how ecological receptors respond to most COPCs is generally less well understood than for human receptors. Hence, HI values are not commonly used in ecological risk assessments. The inability to quantify cumulative or synergistic effects could underestimate risk, and the inability to quantify antagonistic effects could overestimate risk.

Two additional but minor sources of uncertainty are also present in the SLERAP calculations. The first is that the SLERAP, and the EcoRiskView model developed based on the SLERAP, can not calculate ESQ values for COPCs lacking TRV values or for COPC exposure pathways lacking the requisite BCF and/or BSAF values needed to complete the exposure calculations. As explained in Sections 2.2 and 2.3, EcoRiskView calculations were performed using alternate TRV and exposure factor values for certain compounds generated by site operations but lacking corresponding values in the SLERAP. Most relevant COPCs known to be generated by site operations are therefore covered by TRV and exposure factor values in the SLERAP or alternate values in Sections 2.2 and 2.3. The second minor source of uncertainty is that the ESQ calculations for Locations 1 through 3, where exposure was quantified based on soil samples rather than dispersion modeling, address detected COPCs only. There is a slight possibility that the detection limits for one or a few COPCs might exceed the minimum exposure level indicative of potential risk.

Overall, the uncertainties could have either underestimated or overestimated risk. The SLERAP process is designed to be conservative so as to not eliminate COPCs from further consideration unless there is overwhelming evidence that the potential for risk is low. The high level of conservatism underlying the exposure calculations, TRV values, and bioavailability and home range assumptions ensures that the overall effect of uncertainty is more likely to overestimate rather than underestimate risk.

8.0 SITE-SPECIFIC CONCLUSIONS, RISK MANAGEMENT, AND RECOMMENDATIONS

8.1 RESULTS OF THE SCREENING LEVEL RISK ASSESSMENT

General Conclusions: Table 8-1 summarizes those initial COPCs that could potentially pose risk to one or more ecological receptors at each location. Any COPC for which an ESQ greater than or equal to 1.0 for any combination of receptor (feeding guild), source area, and diet in the SLERA modeling (EcoRiskView) was identified as posing potential ecological risk. Inclusion of a COPC in Table 8-1 does not necessarily indicate that it poses ecological risk but merely indicates that the SLERA calculations indicate that it poses potential risk which could have lead to an overestimation or underestimation of risk, as quantified using the ESQ values.

Locations 1 through 3: The greatest number of COPCs with ESQ values greater than or equal to 1.0 were found for the broadest diversity of ecological receptors, as well as the highest ESQ values, was identified for Locations 1 through 3, the OB, OD, and SF Sites themselves. ESQ values higher than 1,000 were calculated for terrestrial plants exposed to contamination in the surface soils in which they grew. Despite the conservatism in the exposure assessment and ecological effects assessment, the very high ESQ values calculated by the SLERA clearly suggest that terrestrial plants growing in soils in the OB, OD, and SF Sites themselves are experiencing substantial stress from chemical contamination originating from site activities. The plants are also subject to injury and soil compaction from operations of vehicles and equipment at the sites; from heat, exhaust clouds, and falling debris from OB/OD and SF operations; and from staff walking around the sites. However, the area of the sites is small, and the vegetation at the sites has a long history of disturbance. The ecological impacts resulting from inhibited growth of vegetation at the sites themselves are trivial in the context of the overall regional landscape. Herbivores that feed on vegetation in the vicinity of the sites would be expected to find adequate vegetation in adjoining areas and not be dependent of vegetation on the sites as a food source.

ESQ values as high as 61 were also calculated for soil invertebrates such earthworms and insect larvae inhabiting surface soils at Locations 1, 2, and 3. Considering the conservatism in the exposure assessment and ecological effects assessment, it is unclear if the soil invertebrate community at the locations is actually experiencing substantial stress due to soil contamination. Further evaluation would be necessary to determine conclusively whether stress is substantial. However, for similar reasons outlined for terrestrial plants, the potential regional ecological impact from even severe localized stress to soil invertebrates within the OB, OD, and SF Sites themselves is expected to be trivial. Hence, no further evaluation is recommended.

However, ESQs greater than 1.0 were also found for most other categories of receptors evaluated. The results suggest that birds and mammals of various feeding guilds (i.e., herbivores, carnivores, and omnivores) that forage at the three locations could potentially be adversely affected by exposure to one or more site-related COPCs through their diet. Although the highest ESQ values were found for herbivorous and omnivorous mammals, which tend have small home ranges; the likelihood of occurrence directly on the OB, OD, and SF sites is low considering the sparse and degraded vegetation, irregular but frequent noise, and human activity. Further investigation is therefore not recommended.

Locations 4 through 6: COPCs for which at least one ESQ was found to be greater than or equal to 1.0 are limited to hexachlorobenzene and the metals lead, cadmium, thallium, and zinc. Hexachlorobenzene is an industrial chemical and fungicide but is also used as an additive in explosives (USEPA, 2006). Hence, its presence could be a result of site operations. Metals are also produced by OB, OD, and SF operations. The highest ESQ values were between 10 and 100 rather than greater than 100 as for Locations 1, 2, and 3. Clearly, the risk is lower in areas surrounding the OB, OD, and SF sites than within the sites. However, the surrounding areas support vegetation that is less degraded than that on the site itself. They therefore support terrestrial food chains that are generally typical of undeveloped areas in the region.

Locations 4 -6 occur on the periphery of the OB/OD Area that contains the OB, OD, and SF sites and hence, while not generally denuded of vegetation, are heavily influenced by the noise and bustle of site activities. Adverse effects on individual ecological receptors at these locations are therefore unlikely to have substantial adverse effects on regional populations and communities of ecological receptors. Hence, no further evaluation is recommended.

Grantsville Reservoir (Location 7): No ESQ values greater than or equal to 1.0 were found for any category of receptor considered at Grantsville Reservoir. The SLERA therefore suggests that COPCs originating from site activities are not likely adversely affecting ecological receptors at Grantsville Reservoir. No further investigation is recommended.

Rush Lake (Location 8): ESQ values greater than or equal to 1.0 were found only for lead and thallium (metals) and benzo(b)fluoranthene and benzo(k)fluoranthene (SVOCs). No ESQ was found that exceeded 2.6. Because of the high conservatism of the SLERAP calculations, especially the exposure calculations, and low and few ESQ values, it is concluded that the probability of adverse risk to ecological receptors at Rush Lake is too low to warrant further investigation.

8.2 RESULTS OF THE STEP 3A REFINEMENT

Because the OB, OD, and SF areas are considered impacted, as agreed to by the State of Utah Department of Environmental Quality, the risk reevaluation only considered the risks associated with the terrestrial locations 4 through 6 (Southwest OB/OD Area Boundary, Northeast OB/OD Area Boundary) and the aquatic location 8 (Rush Lake). Location 7 (Grantsville Reservoir) was not included because no ESQs greater than 1.0 were estimated for this receptor location. The results of the analysis identified 7 COPCs comprised of semi-volatile organic compounds and metals. The results of the risk evaluation were subjected to a refinement analysis where conservative assumptions were examined in order to more realistically estimate potential risks to plants, invertebrates, and wildlife receptors. Overall, while potential risks may be present, adverse effects on individual ecological receptors at the modeled locations are unlikely to have substantial adverse effects on regional populations and communities of ecological receptors.

The following sections summarize the results of the refinement analyses.

8.2.1 Risks to Soil Invertebrates and Plants

Chemicals initially selected as COPCs in the screening process were further evaluated to determine the likelihood that concentrations in surface soil predicted by the EcoRisk View model pose potential risk to plants; no chemicals were initially selected as COPCs for soil invertebrates. Based on comparisons of modeled soil concentrations with alternate ecological soil screening levels, COPCs demonstrated little to no potential risk based on the soil concentrations predicted by the model at any unit.

8.2.2 Risks to Benthic Invertebrates and Aquatic Organisms

As indicated on Table 5-8, none of the chemicals with ESQs greater than 1.0 were for the benthic invertebrate or aquatic organism guilds; they were only for birds and mammals. Therefore, impacts to benthic invertebrates and aquatic organisms are not expected so a Step 3A refinement was not conducted for these receptors.

8.2.3 Risks to Mammals and Birds

There is uncertainty in the level of potential risk from exposure to hexachlorobenzene through the food chain although it appears that potential risks are overestimated. Little to no risk is expected for avian and mammalian receptors through food chain exposure to the modeled concentration of PAHs. There is uncertainty regarding potential risks from exposure to thallium through the food chain however USEPA does not consider thallium to be bioaccumulative so potential risks are most likely minimal. No risk from exposure to lead or zinc through the food chain is anticipated. There is a potential for risk to mammalian receptors exposed to cadmium through the food chain. The use of an alternate TRV or calculation at the LOAEL level would still result in ESQs less than or equal to 1.0.

8.3 SUMMARY

Initially, a SLERA was based on modeling conducted using EcoRiskView. Many COPCs were retained as COPCs for most site locations. The Step 3A refinement evaluated the conservative exposure assumptions and compared modeled soil concentrations to screening criteria including USEPA Eco SSLs, and Canadian SQGs. After the refinement, some uncertainties remain regarding thallium and a potential risk to mammals from cadmium; however, these risks are expected to be minor. Therefore, modeled concentrations of chemicals are expected to present a negligible risk to ecological receptors.

Table 8-1. Pre-Refinement COPCs Posing Potential Ecological Risk

COPC	Sites of OB/OD Operations (Loc. 1-3)	Sites of OB/OD Area Boundary (Loc. 4 and 5)	TEAD-N Boundary (Loc. 6)	Grantsville Reservoir (Loc. 7)	Rush Lake (Loc. 8)
Aluminum	•				
Arsenic	•				
Barium	•				
Benzo(b)fluoranthene					•
Benzo(k)fluoranthene					•
Beryllium	•				
Cadmium	•	•	•		
Chromium (hexavalent)	•				
Copper	•				
2,4-Dinitrotoluene	•				
1,2,3,4,6,7,8-HeptaCDD	•				
Hexachlorobenzene		•	•		
Lead	•	•	•		•
Nickel	•				
Selenium	•				
Silver	•				
Thallium		•	•		•
2,4,6-Trinitrotoluene	•				
Zinc	•	•	•		

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APPENDIX A

ECORISKVIEW OUTPUT FILES

This Appendix appears on CD only.

APPENDIX B

**EVALUATION OF RISKS USING EMISSION FACTORS BASED ON THE 95% UPPER
CONFIDENCE LIMIT**

SLERA RISK REEVALUATION

1.0 INTRODUCTION

As discussed in Attachment 17, the database for the emission factors was inadequate to calculate 95 percent upper confidence intervals (UCLs), consequently the evaluation of ecological risks presented in Attachment 17c was based on average emission factors. This appendix presents a summary of the ecological risks using emission factors based on 95% UCLs. Because the Open Burning (OB) and Open Detonation (OD), and static firing (SF) areas are considered impacted, this re-evaluation analysis only considers the potential risks associated with Grantsville Reservoir, the Southwest OB/OD Area Boundary, Northeast OB/OD Area Boundary, Tooele Army Depot-North Area (TEAD-N) boundary, and Rush Lake. The emission factors based on 95% UCLs were used as input to the EcoRisk View model to obtain quantitative risk and hazard characterization estimates commensurate with the screening level ecological risk assessment (SLERA) and TEAD-N protocol.

The results of the reanalysis are presented in Table 1-1. The data in this table are sorted by risk receptor (i.e., Southwest OB/OD Area Boundary, Northeast OB/OD Area Boundary, TEAD-N boundary, and Rush Lake). Table 1-1 contains all locations where estimated ecological screening quotients (ESQs) were greater than or equal to 1.0. No data for Grantsville Reservoir is included in Table 1-1 because no ESQs greater than 1.0 were estimated for this receptor location. The highest levels of estimated risk were found at the northeast OB/OD Unit boundary followed by the southeast OB/OD Unit and TEAD-N boundaries.

The data included in Table 1-1 was sorted to identify the COPCs associated with elevated levels of potential risk (Table 1-2). Ten contaminants generated ESQs greater than or equal to 1.0 including:

- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Dibenz(a,h)anthracene
- Hexachlorobenzene
- Ideno(1,2,3-cd)pyrene

- 2,3,7,8-Tetra CDD
- Cadmium
- Lead
- Thallium
- Zinc

Table 1-3 illustrates the estimated potential ecological risk in descending order of ESQs. As illustrated in Table 1-3, the highest ESQs (505) are found at the northeast OB/OD Unit boundary and associated with hexachlorobenzene. The next highest levels of potential risk (ESQ = 347) were also associated with exposure to hexachlorobenzene at the TEAD-N boundary and the southwest OB/OD Unit boundary. These potential risks are all associated with carnivorous birds ingesting omnivorous birds and mammals.

The risk results were also grouped by source (Table 1-4). Lead is the only contaminant with ESQs greater than or equal to 1.0 for the OB and SF units. All other contaminants with ESQs greater than 1.0, both organic and inorganic, are associated with OD operations.

2.0 ECOLOGICAL RISK REEVALUATION

This section presents a brief comparison of the results from the screening portion of the ERA based on the mean emission factors (presented in the ERA) compared to the screening results based on the 95% UCL emission factors (presented above in Section 1.0). The following table presents the COPCs with ESQs greater than 1.0 using the mean emission factors and the 95% UCL emission factors.

COPCs with ESQs>1 in the ERA using Mean Emission Factors		COPCs with ESQs>1 in the ERA using 95% UCL Emission Factors	
<i>Southwest OB/OD Area Boundary</i>			
Hexachlorobenzene	Cadmium	Benzo(b)fluoranthene	Cadmium
	Lead	Benzo(k)fluoranthene	Lead
	Thallium	Hexachlorobenzene	Thallium
	Zinc	Indeno(1,2,3-cd) pyrene	Zinc
		2,3,7,8-TetraCDD	

COPCs with ESQs>1 in the ERA using Mean Emission Factors		COPCs with ESQs>1 in the ERA using 95% UCL Emission Factors	
<i>Northeast OB/OD Area Boundary</i>			
Hexachlorobenzene	Cadmium	Benzo(b)fluoranthene	Cadmium
	Lead	Benzo(k)fluoranthene	Lead
	Thallium	Hexachlorobenzene	Thallium
	Zinc	Indeno(1,2,3-cd) pyrene	Zinc
		2,3,7,8-TetraCDD	
<i>TEAD-N Boundary</i>			
Hexachlorobenzene	Cadmium	Benzo(b)fluoranthene	Cadmium
	Lead	Benzo(k)fluoranthene	Lead
	Thallium	Hexachlorobenzene	Thallium
	Zinc	Indeno(1,2,3-cd) pyrene	Zinc
		2,3,7,8-TetraCDD	
<i>Rush Lake</i>			
Benzo(b)fluoranthene	Lead	Benzo(b)fluoranthene	2,3,7,8-TetraCDD
Benzo(k)fluoranthene	Thallium	Benzo(k)fluoranthene	Cadmium
		Dibenz(a,h)anthracene	Lead
		Hexachlorobenzene	Thallium
		Indeno(1,2,3-cd) pyrene	

As is presented in the above table, a few additional parameters had ESQs greater than 1.0 when the 95% UCL emission factors were used to calculate risks. These additional parameters included benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and 2,3,7,8-TetraCDD in the Southwest OB/OD Area Boundary, the Northeast OB/OD Area Boundary, and the TEAD-N Boundary. In Rush Lake, the additional parameters included dibenz(a,h)anthracene, hexachlorobenzene, indeno(1,2,3-cd) pyrene, 2,3,7,8-TetraCDD, and cadmium. The additional parameters are all associated with OD operations.

The following table presents the maximum ESQs for each risk receptor by source for risks calculated using mean and 95% UCL emission factors.

Risk Receptor	Source	Maximum ESQs using Mean Emission Factors		Maximum ESQs using 95% UCL Emission Factors	
		COPC	ESQ	COPC	ESQ
Southwest OB/OD Area Boundary	OB	Lead	16	Lead	22
	OD	Hexachlorobenzene	19	Hexachlorobenzene	347
	SF	Lead	16	Lead	22

Risk Receptor	Source	Maximum ESQs using Mean Emission Factors		Maximum ESQs using 95% UCL Emission Factors	
		COPC	ESQ	COPC	ESQ
Northeast OB/OD Area Boundary	OB	Lead	9.1	Lead	13
	OD	Hexachlorobenzene	27	Hexachlorobenzene	505
	SF	Lead	12	Lead	17
TEAD-N Boundary	OB	Lead	15	Lead	21
	OD	Hexachlorobenzene	19	Hexachlorobenzene	347
	SF	Lead	13	Lead	18
Rush Lake	OB	Lead	2.6	Lead	3.5
	OD	Thallium	1.4	Benzo(k)fluoranthene	218
	SF	Lead	2.6	Lead	3.5

As can be seen from the table, the maximum ESQs based on the 95% UCL emission factors were only slightly greater than the maximum ESQs based on the mean emission factors for the OB and the SF sources. However, the maximum ESQs based on the 95% UCL emission factors were much greater than the maximum ESQs based on the mean emission factors for the OD source: about 18 times greater for the Southwest OB/OD Area Boundary, the Northeast OB/OD Area Boundary, and the TEAD-N Boundary and about 120 times greater for Rush Lake.

3.0 SUMMARY OF ECOLOGICAL RISK REEVALUATION

As presented above, several additional chemicals have ESQs greater than 1.0, and the ESQs are also greater using the 95% UCL emission factors to calculate risks, compared to using the mean emission factors to calculate risks. This is not surprising given that the 95% UCL emission factors are greater than the mean emission factors. The largest difference in both the number of additional chemicals with ESQs greater than 1.0 and the magnitude of the difference in ESQs were associated with OD operations. No additional chemicals had ESQs greater than 1.0 for the OB and SF units, and the ESQs for these units were only slighter greater when the 95% UCL emission factors were used to calculate risks for these sources.

Although a Step 3A refinement was not conducted for the risks calculated using the 95% UCL emission factors, it is likely that many of the same rationales used to eliminate chemicals as COPCs in the ERA would eliminate many of the additional parameters with ESQs greater than 1.0. That

is because as discussed in the Step 3A refinement, the ERAs are is very conservative when risk assessments are conducted in accordance with the SLERAP guidance.

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
PAGE 1 OF 7

<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.28E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.24E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	6.38E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	6.20E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	2.79E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	2.60E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	2.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.68E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	9.50E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	8.40E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	7.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	5.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	4.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	4.20E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	3.73E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	3.70E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	3.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	3.44E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	2.74E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	2.29E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	2.02E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	1.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.86E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	1.85E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	1.84E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	1.78E+01

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.48E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	1.33E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	1.32E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	8.36E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	7.41E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	6.80E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	5.45E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	5.39E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	5.24E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	4.04E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	3.97E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	3.50E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	2.70E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	2.62E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	2.55E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	2.20E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	2.18E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.79E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.53E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.30E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Soil Invertebrate	Soil	1.26E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Bird	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Mammal	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Bird	Soil Invertebrate	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Soil Invertebrate	1.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	8.59E+00

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.35E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.93E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Benthic Invertebrate	2.18E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	1.11E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Benthic Invertebrate	4.92E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	EQDIET	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	Piscivorous Fish	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	2.49E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Piscivorous Fish	2.45E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.08E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.07E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	EQDIET	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	Piscivorous Fish	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Benthic Invertebrate	Sediment	5.63E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Benthic Invertebrate	5.60E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Benthic Invertebrate	5.57E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	4.93E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	Benthic Invertebrate	4.38E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	EQDIET	4.33E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Aquatic Vegetation	3.73E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Aquatic Vegetation	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	EQDIET	2.85E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Benthic Invertebrate	Sediment	2.83E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	2.79E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Benthic Invertebrate	2.71E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	EQDIET	2.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	Piscivorous Fish	2.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	EQDIET	2.20E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Mammal	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Bird	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.36E+00

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Piscivorous Fish	1.31E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Omnivorous Bird	Benthic Invertebrate	1.29E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.19E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Benthic Invertebrate	1.06E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.46E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.91E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.49E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.14E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.07E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.26E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.18E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.29E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.71E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.66E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.24E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.26E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	9.13E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.36E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	6.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.96E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.78E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.35E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.07E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.46E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.43E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.37E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.82E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.80E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.22E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.18E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.15E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.22E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.16E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.08E+01

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.10E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.05E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.24E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.16E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.23E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.52E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.68E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.64E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.22E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	8.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.19E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	7.92E+00

TABLE 1-1
POTENTIAL RISK BY RECEPTOR LOCATION SORTED BY RISK RECEPTOR
TEAD-N ECOLOGICAL RISK ASSESSMENT REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	5.93E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.86E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.72E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.30E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.02E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.43E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.40E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.33E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.80E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.77E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.20E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.16E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.10E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.09E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.09E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.84E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.79E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	9.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.96E+00

Abbreviations:

COPC - Chemical of Potential Concern

ESQ -Ecological Screening Quotient

N/E - Northeast

S/W - Southwest

TEAD-N - Tooele Army Depot North

EQDIET - Assumes species eating each component of its diet in equal amounts

OB - Open burning

OD - Open detonation

SF - Static firing

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Benthic Invertebrate	5.60E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	EQDIET	2.85E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	2.20E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Soil Invertebrate	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Benthic Invertebrate	2.18E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	1.11E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	EQDIET	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	Piscivorous Fish	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Aquatic Vegetation	3.73E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Aquatic Vegetation	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Benthic Invertebrate	Sediment	2.83E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	7.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	4.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	4.20E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	3.73E+01

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.53E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Piscivorous Fish	1.31E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Benthic Invertebrate	1.06E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.23E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.52E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	8.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.19E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	5.93E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.86E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.02E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	9.50E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	5.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	2.02E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	1.84E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	1.33E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	1.32E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	6.80E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Bird	Soil Invertebrate	1.17E+00

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.29E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	9.13E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	6.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.96E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.07E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Mammal	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Bird	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Omnivorous Bird	Benthic Invertebrate	1.29E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Benthic Invertebrate	5.57E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	2.79E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Benthic Invertebrate	2.71E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.36E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.19E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	2.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.68E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	8.40E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	3.44E+01

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.48E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Benthic Invertebrate	4.92E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	2.49E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	EQDIET	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	Piscivorous Fish	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Benthic Invertebrate	Sediment	5.63E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.68E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.64E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.30E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.10E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	3.70E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	3.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	1.97E+01

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
PAGE 5 OF 9

<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.86E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	7.41E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	3.50E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.79E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.71E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.66E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.26E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.35E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.11E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.93E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.51E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.10E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.05E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.02E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.28E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.24E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	6.38E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	6.20E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.14E+01

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
PAGE 6 OF 9

<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.07E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.40E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.33E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.20E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.16E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	5.39E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	5.24E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	2.70E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	2.62E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.43E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.37E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.22E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.18E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.46E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.91E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.49E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.84E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.79E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.75E+01

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	9.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.96E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	8.59E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.35E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.22E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.16E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.08E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.08E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.07E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	Benthic Invertebrate	4.38E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	EQDIET	4.33E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	EQDIET	2.20E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.30E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Piscivorous Fish	2.45E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	4.93E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	EQDIET	2.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	Piscivorous Fish	2.41E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.16E+02

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.22E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.80E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.77E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	2.60E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	2.74E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	2.29E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	1.85E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	4.04E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	3.97E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	2.18E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.18E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.24E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.36E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.82E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.80E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.24E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.72E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.43E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.09E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.09E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	2.79E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	8.36E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	5.45E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	2.55E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	2.46E+00

TABLE 1-2
POTENTIAL RISK BY CONTAMINANT SORTED BY COPC
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
PAGE 9 OF 9

<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Soil Invertebrate	Soil	1.26E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Bird	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Mammal	1.17E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.26E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.78E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.46E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.15E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.11E+00

Abbreviations:

COPC - Chemical of Potential Concern

ESQ -Ecological Screening Quotient

N/E - Northeast

S/W - Southwest

TEAD-N - Tooele Army Depot North

EQDIET - Assumes species eating each component of its diet in equal amounts

OB - Open burning

OD - Open detonation

SF - Static firing

TABLE 1-3
ESTIMATED ECOLOGICAL RISK SORTED BY ESQ
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
Page 1 of 7

<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	5.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	2.79E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	2.60E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	2.53E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Benthic Invertebrate	2.18E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.68E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.53E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.26E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.24E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.18E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.16E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	1.11E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	105.00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	9.50E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	8.40E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	7.72E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	5.67E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Benthic Invertebrate	4.92E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	4.67E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.29E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.23E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	4.20E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	EQDIET	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	Piscivorous Fish	3.75E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	3.73E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	3.70E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	3.63E+01

TABLE 1-3
ESTIMATED ECOLOGICAL RISK SORTED BY ESQ
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	3.44E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.97E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	2.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.56E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.52E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	2.49E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Piscivorous Fish	2.45E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	2.39E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	2.29E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.22E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.16E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.14E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.10E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.09E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.04E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	2.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.99E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	1.97E+01

TABLE 1-3
ESTIMATED ECOLOGICAL RISK SORTED BY ESQ
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.86E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	1.85E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.84E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.83E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.79E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	1.78E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.74E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.72E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.71E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.68E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.67E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.66E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.64E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.63E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.54E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.53E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.48E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	1.33E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	1.32E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.28E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.24E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.24E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.22E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.21E+01

TABLE 1-3
ESTIMATED ECOLOGICAL RISK SORTED BY ESQ
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.21E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	1.11E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.10E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.08E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.08E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.07E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.07E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.06E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.05E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.02E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.26E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	9.22E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	9.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	8.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.96E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	8.59E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	8.36E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.36E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.35E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.19E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	8.03E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	7.90E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	7.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	EQDIET	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	Piscivorous Fish	7.30E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	6.80E+00

TABLE 1-3
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TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	6.38E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	6.20E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	6.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.96E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	5.93E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.86E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Benthic Invertebrate	Sediment	5.63E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Benthic Invertebrate	5.60E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Benthic Invertebrate	5.57E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	5.45E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	5.39E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	5.24E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	5.11E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	4.93E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	4.47E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	Benthic Invertebrate	4.38E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	4.35E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	EQDIET	4.33E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	4.04E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	3.97E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.78E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Aquatic Vegetation	3.73E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.72E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.51E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	3.50E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.46E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.35E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.30E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.07E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.02E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Aquatic Vegetation	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	EQDIET	2.85E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Benthic Invertebrate	Sediment	2.83E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	2.79E+00

TABLE 1-3
ESTIMATED ECOLOGICAL RISK SORTED BY ESQ
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Benthic Invertebrate	2.71E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	2.70E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	2.62E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	2.55E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	2.46E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.43E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.43E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	EQDIET	2.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	Piscivorous Fish	2.41E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.40E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.37E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.33E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.31E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.27E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	EQDIET	2.20E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	2.20E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	2.18E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Mammal	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Bird	2.10E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	2.02E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.99E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.93E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.92E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.91E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.82E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.80E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.80E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.79E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.77E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.53E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.49E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.36E+00

TABLE 1-3
ESTIMATED ECOLOGICAL RISK SORTED BY ESQ
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Piscivorous Fish	1.31E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Omnivorous Bird	Benthic Invertebrate	1.29E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Soil Invertebrate	Soil	1.26E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.20E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.19E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.18E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Bird	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Mammal	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Bird	Soil Invertebrate	1.17E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.16E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.15E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.13E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Soil Invertebrate	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.11E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.10E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.09E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.09E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Benthic Invertebrate	1.06E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00

Abbreviations:

COPC - Chemical of Potential Concern
 ESQ -Ecological Screening Quotient
 N/E - Northeast
 S/W - Southwest
 TEAD-N - Tooele Army Depot North

EQDIET - Assumes species eating each component of its diet in equal amounts
 OB - Open burning
 OD - Open detonation
 SF - Static firing

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.51E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.93E+00
Rush Lake	FreshWater	Aquatic WEB_01	OB_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.51E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.10E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.99E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.74E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.05E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.02E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.28E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.24E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	1.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.21E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.06E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	6.38E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	6.20E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.14E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	EQDIET	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.09E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	EQDIET	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.83E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Bird	EQDIET	1.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OB_UNIT	Lead	Omnivorous Mammal	EQDIET	1.07E+01

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Benthic Invertebrate	2.18E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	1.11E+02
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Benthic Invertebrate	4.92E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	EQDIET	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Shorebird	Piscivorous Fish	3.75E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	2.49E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Piscivorous Fish	2.45E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.08E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.07E+01
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	EQDIET	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Shorebird	Piscivorous Fish	7.30E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Benthic Invertebrate	Sediment	5.63E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Benthic Invertebrate	5.60E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Benthic Invertebrate	5.57E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	4.93E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	Benthic Invertebrate	4.38E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	EQDIET	4.33E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Aquatic Vegetation	3.73E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.98E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Aquatic Vegetation	2.87E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	EQDIET	2.85E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Benzo(k)fluoranthene	Benthic Invertebrate	Sediment	2.83E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	2.79E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Benthic Invertebrate	2.71E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	EQDIET	2.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Thallium (I)	Carnivorous Shorebird	Piscivorous Fish	2.41E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Omnivorous Mammal	EQDIET	2.20E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Mammal	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Carnivorous Mammal	Omnivorous Bird	2.10E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.36E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Piscivorous Fish	1.31E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Dibenz(a,h)anthracene	Omnivorous Bird	Benthic Invertebrate	1.29E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.19E+00
Rush Lake	FreshWater	Aquatic WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Benthic Invertebrate	1.06E+00

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.24E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.16E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.23E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.52E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.68E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.64E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.22E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.02E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	8.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.19E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	7.92E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	7.90E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	5.93E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.86E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.72E+00

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.30E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.02E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.43E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.40E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.33E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.27E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.99E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.80E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.77E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.20E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.16E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.13E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.10E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.09E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.09E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	5.05E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	2.79E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	2.60E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	2.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.68E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.53E+02
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	9.50E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	8.40E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	7.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	5.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	4.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	4.20E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	3.73E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	3.70E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	3.63E+01

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	3.51E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	3.44E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	2.74E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	2.39E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	2.29E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	2.02E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	1.97E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.86E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	1.85E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	1.84E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	1.78E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.48E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	1.33E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	1.32E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	8.36E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	7.41E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	6.80E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	5.45E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	5.39E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	5.24E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	5.11E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	4.47E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	4.35E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	4.04E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	3.97E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	3.50E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	2.70E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	2.62E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	2.55E+00

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	2.46E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	2.20E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	EQDIET	2.18E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.92E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.79E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.53E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Mammal	1.30E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Soil Invertebrate	Soil	1.26E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Bird	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Carnivorous Mammal	Omnivorous Mammal	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Bird	Soil Invertebrate	1.17E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Omnivorous Bird	Soil Invertebrate	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Bird	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	Omnivorous Mammal	3.47E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Bird	EQDIET	1.74E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Terrestrial Plants	Soil	1.26E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Terrestrial Plants	Soil	1.18E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	Soil Invertebrate	1.16E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Mammal	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Omnivorous Bird	1.05E+02
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Bird	EQDIET	5.78E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	EQDIET	5.31E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Soil Invertebrate	4.29E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Terrestrial Plant	3.21E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	EQDIET	2.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Omnivorous Bird	Soil Invertebrate	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	EQDIET	2.56E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	EQDIET	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Herbivorous Bird	Terrestrial Plant	2.42E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	Soil Invertebrate	2.37E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Bird	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	Omnivorous Mammal	2.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Terrestrial Plant	1.89E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Mammal	1.71E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Omnivorous Bird	1.66E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	EQDIET	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Herbivorous Bird	Terrestrial Plant	1.54E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Soil Invertebrate	1.24E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Omnivorous Mammal	EQDIET	1.18E+01

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	EQDIET	1.04E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Hexachlorobenzene	Carnivorous Mammal	EQDIET	1.02E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	EQDIET	9.26E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Terrestrial Plants	Soil	9.13E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Omnivorous Mammal	Terrestrial Plant	8.36E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Omnivorous Mammal	Terrestrial Plant	8.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	EQDIET	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Herbivorous Mammal	Terrestrial Plant	8.04E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	EQDIET	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Herbivorous Mammal	Terrestrial Plant	8.03E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Bird	6.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	Omnivorous Mammal	5.96E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Soil Invertebrate	3.78E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Omnivorous Bird	Soil Invertebrate	3.35E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Cadmium	Carnivorous Mammal	EQDIET	3.07E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Bird	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	Omnivorous Mammal	2.99E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	EQDIET	2.46E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.43E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.37E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	EQDIET	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.31E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Mammal	2.23E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	EQDIET	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	2.02E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Mammal	1.82E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Thallium (I)	Carnivorous Mammal	Omnivorous Bird	1.80E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(b)fluoranthene	Carnivorous Bird	EQDIET	1.51E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	TetraCDD, 2,3,7,8-	Carnivorous Mammal	Omnivorous Bird	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Mammal	1.32E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Bird	EQDIET	1.22E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Lead	Omnivorous Mammal	EQDIET	1.18E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Omnivorous Mammal	Terrestrial Plant	1.15E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	EQDIET	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Zinc	Herbivorous Mammal	Terrestrial Plant	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Indeno(1,2,3-cd) pyrene	Carnivorous Bird	Herbivorous Bird	1.11E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	OD_UNIT	Benzo(k)fluoranthene	Carnivorous Bird	Herbivorous Bird	1.05E+00

TABLE 1-4
ESTIMATED ECOLOGICAL RISK SORTED BY CONTAMINANT SOURCE
TEAD-N ECOLOGICAL RISK REEVALUATION USING 95% UCL EMISSION FACTORS
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<i>Risk Receptor</i>	<i>Food Web</i>	<i>Food Web ID</i>	<i>Source</i>	<i>COPC</i>	<i>Guild</i>	<i>Diet Type</i>	<i>ESQ</i>
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Benthic Invertebrate	3.46E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.91E+00
Rush Lake	FreshWater	Aquatic WEB_01	SF_UNIT	Lead	Omnivorous Bird	Benthic Invertebrate	1.49E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.84E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.79E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.75E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.53E+01
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	9.22E+00
TEAD-N bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.96E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	1.72E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	1.67E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	1.63E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.42E+01
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	8.59E+00
N/E OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	8.35E+00
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	Terrestrial Plant	2.22E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	Terrestrial Plant	2.16E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	EQDIET	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Mammal	Terrestrial Plant	2.10E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	EQDIET	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Herbivorous Bird	Terrestrial Plant	1.84E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Bird	EQDIET	1.11E+01
S/W OB/OD Bndry	ShrubScrub	Terrestrial WEB_01	SF_UNIT	Lead	Omnivorous Mammal	EQDIET	1.08E+01

Abbreviations:

COPC - Chemical of Potential Concern
ESQ -Ecological Screening Quotient
N/E - Northeast
S/W - Southwest
TEAD-N - Tooele Army Depot North

EQDIET - Assumes species eating each component of its diet in equal amounts
OB - Open burning
OD - Open detonation
SF - Static firing