3.2.4 Exposure Point Concentrations

The exposure point concentration, or the concentration term in the exposure equation, is meant to reflect a representative concentration at the exposure point or points over the exposure period (U.S. EPA 1989). In evaluating the RME exposure scenario, EPA guidance specifies the use of the 95 percent upper confidence limit (UCL) on the mean concentration, while average concentrations are used to quantify the typical scenario. In most situations, assuming long-term contact with the maximum concentration in any exposure medium is not reasonable or realistic. RAGS states that although the average concentration does not reflect the maximum concentration that could be contacted at any one time, it is regarded as a reasonable estimate of the concentration likely to be contacted over time (U.S. EPA 1989).

To evaluate exposures to CoPCs in Wiggins facility media, concentrations in surface soil (0 to 1.5 ft) were calculated separately from those for soil from 0-17 feet bgs (i.e., surface to subsurface soil). Surface soil concentrations were evaluated through the long-term worker scenario, while soil from 0-17 feet bgs were evaluated in the construction worker scenario. This is consistent with the fact that any contact with deep soil would be limited to particular excavation scenarios such as the construction scenario. As part of data analyses conducted during the HHRA, data distributions in each affected environmental medium were evaluated, and distributions of each data set in each medium were determined. Where data sets had fewer than ten samples, the maximum concentration was used as the exposure point concentration for both the RME and typical case. Where data sets were larger than or equal to ten samples, the data distributions were statistically tested for lognormality or normality using the Kolmogorov-Smirnov goodness-of-fit test and the Shapiro-Wilk test. Data were identified as best fitting a lognormal or a normal distribution. In cases where neither a lognormal nor a normal distribution fit the data, or when both distribution types appeared to fit the data equally well, the data were identified as following an unknown distribution. Consistent with U.S. EPA (1992) guidance, if distributions were unknown, calculations consistent with a lognormal distribution were applied.

As recommended in RAGS, the 95 percent UCL of the arithmetic mean was used in estimating exposure concentrations for the RME scenarios because of the uncertainty associated with

estimating the typical exposure-point concentration. Consistent with supplemental guidance to RAGS (U.S. EPA 1992), the UCL on mean concentrations was calculated as follows:

$$UCL = \exp\left(\bar{y} + \frac{S_y^2}{2} + \frac{S_y \times H}{\sqrt{n-1}}\right)$$

where:

n	=	number of observations
H	=	H statistic for a given confidence level, n, and S_y
exp	=	exponential function
$\bar{y}$	=	average of the log-transformed data ($y = \ln(x)$)
S_y	=	standard deviation of the log-transformed data.

Using the UCL on the mean concentration is a conservative method for evaluating exposure and risks. As noted in U.S. EPA (1992), a value other than the 95 percent UCL can be used, provided the risk assessor can document that high coverage of the true population mean occurs (i.e., the value equals or exceeds the true population mean with high probability).

Results of the calculation of the exposure point concentrations used in the HHRA are presented in Attachment H1.

estimating the typical exposure-point concentration. Consistent with supplemental guidance to RAGS (U.S. EPA 1992), the UCL on mean concentrations was calculated as follows:

$$UCL = \exp\left(\bar{y} + \frac{S_y^2}{2} + \frac{S_y \times H}{\sqrt{n-1}}\right)$$

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Results of the calculation of the exposure point concentrations used in the HHRA are presented in Attachment H1.

4 Toxicity Assessment

The purpose of a toxicity assessment is to evaluate the potential for CoPCs to cause adverse health effects in exposed persons, and to evaluate the relationship between the extent of exposure to a hazardous chemical and the likelihood and severity of any adverse health effects. The standard procedure for a toxicity assessment is to identify toxicity values for carcinogenic and noncarcinogenic effects and to summarize other relevant toxicity information. This section describes the methods used to evaluate toxicity that could result following oral or dermal exposure to CoPCs.

EPA-derived toxicity values used in risk assessments are termed cancer slope factors (CSFs) and reference doses (RfDs). CSFs are used to estimate the incremental lifetime risk of developing cancer corresponding to CDIs calculated in the exposure assessment. The potential for noncarcinogenic health effects is typically evaluated by comparing estimated daily intakes to RfDs, which represent daily intakes at which no adverse effects are expected to occur even for sensitive individuals exposed over a lifetime. Both CSFs and RfDs are specific to the route of exposure (e.g., ingestion [oral] exposure). Currently, no CSFs or RfDs exist for dermal exposure; therefore, oral absorption factors were used to adjust CSFs and RfDs to assess dermal exposure, as described in the subsection below.

As indicated in RAGS (U.S. EPA 1989), the primary source for EPA-derived toxicity values is EPA's Integrated Risk Information System (IRIS) (U.S. EPA 2002b). This computerized database contains verified toxicity values in addition to up-to-date health risk and EPA regulatory information for many chemicals commonly detected at hazardous waste sites. EPA extensively reviews and verifies RfDs and CSFs derived for risk assessment, and once they are verified and posted in IRIS (U.S. EPA 2002b), they represent agency consensus. EPA's *Health Effects Assessment Summary Tables* (U.S. EPA 1997b), which are supposed to be updated quarterly, also provide EPA-derived toxicity values that may or may not be verified at the time of publication. Tables H-8 and H-9 show the toxicity values used in this risk assessment to assess

carcinogenic and noncarcinogenic effects of CoPCs, respectively. These tables were prepared in a format consistent with RAGS Part D Tables 5.1 and 6.1, respectively.

4.1 Toxicity Assessment for Dermal Exposure

As noted previously, EPA has not developed any toxicity values for dermal exposure. EPA suggests, however, that dermal toxicity values can be derived from oral toxicity values for substances with systemic effects that are not dependent on route of administration (U.S. EPA 1989). In deriving such values, consistency is required between the type of dose that forms the basis of the oral toxicity value and the type of dose that will be calculated by the dermal exposure models. Specifically, a distinction must be made between an administered dose or intake (i.e., the amount of chemical taken into the body) and the absorbed dose (i.e., the amount of chemical that crosses body membranes and enters the blood stream).

Typically, oral toxicity values and CDIs for oral exposure are based on administered doses (or intakes); therefore, usually no adjustments are necessary to calculate risk estimates for oral exposures provided the absorption from the environmental media (e.g., water, soil) is the same as the studies used to derive the toxicity value. However, because dermal exposures are usually expressed in terms of absorbed doses, dermal toxicity values must also be based on absorbed, rather than administered, doses (U.S. EPA 1989). To derive a dermal toxicity value for absorbed dose from an oral toxicity value based on administered dose, the oral toxicity value is adjusted by an estimate of the fractional oral absorption (i.e., the oral absorption factor). A CSF is divided by the oral absorption factor, and an RfD is multiplied by the oral absorption factor to calculate the adjusted toxicity value.

Only limited data are available to derive a technically supportable adjustment factor for an oral slope factor/RfD, to estimate a dermal toxicity value. Based on the current guidance (U.S. EPA 1999a), the only chemical for which an adjustment is recommended is chromium. An oral absorption efficiency of 10% is assumed for chromium, which leads to an estimated dermal reference dose (RfDd) of 3×10^{-4} mg/kg-day. This value was used in the dermal risk assessment.

Dermal absorption through the skin is also a chemical-specific variable. The recent EPA dermal risk assessment guidance provides chemical-specific dermal absorption values or three of the chemicals identified as CoPCs for this facility: arsenic, PAHs, and PCP. Adjusted toxicity values are shown on Tables H-8 and H-9 and in the risk characterization tables presented in Attachment H3.

4.2 Toxicity Profiles

Toxicity profiles provided by EPA in the IRIS database were referred to in preparing this assessment. These profiles can be accessed through the EPA web site (http://www.epa.gov/iris/subst/index.html).

5 Risk Characterization

In risk characterization, quantitative exposure estimates and toxicity factors are combined to calculate numerical estimates of potential health risk. In this section, potential cancer and noncancer health risks are estimated assuming long-term exposure to CoPCs detected in Wiggins facility soils or sediments. As described in Section 4, Toxicity Assessment, potential risks are estimated for the current and future worker and trespasser scenarios to provide a conservative means of considering possible future uses. The risk characterization methods described in RAGS (U.S. EPA 1989) are used to calculate potential RME and typical excess lifetime cancer risks for carcinogens, and hazard indices for CoPCs with noncancer health effects. These methods and the results of the risk characterization are described below. Tables H-10 and H-11 show excess cancer risk estimates for the RME and typical scenarios, while Tables H-12 and H-13 present RME and typical hazard indices. In addition, tables in Attachment H3 present detailed results of the risk calculations for each exposure pathway, including exposure point concentrations and CDIs calculated for the RME and typical scenarios, toxicity values used in risk estimates, and potential risk estimates for each CoPC in each exposure pathway.

5.1 Carcinogens

5.1.1 Methods

Quantifying total excess cancer risk requires calculating risks associated with exposure to individual carcinogens and aggregating risks associated with simultaneous exposure to multiple carcinogenic CoPCs. A cancer risk estimate for a single carcinogen is calculated by multiplying the carcinogenic CDI of the CoPC by its slope factor. A 1×10^{-6} cancer risk represents a one-in-one-million additional probability that an individual may develop cancer over a 70-year lifetime as a result of the exposure conditions evaluated. Because cancer risks are assumed to be additive, risks associated with simultaneous exposure to more than one carcinogen in a given medium are

aggregated to determine a total cancer risk for each exposure pathway. Total cancer risks for each pathway are then summed for reasonable combinations of exposure pathways, to determine the total cancer risk for the population of concern.

The likelihood that actual risks are greater than estimated risks is very low because of the conservative assumptions used to develop cancer risk estimates; in fact, actual risks may be significantly less than predicted values. EPA's *Guidelines for Cancer Risk Assessment* states, "...the linearized multistage procedure (typically used to calculate CSFs) leads to a plausible upper limit to the risk that is consistent with proposed mechanisms of carcinogenesis...The true value of the risk is unknown, and may be as low as zero" (51 Fed. Reg. 185:33992, 33998 [1986]).

Although the determination of an acceptable risk level is ultimately a decision to be made by risk managers, the findings presented here are compared with the range of acceptable risk levels cited in EPA's National Contingency Plan (NCP) (U.S. EPA 1990b), which EPA describes as the "blueprint for the Superfund law." The NCP states that risk levels in the range of 10^{-4} to 10^{-6} and lower are considered to be within the range of acceptable risks for Superfund sites. For perspective on background cancer risks, the lifetime risk of developing cancer in the U.S. population is approximately one in two (i.e., 5×10^{-1}) for men and approximately one in three (i.e., 3×10^{-1}) for women (American Cancer Society 1998).

5.1.2 Quantification of Carcinogenic Risks

Carcinogenic risk estimates were calculated for older children and adults in the RME and typical scenarios as the probability of additional cancers associated with the exposure pathways evaluated. Table H-10 provides risk estimates for CoPCs in the RME scenario, and Table H-11 provides a summary of risk estimates for all complete exposure pathways in the typical scenario. These tables also provide a summary of CoPCs that account for 90 percent of the risk estimates in each pathway. Tables H-14 through H-16 provide estimates for chemicals in pathways with RME cancer risk estimates greater than 1×10^{-6}. Estimated total cancer risks for both RME and typical scenarios were within the 10^{-6} to 10^{-4} target risk range identified above.

The current and future long-term worker in Treatment Areas 1 and Treatment Area 2 had the highest *cumulative* risk estimates of 8×10^{-5} and 6×10^{-5}, respectively, due primarily to PCP and arsenic in surface soil in Treatment Area 1 and due to PAHs in surface soil in Treatment Area 2. The RME risk estimate for worker's ingestion of surface soil in the Treatment Area 1 was 2×10^{-5}, and dermal contact with soil was 6×10^{-5}, related primarily to arsenic and PCP for ingestion and to PCP for dermal contact (Table H-14). Similarly, in Treatment Area 2, the RME risk estimate for worker's ingestion of surface soil was 2×10^{-5}, and dermal contact with soil was 4×10^{-5}, with all estimates related to PAHs in surface soil (Table H-15).

The current and future construction worker in Treatment Area 2 had a cumulative cancer risk estimate of 2×10^{-6} based on exposure to PCP and PAHs present in soil from 0-17 feet bgs. This cumulative risk estimate just slightly exceeds the lower end of the acceptable carcinogenic risk range (1×10^{-6}) (Table H-16).

Risk estimates for construction workers' contact with soil from 0-17 feet bgs in Treatment Area 1 and for trespassers' contact with sediments were well within the acceptable level identified by EPA, (i.e., all estimates for these receptors were less than the 1×10^{-6} risk level identified as the lower end of the acceptable risk range).

5.2 Noncarcinogens

5.2.1 Methods

Unlike carcinogenic effects, other potentially adverse health effects are not expressed as a probability. Instead, these effects are expressed as the ratio of the estimated exposure over a specified period to the RfD derived for a similar exposure period (e.g., CDI:chronic RfD). This ratio is termed a hazard quotient. If the CDI exceeds the RfD (i.e., hazard quotient greater than 1), there may be concern for noncancer adverse health effects. Exposures resulting in a hazard quotient less than or equal to 1 are very unlikely to result in noncancer adverse health effects. Because EPA states that the range of possible values around RfDs is "perhaps an order of magnitude" (Dourson 1993), the significance of intakes exceeding the RfD by one-half order of

magnitude or less (i.e., hazard indices less than 5) must be considered carefully. However, due to the uncertainties in data supporting RfDs, their use may also underestimate risk.

In initial risk calculations, hazard quotients for individual CoPCs are summed for each exposure pathway to derive a hazard index. Hazard indices for each exposure pathway are then summed to determine the total hazard index for each population of concern.

5.2.2 Quantification of Noncarcinogenic Risks

Tables H-12 and H-13 summarize total hazard indices calculated for RME and typical scenarios, respectively. These tables also show the CoPCs contributing 90 percent of the total hazard index for each pathway. No current or future exposure scenarios had hazard indices greater than 1 for any receptor. This finding suggests that no adverse effects would be expected under the exposure scenarios evaluated.

5.3 Uncertainty Assessment

Because risk characterization serves as a bridge between risk assessment and risk management, it is important that major assumptions, scientific judgments, and estimates of uncertainties be described in the assessment. Risk assessment methods are designed to be conservative to address the uncertainties associated with each step in the risk assessment process. Thus, "true" site risks are likely to be less than risks estimated using standard risk assessment methods.

5.3.1 Summary of Key Uncertainties

Key factors in risk assessment methods that are likely to result in underestimates or overestimates of potential site risks include the following:

- Scenarios regarding site use are estimates and may reflect higher or lower exposures than actual use patterns.

- In particular, the high degree of contact assumed in the long-term worker scenario may overestimate risks given the degree to which the site is covered by pavement and buildings

- Trespassing is also highly unlikely, given the high site security and the inaccessibility of the offsite Church House Branch reach with affected sediments.

- The assessment focused on areas with affected soils, whereas workers' soil contact may include areas where soils are not affected, thus reducing long-term average exposures.

- The screening process used to identify the CoPCs revealed that several samples had elevated detection limits that exceeded corresponding risk-based PRGs.

  - This issue did not affect the selection of CoPCs in the Church House Branch sediments, or in soils from the Vehicle Maintenance Area and the Treated Wood Storage Area.

  - Four surface soil samples from Treatment Area 1 had elevated detection limits for select constituents (Table H1-17). One sample, GP-14, had elevated limits for all constituents and was considered an anomaly. The constituents affected by elevated detection limits in the remaining three samples were non-detect at successively lower detection limits, with the exception of indeno(1,2,3-cd)pyrene, which was detected once at a concentration of 0.014 mg/kg. Therefore, elevated detection limits are not believed to have adversely impacted the CoPC selection process for surface soils in Treatment Area 1.

  - Six subsurface soil samples from Treatment Area 1 had elevated detection limits for three constituents (Table H1-17). Arsenic was frequently detected in the remaining soil samples and was retained for evaluation as a CoPC in subsurface soil at a concentration that exceeded the elevated detection limits. Benzo(a)pyrene and dibenzo(a,h)anthracene were not detected in the remaining subsurface soil samples (including samples with detection limits less than corresponding Region 9 residential PRGs). Accordingly, it was appropriate that these constituents be excluded from the list of CoPCs in subsurface soil in Treatment Area 1. Therefore, the elevated detection limit issue is not believed to have adversely impacted the CoPC selection process for subsurface soils in Treatment Area 1.

  - Two surface soil samples from Treatment Area 2 had elevated detection limits for ten constituents (Table H1-18). Three of the ten constituents, benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene, were

detected in another surface soil sample at concentrations above residential PRGs. These three constituents, therefore, were retained for evaluation as CoPCs in surface soil from Treatment Area 2 at concentrations above the elevated detection limits. Four other constituents, naphthalene, 2-methylnaphthalene, acenaphthylene, and benzo(g,h,i)perylene, are noncarcinogenic constituents that were non-detect in the remaining surface soil samples. The elevated detection limits for these constituents ranged from 5.64 to 11 mg/kg. At these concentrations, the four referenced constituents would not tend to contribute significantly to risk associated with exposure to soil. Therefore, the fact that these constituents were not retained as CoPCs in surface soil is not believed to have adversely impacted the risk estimates associated with this medium. The three remaining constituents, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and PCP, had elevated detection limits associated with two of the three surface soil samples from Treatment Area 2. The remaining sample was non-detect for these three constituents. It is possible, that these constituents may have been detected if the samples in question had lower detection limits. However, the detections may still have been below the corresponding Region 9 residential PRGs. Therefore, the impact on the CoPC selection process and risk estimates cannot be determined.

- Five subsurface soil samples from Treatment Area 2 had elevated detection limits for twelve constituents (Table H1-18). Eight of these constituents were detected in other subsurface soil samples and were retained as CoPCs at concentrations above the elevated detection limits. Three additional constituents were non-detect in other subsurface soil samples at detection limits less than corresponding Region 9 residential PRGs, and were therefore, not retained as CoPCs. Only one constituent, naphthalene, was detected at a maximum concentration (154 mg/kg) which was less than the elevated detection limit (267 mg/kg). The maximum concentration was ultimately used as the exposure point concentration for naphthalene. As this value is greater than one-half the detection limit value of 267 mg/kg (the typical method used to address non-detect data), it is not believed that the exclusion of this sample in the screening process adversely impacted the selection of the CoPCs, or the resulting risk estimates.

- Three sediment samples in the site drainage ditches had elevated detection limits for select constituents (Table H1-19). Elevated detection limits from these sediment samples were associated with constituents that were detected in other samples collected from the site drainage ditches. These constituents were screened against residential PRGs, and with the exception of indeno(1,2,3-cd)pyrene, the constituents were identified as CoPCs requiring further evaluation in the risk assessment. Therefore, the

elevated detection limit issue is not believed to have adversely impacted the CoPC selection process for sediment in the site drainage ditches.

- Adherence factors used in estimating dermal exposure vary widely and the selection of factors identified in U.S. EPA (1999a) and in the EPA Region 9 PRGs may underestimate dermal exposure.
- Use of EPA's CSFs for carcinogens, which are based on the assumption that any exposure to a carcinogen is associated with some risk of cancer, is likely to overestimate risks.
- Use of studies conducted in animals dosed at high levels to derive toxicity values may overestimate risks in human populations exposed at much lower levels.

EPA has stated in its guidelines for cancer risk assessment, "...the linearized multistage procedure leads to a plausible upper limit to the risk that is consistent with proposed mechanisms of carcinogenesis. The true value of the risk is unknown, and may be as low as zero" (51 Fed. Reg. 185:33992, 33998 [1986]). As a result, actual site risks related to exposures to carcinogens in site media are unlikely to be underestimated, and are likely to be substantially overestimated by the procedures applied in this risk assessment. However, given uncertainties regarding individual exposure patterns and sensitivities, actual risk for an individual may be higher or lower than the calculated estimate.

For evaluating noncarcinogenic risks, EPA states in IRIS that the range of possible values around RfDs is "perhaps an order of magnitude" (U.S. EPA 2002b). EPA staff (Dourson 1993) have expanded on this concept by noting that the range varies for different RfDs, depending on the uncertainty factors used (the greater the uncertainty factor, the greater the possible range). This means, in general, that environmental exposures falling into the range of the RfD cannot be distinguished scientifically from the RfD itself. That is, if a CoPC has an RfD of 1 mg/kg-day, the range of true no-effect values might be 0.3–3 mg/kg-day, indicating a combined span of about one-half an order of magnitude above and below the RfD (Dourson 1993). EPA staff have further noted (Woodruff 1989, pers. comm.) that, although they are generally concerned if intakes exceed the RfD by one-half order of magnitude, the magnitude of the uncertainty factors

in the RfD must be considered in evaluating the significance of any exceedance of the RfD. For example, fluoride has an uncertainty factor of 1; thus, a regulator might be concerned about any exceedance of the RfD. On the other hand, for CoPCs with very large uncertainty factors (e.g., 1,000), exceedances of 5-fold or more may not be of concern.

6 Summary and Conclusions

This HHRA was developed to support the RFI Report for the Wiggins facility. The objective of the baseline HHRA is to quantify human health risks associated with CoPCs in the absence of any remedial action (i.e., under the no-action alternative). This HHRA is a supplement to the Wiggins RFI and relies on data collected during that investigation. The assessment was conducted in a manner consistent with EPA and MDEQ guidance and with the 2000 RFI work plan (Exponent 2000).

As indicated in the RFI work plan and in the Wiggins RFI, this investigation focuses on soils and sediments within site boundaries that may have been affected by releases of site-related chemicals. Groundwater is not included because of existing groundwater monitoring and control measures, implemented as part of a groundwater corrective action program being conducted under State of Mississippi Hazardous Waste Management Permit No. HW-980-600-084. Furthermore, the vertical extent of site-related chemicals was delineated and was limited to vadose-zone soils. The potential for migration from soil to groundwater was evaluated through comparison of CoPCs with conservative screening values provided by EPA. This comparison indicated limited potential for migration in light of the low concentrations or non-detection of CoPCs in deep soils.

Conservative methods were used to select CoPCs to assure that all potentially significant risks would be evaluated. CoPCs have been identified in surface and subsurface soil and in sediments within the following areas: Treatment Areas 1 and 2 (both surface soil and subsurface soil); Church House Branch sediments; and Site Drainage Ditch Sediments. The HHRA focused on current and hypothetical future conditions that assumed ongoing industrial use of this facility as a work place. In addition, a hypothetical trespasser scenario was evaluated to assess potential risks associated with contact with sediments although the potential for this scenario is considered to be low given access constraints associated with the ditch and Church House Branch. Inhalation was

not considered a significant pathway, based on comparison with conservative preliminary remediation goals derived by EPA. The following exposure pathways were evaluated:

- **Surface soils**: Incidental ingestion, and dermal contact with CoPCs by long-term workers
- **Sediments**: Incidental ingestion and dermal contact with CoPCs by hypothetical trespassers who might gain access to site drainage ditches or to Church House Branch
- **Soils:** Incidental ingestion and dermal contact with CoPCs in soil from 0-17 feet bgs (i.e., surface to subsurface soil) by construction workers.

The assumptions used to characterize these scenarios are hypothetical. Site entry by trespassers is highly unlikely, given the degree of site security, and the potential for access to offsite areas within Church House Branch is also limited. In addition to consideration of hypothetical exposure pathways, conservative assumptions regarding exposure and toxicity were used to calculate potential risk estimates. Actual contact with site surface soils is likely to be lower than the conservative assumptions applied here, (e.g. an assumed 250 day/year 25 year exposure period for long-term workers). Exposure assumptions and toxicity values used in this HHRA reflect the inherently conservative nature of risk assessments conducted for regulatory purposes.

Potential risk estimates for carcinogens were compared to the range of excess target risk levels (1×10^{-6} to 1×10^{-4}) identified by EPA in the NCP, and potential risk estimates for noncarcinogens were compared with a hazard index of 1. For carcinogens, all estimated total cancer risks for both RME and typical scenarios were within the 10^{-6} to 10^{-4} target risk range. Specific results for each scenario were as follows:

Excess Cancer Risk Estimates:

- **Long-term workers' contact with surface soils in Treatment Areas 1 and 2.** The current and future long-term worker in Treatment Areas 1 and 2 had the highest *cumulative* risk estimates of 8×10^{-5} and 6×10^{-5}, respectively, due primarily to PCP and arsenic in surface soil in Treatment Area 1 and due to PAHs in surface soil in Treatment Area 2.

- **Construction workers' contact with soil from 0-17 feet bgs.** Risk estimates were well within the acceptable risk range identified by EPA. All estimates for construction worker exposure to soil from 0-17 feet bgs in Treatment Area 1 were less than the 1×10^{-6} risk level identified as the lower end of the acceptable risk range. The cumulative cancer risk estimate for construction worker exposure to soil from 0-17 feet bgs in Treatment Area 2 of 2×10^{-6} just slightly exceeded the lower end of the acceptable risk range.
- **Trespassers' contact with sediments**. Similarly, cancer risk estimates for trespassers were also well within the acceptable risk level identified by EPA.

Hazard Indices:

- No current or future exposure scenarios had hazard indices greater than one for any receptor. This finding suggests that no adverse effects would be expected under the exposure scenarios evaluated.

Given the conservative methods used to assess risks, the finding of no cancer risk estimates greater than the 1×10^{-4} risk level identified by EPA as the upper end of the acceptable risk range suggests that cancer risks are within acceptable levels. In addition, the finding of no hazard indices greater than 1 also suggests that no other adverse effects would be expected.

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Figures

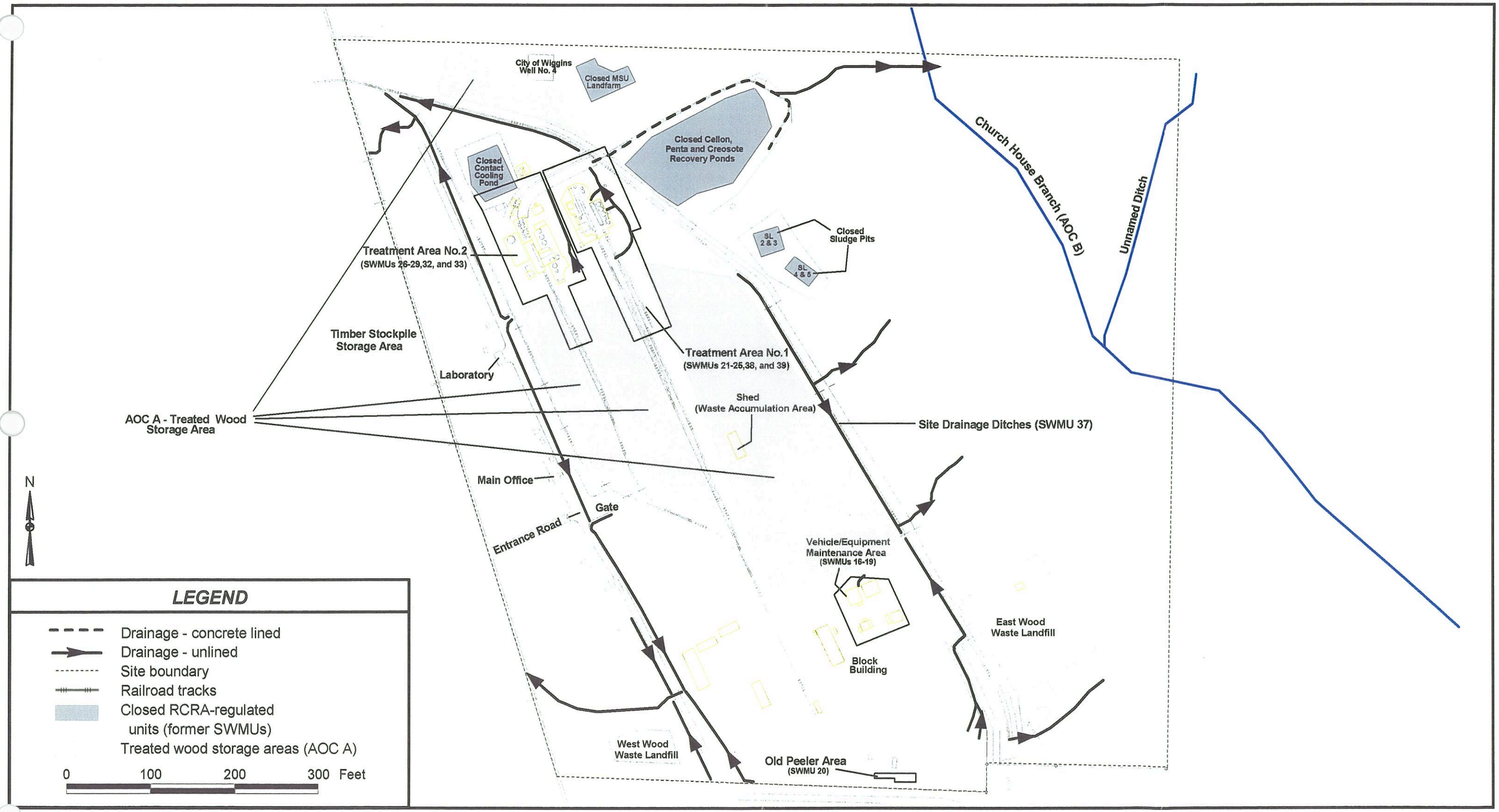

Figure H-1. Wiggins facility site map

Tables

Table H-1. Contaminants of potential concern identified at the International Paper Wiggins facility

Analyte	Treatment Area #1 Surface Soils (0–1.5 ft)	Treatment Area #2 Surface Soils (0–1.5 ft)	Treatment Area #1 Subsurface Soils (5–17 ft)	Treatment Area #2 Subsurface Soils (5–17 ft)	Vehicle Maintenance Soils (0–6.5 ft)	Treated Wood Storage Area Soils (0–6.5 ft)	Church House Branch Sediments (0–1 ft)	Site Drainage Ditch Sediments (0–1 ft)
Inorganics								
Arsenic	X		X	X			X	X
Chromium			X	X				X
Organics								
Benzene				X				
Pentachlorophenol	X		X	X				
PAHs								
2-Methylnaphthalene	X			X				X
Acenaphthylene				X				
Benz[a]anthracene		X		X				X
Benzo[a]pyrene		X		X			X	X
Benzo[b]fluoranthene		X						X
Benzo[k]fluoranthene		X						
Dibenz[a,h]anthracene				X				X
Fluoranthene				X				
Indeno[1,2,3-cd]pyrene				X				
Naphthalene				X				X
Phenanthrene		X		X				
Number of samples screened	6	3	15	13	6	2	6	20

Table H-2. Results of screening the soil to groundwater pathway

Analyte	Treatment Area #1 Subsurface Soils (5–17 ft)	Treatment Area #2 Subsurface Soils (5–17 ft)	Treatment Area #1 Deep Subsurface Soils (30–40 ft)	Treatment Area #2 Deep Subsurface Soils (20–32 ft)	Vehicle Maintenance Area Soils (5–6.5 ft)
Inorganics					
Chromium (38)	41.8				
Organics					
Benzene (0.03)		0.698			
Pentachlorophenol (0.03)	25.4	542	1.43	1.02	0.117
PAHs					
Benz[a]anthracene (2)		33.9			
Dibenz[a,h]anthracene (2)		11.2			
Naphthalene (84)		154			

Note: The screening value for the soil to groundwater pathway is shown in parentheses.
The maximum detected result is given for each chemical exceeding the screening value.

Table H-3. Selection of exposure pathways for International Paper Wiggins facility

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Onsite/ Offsite	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Soil, sediment, water, air	Soil, sediment, water, air	Soil, sediment, water, air	Resident	Adult/ child	Ingestion, dermal, inhalation	Onsite	Not analyzed	Residential populations not evaluated here due to lack of current residential use and unlikely future development for residential use
Current/Future	Air	Air	Air	Long-term worker	Adult	Inhalation	Onsite	Qualitative evaluation	Contact with CoPCs in air by workers evaluated through comparison with screening values for air derived by EPA Region 9
Current/Future	Soil	Surface soil	Surface soil	Long-term worker	Adult	Ingestion, dermal	Onsite	Deterministic	Contact with CoPCs in surface soil by workers identified as a potential pathway and evaluated in risk assessment
Current/Future	Soil	Soil	Surface/Subsurface soil (0 to 17 ft depths)	Construction worker	Adult	Ingestion, dermal	Onsite	Deterministic	Contact with CoPCs in soil (0-17 ft) by construction workers identified as a potential pathway and evaluated in risk assessment
Current/Future	Sediment	Sediment	Surface sediment in Church House Branch and Site Drainage Ditches	Trespasser	Adult/older child	Ingestion, dermal	Onsite	Deterministic	Contact with CoPCs in sediments by trespassers identified as a potential pathway and evaluated in risk assessment
Current/Future	Water	Surface water	Surface water in undeveloped area	Trespasser	Adult/older child	Ingestion, dermal	Onsite	Not evaluated	Contact with CoPCs in surface water by trespassers not evaluated here due to lack of data, but can be evaluated if needed, in the future
Future	Water	Groundwater	Groundwater sitewide	Long-term worker	Adult	Ingestion, dermal	Onsite	Not evaluated	Use of groundwater as drinking water not quantified here because groundwater remediation is in place

Note: CoPC - constituent of potential concern

Table H-4. Values used for daily intake calculations for surface soils: International Paper Wiggins facility long-term worker scenario

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Surface soil of Treatment Areas 1 and 2
Scenario Timeframe: Current/Future
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical concentration in soil	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	IR	Ingestion rate	mg soil/day	50	U.S. EPA 1991	50	U.S. EPA 1997a	
	FI	Fraction ingested	--	1	[a]	1	[a]	
	EF	Exposure frequency	days/year	250	U.S. EPA 1997a	250	U.S. EPA 1997a	
	ED	Exposure duration	years	25	U.S. EPA 1991	6.6	U.S. EPA 1997a	
	BW	Body weight	kg	70	U.S. EPA 1991	70	U.S. EPA 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	9,125	U.S. EPA 1989	2,409	U.S. EPA 1989	
Dermal	CS	Chemical concentration in soil	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	SA	Skin surface area available for contact	cm^2/event	3,300	U.S. EPA 1997a	3,300	U.S. EPA 1997a	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.2	U.S. EPA 1999a, 2002a	0.2	U.S. EPA 1999a, 2002a	
	EF	Exposure frequency	days/year	250	U.S. EPA 1997a	250	U.S. EPA 1997a	
	ED	Exposure duration	years	25	U.S. EPA 1991	6.6	U.S. EPA 1997a	
	BW	Body weight	kg	70	U.S. EPA 1991	70	U.S. EPA 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	9,125	U.S. EPA 1989	2,409	U.S. EPA 1989	
	ABS	Dermal absorption factor - arsenic	unitless	0.03	U.S. EPA 1999a	0.03	U.S. EPA 1999a	
	ABS	Dermal absorption factor - chromium	unitless	0.01	U.S. EPA 1999a	0.01	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PCP	unitless	0.25	U.S. EPA 1999a	0.25	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PAHs	unitless	0.13	U.S. EPA 1999a	0.13	U.S. EPA 1999a	

Note: -- - not applicable
CT - central tendency
PCP - pentachlorophenol
PAH - polycyclic aromatic hydrocarbons
RME - reasonable maximum exposure

[a] Based on best professional judgment.

Table H-5. Values used for daily intake calculations for soil from 0-17 feet bgs: International Paper Wiggins facility construction worker scenario

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil
Exposure Point: Soil (0-17 ft depths in Treatment Areas 1 and 2)
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical concentration - subsurface soil	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	IR	Ingestion rate	mg soil/day	100	U.S. EPA 1991	50	U.S. EPA 1997a	
	FI	Fraction ingested	--	1	[a]	1	[a]	
	EF	Exposure frequency	days/year	25	[a]	10	[a]	
	ED	Exposure duration	years	2	[a]	2	[a]	
	BW	Body weight	kg	70	U.S. EPA 1991	70	U.S. EPA 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	730	U.S. EPA 1989	730	U.S. EPA 1989	
Dermal	CS	Chemical concentration in soil	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	SA	Skin surface area available for contact	cm^2/event	3,300	U.S. EPA 1997a	3,300	U.S. EPA 1997a	
	AF	Soil-to-skin adherence factor	mg/cm^2	0.2	U.S. EPA 1999a, 2002a	0.2	U.S. EPA 1999a, 2002a	
	EF	Exposure frequency	days/year	25	[a]	10	[a]	
	ED	Exposure duration	years	2	[a]	2	[a]	
	BW	Body weight	kg	70	U.S. EPA 1991	70	U.S. EPA 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	730	U.S. EPA 1989	730	U.S. EPA 1989	
	ABS	Dermal absorption factor - arsenic	unitless	0.03	U.S. EPA 1999a	0.03	U.S. EPA 1999a	
	ABS	Dermal absorption factor - chromium	unitless	0.01	U.S. EPA 1999a	0.01	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PCP	unitless	0.25	U.S. EPA 1999a	0.25	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PAHs	unitless	0.13	U.S. EPA 1999a	0.13	U.S. EPA 1999a	

Note: -- - not applicable
CT - central tendency
PAH - polycyclic aromatic hydrocarbons
PCP - pentachlorophenol
RME - reasonable maximum exposure

[a] Based on best professional judgment.

Table H-6. Values used for daily intake calculations for sediments: International Paper Wiggins facility older child trespasser scenario

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Church House Branch or Site Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical concentration in sediment/soil	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	IR	Ingestion rate	mg soil/day	100	U.S. EPA 1991	50	U.S. EPA 1997a	
	FI	Fraction ingested	--	1	[a]	1	[a]	
	EF	Exposure frequency	days/year	14	[a]	5	[a]	
	ED	Exposure duration	years	9	[a]	9	[a]	
	BW	Body weight	kg	49	U.S. EPA 1997a	49	U.S. EPA 1997a	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	3,285	U.S. EPA 1989	3,285	U.S. EPA 1989	
Dermal	CS	Chemical concentration in sediment	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	SA	Skin surface area available for contact	cm^2/event	4,400	U.S. EPA 1997a	3,600	U.S. EPA 1997a	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.2	U.S. EPA 1999a	0.2	U.S. EPA 1999a	
	EF	Exposure frequency	days/year	14	[a]	5	[a]	
	ED	Exposure duration	years	9	[a]	9	[a]	
	BW	Body weight	kg	49	U.S. EPA 1997a	49	U.S. EPA 1997a	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	3,285	U.S. EPA 1989	3,285	U.S. EPA 1989	
	ABS	Dermal absorption factor - arsenic	unitless	0.03	U.S. EPA 1999a	0.03	U.S. EPA 1999a	
	ABS	Dermal absorption factor - chromium	unitless	0.01	U.S. EPA 1999a	0.01	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PCP	unitless	0.25	U.S. EPA 1999a	0.25	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PAHs	unitless	0.13	U.S. EPA 1999a	0.13	U.S. EPA 1999a	

Note: -- - not applicable
CT - central tendency
PCP - pentachlorophenol
PAH - polycyclic aromatic hydrocarbons
RME - reasonable maximum exposure

[a] Based on best professional judgment.

Table H-7. Values used for daily intake calculations for sediments: International Paper Wiggins facility adult trespasser scenario

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Church House Branch or Site Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical concentration in sediment	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x IR x FI x EF x ED / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	IR	Ingestion rate	mg soil/day	100	U.S. EPA 1991	50	U.S. EPA 1997a	
	FI	Fraction ingested	--	1	[a]	1	[a]	
	EF	Exposure frequency	days/year	14	[a]	5	[a]	
	ED	Exposure duration	years	30	U.S. EPA 1991	9	U.S. EPA 1989	
	BW	Body weight	kg	70	U.S. EPA 1997a	70	U.S. EPA 1997a	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	10,950	U.S. EPA 1989	3,285	U.S. EPA 1989	
Dermal	CS	Chemical concentration in sediment	mg/kg	see Attachment H1	--	see Attachment H1	--	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF x SA x AF x EF x ED x ABS / (BW x AT)
	CF	Conversion factor	kg/mg	0.000001	--	0.000001	--	
	SA	Skin surface area available for contact	cm^2/event	5,800	U.S. EPA 1997a	5,000	U.S. EPA 1997a	
	AF	Sediment/soil-to-skin adherence factor	mg/cm^2	0.07	U.S. EPA 1999a	0.07	U.S. EPA 1999a	
	EF	Exposure frequency	days/year	14	[a]	5	[a]	
	ED	Exposure duration	years	30	U.S. EPA 1991	9	U.S. EPA 1989	
	BW	Body weight	kg	70	U.S. EPA 1997a	70	U.S. EPA 1997a	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989	
	AT-NC	Averaging Time (Noncancer)	days	10,950	U.S. EPA 1989	3,285	U.S. EPA 1989	
	ABS	Dermal absorption factor - arsenic	unitless	0.03	U.S. EPA 1999a	0.03	U.S. EPA 1999a	
	ABS	Dermal absorption factor - chromium	unitless	0.01	U.S. EPA 1999a	0.01	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PCP	unitless	0.25	U.S. EPA 1999a	0.25	U.S. EPA 1999a	
	ABS	Dermal absorption factor - PAHs	unitless	0.13	U.S. EPA 1999a	0.13	U.S. EPA 1999a	

Note: -- - not applicable
CT - central tendency
PCP - pentachlorophenol
PAH - polycyclic aromatic hydrocarbons
RME - reasonable maximum exposure

[a] Based on best professional judgment.

Table H-8. Oral toxicity values for estimating excess cancer risks associated with constituents of concern

Contaminant of Concern	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	EPA Weight-of-Evidence Classification[a]	Oral-to-Dermal Adjustment Factor[b]	Adjusted Dermal CSF[b] (mg/kg-day)	Type of Cancer	Basis of Cancer Slope Factor	Source of CSF	Date of CSF Source[c] (MM/DD/YY)
Inorganic Chemicals								
Arsenic	1.5	A	0.95	1.5	Skin	Human population, drinking water	IRIS	11/1/2002
Organic Chemicals								
Benzene	0.055	A	1	0.055	Leukemia	Occupational	IRIS	11/1/2002
Pentachlorophenol	0.12	B2	1	0.12	Liver, adrenal	Mouse, diet	IRIS	11/1/2002
PAH Compounds[d]								
Benz[a]anthracene	0.73	B2	1	0.73	Based on potency relative to benzo[a]pyrene	Mouse, diet	IRIS	11/1/2002
Benzo[a]pyrene	7.3	B2	1	7.3	Forestomach, squamous cell papillomas and carcinomas	Mouse, diet	IRIS	11/1/2002
Benzo[b]fluoranthene	0.73	B2	1	0.73	Based on potency relative to benzo[a]pyrene	Mouse, diet	IRIS	11/1/2002
Benzo[k]fluoranthene	0.073	B2	1	0.073	Based on potency relative to benzo[a]pyrene	Mouse, diet	IRIS	11/1/2002
Dibenz[a,h]anthracene	7.3	B2	1	7.3	Based on potency relative to benzo[a]pyrene	Mouse, diet	IRIS	11/1/2002
Indeno[1,2,3-cd]pyrene	0.73	B2	1	0.73	Based on potency relative to benzo[a]pyrene	Mouse, diet	IRIS	11/1/2002

Note: CSF - carcinogenic slope factor
EPA - U.S. Environmental Protection Agency
PAH - polycyclic aromatic hydrocarbon

[a] A - human carcinogen
B2 - probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - possible human carcinogen

[b] Consistent with U.S. EPA (1999a), where oral absorption is less than 50 percent, oral slope factors are adjusted by dividing by the oral-to-dermal adjustment factor.

[c] Date represents: IRIS - date is when IRIS was searched; HEAST - Publication date; NCEA - article date.

[d] Carcinogenic slope factors for PAH compounds are based on potency relative to benzo[a]pyrene per EPA guidance (U.S. EPA 1998).

Table H-9. Noncancer toxicity data—oral/dermal reference doses

Chemical of Concern	Oral Chronic RfD (mg/kg-day)	Oral-to-Dermal Adjustment Factor[a]	Adjusted Dermal RfD[b] (mg/kg-day)	Primary Target Organ or System	Combined Uncertainty/ Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ[c], (MM/DD/YY)
Inorganics							
Arsenic	0.0003	NA	0.0003	Cardiovascular	3/1	IRIS	11/1/2002
Chromium (as chromium[VI])	0.003 [d]	0.1	0.0003	None reported	300/3	IRIS	11/1/2002
Organics							
Benzene	0.003	NA	0.003	--	--	NCEA[e]	NA
Pentachlorophenol	0.03	NA	0.03	Liver, kidney	100/1	IRIS	11/1/2002
PAHs							
Acenaphthylene (based on naphthalene)	0.02	NA	0.02	Body weight	3,000/1	Professional judgement	--
Fluoranthene	0.04	NA	0.04	Kidney, liver, blood	3,000/1	IRIS	11/1/2002
2-Methylnaphthalene (based on naphthalene)	0.02	NA	0.02	Body weight	3,000/1	NCEA[e]	NA
Naphthalene	0.02	NA	0.02	Body weight	3,000/1	IRIS	11/1/2002
Phenanthrene (based on napthalene)	0.02	NA	0.02	Body weight	3,000/1	Professional judgement	--

Note: -- - not available
EPA - U.S. Environmental Protection Agency
NA - not applicable
PAH - polycyclic aromatic hydrocarbon
RfD - reference dose

[a] Factors used to adjust for oral absorption in deriving dermal toxicity values from U.S. EPA (1999a).

[b] Consistent with U.S. EPA (1999a), where oral absorption is less than 50 percent, oral RfDs are adjusted by multiplying by the oral-to-dermal adjustment factor. Where absorption is greater than 50 percent no adjustment is made and "NA" (not applicable) is entered.

[c] Date represents: IRIS - date is when IRIS was searched; HEAST - Publication date; NCEA - article date.

[d] Because the chemical forms of chromium present are not known, the human health risk assessment conservatively assumes that all chromium is present as chromium(VI).

[e] Source as cited by EPA Region 9 (U.S. EPA 2002a).

Table H-10. Summary of total excess lifetime cancer risks for reasonable maximum exposure scenarios

Receptor/Exposure Pathway	Cancer Risk	Percent Contribution by Pathway	Cancer Risk	Percent Contribution by Pathway	Chemicals Accounting for 90 percent of Cancer Risk for each Pathway
Treatment Area 1	**Adult**		**Older Child**		
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	2E-5	27%	NA	--	Arsenic, pentachlorophenol
Dermal Contact with Surface Soil	6E-5	73%	NA	--	Pentachlorophenol
Total for Long-term Worker:	**8E-5**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	3E-7	39%	NA	--	Pentachlorophenol
Dermal Contact with Soil 0-17 feet bgs	4E-7	61%	NA	--	Pentachlorophenol
Total for Construction Worker:	**7E-7**	100%			
Treatment Area 2					
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	2E-5	37%	NA	--	PAHs
Dermal Contact with Surface Soil	4E-5	63%	NA	--	PAHs
Total for Long-term Worker:	**6E-5**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	8E-7	49%	NA	--	Pentachlorophenol, PAHs
Dermal Contact with Soil 0-17 feet bgs	8E-7	51%	NA	--	Pentachlorophenol, PAHs
Total for Construction Worker:	**2E-6**	100%			
Church House Branch Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	3E-7	86%	1E-7	73%	Arsenic, PAHs
Dermal Contact with Sediments	4E-8	14%	4E-8	27%	Arsenic, PAHs
Total: Church House Branch Sediments:	**3E-7**	100%	1E-7	100%	
Site Drainage Ditches Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	8E-7	84%	3E-7	70%	Arsenic, PAHs
Dermal Contact with Sediments	1E-7	16%	1E-7	30%	Arsenic, PAHs
Total: Drainage Ditch Sediments:	**9E-7**	100%	5E-7	100%	

Note:

PAH - Polycyclic aromatic hydrocarbons

Table H-11. Summary of total excess lifetime cancer risks for typical exposure scenarios

Receptor/Exposure Pathway	Cancer Risk	Percent Contribution by Pathway	Cancer Risk	Percent Contribution by Pathway	Chemicals Accounting for 90 percent of Cancer Risk for each Pathway
	Adult		Older Child		
Treatment Area 1					
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	5E-6	27%	NA	--	Arsenic, pentachlorophenol
Dermal Contact with Surface Soil	1E-5	73%	NA	--	Pentachlorophenol
Total for Long-term Worker:	**2E-5**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	6E-8	24%	NA	--	Pentachlorophenol
Dermal Contact with Soil 0-17 feet bgs	2E-7	76%	NA	--	Pentachlorophenol
Total for Construction Worker:	**2E-7**	100%			
Treatment Area 2					
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	6E-6	37%	NA	--	PAHs
Dermal Contact with Surface Soil	1E-5	63%	NA	--	PAHs
Total for Long-term Worker:	**2E-5**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	2E-7	33%	NA	--	Pentachlorophenol, PAHs
Dermal Contact with Soil 0-17 feet bgs	3E-7	67%	NA	--	Pentachlorophenol, PAHs
Total for Construction Worker:	**5E-7**	100%			
Church House Branch Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	1E-8	77%	2E-8	63%	Arsenic, PAHs
Dermal Contact with Sediments	4E-9	23%	1E-8	37%	Arsenic, PAHs
Total: Church House Branch Sediments:	**2E-8**	100%	3E-8	100%	
Site Drainage Ditches Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	4E-8	75%	6E-8	59%	Arsenic, PAHs
Dermal Contact with Sediments	1E-8	25%	4E-8	41%	Arsenic, PAHs
Total: Drainage Ditch Sediments:	**6E-8**	100%	**1E-7**	100%	

Note:

PAH - Polycyclic aromatic hydrocarbons

Table H-12. Summary of total hazard indices for reasonable maximum exposure scenarios

Receptor/Exposure Pathway	Hazard Index	Percent Contribution by Pathway	Hazard Index	Percent Contribution by Pathway	Chemicals Accounting for 90 percent of Hazard Indicies for each Pathway
Treatment Area 1	**Adult**		**Older Child**		
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	0.039	43%	NA	--	Arsenic, pentachlorophenol
Dermal Contact with Surface Soil	0.053	57%	NA	--	Arsenic, pentachlorophenol
Total for Long-term Worker:	**0.092**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	0.0044	47%	NA	--	Arsenic, chromium, pentachlorophenol
Dermal Contact with Soil 0-17 feet bgs	0.0049	53%	NA	--	Chromium, pentachlorophenol
Total for Construction Worker:	**0.0094**	100%			
Treatment Area 2					
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	0.0054	37%	NA	--	PAHs
Dermal Contact with Surface Soil	0.0092	63%	NA	--	PAHs
Total for Long-term Worker:	**0.015**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	0.0077	50%	NA	--	Chromium, pentachlorophenol, PAHs
Dermal Contact with Soil 0-17 feet bgs	0.0077	50%	NA	--	Pentachlorophenol, PAHs
Total for Construction Worker:	**0.015**	100%			
Church House Branch Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	0.0012	89%	0.0016	79%	Arsenic
Dermal Contact with Sediments	0.00014	11%	0.00043	21%	Arsenic
Total: Church House Branch Sediments:	**0.0013**	100%	**0.0021**	100%	
Site Drainage Ditches Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	0.0039	86%	0.0056	73%	Arsenic, chromium
Dermal Contact with Sediments	0.00065	14%	0.0020	27%	Arsenic, chromium
Total: Drainage Ditch Sediments:	**0.0045**	100%	**0.0076**	100%	

Note:

PAH - Polycyclic aromatic hydrocarbons

Table H-13. Summary of total hazard indices for typical exposure scenarios

Receptor/Exposure Pathway	Hazard Index	Percent Contribution by Pathway	Hazard Index	Percent Contribution by Pathway	Chemicals Accounting for 90 percent of Hazard Indicies for each Pathway
Treatment Area 1	**Adult**		**Older Child**		
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	0.039	43%	NA	--	Arsenic, pentachlorophenol
Dermal Contact with Surface Soil	0.053	57%	NA	--	Arsenic, pentachlorophenol
Total for Long-term Worker:	**0.092**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	0.00089	31%	NA	--	Arsenic, chromium, pentachlorophenol
Dermal Contact with Soil 0-17 feet bgs	0.00190	69%	NA	--	Chromium, pentachlorophenol
Total for Construction Worker:	**0.00290**	100%			
Treatment Area 2					
Long-Term Worker - Current / Future					
Surface Soil					
Ingestion of Surface Soil	0.0054	37%	NA	--	PAHs
Dermal Contact with Surface Soil	0.0092	63%	NA	--	PAHs
Total for Long-term Worker:	**0.015**	100%			
Construction Worker - Current/Future					
Exposure to Soil 0-17 feet bgs					
Ingestion of Soil 0-17 feet bgs	0.0015	33%	NA	--	Chromium, pentachlorophenol, PAHs
Dermal Contact with Soil 0-17 feet bgs	0.0031	67%	NA	--	Pentachlorophenol, PAHs
Total for Construction Worker:	**0.0046**	100%			
Church House Branch Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	0.00021	83%	0.00029	70%	Arsenic
Dermal Contact with Sediments	0.000043	17%	0.00013	30%	Arsenic
Total: Church House Branch Sediments:	**0.00025**	100%	**0.00042**	100%	
Site Drainage Ditches Sediments					
Trespassers - Future					
Exposure to Surface Sediments					
Ingestion of Sediments	0.00069	78%	0.0010	63%	Arsenic, chromium
Dermal Contact with Sediments	0.00020	22%	0.00059	37%	Arsenic, chromium
Total: Drainage Ditch Sediments:	**0.00089**	100%	**0.0016**	100%	

Note:

PAH - Polycyclic aromatic hydrocarbons

TABLE H-14.RME
Risk Assessment Summary
Reasonable Maximum Exposure
Worker: Reasonable Exposure Scenario
Treatment Area 1 Surface Soil

Scenario Timeframe: Current /Future
Receptor Population: Long-term Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Percentage of total pathway risk
Soil	Soil	Treatment Area 1 Surface Soil	Arsenic	4E-6	NA	2E-6	6E-06	8%
			Pentachlorophenol	2E-5	NA	5E-5	7E-05	92%
			2-Methylnapthalene	--	NA	--	--	--
			(Total)	2E-5		6E-5	8E-5	100%

Total Risk Across All Media and Exposure Routes: **8E-05**

Chemical	Non-Carcinogenic Hazard Quotient					
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	Percentage of total pathway risk
Arsenic	Cardiovascular	0.026	NA	0.0103327	0.036	40%
Pentachlorophenol	Liver/kidney	0.013	NA	0.0419765	0.055	60%
2-Methylnapthalene	Body Weight	0.00027	NA	0.0004617	0.00073	1%
		0.039		0.0527709		100%

Total Hazard Index Across All Media and Exposure Routes: **0.092**

Total Cardivascular HI=	0.036
Total liver kidney HI=	0.055
Total other HI=	0.00073

Notes: NA - not applicable

TABLE H-15.RME
Risk Assessment Summary
Worker: Reasonable Exposure Scenario
Treatment Area 2 Surface Soil

Scenario Timeframe: Current /Future
Receptor Population: Long-term Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Percentage of total pathway risk
Soil	Soil	Treatment Area 2 Surface Soil	Benz[a]anthracene	4E-6	NA	7E-6	1E-05	19%
			Benzo[a]pyrene	1E-5	NA	2E-5	4E-05	65%
			Benzo[b]fluoranthene	3E-6	NA	6E-6	9E-06	16%
			Benzo[k]fluoranthene	2E-7	NA	3E-7	4E-07	1%
			Phenanthrene	--	NA	--	--	--
			(Total)	2E-5		4E-5	6E-5	100%

Total Risk Across All Media and Exposure Routes: **6E-05**

Chemical	Non-Carcinogenic Hazard Quotient					
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	Percentage of total pathway risk
Benz[a]anthracene	--	--	NA	--	--	--
Benzo[a]pyrene	--	--	NA	--	--	--
Benzo[b]fluoranthene	--	--	NA	--	--	--
Benzo[k]fluoranthene	--	--	NA	--	--	--
Phenanthrene	Body Weight	0.0054	NA	0.0092	0.015	100%
(Total)		0.0054		0.0092	0.015	100%

Total Hazard Index Across All Media and Exposure Routes: **0.015**

Notes: NA - not applicable

TABLE H-16.RME
Risk Assessment Summary
Worker: Reasonable Exposure Scenario
Treatment Area 2 Soil 0-17 feet bgs

Scenario Timeframe: Current /Future
Receptor Population: Long-term Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Percentage of total pathway risk
Soil	Soil	Treatment Area 2 Soil 0-17 feet bgs	Arsenic	6.E-09	NA	1.E-09	7.E-09	0%
			Chromium	--	NA	--	--	--
			Benzene	1.E-10	NA	7.E-10	8.E-10	0%
			Pentachlorophenol	2.E-07	NA	3.0002E-07	5.E-07	30%
			2-Methylnaphthalene	--	NA	--	--	--
			Acenaphthylene	--	NA	--	--	--
			Benz[a]anthracene	7E-8	NA	6E-8	1.E-07	8%
			Benz[a]pyrene	2E-7	NA	2E-7	4.E-07	27%
			Benzo(b)fluoranthene	5E-8	NA	5E-8	1.E-07	6%
			Benzo(k)fluoranthene	2E-9	NA	2E-9	4.E-09	0%
			Dibenz[a,h]anthracene	2E-7	NA	2E-7	4.E-07	26%
			Fluoranthene	--	NA	--	--	--
			Indeno[1,2,3-cd]pyrene	2E-8	NA	2E-8	4.E-08	3%
			Naphthalene	--	NA	--	--	--
			Phenanthrene	--	NA	--	--	--
			(Total)	8E-7		8E-7	2E-6	100%

Total Risk Across All Media and Exposure Routes: **2E-06**

Chemical	Non-Carcinogenic Hazard Quotient					
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total	Percentage of total pathway risk
Arsenic	Cardiovascular	0.00044	NA	0.000087	0.00052	3%
Chromium	--	0.00063	NA	0.00042	0.0011	7%
Benzene	--	0.000023	NA	0.00015	0.00017	1%
Pentachlorophenol	Liver, kidney	0.00177	NA	0.0029	0.0047	30%
2-Methylnaphthalene	Body Weight	0.00095	NA	0.00081	0.0018	11%
Acenaphthylene	Body Weight	0.000055	NA	0.000047	0.00010	1%
Benz[a]anthracene	--	--	NA	--	--	--
Benz[a]pyrene	--	--	NA	--	--	--
Benzo(b)fluoranthene	--	--	NA	--	--	--
Benzo(k)fluoranthene	--	--	NA	--	--	--
Dibenz[a,h]anthracene	--	--	NA	--	--	--
Fluoranthene	Liver, kidney	0.00066	NA	0.00056	0.0012	8%
Indeno[1,2,3-cd]pyrene	--	--	NA	--	--	--
Naphthalene	Body Weight	0.00075	NA	0.00065	0.0014	9%
Phenanthrene	Body Weight	0.0024	NA	0.0021	0.0045	29%
(Total)		0.0077		0.0077	0.015	100%

Total Hazard Index Across All Media and Exposure Routes: **0.015**

Total cardivascular HI=	0.0005
Total liver kidney HI=	0.0059
Total body weight HI=	0.0078
Total other HI=	0.0012

Notes: NA - not applicable

Attachment H1

Data Analysis and Exposure Point Concentrations

Table H1-1. Surface soil (0-1.5 ft) samples from Treatment Area #1 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Residential soil to air	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	Selected as CoC?	GP-12	GP-14	GP-18	GP-20	GP-28	GP-40
Station													GP-12	GP-14	GP-18	GP-20	GP-28	GP-40
Sample													GP12SO01	GP14SO01	GP18SO01	GP20SO01	GP28SO01	GP40SO01
Lab ID													2010207028	2010207032	2010207041	2010208041	2010208058	2010209028
Replicate																		
Depth													0 - 1.5 ft	0 - 1.5 ft	0 - 1.5 ft	0 - 1.5 ft	0 - 1.5 ft	0 - 1.5 ft
Total Organic Carbon					6	3	3230	4610					4110	3230	4610	200 *U*	200 *U*	200 *U*
Arsenic	1.7	0.39	C	590	6	6	1.36	16.3	Y	Y		Yes	16.3	1.52	2.06	1.75	1.87	1.36
Chromium (as Cr VI)	7.8	23	N	30	6	6	9.16	20.6	Y				20.6	9.33	11.50	9.48	9.16	17.50
Copper		291	N		6	6	2.96	10.4					10.4	2.96	3.21	3.03	4.10	3.90
Lead	11.7	40	N		6	6	3.20	5.11	B				5.0	5.07	5.11	3.20	4.02	4.87
Nickel		156	N		6	4	1.82	2.39					1.94	1.82	1.87	1.74 *U*	2.39	1.87 *U*
Diesel fuel					6	0							4.81 *U*	217.00 *U*	221.00 *U*	4.35 *U*	4.56 *U*	4.67 *U*
Heavy Fuel Oil #6					6	0							12.0 *U*	544 *U*	554.000 *U*	10.900 *U*	11.400 *U*	11.700 *U*
Hydrocarbons (JP4)					6	0							4.81 *U*	217 *U*	221.000 *U*	4.350 *U*	4.560 *U*	4.670 *U*
Kerosene					6	0							4.81 *U*	217 *U*	221.000 *U*	4.350 *U*	4.560 *U*	4.670 *U*
Lube Oil (Motor)	171.6				6	0							12.0 *U*	544 *U*	554.000 *U*	10.900 *U*	11.400 *U*	11.700 *U*
Mineral spirits					6	0							4.81 *U*	217 *U*	221.000 *U*	4.350 *U*	4.560 *U*	4.670 *U*
Naphtha					6	0							4.81 *U*	217 *U*	221.000 *U*	4.350 *U*	4.560 *U*	4.670 *U*
Non-PHC as Diesel					6	4	39.2	1900					140	1550	1900.000	39.200	4.560 *U*	4.670 *U*
PHC as Diesel	56.9				6	0							4.81 *U*	217 *U*	221.000 *U*	4.350 *U*	4.560 *U*	4.670 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N		6	1	1.39	1.39					1.39	544 *U*	27.700 *U*	0.543 *U*	0.056 *U*	0.058 *U*
2,3,5,6-Tetrachlorophenol					6	1	1.63	1.63					1.63	544 *U*	27.700 *U*	0.543 *U*	0.056 *U*	0.058 *U*
2-Methylnaphthalene	0.1	4	b		6	2	0.174	11.2		Y		Yes	0.24 *U*	108 *U*	11.200	0.174	0.011 *U*	0.011 *U*
Acenaphthene		368	N		6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Acenaphthylene	0.051	9.5	c		6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Anthracene	0.025	2190	N		6	1	0.318	0.318					0.318	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Benzo(a)anthracene	0.036	0.621	C	29000	6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	2900	6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Benzo(b)fluoranthene	0.080	0.62	C	29000	6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Benzo(ghi)perylene		1.1	c		6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Benzo(k)fluoranthene	0.036	6.2	C	290000	6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Chrysene	0.059	62	C	2900000	6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	2900	6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Fluoranthene	0.039	229	N		6	1	0.556	0.556					0.556	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Fluorene		264	N		6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	29000	6	1	0.014	0.014					0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.014	0.011 *U*
Naphthalene		5.6	N		6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Pentachloroanisole					6	0							0.24 *U*	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Pentachlorophenol	0.158	3.0	C	74000	6	4	2.96	782		Y		Yes	8.57	782	124.000	2.960	0.056 *U*	0.058 *U*
Phenanthrene	0.023	23	c		6	1	0.313	0.313					0.313	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
Pyrene	0.055	231	N		6	1	0.574	0.574					0.574	108 *U*	5.540 *U*	0.108 *U*	0.011 *U*	0.011 *U*
1,2-Dibromoethane		0.0069	C		0	0												
1,2-Dichloroethane				0.36	0	0												
Benzene		0.65	C	0.69	0	0												
Ethylbenzene		230	sat		0	0												
Methyl tert Butyl Ether				18	0	0												
M & P Xylene		210	sat		0	0												
O-Xylene		210	sat		0	0												
Total Xylenes (calculated)					0	0												
Toluene		520	sat		0	0												

Notes: Screening completed on samples from 0 - 1.5 ft depth only.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-2. Subsurface soil (5-17 ft) samples from Treatment Area #1 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	>PRG-DAF20	Selected as CoC?	Station	GP-12	GP-13
															Sample	GP12SO02	GP13SO02
															Lab ID	2010207029	2010207031
															Replicate		
															Depth	5 - 6.5 ft	5 - 6.5 ft
Total Organic Carbon						15	0									200 *U*	200 *U*
Arsenic	1.7	0.39	C	1251	29	15	12	0.485	3.18	Y	Y			Yes		0.712	1.100
Chromium (as Cr VI)	7.8	23	N	64	38	15	15	5.16	41.8	Y	Y		Y	Yes		24.60	12.80
Copper		291	N			15	12	2.39	6.15							3.610	3.610
Lead	11.7	40	N			15	15	2.51	6.74	B						4.180	4.280
Nickel		156	N			15	3	2.08	2.84							1.830 *U*	1.790 *U*
Diesel fuel						12	0									4.580 *U*	4.470 *U*
Heavy Fuel Oil #6						15	0									11.400 *U*	11.200 *U*
Hydrocarbons (JP4)						15	0									4.580 *U*	4.470 *U*
Kerosene						15	0									4.580 *U*	4.470 *U*
Lube Oil (Motor)	171.6					15	0									11.400 *U*	11.200 *U*
Mineral spirits						15	0									4.580 *U*	4.470 *U*
Naphtha						15	0									4.580 *U*	4.470 *U*
Non-PHC as Diesel						15	4	17.8	107							4.580 *U*	4.470 *U*
PHC as Diesel	56.9					15	1	30.1	30.1							4.580 *U*	4.470 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			15	1	1.73	1.73							0.057 *U*	0.055 *U*
2,3,5,6-Tetrachlorophenol						15	0									0.057 *U*	0.055 *U*
2-Methylnaphthalene	0.1	4	b			15	4	0.0167	1.34							0.011 *U*	0.011 *U*
Acenaphthene		368	N		570	15	1	0.0156	0.0156							0.011 *U*	0.011 *U*
Acenaphthylene	0.051	9.5	c			15	0									0.011 *U*	0.011 *U*
Anthracene	0.025	2190	N			15	0									0.011 *U*	0.011 *U*
Benzo(a)anthracene	0.036	0.621	C	61000	2	15	0									0.011 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	6100	8	15	0									0.011 *U*	0.011 *U*
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	15	0									0.011 *U*	0.011 *U*
Benzo(ghi)perylene		1.1	c			15	1	0.0125	0.0125							0.011 *U*	0.011 *U*
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	15	0									0.011 *U*	0.011 *U*
Chrysene	0.059	62	C	6100000	160	15	0									0.011 *U*	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	6100	2	15	0									0.011 *U*	0.011 *U*
Fluoranthene	0.039	229	N		4300	15	0									0.011 *U*	0.011 *U*
Fluorene		264	N		560	15	0									0.011 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	15	0									0.011 *U*	0.011 *U*
Naphthalene		5.6	N		84	15	2	0.022	0.023							0.011 *U*	0.011 *U*
Pentachloroanisole						15	0									0.011 *U*	0.011 *U*
Pentachlorophenol	0.158	3.0	C	160000	0.03	15	8	0.078	25.4		Y		Y	Yes		0.057 *U*	0.078
Phenanthrene	0.023	23	c			15	1	0.390	0.390							0.011 *U*	0.011 *U*
Pyrene	0.055	231	N		4200	15	0									0.011 *U*	0.011 *U*
1,2-Dibromoethane		0.0069	C			2	0										
1,2-Dichloroethane				0.77	0.02	2	0										
Benzene		0.65	C	1.5	0.03	2	0										
Ethylbenzene		230	sat		13	2	1	0.0159	0.0159								
Methyl tert Butyl Ether				37		2	0										
M & P Xylene		210	sat			2	1	0.0511	0.0511								
O-Xylene		210	sat			2	1	0.0327	0.0327								
Total Xylenes (calculated)					210	2	1	0.0838	0.0838								
Toluene		520	sat		12	2	0										

Table H1-2. Subsurface soil (5-17 ft) samples from Treatment Area #1 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	GP-15 GP15SO02 2010207035 5 - 6.5 ft	GP-18 GP18SO02 2010207042 5 - 6.5 ft	GP-21 GP21SO02 2010208045 5 - 6.5 ft	GP-23 GP23SO02 2010208049 5 - 6.5 ft	GP-26 GP26SO02 2010208055 5 - 6.5 ft	GP-31 GP31SO02 2010208066 5 - 6.5 ft
Total Organic Carbon						200 *U*	200 *U*	200 *U*	200 *U*	200 *U*	200
Arsenic	1.7	0.39	C	1251	29	1.03	1.30	3.18	3.08	2.42	1.81
Chromium (as Cr VI)	7.8	23	N	64	38	16.40	13.10	23.20	41.80	11.50	18.30
Copper		291	N			2.86	3.90	5.83	6.15	3.67	4.57
Lead	11.7	40	N			3.89	4.05	5.96	6.74	6.06	6.07
Nickel		156	N			1.85 *U*	2.08	1.87 *U*	2.84	2.46	1.86
Diesel fuel						4.62 *U*	22.70 *U*	4.67 *U*	4.67 *U*	4.56 *U*	4.66
Heavy Fuel Oil #6						11.500 *U*	56.700 *U*	11.700 *U*	11.700 *U*	11.400 *U*	11.600
Hydrocarbons (JP4)						4.620 *U*	22.700 *U*	4.670 *U*	4.670 *U*	4.560 *U*	4.660
Kerosene						4.620 *U*	22.700 *U*	4.670 *U*	4.670 *U*	4.560 *U*	4.660
Lube Oil (Motor)	171.6					11.500 *U*	56.700 *U*	11.700 *U*	11.700 *U*	11.400 *U*	11.600
Mineral spirits						4.620 *U*	22.700 *U*	4.670 *U*	4.670 *U*	4.560 *U*	4.660
Naphtha						4.620 *U*	22.700 *U*	4.670 *U*	4.670 *U*	4.560 *U*	4.660
Non-PHC as Diesel						4.620 *U*	107.000	4.670 *U*	4.670 *U*	4.560 *U*	4.660
PHC as Diesel	56.9					4.620 *U*	22.700 *U*	4.670 *U*	4.670 *U*	4.560 *U*	4.660
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			0.057 *U*	2.830 *U*	0.058 *U*	0.058 *U*	0.057 *U*	0.058
2,3,5,6-Tetrachlorophenol						0.057 *U*	2.830 *U*	0.058 *U*	0.058 *U*	0.057 *U*	0.058
2-Methylnaphthalene	0.1	4	[b]			0.011 *U*	1.340	0.011 *U*	0.011 *U*	0.017	0.011
Acenaphthene		368	N		570	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.016	0.011
Acenaphthylene	0.051	9.5	[c]			0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Anthracene	0.025	2190	N			0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Benzo(a)anthracene	0.036	0.621	C	61000	2	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Benzo(a)pyrene		0.062	C	6100	8	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Benzo(ghi)perylene		1.1	[c]			0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.013	0.011
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Chrysene	0.059	62	C	6100000	160	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Dibenzo(a,h)anthracene		0.062	C	6100	2	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Fluoranthene	0.039	229	N		4300	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Fluorene		264	N		560	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Naphthalene		5.6	N		84	0.011 *U*	0.566 *U*	0.011 *U*	0.023	0.022	0.011
Pentachloroanisole						0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Pentachlorophenol	0.158	3.0	C	160000	0.03	0.085	16.500	0.058 *U*	0.058 *U*	0.057 *U*	0.058
Phenanthrene	0.023	23	[c]			0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
Pyrene	0.055	231	N		4200	0.011 *U*	0.566 *U*	0.011 *U*	0.011 *U*	0.011 *U*	0.011
1,2-Dibromoethane		0.0069	C								
1,2-Dichloroethane				0.77	0.02						
Benzene		0.65	C	1.5	0.03						
Ethylbenzene		230	sat		13						
Methyl tert Butyl Ether				37							
M & P Xylene		210	sat								
O-Xylene		210	sat								
Total Xylenes (calculated)					210						
Toluene		520	sat		12						

Table H1-2. Subsurface soil (5-17 ft) samples from Treatment Area #1 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)		GP-32 GP32SO02 2010208068 5 - 6.5 ft	GP-40 GP40SO02 2010209029 5 - 6.5 ft	GP-44 GP44SO01 2010209051 10 - 12 ft	GP-45 GP45SO01 2010209052 10 - 12 ft	GP-45 GP45SO02 2010209049 1 10 - 12 ft
Total Organic Carbon						U	200 U	200 U	200 U	200 U	200 U
Arsenic	1.7	0.39	C	1251	29		1.31	1.50	0.82	0.47 U	0.49
Chromium (as Cr VI)	7.8	23	N	64	38		34.70	20.40	8.15	12.80	13.40
Copper		291	N				3.08	3.64	2.45 U	2.35 U	2.41
Lead	11.7	40	N				3.88	3.42	3.74	3.90	3.94
Nickel		156	N			U	1.83 U	1.89 U	1.96 U	1.88 U	1.85 U
Diesel fuel						U	4.59 U	4.72 U	4.91 U	4.69 U	
Heavy Fuel Oil #6						U	11.500 U	11.800 U	12.300 U	11.700 U	11.600 U
Hydrocarbons (JP4)						U	4.590 U	4.720 U	4.910 U	4.690 U	4.630 U
Kerosene						U	4.590 U	4.720 U	4.910 U	4.690 U	4.630 U
Lube Oil (Motor)	171.6					U	11.500 U	11.800 U	12.300 U	11.700 U	11.600 U
Mineral spirits						U	4.590 U	4.720 U	4.910 U	4.690 U	4.630 U
Naphtha						U	4.590 U	4.720 U	4.910 U	4.690 U	4.630 U
Non-PHC as Diesel						U	4.590 U	4.720 U	23.900	38.300	17.800
PHC as Diesel	56.9					U	4.590 U	30.100	4.910 U	4.690 U	4.630 U
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			U	0.114 U	1.180 U	1.730	0.586 U	0.289 U
2,3,5,6-Tetrachlorophenol						U	0.114 U	1.180 U	1.530 U	0.586 U	0.289 U
2-Methylnaphthalene	0.1	4	b			U	0.036	0.236 U	0.794	0.117 U	0.057 U
Acenaphthene		368	N		570	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Acenaphthylene	0.051	9.5	c			U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Anthracene	0.025	2190	N			U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Benzo(a)anthracene	0.036	0.621	C	61000	2	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Benzo(a)pyrene		0.062	C	6100	8	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Benzo(ghi)perylene		1.1	c			U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Chrysene	0.059	62	C	6100000	160	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Dibenzo(a,h)anthracene		0.062	C	6100	2	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Fluoranthene	0.039	229	N		4300	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Fluorene		264	N		560	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Naphthalene		5.6	N		84	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Pentachloroanisole						U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
Pentachlorophenol	0.158	3.0	C	160000	0.03	U	1.020	7.330	25.400	5.730	2.390
Phenanthrene	0.023	23	c			U	0.022 U	0.236 U	0.390	0.117 U	0.057 U
Pyrene	0.055	231	N		4200	U	0.022 U	0.236 U	0.306 U	0.117 U	0.057 U
1,2-Dibromoethane		0.0069	C						0.006 U	0.005 U	
1,2-Dichloroethane				0.77	0.02				0.006 U	0.005 U	
Benzene		0.65	C	1.5	0.03				0.006 U	0.005 U	
Ethylbenzene		230	sat		13				0.016	0.005 U	
Methyl tert Butyl Ether				37					0.006 U	0.005 U	
M & P Xylene		210	sat						0.051	0.005 U	
O-Xylene		210	sat						0.033	0.005 U	
Total Xylenes (calculated)					210				0.084	0.005 U	
Toluene		520	sat		12				0.006 U	0.005 U	

Table H1-2. Subsurface soil (5-17 ft) samples from Treatment Area #1 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	GP-46 GP46SO01 2010212016 15 - 17 ft	GP-47 GP47SO01 2010212018 10 - 12 ft
Total Organic Carbon						200 *U*	200 *U*
Arsenic	1.7	0.39	C	1251	29	0.47 *U*	0.46 *U*
Chromium (as Cr VI)	7.8	23	N	64	38	5.16	13.10
Copper		291	N			2.33 *U*	2.39
Lead	11.7	40	N			2.51	4.40
Nickel		156	N			1.87 *U*	1.84 *U*
Diesel fuel						11.700 *U*	11.500 *U*
Heavy Fuel Oil #6						4.670 *U*	4.610 *U*
Hydrocarbons (JP4)						4.670 *U*	4.610 *U*
Kerosene						11.700 *U*	11.500 *U*
Lube Oil (Motor)	171.6					4.670 *U*	4.610 *U*
Mineral spirits						4.670 *U*	4.610 *U*
Naphtha						4.670 *U*	4.610 *U*
Non-PHC as Diesel						4.670 *U*	4.610 *U*
PHC as Diesel	56.9					0.058 *U*	0.057 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			0.058 *U*	0.057 *U*
2,3,5,6-Tetrachlorophenol						0.011 *U*	0.011 *U*
2-Methylnaphthalene	0.1	4	b			0.011 *U*	0.011 *U*
Acenaphthene		368	N		570	0.011 *U*	0.011 *U*
Acenaphthylene	0.051	9.5	c			0.011 *U*	0.011 *U*
Anthracene	0.025	2190	N			0.011 *U*	0.011 *U*
Benzo(a)anthracene	0.036	0.621	C	61000	2	0.011 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	6100	8	0.011 *U*	0.011 *U*
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	0.011 *U*	0.011 *U*
Benzo(ghi)perylene		1.1	c			0.011 *U*	0.011 *U*
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	0.011 *U*	0.011 *U*
Chrysene	0.059	62	C	6100000	160	0.011 *U*	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	6100	2	0.011 *U*	0.011 *U*
Fluoranthene	0.039	229	N		4300	0.011 *U*	0.011 *U*
Fluorene		264	N		560	0.011 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	0.011 *U*	0.011 *U*
Naphthalene		5.6	N		84	0.011 *U*	0.011 *U*
Pentachloroanisole						0.011 *U*	0.011 *U*
Pentachlorophenol	0.158	3.0	C	160000	0.03	0.058 *U*	0.057 *U*
Phenanthrene	0.023	23	c			0.011 *U*	0.011 *U*
Pyrene	0.055	231	N		4200	0.011 *U*	0.011 *U*
1,2-Dibromoethane		0.0069	C				
1,2-Dichloroethane				0.77	0.02		
Benzene		0.65	C	1.5	0.03		
Ethylbenzene		230	sat		13		
Methyl tert Butyl Ether				37			
M & P Xylene		210	sat				
O-Xylene		210	sat				
Total Xylenes (calculated)					210		
Toluene		520	sat		12		

Notes: Screening for subsurface soils up to 17 feet in depth.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-3. Deep subsurface soil (>17 ft) samples from Treatment Area #1 - Wiggins RFI, February 2001

									Station	GP-44	GP-45	GP-46	GP-47
									Sample	GP44SO05	GP45SO08	GP46SO04	GP47SO05
									Lab ID	2010209048	2010212014	2010212017	2010212019
									Replicate				
									Depth	30 - 32 ft	38 - 40 ft	30 - 32 ft	30 - 32 ft
Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Soil to Ground-water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>PRG-DAF20				
Total Organic Carbon					4	0				200 *U*	200 *U*	200 *U*	200 *U*
Arsenic	1.7	0.39	C	29	4	1	0.65	0.65		0.65	0.49 *U*	0.48 *U*	0.46 *U*
Chromium (as Cr VI)	7.8	23	N	38	4	4	0.551	2.61		2.6	0.6	1.6	0.9
Copper		291	N		4	0				2.48 *U*	2.45 *U*	2.42 *U*	2.29 *U*
Lead	11.7	40	N		4	4	2.27	4.72		4.72	3.75	2.27	3.22
Nickel		156	N		4	0				1.98 *U*	1.96 *U*	1.94 *U*	1.83 *U*
Diesel fuel					0	0							
Heavy Fuel Oil #6					4	0				12.40 *U*	12.30 *U*	12.10 *U*	11.50 *U*
Hydrocarbons (JP4)					4	0				4.95 *U*	4.90 *U*	4.84 *U*	4.58 *U*
Kerosene					4	0				4.95 *U*	4.90 *U*	4.84 *U*	4.58 *U*
Lube Oil (Motor)	171.6				4	0				12.40 *U*	12.30 *U*	12.10 *U*	11.50 *U*
Mineral spirits					4	0				4.95 *U*	4.90 *U*	4.84 *U*	4.58 *U*
Naphtha					4	0				4.95 *U*	4.90 *U*	4.84 *U*	4.58 *U*
Non-PHC as Diesel					4	0				4.95 *U*	4.90 *U*	4.84 *U*	4.58 *U*
PHC as Diesel	56.9				4	1	14.1	14.1		14.10	4.90 *U*	4.84 *U*	4.58 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N		4	0				0.123 *U*	0.061 *U*	0.060 *U*	0.057 *U*
2,3,5,6-Tetrachlorophenol					4	0				0.123 *U*	0.061 *U*	0.060 *U*	0.057 *U*
2-Methylnaphthalene	0.1	4	[b]		4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Acenaphthene		368	N	570	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Acenaphthylene	0.051	9.5	[c]		4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Anthracene	0.025	2190	N		4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Benzo(a)anthracene	0.036	0.621	C	2	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	8	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Benzo(b)fluoranthene	0.080	0.62	C	5	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Benzo(ghi)perylene		1.1	[c]		4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Benzo(k)fluoranthene	0.036	6.2	C	4.9	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Chrysene	0.059	62	C	160	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	2	4	1	0.026	0.026		0.026	0.012 *U*	0.012 *U*	0.011 *U*
Fluoranthene	0.039	229	N	4300	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Fluorene		264	N	560	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	14	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Naphthalene		5.6	N	84	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Pentachloroanisole					4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Pentachlorophenol	0.158	3.0	C	0.03	4	2	0.991	1.43	Y	1.430	0.061 *U*	0.991	0.057 *U*
Phenanthrene	0.023	23	[c]		4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
Pyrene	0.055	231	N	4200	4	0				0.024 *U*	0.012 *U*	0.012 *U*	0.011 *U*
1,2-Dibromoethane		0.0069	C		0	0							
1,2-Dichloroethane				0.02	0	0							
Benzene		0.65	C	0.03	0	0							
Ethylbenzene		230	sat	13	0	0							
Methyl tert Butyl Ether					0	0							
M & P Xylene		210	sat		0	0							
O-Xylene		210	sat		0	0							
Total Xylenes (calculated)				210	0	0							
Toluene		520	sat	12	0	0							

Notes: Screening for subsurface soils greater than 17 feet in depth.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-4. Surface soil (0-1.5 ft) samples from Treatment Area #2 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Residential soil to air	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	Selected as CoC?			
												Station	GP-04	GP-07	GP-10
												Sample	GP04SO01	GP07SO02	GP10SO01
												Lab ID	2010206053	2010206060	2010206066
												Replicate		1	
												Depth	0 - 1.5 ft	0 - 1.5 ft	0 - 1.5 ft
Total Organic Carbon					3	1	17800	17800					17800	200 *U*	200 *U*
Arsenic	1.7	0.39	C	590	3	3	0.98	1.23	B	Y			1.04	0.98	1.23
Chromium (as Cr VI)	7.8	23	N	30	3	3	11	13.5	Y				11.00	13.00	13.50
Copper		291	N		3	3	2.35	74.1					74.10	2.35	2.99
Lead	11.7	40	N		3	2	3.27	4.26	B				3.19 *U*	4.26	3.27
Nickel		156	N		3	1	30.5	30.5					30.50	1.79 *U*	1.80 *U*
Diesel fuel					3	0							850 *U*	4.47 *U*	180 *U*
Heavy Fuel Oil #6					3	0							2125 *U*	11.20 *U*	450 *U*
Hydrocarbons (JP4)					3	0							850 *U*	4.47 *U*	180 *U*
Kerosene					3	0							850 *U*	4.47 *U*	180 *U*
Lube Oil (Motor)	171.6				3	0							2125 *U*	11.20 *U*	450 *U*
Mineral spirits					3	0							850 *U*	4.47 *U*	180 *U*
Naphtha					3	0							850 *U*	4.47 *U*	180 *U*
Non-PHC as Diesel					3	0							850 *U*	4.47 *U*	180 *U*
PHC as Diesel	56.9				3	3	5.53	5440					5440	5.53	2250
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N		3	0							53 *U*	0.055 *U*	28 *U*
2,3,5,6-Tetrachlorophenol					3	0							53 *U*	0.055 *U*	28 *U*
2-Methylnaphthalene	0.1	4	b		3	0							11 *U*	0.011 *U*	5.640 *U*
Acenaphthene		368	N		3	1	56.4	56.4					56	0.011 *U*	5.640 *U*
Acenaphthylene	0.051	9.5	c		3	0							11 *U*	0.011 *U*	5.640 *U*
Anthracene	0.025	2190	N		3	1	26.6	26.6					27	0.011 *U*	5.640 *U*
Benzo(a)anthracene	0.036	0.621	C	29000	3	1	32.0	32.0		Y		Yes	32	0.011 *U*	5.640 *U*
Benzo(a)pyrene		0.062	C	2900	3	1	11.4	11.4		Y		Yes	11	0.011 *U*	5.640 *U*
Benzo(b)fluoranthene	0.080	0.62	C	29000	3	1	26.7	26.7		Y		Yes	27	0.011 *U*	5.640 *U*
Benzo(ghi)perylene		1.1	c		3	0							11 *U*	0.011 *U*	5.640 *U*
Benzo(k)fluoranthene	0.036	6.2	C	290000	3	1	11.6	11.6		Y		Yes	12	0.011 *U*	5.640 *U*
Chrysene	0.059	62	C	2900000	3	2	35.2	35.7					36	0.011 *U*	35.200
Dibenzo(a,h)anthracene		0.062	C	2900	3	0							11 *U*	0.011 *U*	5.640 *U*
Fluoranthene	0.039	229	N		3	2	93.7	190					190	0.011 *U*	93.700
Fluorene		264	N		3	1	63.6	63.6					64	0.011 *U*	5.640 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	29000	3	0							11 *U*	0.011 *U*	5.640 *U*
Naphthalene		5.6	N		3	0							11 *U*	0.011 *U*	5.640 *U*
Pentachloroanisole					3	0							11 *U*	0.011 *U*	5.640 *U*
Pentachlorophenol	0.158	3.0	C	74000	3	0							53 *U*	0.055 *U*	28.200 *U*
Phenanthrene	0.023	23	c		3	1	220	220		Y		Yes	220	0.011 *U*	5.640 *U*
Pyrene	0.055	231	N		3	2	135	213					135	0.011 *U*	213.000
1,2-Dibromoethane		0.0069	C		0	0									
1,2-Dichloroethane				0.36	0	0									
Benzene		0.65	C	0.69	0	0									
Ethylbenzene		230	sat		0	0									
Methyl tert Butyl Ether				18	0	0									
M & P Xylene		210	sat		0	0									
O-Xylene		210	sat		0	0									
Total Xylenes (calculated)					0	0									
Toluene		520	sat		0	0									

Notes: Screening completed on samples from 0 - 1.5 ft depth only.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-5. Subsurface soil (5-17 ft) samples from Treatment Area #2 - Wiggins RFI, February 2001

														Station	GP-01	GP-04	GP-06
														Sample	GP01SO02	GP04SO02	GP06SO02
														Lab ID	2010206048	2010206054	2010206058
														Replicate			
														Depth	5 - 6.5 ft	5 - 6.5 ft	5 - 6.5 ft
Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	>PRG-DAF20	Selected as CoC?			
Total Organic Carbon						13	2	200	4190						200 *U*	200 *U*	200 *U*
Arsenic	1.7	0.39	C	1251	29	13	12	0.45	2.30	Y	Y			Yes	0.79	2.30	1.43
Chromium (as Cr VI)	7.8	23	N	64	38	13	12	4.29	26.5	Y	Y			Yes	15.60	9.33	19.60
Copper		291	N			13	10	2.23	6.11						4.35	3.64	5.03
Lead	11.7	40	N			13	12	3.61	6.64	B					4.34	5.31	5.38
Nickel		156	N			13	1	2.27	2.27						1.86 *U*	2.27	1.88 *U*
Diesel fuel						11	0								4.650 *U*	18 *U*	94 *U*
Heavy Fuel Oil #6						13	0								11.600 *U*	45 *U*	235 *U*
Hydrocarbons (JP4)						13	0								4.650 *U*	18 *U*	94 *U*
Kerosene						13	0								4.650 *U*	18 *U*	94 *U*
Lube Oil (Motor)	171.6					13	0								11.600 *U*	45 *U*	235 *U*
Mineral spirits						13	0								4.650 *U*	18 *U*	94 *U*
Naphtha						13	0								4.650 *U*	18 *U*	94 *U*
Non-PHC as Diesel						13	1	4469	4469						4.650 *U*	18 *U*	94 *U*
PHC as Diesel	56.9					13	4	55.8	11800						55.800	127	1380
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			13	2	0.29	1.3						0.290 *U*	0.288	1.300
2,3,5,6-Tetrachlorophenol						13	1	55.9	55.9						0.290 *U*	0.565 *U*	1.250 *U*
2-Methylnaphthalene	0.1	4	b			13	7	0.018	194		Y			Yes	0.058 *U*	0.177	4.030
Acenaphthene		368	N		570	13	4	0.068	216						0.068	0.535	1.240
Acenaphthylene	0.051	9.5	c			13	1	11.2	11.2		Y			Yes	0.058 *U*	0.113 *U*	0.250 *U*
Anthracene	0.025	2190	N			13	3	0.027	62.9						0.058 *U*	0.113 *U*	0.487
Benzo(a)anthracene	0.036	0.621	C	61000	2	13	2	0.17	33.9		Y		Y	Yes	0.170	0.113 *U*	0.250 *U*
Benzo(a)pyrene		0.062	C	6100	8	13	1	0.0847	0.0847		Y			Yes	0.085	0.113 *U*	0.250 *U*
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	13	3	0.014	0.192						0.192	0.113 *U*	0.250 *U*
Benzo(ghi)perylene		1.1	c			13	2	0.014	0.058						0.058	0.113 *U*	0.250 *U*
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	13	1	0.0941	0.0941						0.094	0.113 *U*	0.250 *U*
Chrysene	0.059	62	C	6100000	160	13	4	0.015	31.6						0.218	0.113 *U*	0.250 *U*
Dibenzo(a,h)anthracene		0.062	C	6100	2	13	2	0.025	11.2		Y		Y	Yes	0.058 *U*	0.113 *U*	0.250 *U*
Fluoranthene	0.039	229	N		4300	13	8	0.014	268		Y			Yes	1.140	0.478	0.723
Fluorene		264	N		560	13	3	0.697	176						0.058 *U*	0.697	1.210
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	13	2	0.016	11.2		Y			Yes	0.058 *U*	0.113 *U*	0.250 *U*
Naphthalene		5.6	N		84	13	3	0.032	154		Y		Y	Yes	0.058 *U*	0.113 *U*	1.660
Pentachloroanisole						13	1	11.2	11.2						0.058 *U*	0.113 *U*	0.250 *U*
Pentachlorophenol	0.158	3.0	C	160000	0.03	13	5	0.113	542		Y		Y	Yes	0.349	6.240	18.400
Phenanthrene	0.023	23	c			13	6	0.021	499		Y			Yes	0.144	2.280	3.170
Pyrene	0.055	231	N		4200	13	7	0.012	178						0.797	0.336	0.582
1,2-Dibromoethane		0.0069	C			2	0										
1,2-Dichloroethane				0.77	0.02	2	0										
Benzene		0.65	C	1.5	0.03	2	1	0.698	0.698		Y		Y	Yes			
Ethylbenzene		230	sat		13	2	1	0.771	0.771								
Methyl tert Butyl Ether				37		2	1	0.698	0.698								
M & P Xylene		210	sat			2	0										
O-Xylene		210	sat			2	0										
Total Xylenes (calculated)					210	2	0										
Toluene		520	sat		12	2	1	0.698	0.698								

Table H1-5. Subsurface soil (5-17 ft) samples from Treatment Area #2 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	GP-08 GP08SO02 2010206063 5 - 6.5 ft	GP-10 GP10SO02 2010206067 5 - 6.5 ft	GP-33 GP33SO02 2010208070 5 - 6.5 ft	GP-34 GP34SO02 2010208072 5 - 6.5 ft	GP-36 GP36SO02 2010208076 5 - 6.5 ft	GP-38 GP38SO02 2010208081 5 - 6.5 ft	GP-42 GP42SO02 2010209045 15 - 17 ft
Total Organic Carbon						200 *U*	200 *U*	200 *U*	4190	200 *U*	200 *U*	200 *U*
Arsenic	1.7	0.39	C	1251	29	0.87	1.26	0.84	0.66	1.40	1.03	0.52
Chromium (as Cr VI)	7.8	23	N	64	38	12.10	16.60	15.10	9.70	26.50	12.90	17.20
Copper		291	N			2.49	3.10	6.11	2.57	3.74	3.93	4.66 *U*
Lead	11.7	40	N			4.26	3.78	3.78	4.25	6.64	4.37	4.19
Nickel		156	N			1.83 *U*	1.83 *U*	1.91 *U*	1.90 *U*	1.91 *U*	1.86 *U*	3.73 *U*
Diesel fuel						4.59 *U*	4.58 *U*	4.77 *U*	948 *U*	4.78 *U*	4.64 *U*	
Heavy Fuel Oil #6						11.50 *U*	11.50 *U*	11.90 *U*	2372 *U*	12.00 *U*	11.60 *U*	11.70 *U*
Hydrocarbons (JP4)						4.59 *U*	4.58 *U*	4.77 *U*	948 *U*	4.78 *U*	4.64 *U*	4.66 *U*
Kerosene						4.59 *U*	4.58 *U*	4.77 *U*	948 *U*	4.78 *U*	4.64 *U*	4.66 *U*
Lube Oil (Motor)	171.6					11.50 *U*	11.50 *U*	11.90 *U*	2372 *U*	12.00 *U*	11.60 *U*	11.70 *U*
Mineral spirits						4.59 *U*	4.58 *U*	4.77 *U*	948 *U*	4.78 *U*	4.64 *U*	4.66 *U*
Naphtha						4.59 *U*	4.58 *U*	4.77 *U*	948 *U*	4.78 *U*	4.64 *U*	4.66 *U*
Non-PHC as Diesel						4.59 *U*	4.58 *U*	4.77 *U*	948 *U*	4.78 *U*	4.64 *U*	4.66 *U*
PHC as Diesel	56.9					4.59 *U*	4.58 *U*	4.77 *U*	11800	4.78 *U*	4.64 *U*	4.66 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			0.057 *U*	0 *U*	0 *U*	30 *U*	0.059 *U*	0.058 *U*	0.058 *U*
2,3,5,6-Tetrachlorophenol						0.057 *U*	0.057 *U*	0.059 *U*	30 *U*	0.059 *U*	0.058 *U*	0.058 *U*
2-Methylnaphthalene	0.1	4	b			0.011 *U*	0.011 *U*	0.019	126	0.019	0.011 *U*	0.011 *U*
Acenaphthene		368	N		570	0.011 *U*	0.011 *U*	0.011 *U*	216	0.011 *U*	0.011 *U*	0.011 *U*
Acenaphthylene	0.051	9.5	c			0.011 *U*	0.011 *U*	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.011 *U*
Anthracene	0.025	2190	N			0.011 *U*	0.027	0.011 *U*	63	0.011 *U*	0.011 *U*	0.011 *U*
Benzo(a)anthracene	0.036	0.621	C	61000	2	0.011 *U*	0.011 *U*	0.011 *U*	34	0.011 *U*	0.011 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	6100	8	0.011 *U*	0.011 *U*	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.011 *U*
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	0.011 *U*	0.028	0.011 *U*	6 *U*	0.014	0.011 *U*	0.011 *U*
Benzo(ghi)perylene		1.1	c			0.011 *U*	0.014	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.011 *U*
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	0.011 *U*	0.011 *U*	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.011 *U*
Chrysene	0.059	62	C	6100000	160	0.011 *U*	0.021	0.011 *U*	32	0.015	0.011 *U*	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	6100	2	0.011 *U*	0.011 *U*	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.025
Fluoranthene	0.039	229	N		4300	0.011 *U*	0.021	0.011 *U*	268	0.046	0.011 *U*	0.011 *U*
Fluorene		264	N		560	0.011 *U*	0.011 *U*	0.011 *U*	176	0.011 *U*	0.011 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	0.011 *U*	0.016	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.011 *U*
Naphthalene		5.6	N		84	0.011 *U*	0.011 *U*	0.011 *U*	154	0.032	0.011 *U*	0.011 *U*
Pentachloroanisole						0.011 *U*	0.011 *U*	0.011 *U*	6 *U*	0.011 *U*	0.011 *U*	0.011 *U*
Pentachlorophenol	0.158	3.0	C	160000	0.03	0.057 *U*	0.057 *U*	0.059 *U*	30 *U*	0.059 *U*	0.058 *U*	0.113
Phenanthrene	0.023	23	c			0.011 *U*	0.011 *U*	0.011 *U*	499	0.021	0.011 *U*	0.011 *U*
Pyrene	0.055	231	N		4200	0.011 *U*	0.106	0.011 *U*	178	0.033	0.011 *U*	0.011 *U*
1,2-Dibromoethane		0.0069	C									
1,2-Dichloroethane				0.77	0.02							
Benzene		0.65	C	1.5	0.03							
Ethylbenzene		230	sat		13							
Methyl tert Butyl Ether				37								
M & P Xylene		210	sat									
O-Xylene		210	sat									
Total Xylenes (calculated)					210							
Toluene		520	sat		12							

Table H1-5. Subsurface soil (5-17 ft) samples from Treatment Area #2 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Industrial soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	GP-43 GP43SO01 2010209050 10 - 12 ft	GP-48 GP48SO01 2010212022 10 - 12 ft	GP-49 GP49SO01 2010212025 10 - 12 ft
Total Organic Carbon						200 *U*	200 *U*	200
Arsenic	1.7	0.39	C	1251	29	0.46 *U*	0.56	0.45
Chromium (as Cr VI)	7.8	23	N	64	38	4.29	13.60	4.44 *U*
Copper		291	N			2.30 *U*	2.34 *U*	2.23
Lead	11.7	40	N			3.61	4.15	2.44 *U*
Nickel		156	N			1.84 *U*	1.87 *U*	1.79 *U*
Diesel fuel						4.60 *U*		4469 *U*
Heavy Fuel Oil #6						11.50 *U*	11.70 *U*	11173 *U*
Hydrocarbons (JP4)						4.60 *U*	4.68 *U*	4469 *U*
Kerosene						4.60 *U*	4.68 *U*	4469 *U*
Lube Oil (Motor)	171.6					11.50 *U*	11.70 *U*	11173 *U*
Mineral spirits						4.60 *U*	4.68 *U*	4469 *U*
Naphtha						4.60 *U*	4.68 *U*	4469 *U*
Non-PHC as Diesel						4.60 *U*	4.68 *U*	4469
PHC as Diesel	56.9					4.60 *U*	4.68 *U*	11700 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			0.057 *U*	0.058 *U*	56 *U*
2,3,5,6-Tetrachlorophenol						0.057 *U*	0.058 *U*	56
2-Methylnaphthalene	0.1	4	[b]			0.018	0.011 *U*	194
Acenaphthene		368	N		570	0.011 *U*	0.011 *U*	105 *U*
Acenaphthylene	0.051	9.5	[c]			0.011 *U*	0.011 *U*	11
Anthracene	0.025	2190	N			0.011 *U*	0.011 *U*	32 *U*
Benzo(a)anthracene	0.036	0.621	C	61000	2	0.011 *U*	0.011 *U*	11 *U*
Benzo(a)pyrene		0.062	C	6100	8	0.011 *U*	0.011 *U*	11 *U*
Benzo(b)fluoranthene	0.080	0.62	C	61000	5	0.011 *U*	0.011 *U*	11 *U*
Benzo(ghi)perylene		1.1	[c]			0.011 *U*	0.011 *U*	11 *U*
Benzo(k)fluoranthene	0.036	6.2	C	610000	4.9	0.011 *U*	0.011 *U*	11 *U*
Chrysene	0.059	62	C	6100000	160	0.011 *U*	0.011 *U*	11 *U*
Dibenzo(a,h)anthracene		0.062	C	6100	2	0.011 *U*	0.011 *U*	11
Fluoranthene	0.039	229	N		4300	0.014	0.011 *U*	48
Fluorene		264	N		560	0.011 *U*	0.011 *U*	77 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	61000	14	0.011 *U*	0.011 *U*	11
Naphthalene		5.6	N		84	0.011 *U*	0.011 *U*	267 *U*
Pentachloroanisole						0.011 *U*	0.011 *U*	11
Pentachlorophenol	0.158	3.0	C	160000	0.03	0.057 *U*	0.058 *U*	542
Phenanthrene	0.023	23	[c]			0.011 *U*	0.011 *U*	191
Pyrene	0.055	231	N		4200	0.012	0.011 *U*	34 *U*
1,2-Dibromoethane		0.0069	C			0.005 *U*		0.698 *U*
1,2-Dichloroethane				0.77	0.02	0.005 *U*		0.698 *U*
Benzene		0.65	C	1.5	0.03	0.005 *U*		0.698
Ethylbenzene		230	sat		13	0.005 *U*		0.771
Methyl tert Butyl Ether				37		0.005 *U*		0.698
M & P Xylene		210	sat			0.005 *U*		2.440 *U*
O-Xylene		210	sat			0.005 *U*		1.290 *U*
Total Xylenes (calculated)					210	0.005 *U*		2.440 *U*
Toluene		520	sat		12	0.005 *U*		0.698

Notes: Screening for subsurface soils up to 17 feet in depth.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-6. Deep subsurface soil (>17 ft) samples from Treatment Area #2 - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Soil to Ground-water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>PRG-DAF20	GP-42	GP-43	GP-48	GP-48	GP-49
Station										GP-42	GP-43	GP-48	GP-48	GP-49
Sample										GP42SO05	GP43SO03	GP48SO05	GP48SO06	GP49SO05
Lab ID										2010209046	2010209047	2010212023	2010212024	2010212021
Replicate													1	
Depth										30 - 32 ft	20 - 22 ft	30 - 32 ft	30 - 32 ft	30 - 32 ft
Total Organic Carbon					5	0				200 *U*	200 *U*	200 *U*	200 *U*	200 *U*
Arsenic	1.7	0.39	C	29	5	0				0.45 *U*	0.48 *U*	0.45 *U*	0.44 *U*	0.51 *U*
Chromium (as Cr VI)	7.8	23	N	38	5	5	1.01	16.9		1.0	1.8	1.7	1.7	16.9
Copper		291	N		5	0				2.27 *U*	2.38 *U*	2.23 *U*	2.22 *U*	2.56 *U*
Lead	11.7	40	N		5	5	2.69	7.62		2.69	3.38	6.12	3.43	7.62
Nickel		156	N		5	0				1.81 *U*	1.90 *U*	1.78 *U*	1.78 *U*	2.05 *U*
Diesel fuel					0	0								
Heavy Fuel Oil #6					5	0				11.30 *U*	11.90 *U*	11.10 *U*	11.10 *U*	12.80 *U*
Hydrocarbons (JP4)					5	0				4.54 *U*	4.76 *U*	4.45 *U*	4.45 *U*	5.12 *U*
Kerosene					5	0				4.54 *U*	4.76 *U*	4.45 *U*	4.45 *U*	5.12 *U*
Lube Oil (Motor)	171.6				5	0				11.30 *U*	11.90 *U*	11.10 *U*	11.10 *U*	12.80 *U*
Mineral spirits					5	0				4.54 *U*	4.76 *U*	4.45 *U*	4.45 *U*	5.12 *U*
Naphtha					5	0				4.54 *U*	4.76 *U*	4.45 *U*	4.45 *U*	5.12 *U*
Non-PHC as Diesel					5	0				4.54 *U*	4.76 *U*	4.45 *U*	4.45 *U*	5.12 *U*
PHC as Diesel	56.9				5	2	6.70	7.47		4.54 *U*	4.76 *U*	7.47	6.70	5.12 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N		5	0				0.056 *U*	0.059 *U*	0.111 *U*	0.055 *U*	0.063 *U*
2,3,5,6-Tetrachlorophenol					5	0				0.056 *U*	0.059 *U*	0.111 *U*	0.055 *U*	0.063 *U*
2-Methylnaphthalene	0.1	4	[b]		5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Acenaphthene		368	N	570	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Acenaphthylene	0.051	9.5	[c]		5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Anthracene	0.025	2190	N		5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Benzo(a)anthracene	0.036	0.621	C	2	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Benzo(a)pyrene		0.062	C	8	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Benzo(b)fluoranthene	0.080	0.62	C	5	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Benzo(ghi)perylene		1.1	[c]		5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Benzo(k)fluoranthene	0.036	6.2	C	4.9	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Chrysene	0.059	62	C	160	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Dibenzo(a,h)anthracene		0.062	C	2	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Fluoranthene	0.039	229	N	4300	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Fluorene		264	N	560	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	14	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Naphthalene		5.6	N	84	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Pentachloroanisole					5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
Pentachlorophenol	0.158	3.0	C	0.03	5	3	0.44	1.02	Y	0.056 *U*	0.440	1.020	0.506	0.063 *U*
Phenanthrene	0.023	23	[c]		5	1	0.025	0.025		0.011 *U*	0.011 *U*	0.025	0.011 *U*	0.012 *U*
Pyrene	0.055	231	N	4200	5	0				0.011 *U*	0.011 *U*	0.022 *U*	0.011 *U*	0.012 *U*
1,2-Dibromoethane		0.0069	C		0	0								
1,2-Dichloroethane				0.02	0	0								
Benzene		0.65	C	0.03	0	0								
Ethylbenzene		230	sat	13	0	0								
Methyl tert Butyl Ether					0	0								
M & P Xylene		210	sat		0	0								
O-Xylene		210	sat		0	0								
Total Xylenes (calculated)				210	0	0								
Toluene		520	sat	12	0	0								

Notes: Screening for subsurface soils greater than 17 feet in depth.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-7. Surface (0-1.5 ft) and subsurface soil (5-6.5 ft) samples from the Vehicle Maintenance Area - Wiggins RFI, February 2001

													Station	GP-50	GP-50	GP-51
													Sample	GP50SO01	GP50SO02	GP51SO01
													Lab ID	2010212026	2010212027	2010212028
													Replicate			
													Depth	0 - 1.5 ft	5 - 6.5 ft	0 - 1.5 ft
Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soila		EPA Region 9 PRGs Residential soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	>PRG-DAF20	Selected as CoC?			
Total Organic Carbon						0	0										
Arsenic	1.7	0.39	C	590	29	0	0										
Chromium (as Cr VI)	7.8	23	N	30	38	0	0										
Copper		291	N			0	0										
Lead	11.7	40	N			0	0										
Nickel		156	N			0	0										
Diesel fuel						0	0										
Heavy Fuel Oil #6						0	0										
Hydrocarbons (JP4)						0	0										
Kerosene						0	0										
Lube Oil (Motor)	171.6					0	0										
Mineral spirits						0	0										
Naphtha						0	0										
Non-PHC as Diesel						0	0										
PHC as Diesel	56.9					0	0										
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			6	0								0.056 U	0.056 U	0.057
2,3,5,6-Tetrachlorophenol						6	0								0.056 U	0.056 U	0.057
2-Methylnaphthalene	0.1	4	b			6	0								0.011 U	0.011 U	0.011
Acenaphthene		368	N		570	6	0								0.011 U	0.011 U	0.011
Acenaphthylene	0.051	9.5	c			6	0								0.011 U	0.011 U	0.011
Anthracene	0.025	2190	N			6	0								0.011 U	0.011 U	0.011
Benzo(a)anthracene	0.036	0.621	C	29000	2	6	0								0.011 U	0.011 U	0.011
Benzo(a)pyrene		0.062	C	2900	8	6	0								0.011 U	0.011 U	0.011
Benzo(b)fluoranthene	0.080	0.62	C	29000	5	6	0								0.011 U	0.011 U	0.011
Benzo(ghi)perylene		1.1	c			6	0								0.011 U	0.011 U	0.011
Benzo(k)fluoranthene	0.036	6.2	C	290000	4.9	6	0								0.011 U	0.011 U	0.011
Chrysene	0.059	62	C	2900000	160	6	0								0.011 U	0.011 U	0.011
Dibenzo(a,h)anthracene		0.062	C	2900	2	6	0								0.011 U	0.011 U	0.011
Fluoranthene	0.039	229	N		4300	6	0								0.011 U	0.011 U	0.011
Fluorene		264	N		560	6	0								0.011 U	0.011 U	0.011
Indeno(1,2,3-c,d)pyrene		0.62	C	29000	14	6	0								0.011 U	0.011 U	0.011
Naphthalene		5.6	N		84	6	0								0.011 U	0.011 U	0.011
Pentachloroanisole						6	0								0.011 U	0.011 U	0.011
Pentachlorophenol	0.158	3.0	C	74000	0.03	6	2	0.069	0.117				Y		0.056 U	0.117	0.057
Phenanthrene	0.023	23	c			6	1	0.025	0.025						0.011 U	0.025	0.011
Pyrene	0.055	231	N		4200	6	0								0.011 U	0.011 U	0.011
1,2-Dibromoethane		0.0069	C			6	0								0.005 U	0.005 U	0.005
1,2-Dichloroethane				0.36	0.02	6	0								0.005 U	0.005 U	0.005
Benzene		0.65	C	0.69	0.03	6	0								0.005 U	0.005 U	0.005
Ethylbenzene		230	sat		13	6	0								0.005 U	0.005 U	0.005
Methyl tert Butyl Ether				18		6	0								0.005 U	0.005 U	0.005
M & P Xylene		210	sat			6	0								0.005 U	0.005 U	0.005
O-Xylene		210	sat			6	0								0.005 U	0.005 U	0.005
Total Xylenes (calculated)					210	6	0								0.005 U	0.005 U	0.005
Toluene		520	sat		12	6	0								0.005 U	0.005 U	0.005

Table H1-7. Surface (0-1.5 ft) and subsurface soil (5-6.5 ft) samples from the Vehicle Maintenance Area - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soila		EPA Region 9 PRGs Residential soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	>PRG-DAF20	Selected as CoC?			
														Station	GP-51	GP-52	GP-52
														Sample	GP51SO02	GP52SO01	GP52SO02
														Lab ID	2010212030	2010212031	2010212029
														Replicate			
														Depth	5 - 6.5 ft	0 - 1.5 ft	5 - 6.5 ft
Total Organic Carbon						0	0										
Arsenic	1.7	0.39	C	590	29	0	0										
Chromium (as Cr VI)	7.8	23	N	30	38	0	0										
Copper		291	N			0	0										
Lead	11.7	40	N			0	0										
Nickel		156	N			0	0										
Diesel fuel						0	0										
Heavy Fuel Oil #6						0	0										
Hydrocarbons (JP4)						0	0										
Kerosene						0	0										
Lube Oil (Motor)	171.6					0	0										
Mineral spirits						0	0										
Naphtha						0	0										
Non-PHC as Diesel						0	0										
PHC as Diesel	56.9					0	0										
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			6	0							U	0.057 U	0.057 U	0.058
2,3,5,6-Tetrachlorophenol						6	0							U	0.057 U	0.057 U	0.058
2-Methylnaphthalene	0.1	4	b			6	0							U	0.011 U	0.011 U	0.011
Acenaphthene		368	N		570	6	0							U	0.011 U	0.011 U	0.011
Acenaphthylene	0.051	9.5	c			6	0							U	0.011 U	0.011 U	0.011
Anthracene	0.025	2190	N			6	0							U	0.011 U	0.011 U	0.011
Benzo(a)anthracene	0.036	0.621	C	29000	2	6	0							U	0.011 U	0.011 U	0.011
Benzo(a)pyrene		0.062	C	2900	8	6	0							U	0.011 U	0.011 U	0.011
Benzo(b)fluoranthene	0.080	0.62	C	29000	5	6	0							U	0.011 U	0.011 U	0.011
Benzo(ghi)perylene		1.1	c			6	0							U	0.011 U	0.011 U	0.011
Benzo(k)fluoranthene	0.036	6.2	C	290000	4.9	6	0							U	0.011 U	0.011 U	0.011
Chrysene	0.059	62	C	2900000	160	6	0							U	0.011 U	0.011 U	0.011
Dibenzo(a,h)anthracene		0.062	C	2900	2	6	0							U	0.011 U	0.011 U	0.011
Fluoranthene	0.039	229	N		4300	6	0							U	0.011 U	0.011 U	0.011
Fluorene		264	N		560	6	0							U	0.011 U	0.011 U	0.011
Indeno(1,2,3-c,d)pyrene		0.62	C	29000	14	6	0							U	0.011 U	0.011 U	0.011
Naphthalene		5.6	N		84	6	0							U	0.011 U	0.011 U	0.011
Pentachloroanisole						6	0							U	0.011 U	0.011 U	0.011
Pentachlorophenol	0.158	3.0	C	74000	0.03	6	2	0.069	0.117				Y	U	0.057 U	0.069	0.058
Phenanthrene	0.023	23	c			6	1	0.025	0.025					U	0.011 U	0.011 U	0.011
Pyrene	0.055	231	N		4200	6	0							U	0.011 U	0.011 U	0.011
1,2-Dibromoethane		0.0069	C			6	0							U	0.005 U	0.005 U	0.005
1,2-Dichloroethane				0.36	0.02	6	0							U	0.005 U	0.005 U	0.005
Benzene		0.65	C	0.69	0.03	6	0							U	0.005 U	0.005 U	0.005
Ethylbenzene		230	sat		13	6	0							U	0.005 U	0.005 U	0.005
Methyl tert Butyl Ether				18		6	0							U	0.005 U	0.005 U	0.005
M & P Xylene		210	sat			6	0							U	0.005 U	0.005 U	0.005
O-Xylene		210	sat			6	0							U	0.005 U	0.005 U	0.005
Total Xylenes (calculated)					210	6	0							U	0.005 U	0.005 U	0.005
Toluene		520	sat		12	6	0							U	0.005 U	0.005 U	0.005

Table H1-7. Surface (0-1.5 ft) and subsurface soil (5-6.5 ft) samples from the Vehicle Maintenance Area - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soila		EPA Region 9 PRGs Residential soil to air	EPA Region 9 PRGs Soil to Ground- water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	>PRG-DAF20	Station Sample Lab ID Replicate Depth Selected as CoC?
Total Organic Carbon						0	0							
Arsenic	1.7	0.39	C	590	29	0	0							
Chromium (as Cr VI)	7.8	23	N	30	38	0	0							
Copper		291	N			0	0							
Lead	11.7	40	N			0	0							
Nickel		156	N			0	0							
Diesel fuel						0	0							
Heavy Fuel Oil #6						0	0							
Hydrocarbons (JP4)						0	0							
Kerosene						0	0							
Lube Oil (Motor)	171.6					0	0							
Mineral spirits						0	0							
Naphtha						0	0							
Non-PHC as Diesel						0	0							
PHC as Diesel	56.9					0	0							
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			6	0							U
2,3,5,6-Tetrachlorophenol						6	0							U
2-Methylnaphthalene	0.1	4	b			6	0							U
Acenaphthene		368	N		570	6	0							U
Acenaphthylene	0.051	9.5	c			6	0							U
Anthracene	0.025	2190	N			6	0							U
Benzo(a)anthracene	0.036	0.621	C	29000	2	6	0							U
Benzo(a)pyrene		0.062	C	2900	8	6	0							U
Benzo(b)fluoranthene	0.080	0.62	C	29000	5	6	0							U
Benzo(ghi)perylene		1.1	c			6	0							U
Benzo(k)fluoranthene	0.036	6.2	C	290000	4.9	6	0							U
Chrysene	0.059	62	C	2900000	160	6	0							U
Dibenzo(a,h)anthracene		0.062	C	2900	2	6	0							U
Fluoranthene	0.039	229	N		4300	6	0							U
Fluorene		264	N		560	6	0							U
Indeno(1,2,3-c,d)pyrene		0.62	C	29000	14	6	0							U
Naphthalene		5.6	N		84	6	0							U
Pentachloroanisole						6	0							U
Pentachlorophenol	0.158	3.0	C	74000	0.03	6	2	0.069	0.117				Y	U
Phenanthrene	0.023	23	c			6	1	0.025	0.025					U
Pyrene	0.055	231	N		4200	6	0							U
1,2-Dibromoethane		0.0069	C			6	0							U
1,2-Dichloroethane				0.36	0.02	6	0							U
Benzene		0.65	C	0.69	0.03	6	0							U
Ethylbenzene		230	sat		13	6	0							U
Methyl tert Butyl Ether				18		6	0							U
M & P Xylene		210	sat			6	0							U
O-Xylene		210	sat			6	0							U
Total Xylenes (calculated)					210	6	0							U
Toluene		520	sat		12	6	0							U

Notes: Soil and soil to air screening completed on samples from 0 - 1.5 ft depth and 5-6.5 ft depth. Soil to groundwater screening completed on 5-6.5 ft depth only.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-8. Surface (0-1.5 ft) and subsurface soil (5-6.5 ft) samples from the Treated Wood Storage Areas - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		EPA Region 9 PRGs Residential soil to air	EPA Region 9 PRGs Soil to Ground-water (DAF20)	Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	>PRG-Inh.	>PRG-DAF20	Selected as CoC?	Station	GP-53	GP-53
															Sample	GP53SO01	GP53SO02
															Lab ID	2010212041	2010212042
															Replicate		
															Depth	0 - 1.5 ft	5 - 6.5 ft
Total Organic Carbon						0	0										
Arsenic	1.7	0.39	C	590	29	2	2	0.69	0.731	B	Y					0.73	0.69
Chromium (as Cr VI)	7.8	23	N	30	38	2	2	7.91	11.6	Y						7.91	11.6
Copper		291	N			2	1	2.52	2.52							2.25 *U*	2.52
Lead	11.7	40	N			2	2	4.98	5.51	B						5.51	4.98
Nickel		156	N			2	0									1.80 *U*	1.83 *U*
Diesel fuel						0	0										
Heavy Fuel Oil #6						2	0									11.30 *U*	11.50 *U*
Hydrocarbons (JP4)						2	0									4.50 *U*	4.59 *U*
Kerosene						2	0									4.50 *U*	4.59 *U*
Lube Oil (Motor)	171.6					2	0									11.30 *U*	11.50 *U*
Mineral spirits						2	0									4.50 *U*	4.59 *U*
Naphtha						2	0									4.50 *U*	4.59 *U*
Non-PHC as Diesel						2	0									4.50 *U*	4.59 *U*
PHC as Diesel	56.9					2	0									4.50 *U*	4.59 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N			2	0									0.056 *U*	0.057 *U*
2,3,5,6-Tetrachlorophenol						2	0									0.056 *U*	0.057 *U*
2-Methylnaphthalene	0.1	4	[b]			2	0									0.011 *U*	0.011 *U*
Acenaphthene		368	N		570	2	0									0.011 *U*	0.011 *U*
Acenaphthylene	0.051	9.5	[c]			2	0									0.011 *U*	0.011 *U*
Anthracene	0.025	2190	N			2	0									0.011 *U*	0.011 *U*
Benzo(a)anthracene	0.036	0.621	C	29000	2	2	0									0.011 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	2900	8	2	0									0.011 *U*	0.011 *U*
Benzo(b)fluoranthene	0.080	0.62	C	29000	5	2	0									0.011 *U*	0.011 *U*
Benzo(ghi)perylene		1.1	[c]			2	0									0.011 *U*	0.011 *U*
Benzo(k)fluoranthene	0.036	6.2	C	290000	4.9	2	0									0.011 *U*	0.011 *U*
Chrysene	0.059	62	C	2900000	160	2	0									0.011 *U*	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	2900	2	2	0									0.011 *U*	0.011 *U*
Fluoranthene	0.039	229	N		4300	2	0									0.011 *U*	0.011 *U*
Fluorene		264	N		560	2	0									0.011 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	29000	14	2	0									0.011 *U*	0.011 *U*
Naphthalene		5.6	N		84	2	0									0.011 *U*	0.011 *U*
Pentachloroanisole						2	0									0.011 *U*	0.011 *U*
Pentachlorophenol	0.158	3.0	C	74000	0.03	2	1	0.142	0.142				Y			0.142	0.057 *U*
Phenanthrene	0.023	23	[c]			2	0									0.011 *U*	0.011 *U*
Pyrene	0.055	231	N		4200	2	0									0.011 *U*	0.011 *U*
1,2-Dibromoethane		0.0069	C			0	0										
1,2-Dichloroethane				0.36	0.02	0	0										
Benzene		0.65	C	0.69	0.03	0	0										
Ethylbenzene		230	sat		13	0	0										
Methyl tert Butyl Ether				18		0	0										
M & P Xylene		210	sat			0	0										
O-Xylene		210	sat			0	0										
Total Xylenes (calculated)					210	0	0										
Toluene		520	sat		12	0	0										

Notes: Soil and soil to air screening completed on samples from 0 - 1.5 ft depth and 5-6.5 ft depth. Soil to groundwater screening completed on 5-6.5 ft depth only.

B - below background
C - cancer endpoint
N - noncancer endpoint
sat - soil saturation
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.
[b] Screening value was provided from Massachusetts Cleanup Standards for Hydrocarbon Contaminated Soil.
[c] Screening value was provided from Mississippi Cleanup Standards for Hydrocarbon Contaminated Soil.

Table H1-9. Sedimentl (0-1 ft) samples from the Church House Branch - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	Selected as CoC?	Station	CHBSD1	CHBSD2	CHBSD3	CHBSD4	CHBSD5	CHBSD6
											Sample	CHBSD101	CHBSD201	CHBSD301	CHBSD401	CHBSD501	CHBSD601
											Lab ID	2010212099	2010212100	2010212101	2010212125	2010212102	2010212103
											Replicate						
											Depth	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft
Gravel (%)				6	6	0.0	24.7					0.0	0.0	24.7	0.0	0.0	0.0
Sand (%)				6	6	34.1	71.8					38.9	51.4	34.1	41.0	71.8	63.8
Silt (%)				6	6	20.4	39.1					39.1	32.9	24.9	38.0	20.4	27.0
Clay (%)				6	6	7.3	21.9					21.9	15.6	16.3	21.0	7.3	9.0
Total Organic Carbon				6	6	13800	50800					50800	22100	13800	20000	32800	20800
Total Solids (wt)				6	6	52.5	75.0					52.5	65.2	75.0	61.8	65.0	67.2
Arsenic		0.39	C	6	6	1.5	6.3		Y	Yes		1.7	3.2	4.4	6.3	2.8	1.5
Chromium (as Cr VI)	7	23	N	6	6	4.7	19.1	Y				8.8	8.5	11.1	19.1	8.9	4.7
Copper		291	N	6	5	4.5	10.0					7.1	6.2	5.7	10.0	4.5	3.0 *U*
Lead	11	40	N	6	6	5.7	19.9	Y				19.9	10.6	6.0	12.3	6.8	5.7
Nickel		156	N	6	1	2.0	2.0					2.0	2.5 *U*	2.1 *U*	2.6 *U*	2.5 *U*	2.4 *U*
Diesel fuel				6	0							38.1 *U*	30.7 *U*	5.3 *U*	32.4 *U*	6.2 *U*	6.0 *U*
Heavy Fuel Oil #6				6	0							95.2 *U*	76.7 *U*	13.3 *U*	80.9 *U*	15.4 *U*	14.9 *U*
Hydrocarbons (JP4)				6	0							38.1 *U*	30.7 *U*	5.3 *U*	32.4 *U*	6.2 *U*	6.0 *U*
Kerosene				6	0							38.1 *U*	30.7 *U*	5.3 *U*	32.4 *U*	6.2 *U*	6.0 *U*
Lube Oil (Motor)				6	0							95.2 *U*	76.7 *U*	13.3 *U*	80.9 *U*	15.4 *U*	14.9 *U*
Mineral spirits				6	0							38.1 *U*	30.7 *U*	5.3 *U*	32.4 *U*	6.2 *U*	6.0 *U*
Naphtha				6	0							38.1 *U*	30.7 *U*	5.3 *U*	32.4 *U*	6.2 *U*	6.0 *U*
Non-PHC as Diesel				6	0							38.1 *U*	30.7 *U*	5.3 *U*	32.4 *U*	6.2 *U*	6.0 *U*
PHC as Diesel	63			6	6	39.2	246					246.0	169.0	66.3	99.9	77.5	39.2
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N	6	1	0.169	0.169					0.095 *U*	0.153 *U*	0.066 *U*	0.169	0.076 *U*	0.074 *U*
2,3,5,6-Tetrachlorophenol				6	0							0.095 *U*	0.153 *U*	0.066 *U*	0.161 *U*	0.076 *U*	0.074 *U*
2-Methylnaphthalene		4	[b]	6	0							0.019 *U*	0.030 *U*	0.013 *U*	0.032 *U*	0.015 *U*	0.014 *U*
Acenaphthene		368	N	6	0							0.019 *U*	0.030 *U*	0.013 *U*	0.032 *U*	0.015 *U*	0.014 *U*
Acenaphthylene		9.5	[c]	6	1	0.035	0.035					0.019 *U*	0.030 *U*	0.013 *U*	0.035	0.015 *U*	0.014 *U*
Anthracene		2190	N	6	3	0.033	0.144					0.019 *U*	0.144	0.033	0.077	0.015 *U*	0.014 *U*
Benzo(a)anthracene		0.621	C	6	3	0.052	0.075					0.019 *U*	0.058	0.052	0.075	0.015 *U*	0.014 *U*
Benzo(a)pyrene		0.062	C	6	4	0.022	0.171		Y	Yes		0.019 *U*	0.171	0.073	0.075	0.022	0.014 *U*
Benzo(b)fluoranthene		0.62	C	6	4	0.046	0.264					0.019 *U*	0.187	0.144	0.264	0.046	0.014 *U*
Benzo(ghi)perylene		1.1	[c]	6	1	0.078	0.078					0.019 *U*	0.030 *U*	0.013 *U*	0.078	0.015 *U*	0.014 *U*
Benzo(k)fluoranthene		6.2	C	6	3	0.053	0.090					0.019 *U*	0.090	0.053	0.076	0.015 *U*	0.014 *U*
Chrysene		62	C	6	4	0.027	0.172					0.019 *U*	0.172	0.167	0.130	0.027	0.014 *U*
Dibenzo(a,h)anthracene		0.062	C	6	0							0.019 *U*	0.030 *U*	0.013 *U*	0.032 *U*	0.015 *U*	0.014 *U*
Fluoranthene		229	N	6	4	0.016	0.184					0.019 *U*	0.114	0.184	0.108	0.016	0.014 *U*
Fluorene		264	N	6	0							0.019 *U*	0.030 *U*	0.013 *U*	0.032 *U*	0.015 *U*	0.014 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	6	2	0.015	0.085					0.019 *U*	0.030 *U*	0.015	0.085	0.015 *U*	0.014 *U*
Naphthalene		5.6	N	6	0							0.019 *U*	0.030 *U*	0.013 *U*	0.032 *U*	0.015 *U*	0.014 *U*
Pentachloroanisole				6	0							0.019 *U*	0.030 *U*	0.013 *U*	0.032 *U*	0.015 *U*	0.014 *U*
Pentachlorophenol		3.0	C	6	5	0.121	2.31					0.095 *U*	1.380	0.687	2.310	0.229	0.121
Phenanthrene		23	[c]	6	3	0.019	0.148					0.019 *U*	0.148	0.019	0.036	0.015 *U*	0.014 *U*
Pyrene		231	N	6	4	0.024	0.179					0.019 *U*	0.151	0.179	0.125	0.024	0.014 *U*

Notes: Screening completed on samples from 0 - 1 ft depth only.

B - below background
C - cancer endpoint
N - noncancer endpoint
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

Table H1-10. Sediment (0-1 ft) samples from Site Drainage Ditches - Wiggins RFI, February 2001

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		Number of Samples	Number of Detected Results	Minimum Detected Value	Maximum Detected Value	>Background	>PRG-soil	Selected as CoC?	DDSD1	DDSD2	DDSD3	DDSD4	DDSD5
Station											DDSD1	DDSD2	DDSD3	DDSD4	DDSD5
Sample											DDSD101	DDSD201	DDSD301	DDSD401	DDSD501
Lab ID											2010212126	2010212098	2010212105	2010212127	2010212106
Replicate															
Depth											0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft
Gravel (%)				0	0										
Sand (%)				0	0										
Silt (%)				0	0										
Clay (%)				0	0										
Total Organic Carbon				20	10	4810	15900				9120	200 *U*	4810	200 *U*	200 *U*
Total Solids (wt)				20	20	68.4	92.7				88.9	80.7	88.6	81.7	92.4
Arsenic		0.39	C	20	19	0.469	78.8		Y	Yes	15.5	5.91	0.469	0.949	0.529
Chromium (as Cr VI)	7	23	N	20	20	4.32	112	Y	Y	Yes	16.1	13.1	10.6	11.4	6.52
Copper		291	N	20	18	2.33	51.9				9.93	6.76	3.61	4.09	2.16 *U*
Lead	11	40	N	20	20	1.56	8.23	B			6.38	7.27	5.53	2.71	2.75
Nickel		156	N	20	4	2.12	2.42				2.42	2.27	1.81 *U*	1.96 *U*	1.73 *U*
Diesel fuel				20	0						4.5 *U*	4.96 *U*	4.51 *U*	4.9 *U*	4.33 *U*
Heavy Fuel Oil #6				20	0						11.2 *U*	12.4 *U*	11.3 *U*	12.2 *U*	10.8 *U*
Hydrocarbons (JP4)				20	0						4.5 *U*	4.96 *U*	4.51 *U*	4.9 *U*	4.33 *U*
Kerosene				20	0						4.5 *U*	4.96 *U*	4.51 *U*	4.9 *U*	4.33 *U*
Lube Oil (Motor)				20	8	72.3	729				11.2 *U*	12.4 *U*	11.3 *U*	12.2 *U*	10.8 *U*
Mineral spirits				20	0						4.5 *U*	4.96 *U*	4.51 *U*	4.9 *U*	4.33 *U*
Naphtha				20	0						4.5 *U*	4.96 *U*	4.51 *U*	4.9 *U*	4.33 *U*
Non-PHC as Diesel				20	0						4.5 *U*	4.96 *U*	4.51 *U*	4.9 *U*	4.33 *U*
PHC as Diesel	63			20	10	6.08	45.5				11.3	4.96 *U*	12.1	24.2	41
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N	20	0						0.281 *U*	0.061 *U*	0.056 *U*	0.061 *U*	0.054 *U*
2,3,5,6-Tetrachlorophenol				20	0						0.281 *U*	0.061 *U*	0.056 *U*	0.061 *U*	0.054 *U*
2-Methylnaphthalene		4	[b]	20	7	0.028	28.4		Y	Yes	0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.01 *U*
Acenaphthene		368	N	20	0						0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.01 *U*
Acenaphthylene		9.5	[c]	20	2	0.037	0.042				0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.0421
Anthracene		2190	N	20	8	0.011	0.089				0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.051
Benzo(a)anthracene		0.621	C	20	12	0.035	0.624		Y	Yes	0.056 *U*	0.012 *U*	0.0346	0.012 *U*	0.254
Benzo(a)pyrene		0.062	C	20	14	0.013	0.536		Y	Yes	0.056 *U*	0.012 *U*	0.155	0.0156	0.306
Benzo(b)fluoranthene		0.62	C	20	15	0.026	1.34		Y	Yes	0.0927	0.012 *U*	0.297	0.0258	1.12 *E*
Benzo(ghi)perylene		1.1	[c]	20	12	0.025	0.276				0.056 *U*	0.012 *U*	0.129	0.012 *U*	0.257
Benzo(k)fluoranthene		6.2	C	20	12	0.028	0.642				0.056 *U*	0.012 *U*	0.0871	0.012 *U*	0.338
Chrysene		62	C	20	14	0.019	0.815				0.056 *U*	0.012 *U*	0.114	0.0185	0.481
Dibenzo(a,h)anthracene		0.062	C	20	3	0.024	0.083		Y	Yes	0.056 *U*	0.012 *U*	0.0243	0.012 *U*	0.01 *U*
Fluoranthene		229	N	20	14	0.014	0.765				0.056 *U*	0.012 *U*	0.0635	0.012 *U*	0.436
Fluorene		264	N	20	1	0.067	0.067				0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.01 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	20	12	0.025	0.287				0.056 *U*	0.012 *U*	0.104	0.012 *U*	0.287
Naphthalene		5.6	N	20	2	0.725	7.29		Y	Yes	0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.01 *U*
Pentachloroanisole				20	0						0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.01 *U*
Pentachlorophenol		3.0	C	20	15	0.059	1.47				1.47	0.061 *U*	0.0589	0.348	0.484
Phenanthrene		23	[c]	20	7	0.013	0.085				0.056 *U*	0.012 *U*	0.011 *U*	0.012 *U*	0.0183
Pyrene		231	N	20	16	0.014	1.01				0.121	0.0138	0.0764	0.0148	0.52

Table H1-10. Sediment (0-1 ft) samples from Site Drainage Ditches

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		DDSD6 DDSD601 2010212108 0 - 1 ft	DDSD7 DDSD701 2010212109 0 - 1 ft	DDSD8 DDSD801 2010212111 0 - 1 ft	DDSD8 DDSD802 2010212112 1 0 - 1 ft	DDSD9 DDSD901 2010212128 0 - 1 ft	DDSD10 DDSD1001 2010212118 0 - 1 ft	DDSD11 DDSD1101 2010212129 0 - 1 ft	DDSD12 DDSD1201 2010212120 0 - 1 ft
Gravel (%)											
Sand (%)											
Silt (%)											
Clay (%)											
Total Organic Carbon				200 *U*	7000	11400	15900	7490	5010	5750	200 *U*
Total Solids (wt)				85.2	90.3	71.3	72.7	72	76.9	86	87.7
Arsenic		0.39	C	0.469 *U*	0.825	1.34	2.73	1.75	1.32	0.995	1.64
Chromium (as Cr VI)	7	23	N	6.89	7	6.9	7.92	13.7	5.93	88	10.1
Copper		291	N	2.35 *U*	2.78	8.13	9.72	4.95	3.57	21.5	3.7
Lead	11	40	N	4.82	5.07	5.47	5.45	5.42	8.23	3.94	5.43
Nickel		156	N	1.88 *U*	1.77 *U*	2.24 *U*	2.2 *U*	2.22 *U*	2.18	1.86 *U*	2.12
Diesel fuel				4.69 *U*	4.43 *U*	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	4.56 *U*
Heavy Fuel Oil #6				11.7 *U*	11.1 *U*	14 *U*	13.8 *U*	69.4 *U*	13 *U*	23.3 *U*	11.4 *U*
Hydrocarbons (JP4)				4.69 *U*	4.43 *U*	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	4.56 *U*
Kerosene				4.69 *U*	4.43 *U*	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	4.56 *U*
Lube Oil (Motor)				11.7 *U*	11.1 *U*	227	240	729	72.3	164	11.4 *U*
Mineral spirits				4.69 *U*	4.43 *U*	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	4.56 *U*
Naphtha				4.69 *U*	4.43 *U*	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	4.56 *U*
Non-PHC as Diesel				4.69 *U*	4.43 *U*	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	4.56 *U*
PHC as Diesel	63			15.4	27	5.61 *U*	5.5 *U*	27.8 *U*	5.2 *U*	9.3 *U*	6.08
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N	0.058 *U*	0.055 *U*	0.07 *U*	0.068 *U*	3.47 *U*	0.065 *U*	0.058 *U*	0.057 *U*
2,3,5,6-Tetrachlorophenol				0.058 *U*	0.055 *U*	0.07 *U*	0.068 *U*	3.47 *U*	0.065 *U*	0.058 *U*	0.057 *U*
2-Methylnaphthalene		4	b	0.011 *U*	0.011 *U*	0.014 *U*	0.013 *U*	28.4	0.0327	0.011 *U*	0.0277
Acenaphthene		368	N	0.011 *U*	0.011 *U*	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Acenaphthylene		9.5	c	0.011 *U*	0.037	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Anthracene		2190	N	0.0121	0.0537	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Benzo(a)anthracene		0.621	C	0.0397	0.109	0.0373	0.0353	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Benzo(a)pyrene		0.062	C	0.0174	0.168	0.0313	0.0302	0.694 *U*	0.013 *U*	0.013	0.011 *U*
Benzo(b)fluoranthene		0.62	C	0.0918	0.495	0.125	0.133	0.694 *U*	0.013 *U*	0.0255	0.011 *U*
Benzo(ghi)perylene		1.1	c	0.0263	0.276	0.0256	0.0277	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Benzo(k)fluoranthene		6.2	C	0.0283	0.192	0.044	0.045	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Chrysene		62	C	0.108	0.238	0.0865	0.0652	0.694 *U*	0.013 *U*	0.0203	0.011 *U*
Dibenzo(a,h)anthracene		0.062	C	0.011 *U*	0.0602	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Fluoranthene		229	N	0.0394	0.14	0.0372	0.0497	0.694 *U*	0.0141	0.0162	0.011 *U*
Fluorene		264	N	0.011 *U*	0.011 *U*	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	0.0302	0.224	0.028	0.0305	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Naphthalene		5.6	N	0.011 *U*	0.011 *U*	0.014 *U*	0.013 *U*	7.29	0.013 *U*	0.011 *U*	0.011 *U*
Pentachloroanisole				0.011 *U*	0.011 *U*	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Pentachlorophenol		3.0	C	0.269	0.172	0.11	0.129	3.47 *U*	0.0787	0.155	0.057 *U*
Phenanthrene		23	c	0.011 *U*	0.0127	0.014 *U*	0.013 *U*	0.694 *U*	0.013 *U*	0.011 *U*	0.011 *U*
Pyrene		231	N	0.0393	0.181	0.047	0.0681	0.694 *U*	0.013 *U*	0.0157	0.011 *U*

Table H1-10. Sediment (0-1 ft) samples from Site Drainage Ditches

Chemical (mg/kg)	Soil Background Average x 2	EPA Region 9 PRGs Residential Soil[a]		DDSD13 DDSD1301 2010212117 0 - 1 ft	DDSD14 DDSD1401 2010212122 0 - 1 ft	DDSD14 DDSD1402 2010212123 1 0 - 1 ft	DDSD15 DDSD1501 2010212124 0 - 1 ft	DDSD16 DDSD1601 2010212116 0 - 1 ft	DDSD17 DDSD1701 2010212114 0 - 1 ft	DDSD18 DDSD1801 2010212115 0 - 1 ft
Gravel (%)				200 *U*	200 *U*	200 *U*	200 *U*	200 *U*	14500	8970
Sand (%)				92.7	91.4	79.4	86.6	77.5	68.4	90
Silt (%)				1.8	11.8	25.4	1.08	78.8	2.47	1.36
Clay (%)				4.32	18.8	55.5	5.13	112	8.58	5.17
Total Organic Carbon				2.33	14.4	36.1	2.89	51.9	14.6	3.71
Total Solids (wt)				2.14	1.56	3.06	3.44	4.38	4.71	2.84
Arsenic		0.39	C	1.73 *U*	1.75 *U*	2.02 *U*	1.85 *U*	2.06 *U*	2.34 *U*	1.78 *U*
Chromium (as Cr VI)	7	23	N	4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Copper		291	N	10.8 *U*	10.9 *U*	12.6 *U*	11.5 *U*	12.9 *U*	14.6 *U*	11.1 *U*
Lead	11	40	N	4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Nickel		156	N	4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Diesel fuel				10.8 *U*	10.9 *U*	12.6 *U*	11.5 *U*	186	182	101
Heavy Fuel Oil #6				4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Hydrocarbons (JP4)				4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Kerosene				4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Lube Oil (Motor)				10.8 *U*	10.9 *U*	12.6 *U*	11.5 *U*	186	182	101
Mineral spirits				4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Naphtha				4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
Non-PHC as Diesel				4.31 *U*	4.38 *U*	5.04 *U*	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
PHC as Diesel	63			8.31	45.5	30	4.62 *U*	5.16 *U*	5.85 *U*	4.44 *U*
2,3,4,5/2,3,4,6 Tetrachlorophenol		183	N	0.053 *U*	0.054 *U*	0.062 *U*	0.057 *U*	0.322 *U*	0.365 *U*	0.055 *U*
2,3,5,6-Tetrachlorophenol				0.053 *U*	0.054 *U*	0.062 *U*	0.057 *U*	0.322 *U*	0.365 *U*	0.055 *U*
2-Methylnaphthalene		4	[b]	0.0279	0.0289	0.0322	0.011 *U*	2.91	0.073 *U*	0.011 *U*
Acenaphthene		368	N	0.01 *U*	0.01 *U*	0.012 *U*	0.011 *U*	0.064 *U*	0.073 *U*	0.011 *U*
Acenaphthylene		9.5	[c]	0.01 *U*	0.01 *U*	0.012 *U*	0.011 *U*	0.064 *U*	0.073 *U*	0.011 *U*
Anthracene		2190	N	0.0192	0.011	0.0166	0.011 *U*	0.089	0.073 *U*	0.0264
Benzo(a)anthracene		0.621	C	0.104	0.109	0.0975	0.011 *U*	0.207	0.624	0.0903
Benzo(a)pyrene		0.062	C	0.0631	0.0488	0.0687	0.011 *U*	0.346	0.536	0.0447
Benzo(b)fluoranthene		0.62	C	0.274	0.153	0.254	0.011 *U*	0.72	1.34	0.133
Benzo(ghi)perylene		1.1	[c]	0.043	0.0247	0.0455	0.011 *U*	0.16	0.227	0.0245
Benzo(k)fluoranthene		6.2	C	0.0956	0.0589	0.0892	0.011 *U*	0.221	0.642	0.0608
Chrysene		62	C	0.259	0.183	0.234	0.011 *U*	0.622	0.815	0.175
Dibenzo(a,h)anthracene		0.062	C	0.01 *U*	0.01 *U*	0.012 *U*	0.011 *U*	0.064 *U*	0.0834	0.011 *U*
Fluoranthene		229	N	0.296	0.298	0.304	0.011 *U*	0.765	0.713	0.0902
Fluorene		264	N	0.01 *U*	0.01 *U*	0.012 *U*	0.011 *U*	0.0673	0.073 *U*	0.011 *U*
Indeno(1,2,3-c,d)pyrene		0.62	C	0.0472	0.0277	0.0505	0.011 *U*	0.164	0.272	0.0245
Naphthalene		5.6	N	0.01 *U*	0.01 *U*	0.012 *U*	0.011 *U*	0.725	0.073 *U*	0.011 *U*
Pentachloroanisole				0.01 *U*	0.01 *U*	0.012 *U*	0.011 *U*	0.064 *U*	0.073 *U*	0.011 *U*
Pentachlorophenol		3.0	C	0.182	0.16	0.469	0.057 *U*	1.1	0.365 *U*	0.0698
Phenanthrene		23	[c]	0.043	0.0345	0.0293	0.011 *U*	0.0851	0.073 *U*	0.0308
Pyrene		231	N	0.297	0.324	0.323	0.011 *U*	0.724	1.01	0.136

Notes: Screening completed on samples from 0 - 1 ft depth only.

B - below background
C - cancer endpoint
N - noncancer endpoint
U - not detected at indicated detection limit.
Y - exceeds indicated screening level.

[a] Chemicals are screened against the lower of either the PRG for cancer or the PRG for noncancer divided by 10.

Table H1-11. Medium-specific exposure point concentration summary
Treatment Area 1 Surface Soil

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 1 Surface Soil

							Reasonable Maximum Exposure			Central Tendency		
Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum detected value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	4.1E+00	n<10	1.6E+01		mg/kg	1.6E+01	Max	W-Test (2)	1.6E+01	Max	W-Test (2)
Pentachlorophenol	mg/kg	1.8E+02	n<10	7.8E+02		mg/kg	7.8E+02	Max	W-Test (2)	7.8E+02	Max	W-Test (2)
2-Methylnaphthalene	mg/kg	1.1E+01	n<10	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)

Duplicate sample results were averaged in calculations
Distributional fits were assessed using probability plots and Shapiro-Wilk goodness-of-fit test
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.

95% UCL-T - 95% UCL of log-transformed data
(1) W-Test indicates data are log-normally distributed
(2) 95% UCL exceeds maximum detected concentration. Therefore, maximum detected concentration used for EPC.

Table H1-12. Medium-specific exposure point concentration summary
Treatment Area 1 Soil 0-17 feet bgs

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 1 Soil 0-17 feet bgs

							Reasonable Maximum Exposure			Central Tendency		
Chemical of Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum detected value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	2.1E+00	3.6E+00	1.6E+01		mg/kg	3.6E+00	95% UCL-T	W-Test (1)	3.6E+00	95% UCL-T	W-Test (1)
Chromium	mg/kg	1.7E+01	2.1E+01	4.2E+01		mg/kg	2.1E+01	95% UCL-T	W-Test (1)	2.1E+01	95% UCL-T	W-Test (1)
2-Methylnaphthalene	mg/kg	3.2E+00	5.2E+01	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)
Pentachlorophenol	mg/kg	4.6E+01	1.7E+04	7.8E+02		mg/kg	7.8E+02	Max	W-Test (2)	7.8E+02	Max	W-Test (2)

Duplicate sample results were averaged in calculations
Distributional fits were assessed using probability plots and Shapiro-Wilk goodness-of-fit test
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.

95% UCL-T - 95% UCL of log-transformed data
(1) W-Test indicates data are log-normally distributed
(2) 95% UCL exceeds maximum detected concentration. Therefore, maximum detected concentration used for EPC.

Table H1-13. Medium-specific exposure point concentration summary
Treatment Area 2 Surface Soil

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 2 Surface Soil

							Reasonable Maximum Exposure			Central Tendency		
Chemical of Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum detected value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo[a]anthracene	mg/kg	1.2E+01	n<10	3.2E+01		mg/kg	3.2E+01	Max	W-Test (2)	3.2E+01	Max	W-Test (2)
Benzo[a]pyrene	mg/kg	4.7E+00	n<10	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)
Benzo[b]fluoranthene	mg/kg	9.8E+00	n<10	2.7E+01		mg/kg	2.7E+01	Max	W-Test (2)	2.7E+01	Max	W-Test (2)
Benzo[k]fluoranthene	mg/kg	4.8E+00	n<10	1.2E+01		mg/kg	1.2E+01	Max	W-Test (2)	1.2E+01	Max	W-Test (2)
Phenanthrene	mg/kg	7.4E+01	n<10	2.2E+02		mg/kg	2.2E+02	Max	W-Test (2)	2.2E+02	Max	W-Test (2)

Duplicate sample results were averaged in calculations
Distributional fits were assessed using probability plots and Shapiro-Wilk goodness-of-fit test
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.

95% UCL-T - 95% UCL of log-transformed data
(1) W-Test indicates data are log-normally distributed
(2) 95% UCL exceeds maximum detected concentration. Therefore, maximum detected concentration used for EPC.

Table H1-14. Medium-specific exposure point concentration summary
Treatment Area 2 Soil 0-17 feet bgs

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 2 Soil 0-17 feet bgs

							Reasonable Maximum Exposure			Central Tendency		
Chemical of Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum detected value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	9.7E-01	1.3E+00	2.3E+00		mg/kg	1.3E+00	95% UCL-T	W-Test (1)	1.3E+00	95% UCL-T	W-Test (1)
Chromium	mg/kg	1.3E+01	1.9E+01	2.7E+01		mg/kg	1.9E+01	95% UCL-T	W-Test (1)	1.9E+01	95% UCL-T	W-Test (1)
Benzene	mg/kg	3.5E-01	n<10	7.0E-01		mg/kg	7.0E-01	Max	W-Test (2)	7.0E-01	Max	W-Test (2)
Pentachlorophenol	mg/kg	3.9E+01	9.2E+04	5.4E+02		mg/kg	5.4E+02	Max	W-Test (2)	5.4E+02	Max	W-Test (2)
2-Methylnaphthalene	mg/kg	2.1E+01	2.6E+05	1.9E+02		mg/kg	1.9E+02	Max	W-Test (2)	1.9E+02	Max	W-Test (2)
Acenaphthylene	mg/kg	1.4E+00	4.0E+02	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)
Benz[a]anthracene	mg/kg	4.7E+00	8.2E+03	3.4E+01		mg/kg	3.4E+01	Max	W-Test (2)	3.4E+01	Max	W-Test (2)
Benz[a]pyrene	mg/kg	1.4E+00	4.5E+02	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)
Benzo[b]fluoranthene	mg/kg	2.4E+00	7.1E+02	2.7E+01		mg/kg	2.7E+01	Max	W-Test (2)	2.7E+01	Max	W-Test (2)
Benzo[k]fluoranthene	mg/kg	1.5E+00	4.6E+02	1.2E+01		mg/kg	1.2E+01	Max	W-Test (2)	1.2E+01	Max	W-Test (2)
Dibenz[a,h]anthracene	mg/kg	1.4E+00	3.2E+02	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)
Fluoranthene	mg/kg	3.8E+01	2.1E+07	2.7E+02		mg/kg	2.7E+02	Max	W-Test (2)	2.7E+02	Max	W-Test (2)
Indeno[1,2,3-cd]pyrene	mg/kg	1.4E+00	3.3E+02	1.1E+01		mg/kg	1.1E+01	Max	W-Test (2)	1.1E+01	Max	W-Test (2)
Naphthalene	mg/kg	1.9E+01	2.2E+05	1.5E+02		mg/kg	1.5E+02	Max	W-Test (2)	1.5E+02	Max	W-Test (2)
Phenanthrene	mg/kg	5.7E+01	7.8E+07	5.0E+02		mg/kg	5.0E+02	Max	W-Test (2)	5.0E+02	Max	W-Test (2)

Duplicate sample results were averaged in calculations
Distributional fits were assessed using probability plots and Shapiro-Wilk goodness-of-fit test
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.

95% UCL-T - 95% UCL of log-transformed data
(1) W-Test indicates data are log-normally distributed
(2) 95% UCL exceeds maximum detected concentration. Therefore, maximum detected concentration used for EPC.

Table H1-15. Medium-specific exposure point concentration summary
Church House Branch Sediments

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments

							Reasonable Maximum Exposure			Central Tendency		
Chemical of Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum detected value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	3.3E+00	n<10	6.3E+00		mg/kg	6.3E+00	Max	W-Test (2)	6.3E+00	Max	W-Test (2)
Benzo[a]pyrene	mg/kg	6.0E-02	n<10	1.7E-01		mg/kg	1.7E-01	Max	W-Test (2)	1.7E-01	Max	W-Test (2)

Duplicate sample results were averaged in calculations
Distributional fits were assessed using probability plots and Shapiro-Wilk goodness-of-fit test
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.

95% UCL-T - 95% UCL of log-transformed data
(1) W-Test indicates data are log-normally distributed
(2) 95% UCL exceeds maximum detected concentration. Therefore, maximum detected concentration used for EPC.

Table H1-16. Medium-specific exposure point concentration summary
Drainage Ditch Sediments

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments

							Reasonable Maximum Exposure			Central Tendency		
Chemical of Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum detected value	Maximum Qualifier	EPC Units	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	7.6E+00	1.8E+01	7.9E+01		mg/kg	1.8E+01	95% UCL-T	W-Test (1)	1.8E+01	95% UCL-T	W-Test (1)
Chromium	mg/kg	2.1E+01	3.2E+01	1.1E+02		mg/kg	3.2E+01	95% UCL-T	W-Test (1)	3.2E+01	95% UCL-T	W-Test (1)
Benz[a]anthracene	mg/kg	1.1E-01	6.1E-01	6.2E-01		mg/kg	6.1E-01	95% UCL-T	W-Test (1)	6.1E-01	95% UCL-T	W-Test (1)
Benzo[a]pyrene	mg/kg	1.2E-01	5.8E-01	5.4E-01		mg/kg	5.4E-01	Max	W-Test (2)	5.4E-01	Max	W-Test (2)
Benzo[b]fluoranthene	mg/kg	3.0E-01	3.4E+00	1.3E+00		mg/kg	1.3E+00	Max	W-Test (2)	1.3E+00	Max	W-Test (2)
Dibenz[a,h]anthracene	mg/kg	3.6E-02	6.7E-02	8.3E-02		mg/kg	6.7E-02	95% UCL-T	W-Test (1)	6.7E-02	95% UCL-T	W-Test (1)
Napthalene	mg/kg	4.5E-01	7.8E-01	7.3E+00		mg/kg	7.8E-01	95% UCL-T	W-Test (1)	7.8E-01	95% UCL-T	W-Test (1)
2-Methylnapthalene	mg/kg	1.8E+00	6.1E+00	2.8E+01		mg/kg	6.1E+00	95% UCL-T	W-Test (1)	6.1E+00	95% UCL-T	W-Test (1)

Duplicate sample results were averaged in calculations
Distributional fits were assessed using probability plots and Shapiro-Wilk goodness-of-fit test
Arithmetic mean and 95% UCL of normal data were calculated using half the detection limit for non-detects. 95% UCL was not calculated for less than 10 data points.

95% UCL-T - 95% UCL of log-transformed data
(1) W-Test indicates data are log-normally distributed
(2) 95% UCL exceeds maximum detected concentration. Therefore, maximum detected concentration used for EPC.

Table H1-17. Summary of Treatment Area 1 Soil Samples with Detection Limits that Exceed Risk-Based PRGs

Area	Treatment Area 1 Surface Soil				Treatment Area 1 Subsurface Soil (5-17 ft bgs)					
Depth / Sample I.D. / Constituent	GP-12 0-1.5'	GP-14 0-1.5'	GP-18 0-1.5'	GP-20 0-1.5'	GP-18 5-6.5'	GP-40 5-6.5'	GP-44 10-12'	GP-45 10-12'	GP-46 15-17'	GP-47 10-12'
2,3,4,5/2,3,4,6-Tetrachlorophenol		x								
2-Methylnaphthalene		x								
Acenaphthylene		x								
Benzo(a)anthracene		x	x							
Benzo(a)pyrene	x	x	x	x	x	x	x	x		
Benzo(b)fluoranthene		x	x							
Benzo(g,h,I)perylene		x	x							
Benzo(k)fluoranthene		x								
Chrysene		x								
Dibenzo(a,h)anthracene	x	x	x	x	x	x	x	x		
Indeno(1,2,3-cd)pyrene		x	x							
Naphthalene		x								
Phenanthrene		x								
Arsenic								x	x	x

Note:
Deep subsurface soil samples (> 17 feet bgs) are not presented as constituents detected in these soils were compared to soil screening levels not risk-based PRGs.

Table H1-18. Summary of Treatment Area 2 Soil Samples with Detection Limits that Exceed Risk-Based PRGs

Area	Treatment Area 2 Surface Soil		Treatment Area 2 Subsurface Soil (5-17 ft bgs)				
Depth Sample I.D. Constituent	GP-04 0-1.5'	GP-10 0-1.5'	GP-04 5-6.5'	GP-06 5-6.5'	GP-34 5-6.5'	GP-43 10-12'	GP-49 10-12'
2-Methylnaphthalene	x	x					
Acenaphthylene	x						
Benzo(a)anthracene		x					x
Benzo(a)pyrene		x	x	x	x		x
Benzo(b)fluoranthene		x			x		x
Benzo(g,h,I)perylene	x	x			x		x
Benzo(k)fluoranthene							x
Dibenzo(a,h)anthracene	x	x	x	x	x		
Indeno(1,2,3-cd)pyrene	x	x			x		
Naphthalene	x	x					x
Pentachlorophenol	x	x			x		
1,2-Dibromoethane							x
1,2-Dichloroethane							x
Arsenic						x	

Note:
Deep subsurface soil samples (> 17 feet bgs) are not presented as constituents detected in these soils were compared to soil screening levels not risk-based PRGs.

Table H1-19. Summary of Sediment Samples with Detection Limits that Exceed Risk-Based PRGs

Area Depth Sample I.D. Constituent	Site Drainage Ditches Sediment (0-1 ft)		
	DDSD6 0-1'	DDSD9 0-1'	DDSD16 0-1'
Benzo(a)anthracene		x	
Benzo(a)pyrene		x	
Benzo(b)fluoranthene		x	
Dibenzo(a,h)anthracene		x	x
Indeno(1,2,3-cd)pyrene		x	
Arsenic	x		

Attachment H2

Region 9 Tables of Screening Values

Key : SFo,i=Cancer Slope Factor oral, inhalation RfDo,i=Reference Dose oral, inhalation i=IRIS h=HEAST n=NCEA x=Withdrawn o=Other EPA Source r=Route-extrapolation ca=Cancer PRG nc=Noncancer PRG ca* (where: nc < 100X ca) ca**(where: nc < 10X ca)
+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION												CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.			Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
8.7E-03	i	4.0E-03	i	8.7E-03	r	4.0E-03	r	0	0.10	30560-19-1		Acephate	5.6E+01	ca**	2.0E+02	ca*	7.7E-01	ca*	7.7E+00	ca*		
				7.7E-03	i	2.6E-03	i	1		75-07-0		Acetaldehyde	1.1E+01	ca**	2.3E+01	ca**	8.7E-01	ca*	1.7E+00	ca		
		2.0E-02	i			2.0E-02	r	0	0.10	34256-82-1		Acetochlor	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.0E-01	i			1.0E-01	r	1		67-64-1		Acetone	1.6E+03	nc	6.0E+03	nc	3.7E+02	nc	6.1E+02	nc	1.6E+01	8.0E-01
		8.0E-04	h			8.0E-04	r	0	0.10	75-86-5		Acetone cyanohydrin	4.9E+01	nc	4.9E+02	nc	2.9E+00	nc	2.9E+01	nc		
		1.7E-02	r			1.7E-02	i	1		75-05-8		**Acetonitrile**	4.2E+02	nc	1.8E+03	nc	6.2E+01	nc	1.0E+02	nc		
		2.0E-02	h			5.7E-06	i	1		107-02-8		Acrolein	1.0E-01	nc	3.4E-01	nc	2.1E-02	nc	4.2E-02	nc		
4.5E+00	i	2.0E-04	i	4.5E+00	i	2.0E-04	r	0	0.10	79-06-1		Acrylamide	1.1E-01	ca	3.8E-01	ca	1.5E-03	ca	1.5E-02	ca		
		5.0E-01	i			2.9E-04	i	0	0.10	79-10-7		Acrylic acid	2.9E+04	nc	1.0E+05	max	1.0E+00	nc	1.8E+04	nc		
5.4E-01	i	1.0E-03	h	2.4E-01	i	5.7E-04	i	1		107-13-1		Acrylonitrile	2.1E-01	ca*	4.9E-01	ca*	2.8E-02	ca*	3.9E-02	ca*		
8.1E-02	h	1.0E-02	i	8.0E-02	r	1.0E-02	r	0	0.10	15972-60-8		Alachlor	6.0E+00	ca	2.1E+01	ca	8.4E-02	ca	8.4E-01	ca		
		1.5E-01	i			1.5E-01	r	0	0.10	1596-84-5		Alar	9.2E+03	nc	9.2E+04	nc	5.5E+02	nc	5.5E+03	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	116-06-3		Aldicarb	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	1646-88-4		Aldicarb sulfone	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
1.7E+01	i	3.0E-05	i	1.7E+01	i	3.0E-05	r	0	0.10	309-00-2		Aldrin	2.9E-02	ca*	1.0E-01	ca	3.9E-04	ca	4.0E-03	ca	5.0E-01	2.0E-02
		2.5E-01	i			2.5E-01	r	0	0.10	74223-64-6		Ally	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	107-18-6		Allyl alcohol	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		5.0E-02	h			2.9E-04	i	0	0.10	107-05-1		Allyl chloride	3.0E+03	nc	3.0E+04	nc	1.0E+00	nc	1.8E+03	nc		
		1.0E+00	n			1.4E-03	n	0		7429-90-5		Aluminum	7.6E+04	nc	1.0E+05	max	5.1E+00	nc	3.6E+04	nc		
		4.0E-04	i					0		20859-73-8		Aluminum phosphide	3.1E+01	nc	4.1E+02	nc			1.5E+01	nc		
		3.0E-04	i			3.0E-04	r	0	0.10	67485-29-4		Amdro	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		9.0E-03	i			9.0E-03	r	0	0.10	834-12-8		Ametryn	5.5E+02	nc	5.5E+03	nc	3.3E+01	nc	3.3E+02	nc		
		7.0E-02	h			7.0E-02	r	0	0.10	591-27-5		m-Aminophenol	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
		2.0E-05	h			2.0E-05	r	0	0.10	504-24-5		4-Aminopyridine	1.2E+00	nc	1.2E+01	nc	7.3E-02	nc	7.3E-01	nc		
		2.5E-03	i			2.5E-03	r	0	0.10	33089-61-1		Amitraz	1.5E+02	nc	1.5E+03	nc	9.1E+00	nc	9.1E+01	nc		
						2.9E-02	i			7664-41-7		Ammonia					1.0E+02	nc				
		2.0E-01	i					0	0.10	7773-06-0		Ammonium sulfamate	1.2E+04	nc	1.0E+05	max			7.3E+03	nc		
5.7E-03	i	7.0E-03	n	5.7E-03	r	2.9E-04	i	0	0.10	62-53-3		Aniline	8.5E+01	ca**	3.0E+02	ca*	1.0E+00	nc	1.2E+01	ca*		
		4.0E-04	i					0		7440-36-0		Antimony and compounds	3.1E+01	nc	4.1E+02	nc			1.5E+01	nc	5.0E+00	3.0E-01
		5.0E-04	h					0		1314-60-9		Antimony pentoxide	3.9E+01	nc	5.1E+02	nc			1.8E+01	nc		
		9.0E-04	h					0		28300-74-5		Antimony potassium tartrate	7.0E+01	nc	9.2E+02	nc			3.3E+01	nc		
		4.0E-04	h					0		1332-81-6		Antimony tetroxide	3.1E+01	nc	4.1E+02	nc			1.5E+01	nc		
		4.0E-04	h			5.7E-05	i	0		1309-64-4		Antimony trioxide	3.1E+01	nc	4.1E+02	nc	2.1E-01	nc	1.5E+01	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	74115-24-5		Apollo	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
2.5E-02	i	5.0E-02	h	2.5E-02	i	5.0E-02	r	0	0.10	140-57-8		Aramite	1.9E+01	ca	6.9E+01	ca	2.7E-01	ca	2.7E+00	ca		
		3.0E-04	i					0	0.03	7440-38-2		Arsenic (noncancer endpoint)	2.2E+01	nc	2.6E+02	nc						

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TOXICITY INFORMATION												CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
1.5E+00	i	3.0E-04	i	1.5E+01	i			0	0.03	7440-38-2	Arsenic (cancer endpoint)	3.9E-01	ca*	1.6E+00	ca	4.5E-04	ca	4.5E-02	ca	2.9E+01	1.0E+00
						1.4E-05	i	0		7784-42-1	Arsine (see arsenic for cancer endpoint)					5.2E-02	nc				
		9.0E-03	i			9.0E-03	r		0.10	76578-12-6	Assure	5.5E+02	nc	5.5E+03	nc	3.3E+01	nc	3.3E+02	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	3337-71-1	Asulam	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
2.2E-01	h	3.5E-02	h	2.2E-01	r	3.5E-02	r	0	0.10	1912-24-9	Atrazine	2.2E+00	ca	7.8E+00	ca	3.1E-02	ca	3.0E-01	ca		
		4.0E-04	i			4.0E-04	r	0	0.10	71751-41-2	Avermectin B1	2.4E+01	nc	2.5E+02	nc	1.5E+00	nc	1.5E+01	nc		
1.1E-01	i			1.1E-01	i			0	0.10	103-33-3	Azobenzene	4.4E+00	ca	1.6E+01	ca	6.2E-02	ca	6.1E-01	ca		
		7.0E-02	i			1.4E-04	h	0		7440-39-3	Barium and compounds	5.4E+03	nc	6.7E+04	nc	5.2E-01	nc	2.6E+03	nc	1.6E+03	8.2E+01
		4.0E-03	i			4.0E-03	r	0	0.10	114-26-1	Baygon	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		3.0E-02	i			3.0E-02	r	0	0.10	43121-43-3	Bayleton	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	68359-37-5	Baythroid	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		3.0E-01	i			3.0E-01	r	0	0.10	1861-40-1	Benefin	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	17804-35-2	Benomyl	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		3.0E-02	i			3.0E-02	r	0	0.10	25057-89-0	Bentazon	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	100-52-7	Benzaldehyde	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
5.5E-02	i	3.0E-03	n	2.9E-02	i	1.7E-03	n	1		71-43-2	Benzene	6.0E-01	ca*	1.3E+00	ca*	2.3E-01	ca*	3.4E-01	ca*	3.0E-02	2.0E-03
2.3E+02	i	3.0E-03	i	2.3E+02	i	3.0E-03	r	0	0.10	92-87-5	Benzidine	2.1E-03	ca	7.5E-03	ca	2.9E-05	ca	2.9E-04	ca		
		4.0E+00	i			4.0E+00	r	0	0.10	65-85-0	Benzoic acid	1.0E+05	max	1.0E+05	max	1.5E+04	nc	1.5E+05	nc	4.0E+02	2.0E+01
1.3E+01	i			1.3E+01	r			0	0.10	98-07-7	Benzotrichloride	3.7E-02	ca	1.3E-01	ca	5.2E-04	ca	5.2E-03	ca		
		3.0E-01	h			3.0E-01	r	0	0.10	100-51-6	Benzyl alcohol	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
1.7E-01	i	2.9E-03	r	1.7E-01	r	2.9E-03	n	1		100-44-7	**Benzyl chloride**	8.9E-01	ca*	2.2E+00	ca	4.0E-02	ca	6.6E-02	ca		
		2.0E-03	i	8.4E+00	i	5.7E-06	i	0		7440-41-7	Beryllium and compounds	1.5E+02	nc	1.9E+03	ca**	8.0E-04	ca*	7.3E+01	nc	6.3E+01	3.0E+00
		1.0E-04	i			1.0E-04	r	0	0.10	141-66-2	Bidrin	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		1.5E-02	i			1.5E-02	r	0	0.10	82657-04-3	Biphenthrin (Talstar)	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
		5.0E-02	i			5.0E-02	r	1		92-52-4	1,1-Biphenyl	3.5E+02	sat	3.5E+02	sat	1.8E+02	nc	3.0E+02	nc		
1.1E+00	i			1.2E+00	i			1		111-44-4	Bis(2-chloroethyl)ether	2.1E-01	ca	5.5E-01	ca	5.8E-03	ca	9.8E-03	ca	4.0E-04	2.0E-05
7.0E-02	x	4.0E-02	i	3.5E-02	x	4.0E-02	r	1		39638-32-9	Bis(2-chloroisopropyl)ether	2.9E+00	ca	7.4E+00	ca	1.9E-01	ca	2.7E-01	ca		
2.2E+02	i			2.2E+02	i			1		542-88-1	Bis(chloromethyl)ether	1.9E-04	ca	4.3E-04	ca	3.1E-05	ca	5.2E-05	ca		
7.0E-02	x	4.0E-02	i	3.5E-02	x	4.0E-02	r	1		108-60-1	Bis(2-chloro-1-methylethyl)ether	2.9E+00	ca	7.4E+00	ca	1.9E-01	ca	2.7E-01	ca		
1.4E-02	i	2.0E-02	i	1.4E-02	r	2.2E-02	r	0	0.10	117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	3.5E+01	ca*	1.2E+02	ca	4.8E-01	ca	4.8E+00	ca		
		5.0E-02	i			5.0E-02	r	0	0.10	80-05-7	Bisphenol A	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		2.0E-01	i			5.7E-03	x	0		7440-42-8	**Boron**	1.6E+04	nc	1.0E+05	max	2.1E+01	nc	7.3E+03	nc		
						2.0E-04	h	0		7637-07-2	Boron trifluoride					7.3E-01	nc				
		4.00E-03	i							15541-45-4	**Bromate**	3.1E+02	nc	4.1E+03	nc	0.0E+00		1.5E+02	nc		
		2.0E-02	n			2.9E-03	n	1		108-86-1	Bromobenzene	2.8E+01	nc	9.2E+01	nc	1.0E+01	nc	2.0E+01	nc		
6.2E-02	i	2.0E-02	i	6.2E-02	r	2.0E-02	r	1		75-27-4	Bromodichloromethane	8.2E-01	ca	1.8E+00	ca	1.1E-01	ca	1.8E-01	ca	6.0E-01	3.0E-02

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
7.9E-03	i	2.0E-02	i	3.9E-03	i	2.0E-02	r	0	0.10	75-25-2	Bromoform (tribromomethane)	6.2E+01	ca*	2.2E+02	ca*	1.7E+00	ca*	8.5E+00	ca*	8.0E-01	4.0E-02
		1.4E-03	i			1.4E-03	i	1		74-83-9	Bromomethane (Methyl bromide)	3.9E+00	nc	1.3E+01	nc	5.2E+00	nc	8.7E+00	nc	2.0E-01	1.0E-02
		5.0E-03	h			5.0E-03	r	0	0.10	2104-96-3	Bromophos	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	1689-84-5	Bromoxynil	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	1689-99-2	Bromoxynil octanoate	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
9.8E-01	r			9.8E-01	i			1		106-99-0	**1,3-Butadiene**	6.5E-03	ca	1.4E-02	ca	6.9E-03	ca	1.1E-02	ca		
		1.0E-01	i			2.6E-03	n	0	0.10	71-36-3	**1-Butanol**	6.1E+03	nc	6.1E+04	nc	9.5E+00	nc	3.6E+03	nc	1.7E+01	9.0E-01
		5.0E-02	i			5.0E-02	r	0	0.10	2008-41-5	Butylate	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		4.00E-02	n			4.00E-02	r	1		104-51-8	**n-Butylbenzene**	2.4E+02	sat	2.4E+02	sat	1.5E+02	nc	2.4E+02	nc		
		4.00E-02	n			4.00E-02	r	1		135-9-88	**sec-Butylbenzene**	2.2E+02	sat	2.2E+02	sat	1.5E+02	nc	2.4E+02	nc		
		4.00E-02	n			4.00E-02	r	1		98-06-6	**tert-Butylbenzene**	3.9E+02	sat	3.9E+02	sat	1.5E+02	nc	2.4E+02	nc		
		2.0E-01	i			2.0E-01	r	0	0.10	85-68-7	Butyl benzyl phthalate	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc	9.3E+02	8.1E+02
		1.0E+00	i			1.0E+00	r	0	0.10	85-70-1	Butylphthalyl butylglycolate	6.1E+04	nc	1.0E+05	max	3.7E+03	nc	3.6E+04	nc		
2.5E-01	h	3.0E-04	h	2.5E-01	r	3.0E-04	r	0	0.10	75-60-5	**Cacodylic acid**	1.9E+00	ca**	6.9E+00	ca*	2.7E-02	ca*	2.7E-01	ca*		
		5.0E-04	i	6.3E+00	i			0	0.001	7440-43-9	Cadmium and compounds	3.7E+01	nc	4.5E+02	nc	1.1E-03	ca	1.8E+01	nc	8.0E+00	4.0E-01
3.8E-01				1.5E+01					0.001		**Cadmium "CAL-Modified PRG"**	1.7E+00	ca	7.4E+00	ca	4.5E-04	ca	1.8E-01	ca		
		5.0E-01	i			5.0E-01	r	0	0.10	105-60-2	Caprolactam	3.1E+04	nc	1.0E+05	max	1.8E+03	nc	1.8E+04	nc		
8.6E-03	h	2.0E-03	i	8.6E-03	r	2.0E-03	r	0	0.10	2425-06-1	Captafol	5.7E+01	ca**	2.0E+02	ca**	7.8E-01	ca**	7.8E+00	ca**		
3.5E-03	h	1.3E-01	i	3.5E-03	r	1.3E-01	r	0	0.10	133-06-2	Captan	1.4E+02	ca*	4.9E+02	ca	1.9E+00	ca	1.9E+01	ca		
		1.0E-01	i			1.1E-01	r	0	0.10	63-25-2	Carbaryl	6.1E+03	nc	6.2E+04	nc	4.0E+02	nc	3.6E+03	nc		
2.0E-02	h			2.0E-02	r			0	0.10	86-74-8	Carbazole	2.4E+01	ca	8.6E+01	ca	3.4E-01	ca	3.4E+00	ca	6.0E-01	3.0E-02
		5.0E-03	i			5.0E-03	r	0	0.10	1563-66-2	Carbofuran	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		1.0E-01	i			2.0E-01	i	1		75-15-0	Carbon disulfide	3.6E+02	nc	7.2E+02	sat	7.3E+02	nc	1.0E+03	nc	3.2E+01	2.0E+00
1.3E-01	i	7.0E-04	i	5.3E-02	i	7.0E-04	r	1		56-23-5	Carbon tetrachloride	2.5E-01	ca**	5.5E-01	ca*	1.3E-01	ca*	1.7E-01	ca*	7.0E-02	3.0E-03
		1.0E-02	i			1.0E-02	r	0	0.10	55285-14-8	Carbosulfan	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	5234-68-4	Carboxin	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		1.5E-02	i			1.5E-02	r	0	0.10	133-90-4	Chloramben	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
4.0E-01	h			4.0E-01	r			0	0.10	118-75-2	Chloranil	1.2E+00	ca	4.3E+00	ca	1.7E-02	ca	1.7E-01	ca		
3.5E-01	i	5.0E-04	i	3.5E-01	i	2.0E-04	i	0	0.04	12789-03-6	Chlordane	1.6E+00	ca*	6.5E+00	ca*	1.9E-02	ca*	1.9E-01	ca*	1.0E+01	5.0E-01
		2.0E-02	i			2.0E-02	r	0	0.10	90982-32-4	Chlorimuron-ethyl	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.0E-01	i			5.71E-05	n			7782-50-5	Chlorine					2.1E-01	nc				
						5.7E-05	i			10049-04-4	Chlorine dioxide					2.1E-01	nc				
		2.0E-03	h			2.0E-03	r	0	0.10	79-11-8	Chloroacetic acid	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		8.6E-06	r			8.6E-06	i	1		532-27-4	2-Chloroacetophenone	3.3E-02	nc	1.1E-01	nc	3.1E-02	nc	5.2E-02	nc		
		4.0E-03	i			4.0E-03	r	0	0.10	106-47-8	4-Chloroaniline	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc	7.0E-01	3.0E-02
		2.0E-02	i			1.7E-02	n	1		108-90-7	Chlorobenzene	1.5E+02	nc	5.3E+02	nc	6.2E+01	nc	1.1E+02	nc	1.0E+00	7.0E-02

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+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		VOC	skin abs. soils	CAS No.	Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
2.7E-01	h	2.0E-02	i	2.7E-01	h	2.0E-02	r	0	0.10	510-15-6	Chlorobenzilate	1.8E+00	ca	6.4E+00	ca	2.5E-02	ca	2.5E-01	ca		
		2.0E-01	h			2.0E-01	r	0	0.10	74-11-3	p-Chlorobenzoic acid	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		2.0E-02	h			2.0E-02	r	0	0.10	98-56-6	4-Chlorobenzotrifluoride	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	h			2.0E-03	h	1		126-99-8	2-Chloro-1,3-butadiene	3.6E+00	nc	1.2E+01	nc	7.3E+00	nc	1.4E+01	nc		
		4.0E-01	h			4.0E-01	r	1		109-69-3	1-Chlorobutane	4.8E+02	sat	4.8E+02	sat	1.5E+03	nc	2.4E+03	nc		
		1.4E+01	r			1.4E+01	i	1		75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	3.4E+02	sat	3.4E+02	sat	5.2E+04	nc	8.7E+04	nc		
		1.4E+01	r			1.4E+01	i	1		75-45-6	Chlorodifluoromethane	3.4E+02	sat	3.4E+02	sat	5.1E+04	nc	8.5E+04	nc		
2.9E-03	n	4.0E-01	n	2.9E-03	r	2.9E+00	i	1		75-00-3	Chloroethane	3.0E+00	ca	6.5E+00	ca	2.3E+00	ca	4.6E+00	ca		
		1.0E-02	i			8.6E-04	n	1		67-66-3	**Chloroform**	3.6E+00	ca/nc	1.2E+01	ca/nc	3.1E+00	ca/nc	6.2E+00	ca/nc	6.0E-01	3.0E-02
3.1E-02				1.9E-02				1			**Chloroform "CAL-Modified PRG"**	9.4E-01	ca	2.0E+00	ca	3.5E-01	ca	5.3E-01	ca		
1.3E-02	h			6.3E-03	h	8.6E-02	n	1		74-87-3	Chloromethane	1.2E+00	ca	2.6E+00	ca	1.1E+00	ca	1.5E+00	ca		
5.8E-01	h			5.8E-01	r			0	0.10	95-69-2	4-Chloro-2-methylaniline	8.4E-01	ca	3.0E+00	ca	1.2E-02	ca	1.2E-01	ca		
4.6E-01	h			4.6E-01	r			0	0.10	3165-93-3	4-Chloro-2-methylaniline hydrochloride	1.1E+00	ca	3.7E+00	ca	1.5E-02	ca	1.5E-01	ca		
		8.0E-02	i			8.0E-02	r	1		91-58-7	beta-Chloronaphthalene	4.9E+03	nc	2.3E+04	nc	2.9E+02	nc	4.9E+02	nc		
9.7E-03	h	1.0E-03	h	9.7E-03	r	2.0E-05	h	1		88-73-3	**o-Chloronitrobenzene**	1.4E+00	nc**	4.5E+00	nc**	7.3E-02	nc**	1.5E-01	nc**		
6.7E-03	h	1.0E-03	h	6.7E-03	r	1.7E-04	h	1		100-00-5	**p-Chloronitrobenzene**	1.0E+01	nc**	3.7E+01	nc**	6.2E-01	nc**	1.2E+00	nc**		
		5.0E-03	i			5.0E-03	r	1		95-57-8	2-Chlorophenol	6.3E+01	nc	2.4E+02	nc	1.8E+01	nc	3.0E+01	nc	4.0E+00	2.0E-01
		2.9E-02	r			2.9E-02	h	1		75-29-6	2-Chloropropane	1.7E+02	nc	5.9E+02	nc	1.0E+02	nc	1.7E+02	nc		
1.1E-02	h	1.5E-02	i	1.1E-02	r	1.5E-02	r	0	0.10	1897-45-6	Chlorothalonil	4.4E+01	ca*	1.6E+02	ca*	6.1E-01	ca*	6.1E+00	ca*		
		2.0E-02	i			2.0E-02	r	1		95-49-8	o-Chlorotoluene	1.6E+02	nc	5.6E+02	nc	7.3E+01	nc	1.2E+02	nc		
		2.0E-01	i			2.0E-01	r	0	0.10	101-21-3	Chlorpropham	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		3.0E-03	i			3.0E-03	r	0	0.10	2921-88-2	Chlorpyrifos	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		1.0E-02	h			1.0E-02	r	0	0.10	5598-13-0	Chlorpyrifos-methyl	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	64902-72-3	Chlorsulfuron	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		8.0E-04	h			8.0E-04	r	0	0.10	60238-56-4	Chlorthiophos	4.9E+01	nc	4.9E+02	nc	2.9E+00	nc	2.9E+01	nc		
				4.2E+01	i			0			Total Chromium (1:6 ratio Cr VI:Cr III)+++	2.1E+02	ca	4.5E+02	ca	1.6E-04	ca			3.8E+01	2.0E+00
		1.5E+00	i							16065-83-1	Chromium III	1.0E+05	max	1.0E+05	max	0.0E+00		5.5E+04	nc		
		3.0E-03	i	2.9E+02	i	2.2E-06	i	0		18540-29-9	Chromium VI+++	3.0E+01	ca**	6.4E+01	ca	2.3E-05	ca	1.1E+02	nc	3.8E+01	2.0E+00
		2.00E-02	n	9.8E+00	n	5.7E-06	n			7440-48-4	**Cobalt**	9.0E+02	ca**	1.9E+03	ca*	6.9E-04	ca*	7.3E+02	nc		
				2.2E+00	i			0		8007-45-2	Coke Oven Emissions					3.1E-03	ca				
		4.00E-02	h					0		7440-50-8	Copper and compounds	3.1E+03	nc	4.1E+04	nc			1.5E+03	nc		
1.9E+00	h			1.9E+00	r			1		123-73-9	Crotonaldehyde	5.3E-03	ca	1.1E-02	ca	3.5E-03	ca	5.9E-03	ca		
		1.0E-01	i			1.1E-01	i	1		98-82-8	Cumene (isopropylbenzene)	5.7E+02	nc	2.0E+03	nc	4.0E+02	nc	6.6E+02	nc		
8.4E-01	h	2.0E-03	h	8.4E-01	r	2.0E-03	r	0	0.10	21725-46-2	Cyanazine	5.8E-01	ca	2.1E+00	ca	8.0E-03	ca	8.0E-02	ca		
		2.0E-02	i					0	0.10	57-12-5	Cyanide (free)	1.2E+03	nc	1.2E+04	nc			7.3E+02	nc		
		2.0E-02	i			8.6E-04	i	1		74-90-8	Cyanide (hydrogen)	1.1E+01	nc	3.5E+01	nc	3.1E+00	nc	6.2E+00	nc		

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TOXICITY INFORMATION																CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		4.0E-02	i			4.0E-02	r	1		460-19-5	Cyanogen	1.3E+02	nc	4.3E+02	nc	1.5E+02	nc	2.4E+02	nc		
		9.0E-02	i			9.0E-02	r	1		506-68-3	Cyanogen bromide	2.9E+02	nc	9.7E+02	nc	3.3E+02	nc	5.5E+02	nc		
		5.0E-02	i			5.0E-02	r	1		506-77-4	Cyanogen chloride	1.6E+02	nc	5.4E+02	nc	1.8E+02	nc	3.0E+02	nc		
		5.7E+00	r			5.7E+00	n	1		110-82-7	Cyclohexane	1.4E+02	sat	1.4E+02	sat	2.1E+04	nc	3.5E+04	nc		
		5.0E+00	i			5.0E+00	r	0	0.10	108-94-1	Cyclohexanone	1.0E+05	max	1.0E+05	max	1.8E+04	nc	1.8E+05	nc		
		2.0E-01	i			2.0E-01	r	0	0.10	108-91-8	Cyclohexylamine	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	68085-85-8	Cyhalothrin/Karate	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	52315-07-8	Cypermethrin	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		7.5E-03	i			7.5E-03	r	0	0.10	66215-27-8	Cyromazine	4.6E+02	nc	4.6E+03	nc	2.7E+01	nc	2.7E+02	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	1861-32-1	Dacthal	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		3.0E-02	i			3.0E-02	r	0	0.10	75-99-0	Dalapon	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	39515-41-8	Danitol	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
2.4E-01	i			2.4E-01	r			0	0.03	72-54-8	DDD	2.4E+00	ca	1.0E+01	ca	2.8E-02	ca	2.8E-01	ca	1.6E+01	8.0E-01
3.4E-01	i			3.4E-01	r			0	0.03	72-55-9	DDE	1.7E+00	ca	7.0E+00	ca	2.0E-02	ca	2.0E-01	ca	5.4E+01	3.0E+00
3.4E-01	i	5.0E-04	i	3.4E-01	i	5.0E-04	r	0	0.03	50-29-3	DDT	1.7E+00	ca*	7.0E+00	ca*	2.0E-02	ca*	2.0E-01	ca*	3.2E+01	2.0E+00
		1.0E-02	i			1.0E-02	r	0	0.10	1163-19-5	Decabromodiphenyl ether	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		4.0E-05	i			4.0E-05	r	0	0.10	8065-48-3	Demeton	2.4E+00	nc	2.5E+01	nc	1.5E-01	nc	1.5E+00	nc		
6.1E-02	h			6.1E-02	r			0	0.10	2303-16-4	Diallate	8.0E+00	ca	2.8E+01	ca	1.1E-01	ca	1.1E+00	ca		
		9.0E-04	h			9.0E-04	r	0	0.10	333-41-5	Diazinon	5.5E+01	nc	5.5E+02	nc	3.3E+00	nc	3.3E+01	nc		
		4.0E-03	n			4.0E-03	r	1		132-64-9	Dibenzofuran	2.9E+02	nc	3.1E+03	nc	1.5E+01	nc	2.4E+01	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	106-37-6	1,4-Dibromobenzene	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
8.4E-02	i	2.0E-02	i	8.4E-02	r	2.0E-02	r	1		124-48-1	Dibromochloromethane	1.1E+00	ca	2.6E+00	ca	8.0E-02	ca	1.3E-01	ca	4.0E-01	2.0E-02
1.4E+00	h	5.7E-05	r	2.4E-03	x	5.7E-05	i	1		96-12-8	1,2-Dibromo-3-chloropropane	4.5E-01	ca**	2.0E+00	ca**	2.1E-01	nc	4.8E-02	ca**		
7.0E+00				7.0E+00				1		96-12-8	**"CAL-Modified PRG"**	1.9E-02	ca	4.6E-02	ca	9.6E-04	ca	1.6E-03	ca		
8.5E+01	i	5.7E-05	r	7.7E-01	i	5.7E-05	h	1		106-93-4	1,2-Dibromoethane	6.9E-03	ca	2.8E-02	ca*	8.7E-03	ca*	7.6E-04	ca		
		1.0E-01	i			1.0E-01	r	0	0.10	84-74-2	Dibutyl phthalate	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc	2.3E+03	2.7E+02
		3.0E-02	i			3.0E-02	r	0	0.10	1918-00-9	Dicamba	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		9.0E-02	i			5.7E-02	h	1		95-50-1	1,2-Dichlorobenzene	3.7E+02	sat	3.7E+02	sat	2.1E+02	nc	3.7E+02	nc	1.7E+01	9.0E-01
		9.00E-04	n			9.00E-04	r	1		541-73-1	1,3-Dichlorobenzene	1.6E+01	nc	6.3E+01	nc	3.3E+00	nc	5.5E+00	nc		
2.4E-02	h	3.00E-02	n	2.2E-02	n	3.00E-02	i	1		106-46-7	1,4-Dichlorobenzene	3.4E+00	ca	7.9E+00	ca	3.1E-01	ca	5.0E-01	ca	2.0E+00	1.0E-01
4.5E-01	i			4.5E-01	r			0	0.10	91-94-1	3,3-Dichlorobenzidine	1.1E+00	ca	3.8E+00	ca	1.5E-02	ca	1.5E-01	ca	7.0E-03	3.0E-04
		3.00E-02	n			3.00E-02	r		0.10	90-98-2	4,4'-Dichlorobenzophenone	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
9.3E+00	r			9.3E+00	h			1		764-41-0	1,4-Dichloro-2-butene	7.9E-03	ca	1.8E-02	ca	7.2E-04	ca	1.2E-03	ca		
		2.0E-01	i			5.7E-02	h	1		75-71-8	Dichlorodifluoromethane	9.4E+01	nc	3.1E+02	nc	2.1E+02	nc	3.9E+02	nc		
		1.0E-01	h			1.4E-01	h	1		75-34-3	1,1-Dichloroethane	5.1E+02	nc	1.7E+03	nc	5.2E+02	nc	8.1E+02	nc	2.3E+01	1.0E+00
5.7E-03				5.7E-03				1			"CAL-Modified PRG"	2.8E+00	ca	6.0E+00	ca	1.2E+00	ca	2.0E+00	ca		

Key : SFo,i=Cancer Slope Factor oral, inhalation RfDo,i=Reference Dose oral, inhalation i=IRIS h=HEAST n=NCEA x=Withdrawn o=Other EPA Source r=Route-extrapolation ca=Cancer PRG nc=Noncancer PRG ca* (where: nc < 100X ca) ca**(where: nc < 10X ca)
+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION												CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
9.1E-02	i	3.0E-02	n	9.1E-02	i	1.4E-03	n	1		107-06-2	1,2-Dichloroethane (EDC)	2.8E-01	ca*	6.0E-01	ca*	7.4E-02	ca*	1.2E-01	ca*	2.0E-02	1.0E-03
		5.0E-02	i			5.7E-02	i	1		75-35-4	**1,1-Dichloroethylene**	1.2E+02	nc	4.1E+02	nc	2.1E+02	nc	3.4E+02	nc	6.0E-02	3.0E-03
		1.0E-02	h			1.0E-02	r	1		156-59-2	1,2-Dichloroethylene (cis)	4.3E+01	nc	1.5E+02	nc	3.7E+01	nc	6.1E+01	nc	4.0E-01	2.0E-02
		2.0E-02	i			2.0E-02	r	1		156-60-5	1,2-Dichloroethylene (trans)	6.9E+01	nc	2.3E+02	nc	7.3E+01	nc	1.2E+02	nc	7.0E-01	3.0E-02
		3.0E-03	i			3.0E-03	r	0	0.10	120-83-2	2,4-Dichlorophenol	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc	1.0E+00	5.0E-02
		8.0E-03	i			8.0E-03	r	0	0.10	94-82-6	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	4.9E+02	nc	4.9E+03	nc	2.9E+01	nc	2.9E+02	nc		
		1.0E-02	i			1.0E-02	r	0	0.05	94-75-7	2,4-Dichlorophenoxyacetic Acid (2,4-D)	6.9E+02	nc	7.7E+03	nc	3.7E+01	nc	3.6E+02	nc		
6.8E-02	h	1.1E-03	r	6.8E-02	r	1.1E-03	i	1		78-87-5	1,2-Dichloropropane	3.4E-01	ca*	7.4E-01	ca*	9.9E-02	ca*	1.6E-01	ca*	3.0E-02	1.0E-03
1.0E-01	i	3.00E-02	i	1.4E-02	i	5.7E-03	i	1		542-75-6	1,3-Dichloropropene	7.8E-01	ca	1.8E+00	ca	4.8E-01	ca	4.0E-01	ca	4.0E-03	2.0E-04
		3.0E-03	i			3.0E-03	r	0	0.10	616-23-9	2,3-Dichloropropanol	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
2.9E-01	i	5.0E-04	i	2.9E-01	r	1.4E-04	i	0	0.10	62-73-7	Dichlorvos	1.7E+00	ca*	5.9E+00	ca*	2.3E-02	ca*	2.3E-01	ca*		
4.4E-01	x			4.4E-01	r			0	0.10	115-32-2	Dicofol	1.1E+00	ca	3.9E+00	ca	1.5E-02	ca	1.5E-01	ca		
		3.0E-02	h			5.7E-05	x	1		77-73-6	Dicyclopentadiene	5.4E-01	nc	1.8E+00	nc	2.1E-01	nc	4.2E-01	nc		
1.6E+01	i	5.0E-05	i	1.6E+01	i	5.0E-05	r	0	0.10	60-57-1	Dieldrin	3.0E-02	ca	1.1E-01	ca	4.2E-04	ca	4.2E-03	ca	4.0E-03	2.0E-04
		1.0E-02	h			5.7E-03	h	0	0.10	112-34-5	**Diethylene glycol, monobutyl ether**	6.1E+02	nc	6.2E+03	nc	2.1E+01	nc	3.6E+02	nc		
		6.0E-02	h			8.6E-04	h	0	0.10	111-90-0	**Diethylene glycol, monomethyl ether**	3.7E+03	nc	3.7E+04	nc	3.1E+00	nc	2.2E+03	nc		
		4.0E-03	h			4.0E-03	r	0	0.10	617-84-5	**Diethylformamide**	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
1.2E-03	i	6.0E-01	i	1.2E-03	r	6.0E-01	r	0	0.10	103-23-1	Di(2-ethylhexyl)adipate	4.1E+02	ca	1.4E+03	ca	5.6E+00	ca	5.6E+01	ca		
		8.0E-01	i			8.0E-01	r	0	0.10	84-66-2	Diethyl phthalate	4.9E+04	nc	1.0E+05	max	2.9E+03	nc	2.9E+04	nc		
4.7E+03	h			4.7E+03	r			0	0.10	56-53-1	Diethylstilbestrol	1.0E-04	ca	3.7E-04	ca	1.4E-06	ca	1.4E-05	ca		
		8.0E-02	i			8.0E-02	r	0	0.10	43222-48-6	Difenzoquat (Avenge)	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	35367-38-5	Diflubenzuron	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.1E+01	r			1.1E+01	i	1		75-37-6	1,1-Difluoroethane					4.2E+04	nc	6.9E+04	nc		
		2.00E-02	n			2.00E-02	r		0.10	28553-12-0	Diisononyl phthalate	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		8.0E-02	i			8.0E-02	r	0	0.10	1445-75-6	Diisopropyl methylphosphonate	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	55290-64-7	Dimethipin	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-04	i			2.0E-04	r	0	0.10	60-51-5	Dimethoate	1.2E+01	nc	1.2E+02	nc	7.3E-01	nc	7.3E+00	nc		
1.4E-02	h			1.4E-02	r			0	0.10	119-90-4	3,3'-Dimethoxybenzidine	3.5E+01	ca	1.2E+02	ca	4.8E-01	ca	4.8E+00	ca		
		5.7E-06	r			5.7E-06	x	1		124-40-3	Dimethylamine	6.7E-02	nc	2.5E-01	nc	2.1E-02	nc	3.5E-02	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	121-69-7	N-N-Dimethylaniline	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
7.5E-01	h			7.5E-01	r			0	0.10	95-68-1	2,4-Dimethylaniline	6.5E-01	ca	2.3E+00	ca	9.0E-03	ca	9.0E-02	ca		
5.8E-01	h			5.8E-01	r			0	0.10	21436-96-4	2,4-Dimethylaniline hydrochloride	8.4E-01	ca	3.0E+00	ca	1.2E-02	ca	1.2E-01	ca		
9.2E+00	h			9.2E+00	r			0	0.10	119-93-7	3,3'-Dimethylbenzidine	5.3E-02	ca	1.9E-01	ca	7.3E-04	ca	7.3E-03	ca		
		1.0E-01	h			8.6E-03	i	0	0.10	68-12-2	N,N-Dimethylformamide	6.1E+03	nc	6.2E+04	nc	3.1E+01	nc	3.6E+03	nc		
		1.0E-03	n			1.0E-03	r	0	0.10	122-09-8	Dimethylphenethylamine	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	105-67-9	2,4-Dimethylphenol	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc	9.0E+00	4.0E-01

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.	Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		6.0E-04	i			6.0E-04	r	0	0.10	576-26-1	2,6-Dimethylphenol	3.7E+01	nc	3.7E+02	nc	2.2E+00	nc	2.2E+01	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	95-65-8	3,4-Dimethylphenol	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E+01	h			1.0E+01	r	0	0.10	131-11-3	Dimethyl phthalate	1.0E+05	max	1.0E+05	max	3.7E+04	nc	3.6E+05	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	120-61-6	Dimethyl terephthalate	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	131-89-5	4,6-Dinitro-o-cyclohexyl phenol	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		1.0E-04	h			1.0E-04	r	0	0.10	528-29-0	**1,2-Dinitrobenzene**	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		1.0E-04	i			1.0E-04	r	0	0.10	99-65-0	1,3-Dinitrobenzene	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		1.0E-04	h			1.0E-04	r	0	0.10	100-25-4	**1,4-Dinitrobenzene**	6.1E+00	nc	6.2E+01	nc	3.7E-01	nc	3.6E+00	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	51-28-5	2,4-Dinitrophenol	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc	3.0E-01	1.0E-02
6.8E-01	i			6.8E-01	r			0	0.10	25321-14-6	Dinitrotoluene mixture	7.2E-01	ca	2.5E+00	ca	9.9E-03	ca	9.9E-02	ca	8.0E-04	4.0E-05
		2.0E-03	i			2.0E-03	r	0	0.10	121-14-2	2,4-Dinitrotoluene (see DNT mixture for "ca")	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc	8.0E-04	4.0E-05
		1.0E-03	h			1.0E-03	r	0	0.10	606-20-2	2,6-Dinitrotoluene (see DNT mixture for "ca")	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc	7.0E-04	3.0E-05
		1.0E-03	i			1.0E-03	r	0	0.10	88-85-7	Dinoseb	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		4.0E-02	h			4.0E-02	r	0	0.10	117-84-0	**di-n-Octyl phthalate**	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc	1.0E+04	1.0E+04
1.1E-02	i			1.1E-02	r			0	0.10	123-91-1	1,4-Dioxane	4.4E+01	ca	1.6E+02	ca	6.1E-01	ca	6.1E+00	ca		
1.5E+05	h			1.5E+05	h			0	0.03	1746-01-6	Dioxin (2,3,7,8-TCDD)	3.9E-06	ca	1.6E-05	ca	4.5E-08	ca	4.5E-07	ca		
		3.0E-02	i			3.0E-02	r	0	0.10	957-51-7	Diphenamid	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	122-39-4	Diphenylamine	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		3.00E-04	n			3.00E-04	r		0.10	74-31-7	N,N-Diphenyl-1,4 benzenediamine (DPPD)	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
8.0E-01	i			7.7E-01	i			0	0.10	122-66-7	1,2-Diphenylhydrazine	6.1E-01	ca	2.2E+00	ca	8.7E-03	ca	8.4E-02	ca		
		3.0E-03	n			3.0E-03	r	0	0.10	127-63-9	**Diphenyl sulfone**	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		2.2E-03	i			2.2E-03	r	0	0.10	85-00-7	Diquat	1.3E+02	nc	1.4E+03	nc	8.0E+00	nc	8.0E+01	nc		
8.6E+00	h			8.6E+00	r			0	0.10	1937-37-7	Direct black 38	5.7E-02	ca	2.0E-01	ca	7.8E-04	ca	7.8E-03	ca		
8.1E+00	h			8.1E+00	r			0	0.10	2602-46-2	Direct blue 6	6.0E-02	ca	2.1E-01	ca	8.3E-04	ca	8.3E-03	ca		
9.3E+00	h			9.3E+00	r			0	0.10	16071-86-6	Direct brown 95	5.2E-02	ca	1.9E-01	ca	7.2E-04	ca	7.2E-03	ca		
		4.0E-05	i			4.0E-05	r	0	0.10	298-04-4	Disulfoton	2.4E+00	nc	2.5E+01	nc	1.5E-01	nc	1.5E+00	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	505-29-3	1,4-Dithiane	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	330-54-1	Diuron	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		4.0E-03	i			4.0E-03	r	0	0.10	2439-10-3	Dodine	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		2.0E-01	n							7429-91-6	Dysprosium	1.6E+04	nc	1.0E+05	max			7.3E+03	nc		
		6.0E-03	i			6.0E-03	r	0	0.10	115-29-7	Endosulfan	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc	1.8E+01	9.0E-01
		2.0E-02	i			2.0E-02	r	0	0.10	145-73-3	Endothall	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		3.0E-04	i			3.0E-04	r	0	0.10	72-20-8	Endrin	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc	1.0E+00	5.0E-02
9.9E-03	i	2.0E-03	h	4.2E-03	h	2.9E-04	i	1		106-89-8	Epichlorohydrin	7.6E+00	nc	2.6E+01	nc	1.0E+00	nc	2.0E+00	nc		
		5.7E-03	r			5.7E-03	i	0	0.10	106-88-7	1,2-Epoxybutane	3.5E+02	nc	3.5E+03	nc	2.1E+01	nc	2.1E+02	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	759-94-4	EPTC (S-Ethyl dipropylthiocarbamate)	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		

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TOXICITY INFORMATION															CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		5.0E-03	i			5.0E-03	r	0	0.10	16672-87-0	Ethephon (2-chloroethyl phosphonic acid)	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		5.0E-04	i			5.0E-04	r	0	0.10	563-12-2	Ethion	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
		4.0E-01	h			5.7E-02	i	0	0.10	110-80-5	2-Ethoxyethanol	2.4E+04	nc	1.0E+05	max	2.1E+02	nc	1.5E+04	nc		
		3.0E-01	h			3.0E-01	r	0	0.10	111-15-9	2-Ethoxyethanol acetate	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
		9.0E-01	i			9.0E-01	r	1		141-78-6	Ethyl acetate	1.9E+04	nc	3.7E+04	sat	3.3E+03	nc	5.5E+03	nc		
4.8E-02	h			4.8E-02	r			1		140-88-5	Ethyl acrylate	2.1E-01	ca	4.5E-01	ca	1.4E-01	ca	2.3E-01	ca		
3.85E-03	r	1.0E-01	i	3.85E-03	n	2.9E-01	i	1		100-41-4	**Ethylbenzene**	8.9E+00	ca	2.0E+01	ca	1.7E+00	ca	2.9E+00	ca	1.3E+01	7.0E-01
2.9E-03	n	4.0E-01	n	2.9E-03	r	2.9E+00	i	1		75-00-3	Ethyl chloride	3.0E+00	ca	6.5E+00	ca	2.3E+00	ca	4.6E+00	ca		
		3.0E-01	h			3.0E-01	r	0	0.10	109-78-4	Ethylene cyanohydrin	1.8E+04	nc	1.0E+05	max	1.1E+03	nc	1.1E+04	nc		
		2.0E-02	h			2.0E-02	r	0	0.10	107-15-3	Ethylene diamine	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E+00	i			2.0E+00	r	0	0.10	107-21-1	Ethylene glycol	1.0E+05	max	1.0E+05	max	7.3E+03	nc	7.3E+04	nc		
		5.0E-01	i			3.7E+00	i	0	0.10	111-76-2	Ethylene glycol, monobutyl ether	3.1E+04	nc	1.0E+05	max	1.4E+04	nc	1.8E+04	nc		
1.0E+00	h			3.5E-01	h			1		75-21-8	Ethylene oxide	1.4E-01	ca	3.4E-01	ca	1.9E-02	ca	2.4E-02	ca		
1.1E-01	h	8.0E-05	i	1.1E-01	r	8.0E-05	r	0	0.10	96-45-7	Ethylene thiourea (ETU)	4.4E+00	ca**	1.6E+01	ca**	6.1E-02	ca**	6.1E-01	ca**		
		2.0E-01	i			2.0E-01	r	1		60-29-7	Ethyl ether	1.8E+03	sat	1.8E+03	sat	7.3E+02	nc	1.2E+03	nc		
		9.0E-02	h			9.0E-02	r	1		97-63-2	Ethyl methacrylate	1.4E+02	sat	1.4E+02	sat	3.3E+02	nc	5.5E+02	nc		
		1.0E-05	i			1.0E-05	r	0	0.10	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	6.1E-01	nc	6.2E+00	nc	3.7E-02	nc	3.6E-01	nc		
		3.0E+00	i			3.0E+00	r	0	0.10	84-72-0	Ethylphthalyl ethyl glycolate	1.0E+05	max	1.0E+05	max	1.1E+04	nc	1.1E+05	nc		
		8.0E-03	i			8.0E-03	r	0	0.10	101200-48-0	Express	4.9E+02	nc	4.9E+03	nc	2.9E+01	nc	2.9E+02	nc		
		2.5E-04	i			2.5E-04	r	0	0.10	22224-92-6	Fenamiphos	1.5E+01	nc	1.5E+02	nc	9.1E-01	nc	9.1E+00	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	2164-17-2	Fluometuron	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		6.0E-02	i					0	0.10	16984-48-8	Flouride	3.7E+03	nc	3.7E+04	nc			2.2E+03	nc		
		8.0E-02	i			8.0E-02	r	0	0.10	59756-60-4	Fluoridone	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	56425-91-3	Flurprimidol	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		6.0E-02	i			6.0E-02	r	0	0.10	66332-96-5	Flutolanil	3.7E+03	nc	3.7E+04	nc	2.2E+02	nc	2.2E+03	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	69409-94-5	Fluvalinate	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
3.5E-03	i	1.0E-01	i	3.5E-03	r	1.0E-01	r	0	0.10	133-07-3	Folpet	1.4E+02	ca*	4.9E+02	ca	1.9E+00	ca	1.9E+01	ca		
1.9E-01	i			1.9E-01	r			0	0.10	72178-02-0	Fomesafen	2.6E+00	ca	9.1E+00	ca	3.5E-02	ca	3.5E-01	ca		
		2.0E-03	i			2.0E-03	r	0	0.10	944-22-9	Fonofos	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		1.5E-01	i	4.6E-02	i			0	0.10	50-00-0	Formaldehyde	9.2E+03	nc	1.0E+05	nc	1.5E-01	ca	5.5E+03	nc		
		2.0E+00	h			2.0E+00	r	0	0.10	64-18-6	Formic Acid	1.0E+05	max	1.0E+05	max	7.3E+03	nc	7.3E+04	nc		
		3.0E+00	i			3.0E+00	r	0	0.10	39148-24-8	Fosetyl-al	1.0E+05	max	1.0E+05	max	1.1E+04	nc	1.1E+05	nc		
		3.0E+01	i			8.6E+00	h	1		76-13-1	Freon 113	5.6E+03	sat	5.6E+03	sat	3.1E+04	nc	5.9E+04	nc		
		1.0E-03	i			1.0E-03	r	1		110-00-9	Furan	2.5E+00	nc	8.5E+00	nc	3.7E+00	nc	6.1E+00	nc		
3.8E+00	h			3.8E+00	r			0	0.10	67-45-8	Furazolidone	1.3E-01	ca	4.5E-01	ca	1.8E-03	ca	1.8E-02	ca		
		3.0E-03	i			1.4E-02	h	0	0.10	98-01-1	Furfural	1.8E+02	nc	1.8E+03	nc	5.2E+01	nc	1.1E+02	nc		

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+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION											CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
5.0E+01	h			5.0E+01	r			0	0.10	531-82-8	Furium	9.7E-03	ca	3.4E-02	ca	1.3E-04	ca	1.3E-03	ca		
3.0E-02	i			3.0E-02	r			0	0.10	60568-05-0	Furmecyclox	1.6E+01	ca	5.7E+01	ca	2.2E-01	ca	2.2E+00	ca		
		4.0E-04	i			4.0E-04	r	0	0.10	77182-82-2	Glufosinate-ammonium	2.4E+01	nc	2.5E+02	nc	1.5E+00	nc	1.5E+01	nc		
		4.0E-04	i			2.9E-04	h	0	0.10	765-34-4	Glycidaldehyde	2.4E+01	nc	2.5E+02	nc	1.0E+00	nc	1.5E+01	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	1071-83-6	Glyphosate	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		5.0E-05	i			5.0E-05	r	0	0.10	69806-40-2	Haloxyfop-methyl	3.1E+00	nc	3.1E+01	nc	1.8E-01	nc	1.8E+00	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	79277-27-3	Harmony	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
4.5E+00	i	5.0E-04	i	4.6E+00	i	5.0E-04	r	0	0.10	76-44-8	Heptachlor	1.1E-01	ca	3.8E-01	ca	1.5E-03	ca	1.5E-02	ca	2.3E+01	1.0E+00
9.1E+00	i	1.3E-05	i	9.1E+00	i	1.3E-05	r	0	0.10	1024-57-3	Heptachlor epoxide	5.3E-02	ca*	1.9E-01	ca*	7.4E-04	ca*	7.4E-03	ca*	7.0E-01	3.0E-02
		2.0E-03	i			2.0E-03	r	0	0.10	87-82-1	Hexabromobenzene	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
1.6E+00	i	8.0E-04	i	1.6E+00	i	8.0E-04	r	0	0.10	118-74-1	Hexachlorobenzene	3.0E-01	ca	1.1E+00	ca	4.2E-03	ca	4.2E-02	ca	2.0E+00	1.0E-01
7.8E-02	i	3.00E-04	n	7.8E-02	i	3.00E-04	r	0	0.10	87-68-3	Hexachlorobutadiene	6.2E+00	ca**	2.2E+01	ca**	8.6E-02	ca*	8.6E-01	ca*	2.0E+00	1.0E-01
6.3E+00	i	5.0E-04	n	6.3E+00	i	5.0E-04	r	0	0.04	319-84-6	**HCH (alpha)**	9.0E-02	ca	3.6E-01	ca	1.1E-03	ca	1.1E-02	ca	5.0E-04	3.0E-05
1.8E+00	i	2.0E-04	n	1.8E+00	i	2.0E-04	r	0	0.04	319-85-7	**HCH (beta)**	3.2E-01	ca	1.3E+00	ca	3.7E-03	ca	3.7E-02	ca	3.0E-03	1.0E-04
1.3E+00	h	3.0E-04	i	1.3E+00	r	3.0E-04	r	0	0.04	58-89-9	HCH (gamma) Lindane	4.4E-01	ca*	1.7E+00	ca	5.2E-03	ca	5.2E-02	ca	9.0E-03	5.0E-04
1.8E+00	i			1.8E+00	i			0	0.04	608-73-1	HCH-technical	3.2E-01	ca	1.3E+00	ca	3.8E-03	ca	3.7E-02	ca	3.0E-03	1.0E-04
		6.0E-03	i			5.7E-05	i	0	0.10	77-47-4	**Hexachlorocyclopentadiene**	3.7E+02	nc	3.7E+03	nc	2.1E-01	nc	2.2E+02	nc	4.0E+02	2.0E+01
1.4E-02	i	1.0E-03	i	1.4E-02	i	1.0E-03	r	0	0.10	67-72-1	Hexachloroethane	3.5E+01	ca**	1.2E+02	ca**	4.8E-01	ca**	4.8E+00	ca**	5.0E-01	2.0E-02
		3.0E-04	i			3.0E-04	r	0	0.10	70-30-4	Hexachlorophene	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
1.1E-01	i	3.0E-03	i	1.1E-01	r	3.0E-03	r	0	0.10	121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine	4.4E+00	ca*	1.6E+01	ca	6.1E-02	ca	6.1E-01	ca		
		2.9E-06	r			2.9E-06	i	0	0.10	822-06-0	1,6-Hexamethylene diisocyanate	1.7E-01	nc	1.8E+00	nc	1.0E-02	nc	1.0E-01	nc		
		6.0E-02	h			5.7E-02	i	1		110-54-3	n-Hexane	1.1E+02	sat	1.1E+02	sat	2.1E+02	nc	3.5E+02	nc		
		3.3E-02	i			3.3E-02	r	0	0.10	51235-04-2	Hexazinone	2.0E+03	nc	2.0E+04	nc	1.2E+02	nc	1.2E+03	nc		
3.0E+00	i			1.7E+01	i			0	0.10	302-01-2	Hydrazine, hydrazine sulfate	1.6E-01	ca	5.7E-01	ca	3.9E-04	ca	2.2E-02	ca		
3.0E+00	n			1.7E+01	n				0.10	60-34-4	Hydrazine, monomethyl	1.6E-01	ca	5.7E-01	ca	4.0E-04	ca	2.2E-02	ca		
3.0E+00	n			1.7E+01	n				0.10	57-14-7	Hydrazine, dimethyl	1.6E-01	ca	5.7E-01	ca	4.0E-04	ca	2.2E-02	ca		
						5.7E-03	i			7647-01-0	Hydrogen chloride					2.1E+01	nc				
		2.0E-02	i			8.6E-04	i	1		74-90-8	Hydrogen cyanide	1.1E+01	nc	3.5E+01	nc	3.1E+00	nc	6.2E+00	nc		
		3.0E-03	i			2.9E-04	i			7783-06-4	Hydrogen sulfide					1.0E+00	nc	1.1E+02	nc		
		4.0E-02	h			4.0E-02	r	0	0.10	123-31-9	p-Hydroquinone	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	35554-44-0	Imazalil	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		2.5E-01	i			2.5E-01	r	0	0.10	81335-37-7	Imazaquin	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		4.0E-02	i			4.0E-02	r	0	0.10	36734-19-7	Iprodione	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
		3.0E-01	n					0		7439-89-6	Iron	2.3E+04	nc	1.0E+05	max			1.1E+04	nc		
		3.0E-01	i			3.0E-01	r	1		78-83-1	Isobutanol	1.3E+04	nc	4.0E+04	sat	1.1E+03	nc	1.8E+03	nc		
9.5E-04	i	2.0E-01	i	9.5E-04	r	2.0E-01	r	0	0.10	78-59-1	Isophorone	5.1E+02	ca*	1.8E+03	ca*	7.1E+00	ca	7.1E+01	ca	5.0E-01	3.0E-02

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TOXICITY INFORMATION												CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.			Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		1.5E-02	i			1.5E-02	r	0	0.10	33820-53-0		Isopropalin	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
		1.0E-01	i			1.1E-01	r	0	0.10	1832-54-8		Isopropyl methyl phosphonic acid	6.1E+03	nc	6.2E+04	nc	4.0E+02	nc	3.6E+03	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	82558-50-7		Isoxaben	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
8.0E+00	n	3.0E-04	n	8.0E+00	r	3.0E-04	r	0	0.10	143-50-0		**Kepone**	6.1E-02	ca	2.2E-01	ca	8.4E-04	ca	8.4E-03	ca		
		2.0E-03	i			2.0E-03	r	0	0.10	77501-63-4		Lactofen	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
For info see: www.epa.gov/oerrpage/superfund/programs/lead/prods.htm#guidance										7439-92-1		Lead+++	4.0E+02	nc	7.5E+02	nc						
For info see: www.dtsc.ca.gov/ScienceTechnology/ledspred.html												**Lead "CAL-Modified PRG"+++**	1.5E+02									
		1.0E-07	i					0	0.10	78-00-2		Lead (tetraethyl)	6.1E-03	nc	6.2E-02	nc			3.6E-03	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	330-55-2		Linuron	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		2.0E-02	x					0		7439-93-2		Lithium	1.6E+03	nc	2.0E+04	nc			7.3E+02	nc		
		2.0E-01	i			2.0E-01	r	0	0.10	83055-99-6		Londax	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	121-75-5		Malathion	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	108-31-6		Maleic anhydride	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		5.0E-01	i			5.0E-01	r	1		123-33-1		Maleic hydrazide	1.7E+03	nc	2.4E+03	sat	1.8E+03	nc	3.0E+03	nc		
		2.0E-05	h			2.0E-05	r	0	0.10	109-77-3		Malononitrile	1.2E+00	nc	1.2E+01	nc	7.3E-02	nc	7.3E-01	nc		
		3.0E-02	h			3.0E-02	r	0	0.10	8018-01-7		Mancozeb	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
6.0E-02	o	5.0E-03	i	6.0E-02	r	5.0E-03	r	0	0.10	12427-38-2		Maneb	8.1E+00	ca*	2.9E+01	ca	1.1E-01	ca	1.1E+00	ca		
		2.4E-02	i			1.4E-05	i	0		7439-96-5		Manganese and compounds+++	1.8E+03	nc	1.9E+04	nc	5.1E-02	nc	8.8E+02	nc		
		9.0E-05	h			9.0E-05	r	0	0.10	950-10-7		Mephosfolan	5.5E+00	nc	5.5E+01	nc	3.3E-01	nc	3.3E+00	nc		
		3.0E-02	i			3.0E-02	r	0	0.10	24307-26-4		Mepiquat chloride	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
2.9E-02	n	1.0E-01	n	2.9E-02	r	1.0E-01	r	0	0.10	149-30-4		2-Mercaptobenzothiazole	1.7E+01	ca	5.9E+01	ca	2.3E-01	ca	2.3E+00	ca		
		3.0E-04	i					0		7487-94-7		Mercury chloride	2.3E+01	nc	3.1E+02	nc			1.1E+01	nc		
						8.6E-05	i			7439-97-6		Mercury (elemental)	0.0E+00		0.0E+00		3.1E-01	nc				
		1.0E-04	i					0	0.10	22967-92-6		Mercury (methyl)	6.1E+00	nc	6.2E+01	nc			3.6E+00	nc		
		3.0E-05	i			3.0E-05	r	0	0.10	150-50-5		Merphos	1.8E+00	nc	1.8E+01	nc	1.1E-01	nc	1.1E+00	nc		
		3.0E-05	i			3.0E-05	r	0	0.10	78-48-8		Merphos oxide	1.8E+00	nc	1.8E+01	nc	1.1E-01	nc	1.1E+00	nc		
		6.0E-02	i			6.0E-02	r	0	0.10	57837-19-1		Metalaxyl	3.7E+03	nc	3.7E+04	nc	2.2E+02	nc	2.2E+03	nc		
		1.0E-04	i			2.0E-04	h	1		126-98-7		Methacrylonitrile	2.1E+00	nc	8.4E+00	nc	7.3E-01	nc	1.0E+00	nc		
		5.0E-05	i			5.0E-05	r	0	0.10	10265-92-6		Methamidophos	3.1E+00	nc	3.1E+01	nc	1.8E-01	nc	1.8E+00	nc		
		5.0E-01	i			5.0E-01	r	0	0.10	67-56-1		Methanol	3.1E+04	nc	1.0E+05	max	1.8E+03	nc	1.8E+04	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	950-37-8		Methidathion	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		2.5E-02	i			2.5E-02	r	1		16752-77-5		Methomyl	4.4E+01	nc	1.5E+02	nc	9.1E+01	nc	1.5E+02	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	72-43-5		Methoxychlor	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc	1.6E+02	8.0E+00
		1.0E-03	h			5.7E-03	i	0	0.10	109-86-4		2-Methoxyethanol	6.1E+01	nc	6.2E+02	nc	2.1E+01	nc	3.6E+01	nc		
		2.0E-03	h			2.0E-03	r	0	0.10	110-49-6		2-Methoxyethanol acetate	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
4.6E-02	h			4.6E-02	r			0	0.10	99-59-2		2-Methoxy-5-nitroaniline	1.1E+01	ca	3.7E+01	ca	1.5E-01	ca	1.5E+00	ca		

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+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION												CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		1.0E+00	h			1.0E+00	r	1		79-20-9	Methyl acetate	2.2E+04	nc	9.2E+04	nc	3.7E+03	nc	6.1E+03	nc		
		3.0E-02	h			3.0E-02	r	1		96-33-3	Methyl acrylate	7.0E+01	nc	2.3E+02	nc	1.1E+02	nc	1.8E+02	nc		
2.4E-01	h			2.4E-01	r			0	0.10	95-53-4	2-Methylaniline (o-toluidine)	2.0E+00	ca	7.2E+00	ca	2.8E-02	ca	2.8E-01	ca		
1.8E-01	h			1.8E-01	r			0	0.10	636-21-5	2-Methylaniline hydrochloride	2.7E+00	ca	9.6E+00	ca	3.7E-02	ca	3.7E-01	ca		
		5.0E-04	i			5.0E-04	r	0	0.10	94-74-6	2-Methyl-4-chlorophenoxyacetic acid	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	94-81-5	4-(2-Methyl-4-chlorophenoxy) butyric acid	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	93-65-2	2-(2-Methyl-4-chlorophenoxy) propionic acid	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	16484-77-8	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		8.6E-01	r			8.6E-01	h	1		108-87-2	Methylcyclohexane	2.6E+03	nc	8.7E+03	nc	3.1E+03	nc	5.2E+03	nc		
2.5E-01	h			2.5E-01	r			0	0.10	101-77-9	4,4'-Methylenebisbenzeneamine	1.9E+00	ca	6.9E+00	ca	2.7E-02	ca	2.7E-01	ca		
1.3E-01	h	7.0E-04	h	1.3E-01	h	7.0E-04	r	0	0.10	101-14-4	4,4'-Methylene bis(2-chloroaniline)	3.7E+00	ca*	1.3E+01	ca*	5.2E-02	ca*	5.2E-01	ca*		
4.6E-02	i			4.6E-02	r			0	0.10	101-61-1	4,4'-Methylene bis(N,N'-dimethyl)aniline	1.1E+01	ca	3.7E+01	ca	1.5E-01	ca	1.5E+00	ca		
		1.0E-02	h			1.0E-02	r	1		74-95-3	Methylene bromide	6.7E+01	nc	2.3E+02	nc	3.7E+01	nc	6.1E+01	nc		
7.5E-03	i	6.0E-02	i	1.6E-03	i	8.6E-01	h	1		75-09-2	Methylene chloride	9.1E+00	ca	2.1E+01	ca	4.1E+00	ca	4.3E+00	ca	2.0E-02	1.0E-03
		1.7E-04	r			1.7E-04	i	0	0.10	101-68-8	4,4'-Methylene diphenyl diisocyanate	1.0E+01	nc	1.0E+02	nc	6.2E-01	nc	6.2E+00	nc		
		6.0E-01	i			2.9E-01	i	1		78-93-3	Methyl ethyl ketone	7.3E+03	nc	2.7E+04	nc	1.0E+03	nc	1.9E+03	nc		
		8.0E-02	h			2.3E-02	h	1		108-10-1	Methyl isobutyl ketone	7.9E+02	nc	2.8E+03	nc	8.3E+01	nc	1.6E+02	nc		
		5.7E-04	r			5.7E-04	n	0	0.10	74-93-1	Methyl Mercaptan	3.5E+01	nc	3.5E+02	nc	2.1E+00	nc	2.1E+01	nc		
		1.4E+00	i			2.0E-01	i	1		80-62-6	Methyl methacrylate	2.2E+03	nc	2.7E+03	sat	7.3E+02	nc	1.4E+03	nc		
3.3E-02	h			3.3E-02	r			0	0.10	99-55-8	2-Methyl-5-nitroaniline	1.5E+01	ca	5.2E+01	ca	2.0E-01	ca	2.0E+00	ca		
		2.5E-04	i			2.5E-04	r	0	0.10	298-00-0	Methyl parathion	1.5E+01	nc	1.5E+02	nc	9.1E-01	nc	9.1E+00	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	95-48-7	2-Methylphenol	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc	1.5E+01	8.0E-01
		5.0E-02	i			5.0E-02	r	0	0.10	108-39-4	3-Methylphenol	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		5.0E-03	h			5.0E-03	r	0	0.10	106-44-5	4-Methylphenol	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.0E-02	n			2.0E-02	r	0	0.10	993-13-5	Methyl phosphonic acid	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		6.0E-03	h			1.1E-02	h	1		25013-15-4	Methyl styrene (mixture)	1.3E+02	nc	5.4E+02	nc	4.2E+01	nc	6.0E+01	nc		
		7.0E-02	h			7.0E-02	r	1		98-83-9	Methyl styrene (alpha)	6.8E+02	sat	6.8E+02	sat	2.6E+02	nc	4.3E+02	nc		
3.3E-03	n	8.6E-01	r	3.5E-04	n	8.6E-01	i	1		1634-04-4	**Methyl tertbutyl ether (MTBE)**	6.2E+01	ca*	1.6E+02	ca	1.9E+01	ca	1.3E+01	ca		
1.8E-03				1.8E-03				1			"CAL-Modified PRG"	1.7E+01	ca	3.6E+01	ca	3.7E+00	ca	6.2E+00	ca		
		1.5E-01	i			1.5E-01	r	0	0.10	51218-45-2	Metolaclor (Dual)	9.2E+03	nc	9.2E+04	nc	5.5E+02	nc	5.5E+03	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	21087-64-9	Metribuzin	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
1.8E+00	x	2.0E-04	i	1.8E+00	r	2.0E-04	r	0	0.10	2385-85-5	Mirex	2.7E-01	ca*	9.6E-01	ca	3.7E-03	ca	3.7E-02	ca		
		2.0E-03	i			2.0E-03	r	0	0.10	2212-67-1	Molinate	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		5.0E-03	i					0		7439-98-7	Molybdenum	3.9E+02	nc	5.1E+03	nc			1.8E+02	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	10599-90-3	Monochloramine	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	300-76-5	Naled	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		

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TOXICITY INFORMATION									CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	VOC	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
	1.0E-01 i		1.0E-01 r	0	0.10	15299-99-7	Napropamide	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
	2.0E-02 i			0		7440-02-0	Nickel (soluble salts)	1.6E+03	nc	2.0E+04	nc			7.3E+02	nc	1.3E+02	7.0E+00
		8.4E-01 i		0			Nickel refinery dust					8.0E-03	ca				
		1.7E+00 i		0		12035-72-2	Nickel subsulfide			1.1E+04	ca	4.0E-03	ca				
Tap Water PRG Based on Infant NOAEL (see IRIS)						14797-55-8	Nitrate+++							1.0E+04	nc		
Tap Water PRG Based on Infant NOAEL (see IRIS)						14797-65-0	Nitrite+++							1.0E+03	nc		
	2.86E-05 r		2.86E-05 h	0	0.10	88-74-4	**2-Nitroaniline**	1.7E+00	nc	1.8E+01	nc	1.0E-01	nc	1.0E+00	nc		
	5.0E-04 i		5.7E-04 h	1		98-95-3	Nitrobenzene	2.0E+01	nc	1.0E+02	nc	2.1E+00	nc	3.4E+00	nc	1.0E-01	7.0E-03
	7.0E-02 h		7.0E-02 r	0	0.10	67-20-9	Nitrofurantoin	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
1.5E+00 h		1.5E+00 r		0	0.10	59-87-0	Nitrofurazone	3.2E-01	ca	1.1E+00	ca	4.5E-03	ca	4.5E-02	ca		
1.4E-02 n		1.4E-02 r		0	0.10	55-63-0	Nitroglycerin	3.5E+01	ca	1.2E+02	ca	4.8E-01	ca	4.8E+00	ca		
	1.0E-01 i		1.0E-01 r	0	0.10	556-88-7	Nitroguanidine	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc		
9.4E+00 r	5.7E-03 r	9.4E+00 h	5.7E-03 i	1		79-46-9	2-Nitropropane					7.2E-04	ca	1.2E-03	ca		
5.4E+00 i		5.6E+00 i		1		924-16-3	N-Nitrosodi-n-butylamine	2.4E-02	ca	5.8E-02	ca	1.2E-03	ca	2.0E-03	ca		
2.8E+00 i		2.8E+00 r		0	0.10	1116-54-7	N-Nitrosodiethanolamine	1.7E-01	ca	6.2E-01	ca	2.4E-03	ca	2.4E-02	ca		
1.5E+02 i		1.5E+02 i		0	0.10	55-18-5	N-Nitrosodiethylamine	3.2E-03	ca	1.1E-02	ca	4.5E-05	ca	4.5E-04	ca		
5.1E+01 i		4.9E+01 i		0	0.10	62-75-9	N-Nitrosodimethylamine	9.5E-03	ca	3.4E-02	ca	1.4E-04	ca	1.3E-03	ca		
4.9E-03 i		4.9E-03 r		0	0.10	86-30-6	N-Nitrosodiphenylamine	9.9E+01	ca	3.5E+02	ca	1.4E+00	ca	1.4E+01	ca	1.0E+00	6.0E-02
7.0E+00 i		7.0E+00 r		0	0.10	621-64-7	N-Nitroso di-n-propylamine	6.9E-02	ca	2.5E-01	ca	9.6E-04	ca	9.6E-03	ca	5.0E-05	2.0E-06
2.2E+01 i		2.2E+01 r		0	0.10	10595-95-6	N-Nitroso-N-methylethylamine	2.2E-02	ca	7.8E-02	ca	3.1E-04	ca	3.1E-03	ca		
2.1E+00 i		2.1E+00 i		0	0.10	930-55-2	N-Nitrosopyrrolidine	2.3E-01	ca	8.2E-01	ca	3.1E-03	ca	3.2E-02	ca		
	1.0E-02 h		1.0E-02 r	1		99-08-1	m-Nitrotoluene	3.7E+02	nc	1.0E+03	sat	3.7E+01	nc	6.1E+01	nc		
	1.0E-02 h		1.0E-02 r	1		99-08-1	o-Nitrotoluene	3.7E+02	nc	1.0E+03	sat	3.7E+01	nc	6.1E+01	nc		
	1.0E-02 h		1.0E-02 r	1		99-99-0	p-Nitrotoluene	3.7E+02	nc	1.0E+03	sat	3.7E+01	nc	6.1E+01	nc		
	4.0E-02 i		4.0E-02 r	0	0.10	27314-13-2	Norflurazon	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
	7.0E-04 i		7.0E-04 r	0	0.10	85509-19-9	NuStar	4.3E+01	nc	4.3E+02	nc	2.6E+00	nc	2.6E+01	nc		
	3.0E-03 i		3.0E-03 r	0	0.10	32536-52-0	Octabromodiphenyl ether	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
	5.0E-02 i		5.0E-02 r	0	0.10	2691-41-0	Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
	2.0E-03 h		2.0E-03 r	0	0.10	152-16-9	Octamethylpyrophosphoramide	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
	5.0E-02 i		5.0E-02 r	0	0.10	19044-88-3	Oryzalin	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
	5.0E-03 i		5.0E-03 r	0	0.10	19666-30-9	Oxadiazon	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
	2.5E-02 i		2.5E-02 r	0	0.10	23135-22-0	Oxamyl	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
	3.0E-03 i		3.0E-03 r	0	0.10	42874-03-3	Oxyfluorfen	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
	1.3E-02 i		1.3E-02 r	0	0.10	76738-62-0	Paclobutrazol	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
	4.5E-03 i		4.5E-03 r	0	0.10	4685-14-7	Paraquat	2.7E+02	nc	2.8E+03	nc	1.6E+01	nc	1.6E+02	nc		
	6.0E-03 h		6.0E-03 r	0	0.10	56-38-2	Parathion	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc		

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		5.0E-02	h			5.0E-02	r	0	0.10	1114-71-2	Pebulate	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		4.0E-02	i			4.0E-02	r	0	0.10	40487-42-1	Pendimethalin	2.4E+03	nc	2.5E+04	nc	1.5E+02	nc	1.5E+03	nc		
2.3E-02	h			2.3E-02	r			0	0.10	87-84-3	Pentabromo-6-chloro cyclohexane	2.1E+01	ca	7.5E+01	ca	2.9E-01	ca	2.9E+00	ca		
		2.0E-03	i			2.0E-03	r	0	0.10	32534-81-9	Pentabromodiphenyl ether	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		8.0E-04	i			8.0E-04	r	0	0.10	608-93-5	Pentachlorobenzene	4.9E+01	nc	4.9E+02	nc	2.9E+00	nc	2.9E+01	nc		
2.6E-01	h	3.0E-03	i	2.6E-01	r	3.0E-03	r	0	0.10	82-68-8	Pentachloronitrobenzene	1.9E+00	ca*	6.6E+00	ca	2.6E-02	ca	2.6E-01	ca		
1.2E-01	i	3.0E-02	i	1.2E-01	r	3.0E-02	r	0	0.25	87-86-5	Pentachlorophenol	3.0E+00	ca	9.0E+00	ca	5.6E-02	ca	5.6E-01	ca	3.0E-02	1.0E-03
		1.00E-04	x					0		7601-90-3	Perchlorate	7.8E+00	ca/nc	1.0E+02	ca/nc			3.6E+00	ca/nc		
		5.0E-02	i			5.0E-02	r	0	0.10	52645-53-1	Permethrin	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		2.5E-01	i			2.5E-01	r	0	0.10	13684-63-4	Phenmedipham	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		6.0E-01	i			6.0E-01	r	0	0.10	108-95-2	Phenol	3.7E+04	nc	1.0E+05	max	2.2E+03	nc	2.2E+04	nc	1.0E+02	5.0E+00
		2.0E-03	n			2.0E-03	r	0	0.10	92-84-2	Phenothiazine	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		6.0E-03	i			6.0E-03	r	0	0.10	108-45-2	m-Phenylenediamine	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc		
		1.9E-01	h			1.9E-01	r	0	0.10	106-50-3	p-Phenylenediamine	1.2E+04	nc	1.0E+05	max	6.9E+02	nc	6.9E+03	nc		
		8.0E-05	i			8.0E-05	r	0	0.10	62-38-4	Phenylmercuric acetate	4.9E+00	nc	4.9E+01	nc	2.9E-01	nc	2.9E+00	nc		
1.9E-03	h			1.9E-03	r			0	0.10	90-43-7	2-Phenylphenol	2.5E+02	ca	8.9E+02	ca	3.5E+00	ca	3.5E+01	ca		
		2.0E-04	h			2.0E-04	r	0	0.10	298-02-2	Phorate	1.2E+01	nc	1.2E+02	nc	7.3E-01	nc	7.3E+00	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	732-11-6	Phosmet	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		3.0E-04	i			8.6E-05	i	0	0.10	7803-51-2	Phosphine	1.8E+01	nc	1.8E+02	nc	3.1E-01	nc	1.1E+01	nc		
						2.9E-03	i			7664-38-2	Phosphoric acid					1.0E+01	nc				
		2.0E-05	i					0		7723-14-0	Phosphorus (white)	1.6E+00	nc	2.0E+01	nc			7.3E-01	nc		
		1.0E+00	h			1.0E+00	r	0	0.10	100-21-0	p-Phthalic acid	6.1E+04	nc	1.0E+05	max	3.7E+03	nc	3.6E+04	nc		
		2.0E+00	i			3.4E-02	h	0	0.10	85-44-9	Phthalic anhydride	1.0E+05	max	1.0E+05	max	1.2E+02	nc	7.3E+04	nc		
		7.0E-02	i			7.0E-02	r	0	0.10	1918-02-1	Picloram	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	29232-93-7	Pirimiphos-methyl	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
8.9E+00	h	7.0E-06	h	8.9E+00	r	7.0E-06	r	0	0.10		Polybrominated biphenyls	5.5E-02	ca**	1.9E-01	ca*	7.6E-04	ca*	7.6E-03	ca*		
2.0E+00	i			2.0E+00	i			0	0.14	1336-36-3	Polychlorinated biphenyls (PCBs)	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
7.0E-02	i	7.0E-05	i	7.0E-02	i	7.0E-05	r	0	0.14	12674-11-2	Aroclor 1016	3.9E+00	nc	2.1E+01	ca**	9.6E-02	ca**	9.6E-01	ca**		
2.0E+00	i			2.0E+00	i			0	0.14	11104-28-2	Aroclor 1221	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	11141-16-5	Aroclor 1232	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	53469-21-9	Aroclor 1242	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i			2.0E+00	i			0	0.14	12672-29-6	Aroclor 1248	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		
2.0E+00	i	2.0E-05	i	2.0E+00	i	2.0E-05	r	0	0.14	11097-69-1	Aroclor 1254	2.2E-01	ca**	7.4E-01	ca*	3.4E-03	ca*	3.4E-02	ca*		
2.0E+00	i			2.0E+00	i			0	0.14	11096-82-5	Aroclor 1260	2.2E-01	ca	7.4E-01	ca	3.4E-03	ca	3.4E-02	ca		

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TOXICITY INFORMATION										CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
4.5E+00	n			4.5E+00	r				0.10	61788-33-8	**Polychlorinated terphenyls**	1.1E-01	ca	3.8E-01	ca	1.5E-03	ca	1.5E-02	ca		
									0.13		Polynuclear aromatic hydrocarbons (PAHs)										
		6.0E-02	i			6.0E-02	r	1		83-32-9	Acenaphthene	3.7E+03	nc	2.9E+04	nc	2.2E+02	nc	3.7E+02	nc	5.7E+02	2.9E+01
		3.0E-01	i			3.0E-01	r	1		120-12-7	Anthracene	2.2E+04	nc	1.0E+05	max	1.1E+03	nc	1.8E+03	nc	1.2E+04	5.9E+02
7.3E-01	n			7.3E-01	r			0	0.13	56-55-3	**Benz[a]anthracene**	6.2E-01	ca	2.1E+00	ca	9.2E-03	ca	9.2E-02	ca	2.0E+00	8.0E-02
7.3E-01	n			7.3E-01	r			0	0.13	205-99-2	**Benzo[b]fluoranthene**	6.2E-01	ca	2.1E+00	ca	9.2E-03	ca	9.2E-02	ca	5.0E+00	2.0E-01
7.3E-02	n			7.3E-02	r			0	0.13	207-08-9	**Benzo[k]fluoranthene**	6.2E+00	ca	2.1E+01	ca	9.2E-02	ca	9.2E-01	ca	4.9E+01	2.0E+00
1.2E+00				3.9E-01					0.13	207-08-9	**"CAL-Modified PRG"**	3.8E-01	ca	1.3E+00	ca	1.7E-02	ca	5.6E-02	ca		
7.3E+00	i			7.3E+00	r			0	0.13	50-32-8	**Benzo[a]pyrene**	6.2E-02	ca	2.1E-01	ca	9.2E-04	ca	9.2E-03	ca	8.0E+00	4.0E-01
7.3E-03	n			7.3E-03	r			0	0.13	218-01-9	**Chrysene**	6.2E+01	ca	2.1E+02	ca	9.2E-01	ca	9.2E+00	ca	1.6E+02	8.0E+00
1.2E-01				3.9E-02					0.13		**"CAL-Modified PRG"**	3.8E+00	ca	1.3E+01	ca	1.7E-01	ca	5.6E-01	ca		
7.3E+00	n			7.3E+00	r			0	0.13	53-70-3	**Dibenz[ah]anthracene**	6.2E-02	ca	2.1E-01	ca	9.2E-04	ca	9.2E-03	ca	2.0E+00	8.0E-02
		4.0E-02	i			4.0E-02	r	0	0.13	206-44-0	Fluoranthene	2.3E+03	nc	2.2E+04	nc	1.5E+02	nc	1.5E+03	nc	4.3E+03	2.1E+02
		4.0E-02	i			4.0E-02	r	1		86-73-7	Fluorene	2.7E+03	nc	2.6E+04	nc	1.5E+02	nc	2.4E+02	nc	5.6E+02	2.8E+01
7.3E-01	n			7.3E-01	r			0	0.13	193-39-5	**Indeno[1,2,3-cd]pyrene**	6.2E-01	ca	2.1E+00	ca	9.2E-03	ca	9.2E-02	ca	1.4E+01	7.0E-01
		2.0E-02	i			8.6E-04	i	1		91-20-3	Naphthalene	5.6E+01	nc	1.9E+02	nc	3.1E+00	nc	6.2E+00	nc	8.4E+01	4.0E+00
		3.0E-02	i			3.0E-02	r	1		129-00-0	Pyrene	2.3E+03	nc	2.9E+04	nc	1.1E+02	nc	1.8E+02	nc	4.2E+03	2.1E+02
1.5E-01	i	9.0E-03	i	1.5E-01	r	9.0E-03	r	0	0.10	67747-09-5	Prochloraz	3.2E+00	ca	1.1E+01	ca	4.5E-02	ca	4.5E-01	ca		
		6.0E-03	h			6.0E-03	r	0	0.10	26399-36-0	Profluralin	3.7E+02	nc	3.7E+03	nc	2.2E+01	nc	2.2E+02	nc		
		1.5E-02	i			1.5E-02	r	0	0.10	1610-18-0	Prometon	9.2E+02	nc	9.2E+03	nc	5.5E+01	nc	5.5E+02	nc		
		4.0E-03	i			4.0E-03	r	0	0.10	7287-19-6	Prometryn	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		7.5E-02	i			7.5E-02	r	0	0.10	23950-58-5	Pronamide	4.6E+03	nc	4.6E+04	nc	2.7E+02	nc	2.7E+03	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	1918-16-7	Propachlor	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	709-98-8	Propanil	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	2312-35-8	Propargite	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-03	i			2.0E-03	r	0	0.10	107-19-7	Propargyl alcohol	1.2E+02	nc	1.2E+03	nc	7.3E+00	nc	7.3E+01	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	139-40-2	Propazine	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		2.0E-02	i			2.0E-02	r	0	0.10	122-42-9	Propham	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	60207-90-1	Propiconazole	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		1.0E-01	i			1.1E-01	i	1		98-82-8	Isopropylbenzene (Cumene)	1.6E+02	nc	5.2E+02	nc	4.0E+02	nc	6.6E+02	nc		
		4.00E-02	n			4.00E-02	r	1		103-65-1	**n-Propylbenzene**	2.4E+02	sat	2.4E+02	sat	1.5E+02	nc	2.4E+02	nc		
		5.0E-01	h			8.6E-04	h	0	0.10	57-55-6	**Propylene glycol**	3.0E+04	nc	1.0E+05	max	3.1E+00	nc	1.8E+04	nc		
		7.0E-01	h			7.0E-01	r	0	0.10	52125-53-8	Propylene glycol, monoethyl ether	4.3E+04	nc	1.0E+05	max	2.6E+03	nc	2.6E+04	nc		
		7.0E-01	h			5.7E-01	i	0	0.10	107-98-2	Propylene glycol, monomethyl ether	4.3E+04	nc	1.0E+05	max	2.1E+03	nc	2.6E+04	nc		
2.4E-01	i	8.6E-03	r	1.3E-02	i	8.6E-03	i	1		75-56-9	Propylene oxide	1.9E+00	ca*	6.6E+00	ca*	5.2E-01	ca*	2.2E-01	ca		

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SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		2.5E-01	i			2.5E-01	r	0	0.10	81335-77-5	Pursuit	1.5E+04	nc	1.0E+05	max	9.1E+02	nc	9.1E+03	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	51630-58-1	Pydrin	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	110-86-1	Pyridine	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		5.0E-04	i			5.0E-04	r	0	0.10	13593-03-8	Quinalphos	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
3.0E+00	i			3.0E+00	r			0	0.10	91-22-5	**Quinoline**	1.6E-01	ca	5.7E-01	ca	2.2E-03	ca	2.2E-02	ca		
1.1E-01	i	3.0E-03	i	1.1E-01	r	3.0E-03	r	0	0.10	121-82-4	RDX (Cyclonite)	4.4E+00	ca*	1.6E+01	ca	6.1E-02	ca	6.1E-01	ca		
		3.0E-02	i			3.0E-02	r	0	0.10	10453-86-8	Resmethrin	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		5.0E-02	h			5.0E-02	r	0	0.10	299-84-3	Ronnel	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		
		4.0E-03	i			4.0E-03	r	0	0.10	83-79-4	Rotenone	2.4E+02	nc	2.5E+03	nc	1.5E+01	nc	1.5E+02	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	78587-05-0	Savey	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		5.0E-03	i					0	0.10	7783-00-8	Selenious Acid	3.1E+02	nc	3.1E+03	nc			1.8E+02	nc		
		5.0E-03	i					0		7782-49-2	Selenium	3.9E+02	nc	5.1E+03	nc			1.8E+02	nc	5.0E+00	3.0E-01
		5.0E-03	h					0	0.10	630-10-4	Selenourea	3.1E+02	nc	3.1E+03	nc			1.8E+02	nc		
		9.0E-02	i			9.0E-02	r	0	0.10	74051-80-2	Sethoxydim	5.5E+03	nc	5.5E+04	nc	3.3E+02	nc	3.3E+03	nc		
		5.0E-03	i					0		7440-22-4	Silver and compounds	3.9E+02	nc	5.1E+03	nc			1.8E+02	nc	3.4E+01	2.0E+00
1.2E-01	h	5.0E-03	i	1.2E-01	r	2.0E-03	r	0	0.10	122-34-9	Simazine	4.1E+00	ca*	1.4E+01	ca	5.6E-02	ca	5.6E-01	ca		
		4.0E-03	i							26628-22-8	Sodium azide										
2.7E-01	h	3.0E-02	i	2.7E-01	r	3.0E-02	r	0	0.10	148-18-5	Sodium diethyldithiocarbamate	1.8E+00	ca	6.4E+00	ca	2.5E-02	ca	2.5E-01	ca		
		2.0E-05	i			2.0E-05	r	0	0.10	62-74-8	Sodium fluoroacetate	1.2E+00	nc	1.2E+01	nc	7.3E-02	nc	7.3E-01	nc		
		1.0E-03	h			1.0E-03	r	0	0.10	13718-26-8	Sodium metavanadate	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		6.0E-01	i					0		7440-24-6	Strontium, stable	4.7E+04	nc	1.0E+05	max			2.2E+04	nc		
		3.0E-04	i			3.0E-04	r	0	0.10	57-24-9	Strychnine	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		2.0E-01	i			2.9E-01	i	1		100-42-5	Styrene	1.7E+03	sat	1.7E+03	sat	1.1E+03	nc	1.6E+03	nc	4.0E+00	2.0E-01
		1.00E-03	n			1.00E-03	r			80-07-9	1,1'-Sulfonylbis (4-chlorobenzene)	7.8E+01	nc	1.0E+03	nc	3.7E+00	nc	3.6E+01	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	88671-89-0	Systhane	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
1.5E+05	h			1.5E+05	h			0	0.03	1746-01-6	2,3,7,8-TCDD (dioxin)	3.9E-06	ca	1.6E-05	ca	4.5E-08	ca	4.5E-07	ca		
		7.0E-02	i			7.0E-02	r	0	0.10	34014-18-1	Tebuthiuron	4.3E+03	nc	4.3E+04	nc	2.6E+02	nc	2.6E+03	nc		
		2.0E-02	h			2.0E-02	r	0	0.10	3383-96-8	Temephos	1.2E+03	nc	1.2E+04	nc	7.3E+01	nc	7.3E+02	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	5902-51-2	Terbacil	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		2.5E-05	h			2.5E-05	r	0	0.10	13071-79-9	Terbufos	1.5E+00	nc	1.5E+01	nc	9.1E-02	nc	9.1E-01	nc		
		1.0E-03	i			1.0E-03	r	0	0.10	886-50-0	Terbutryn	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		3.0E-04	i			3.0E-04	r	0	0.10	95-94-3	1,2,4,5-Tetrachlorobenzene	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
2.6E-02	i	3.0E-02	i	2.6E-02	i	3.0E-02	r	1		630-20-6	1,1,1,2-Tetrachloroethane	3.2E+00	ca	7.3E+00	ca	2.6E-01	ca	4.3E-01	ca		
2.0E-01	i.	6.00E-02	n	2.0E-01	i	6.00E-02	r	1		79-34-5	1,1,2,2-Tetrachloroethane	4.1E-01	ca	9.3E-01	ca	3.3E-02	ca	5.5E-02	ca	3.0E-03	2.0E-04
5.2E-02	n	1.0E-02	i	1.00E-02	n	1.7E-01	n	1		127-18-4	**Tetrachloroethylene (PCE)**	1.5E+00	ca*	3.4E+00	ca*	6.7E-01	ca	6.6E-01	ca	6.0E-02	3.0E-03
		3.0E-02	i			3.0E-02	r	0	0.10	58-90-2	2,3,4,6-Tetrachlorophenol	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		

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+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION														CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.					Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
2.0E+01	h			2.0E+01	r			0	0.10	5216-25-1				p,a,a,a-Tetrachlorotoluene	2.4E-02	ca	8.6E-02	ca	3.4E-04	ca	3.4E-03	ca		
2.4E-02	h	3.0E-02	i	2.4E-02	r	3.0E-02	r	0	0.10	961-11-5				Tetrachlorovinphos	2.0E+01	ca*	7.2E+01	ca	2.8E-01	ca	2.8E+00	ca		
		5.0E-04	i			5.0E-04	r	0	0.10	3689-24-5				Tetraethyldithiopyrophosphate	3.1E+01	nc	3.1E+02	nc	1.8E+00	nc	1.8E+01	nc		
7.6E-03	n	2.1E-01	n	6.8E-03	n	8.6E-02	n	1		109-99-9				**Tetrahydrofuran**	9.4E+00	ca	2.1E+01	ca	9.9E-01	ca	1.6E+00	ca		
		6.6E-05	i					0		7440-28-0				Thallium and compounds+++	5.2E+00	nc	6.7E+01	nc			2.4E+00	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	28249-77-6				Thiobencarb	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		5.0E-02	n			5.0E-02	r	0	0.10	N/A				**Thiocyanate**	3.1E+03	nc	1.0E+05	max	1.8E+02	nc	1.8E+03	nc		
		3.0E-04	h			3.0E-04	r	0	0.10	39196-18-4				Thiofanox	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		8.0E-02	i			8.0E-02	r	0	0.10	23564-05-8				Thiophanate-methyl	4.9E+03	nc	4.9E+04	nc	2.9E+02	nc	2.9E+03	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	137-26-8				Thiram	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		6.0E-01	h					0						Tin (inorganic, see tributyltin oxide for organic tin)	4.7E+04	nc	1.0E+05	max			2.2E+04	nc		
		2.0E-01	i			1.1E-01	i	1		108-88-3				Toluene	5.2E+02	sat	5.2E+02	sat	4.0E+02	nc	7.2E+02	nc	1.2E+01	6.0E-01
3.2E+00	h			3.2E+00	r			0	0.10	95-80-7				Toluene-2,4-diamine	1.5E-01	ca	5.4E-01	ca	2.1E-03	ca	2.1E-02	ca		
		6.0E-01	h			6.0E-01	r	0	0.10	95-70-5				Toluene-2,5-diamine	3.7E+04	nc	1.0E+05	max	2.2E+03	nc	2.2E+04	nc		
		2.0E-01	h			2.0E-01	r	0	0.10	823-40-5				Toluene-2,6-diamine	1.2E+04	nc	1.0E+05	max	7.3E+02	nc	7.3E+03	nc		
2E-01	i			2E-01	r			0	0.10	106-49-0				p-Toluidine	2.6E+00	ca	9.1E+00	ca	3.5E-02	ca	3.5E-01	ca		
1.1E+00	i			1.1E+00	i			0	0.10	8001-35-2				Toxaphene	4.4E-01	ca	1.6E+00	ca	6.0E-03	ca	6.1E-02	ca	3.1E+01	2.0E+00
		7.5E-03	i			7.5E-03	r	0	0.10	66841-25-6				Tralomethrin	4.6E+02	nc	4.6E+03	nc	2.7E+01	nc	2.7E+02	nc		
		1.3E-02	i			1.3E-02	r	0	0.10	2303-17-5				Triallate	7.9E+02	nc	8.0E+03	nc	4.7E+01	nc	4.7E+02	nc		
		1.0E-02	i			1.0E-02	r	0	0.10	82097-50-5				Triasulfuron	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		5.0E-03	i			5.0E-03	r	0	0.10	615-54-3				1,2,4-Tribromobenzene	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
		3.0E-04	i					0	0.10	56-35-9				Tributyltin oxide (TBTO)	1.8E+01	nc	1.8E+02	nc			1.1E+01	nc		
3.4E-02	h			3.4E-02	r			0	0.10	634-93-5				2,4,6-Trichloroaniline	1.4E+01	ca	5.1E+01	ca	2.0E-01	ca	2.0E+00	ca		
2.9E-02	h			2.9E-02	r			0	0.10	33663-50-2				2,4,6-Trichloroaniline hydrochloride	1.7E+01	ca	5.9E+01	ca	2.3E-01	ca	2.3E+00	ca		
		1.0E-02	i			5.7E-02	h	1		120-82-1				1,2,4-Trichlorobenzene	6.5E+02	nc	3.0E+03	sat	2.1E+02	nc	1.9E+02	nc	5.0E+00	3.0E-01
		2.8E-01	n			6.3E-01	n	1		71-55-6				**1,1,1-Trichloroethane**	1.2E+03	sat	1.2E+03	sat	2.3E+03	nc	3.2E+03	nc	2.0E+00	1.0E-01
5.7E-02	i	4.0E-03	i	5.6E-02	i	4.0E-03	r	1		79-00-5				1,1,2-Trichloroethane	7.3E-01	ca*	1.6E+00	ca*	1.2E-01	ca	2.0E-01	ca	2.0E-02	9.0E-04
4.00E-01	n	3.00E-04	n	4.00E-01	n	1.00E-02	n	1		79-01-6				**Trichloroethylene (TCE)**	5.3E-02	ca	1.1E-01	ca	1.7E-02	ca	2.8E-02	ca	6.0E-02	3.0E-03
		3.0E-01	i			2.0E-01	h	1		75-69-4				Trichlorofluoromethane	3.9E+02	nc	2.0E+03	sat	7.3E+02	nc	1.3E+03	nc		
		1.0E-01	i			1.0E-01	r	0	0.10	95-95-4				2,4,5-Trichlorophenol	6.1E+03	nc	6.2E+04	nc	3.7E+02	nc	3.6E+03	nc	2.7E+02	1.4E+01
1.1E-02	i	1.0E-04	n	1.1E-02	i	1.0E-04	r	0	0.10	88-06-2				**2,4,6-Trichlorophenol**	6.1E+00	nc**	6.2E+01	nc**	3.7E-01	nc**	3.6E+00	nc**	2.0E-01	8.0E-03
7.0E-02				7.0E-02					0.10	88-06-2				**"CAL-Modified PRG"**	6.9E+00	ca	2.5E+01	ca	9.6E-02	ca	9.6E-01	ca		
		1.0E-02	i			1.0E-02	r	0	0.10	93-76-5				2,4,5-Trichlorophenoxyacetic Acid	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
		8.0E-03	i			8.0E-03	r	0	0.10	93-72-1				2-(2,4,5-Trichlorophenoxy) propionic acid	4.9E+02	nc	4.9E+03	nc	2.9E+01	nc	2.9E+02	nc		
		5.0E-03	i			5.0E-03	r	1		598-77-6				1,1,2-Trichloropropane	1.5E+01	nc	5.1E+01	nc	1.8E+01	nc	3.0E+01	nc		
2.0E+00	n	6.0E-03	i	2.0E+00	r	1.4E-03	n	1		96-18-4				**1,2,3-Trichloropropane**	5.0E-03	ca	1.1E-02	ca	3.4E-03	ca	5.6E-03	ca		

Key : SFo,i=Cancer Slope Factor oral, inhalation RfDo,i=Reference Dose oral, inhalation i=IRIS h=HEAST n=NCEA x=Withdrawn o=Other EPA Source r=Route-extrapolation ca=Cancer PRG nc=Noncancer PRG ca* (where: nc < 100X ca) ca**(where: nc < 10X ca)
+++=Non-Standard Method Applied (See Section 2.3 of the "Region 9 PRGs Table User's Guide") sat=Soil Saturation (See Section 4.5) max=Ceiling limit (See Section 2.1) DAF=Dilution Attenuation Factor (See Section 2.5) CAS=Chemical Abstract Services

TOXICITY INFORMATION												CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) "Direct Contact Exposure Pathways"								SOIL SCREENING LEVELS "Migration to Ground Water"	
SFo 1/(mg/kg-d)		RfDo (mg/kg-d)		SFi 1/(mg/kg-d)		RfDi (mg/kg-d)		V O C	skin abs. soils	CAS No.			Residential Soil (mg/kg)		Industrial Soil (mg/kg)		Ambient Air (ug/m^3)		Tap Water (ug/l)		DAF 20 (mg/kg)	DAF 1 (mg/kg)
		5.0E-03	h			5.0E-03	r	1		96-19-5		1,2,3-Trichloropropene	1.2E+01	nc	3.8E+01	nc	1.8E+01	nc	3.0E+01	nc		
		3.0E-03	i			3.0E-03	r	0	0.10	58138-08-2		Tridiphane	1.8E+02	nc	1.8E+03	nc	1.1E+01	nc	1.1E+02	nc		
		2.0E-03	r			2.0E-03	i	1		121-44-8		Triethylamine	2.3E+01	nc	8.6E+01	nc	7.3E+00	nc	1.2E+01	nc		
7.7E-03	i	7.5E-03	i	7.7E-03	r	7.5E-03	r	0	0.10	1582-09-8		Trifluralin	6.3E+01	ca**	2.2E+02	ca*	8.7E-01	ca*	8.7E+00	ca*		
		1.400E-04	r			1.400E-04	n		0.10	552-30-7		Trimellitic Anhydride (TMAN)	8.6E+00	nc	8.6E+01	nc	5.1E-01	nc	5.1E+00			
		5.0E-02	n			1.7E-03	n	1		95-63-6		1,2,4-Trimethylbenzene	5.2E+01	nc	1.7E+02	nc	6.2E+00	nc	1.2E+01	nc		
		5.0E-02	n			1.7E-03	n	1		108-67-8		1,3,5-Trimethylbenzene	2.1E+01	nc	7.0E+01	nc	6.2E+00	nc	1.2E+01	nc		
3.7E-02	h			3.7E-02	r			0	0.10	512-56-1		Trimethyl phosphate	1.3E+01	ca	4.7E+01	ca	1.8E-01	ca	1.8E+00	ca		
		3.0E-02	i			3.0E-02	r	0	0.10	99-35-4		1,3,5-Trinitrobenzene	1.8E+03	nc	1.8E+04	nc	1.1E+02	nc	1.1E+03	nc		
		1.0E-02	h			1.0E-02	r	0	0.10	479-45-8		Trinitrophenylmethylnitramine	6.1E+02	nc	6.2E+03	nc	3.7E+01	nc	3.6E+02	nc		
3E-02	i	5.0E-04	i	3E-02	r	5.0E-04	r	0	0.10	118-96-7		2,4,6-Trinitrotoluene	1.6E+01	ca**	5.7E+01	ca**	2.2E-01	ca**	2.2E+00	ca**		
		5.00E-03	n			5.00E-03	r		0.10	791-28-6		**Triphenylphosphine oxide**	3.1E+02	nc	3.1E+03	nc	1.8E+01	nc	1.8E+02	nc		
3.2E-03	n	1.1E-01	n	3.2E-03	r	1.1E-01	r		0.10	115-96-8		**Tris(2-chloroethyl) phosphate**	1.5E+02	ca*	5.4E+02	ca	2.1E+00	ca	2.1E+01	ca		
		2.00E-04	n							7440-61-0		Uranium (chemical toxicity only)	1.6E+01	nc	2.0E+02	nc			7.3E+00	nc		
		7.0E-03	h					0		7440-62-2		Vanadium and compounds	5.5E+02	nc	7.2E+03	nc			2.6E+02	nc	6.0E+03	3.0E+02
		1.0E-03	i			1.0E-03	r	0	0.10	1929-77-7		Vernam	6.1E+01	nc	6.2E+02	nc	3.7E+00	nc	3.6E+01	nc		
		2.5E-02	i			2.5E-02	r	0	0.10	50471-44-8		Vinclozolin	1.5E+03	nc	1.5E+04	nc	9.1E+01	nc	9.1E+02	nc		
		1.0E+00	h			5.7E-02	i	1		108-05-4		Vinyl acetate	4.3E+02	nc	1.4E+03	nc	2.1E+02	nc	4.1E+02	nc	1.7E+02	8.0E+00
1.1E-01	r	8.6E-04	r	1.1E-01	h	8.6E-04	i	1		593-60-2		Vinyl bromide (bromoethene)	1.9E-01	ca*	4.2E-01	ca*	6.1E-02	ca*	1.0E-01	ca*		
1.5E+00	i	3.00E-03	i	3.1E-02	i	2.86E-02	i	1		75-01-4		**Vinyl chloride (child/adult)+++**	7.9E-02	ca			1.1E-01	ca	2.0E-02	ca	1.0E-02	7.0E-04
7.5E-01	i	3.00E-03	i	1.6E-02	i	2.86E-02	i	1		75-01-4		Vinyl chloride (adult)			7.5E-01	ca						
		3.0E-04	i			3.0E-04	r	0	0.10	81-81-2		Warfarin	1.8E+01	nc	1.8E+02	nc	1.1E+00	nc	1.1E+01	nc		
		7.0E-01	i			2.9E-02	i	1	0.10	1330-20-7		**Xylenes**	2.7E+02	nc	4.2E+02	sat	1.1E+02	nc	2.1E+02	nc	2.1E+02	1.0E+01
		3.0E-01	i					0		7440-66-6		Zinc	2.3E+04	nc	1.0E+05	max			1.1E+04	nc	1.2E+04	6.2E+02
		3.0E-04	i					0		1314-84-7		Zinc phosphide	2.3E+01	nc	3.1E+02	nc			1.1E+01	nc		
		5.0E-02	i			5.0E-02	r	0	0.10	12122-67-7		Zineb	3.1E+03	nc	3.1E+04	nc	1.8E+02	nc	1.8E+03	nc		

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Acephate	1.0E+06	2.3E+02	7.4E+01	5.6E+01	8.2E+06	1.1E+03	3.1E+02	2.4E+02	2.2E+06	5.0E+02	3.3E+02	2.0E+02	2.7E+07	6.2E+03	4.1E+03	2.5E+03
Acetaldehyde	1.1E+01			1.1E+01	5.0E+01			5.0E+01	2.3E+01			2.3E+01	1.6E+02			1.6E+02
Acetochlor					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Acetone					2.0E+03		7.8E+03	1.6E+03					6.4E+03		1.0E+05	6.0E+03
Acetone cyanohydrin					1.6E+06	2.2E+02	6.3E+01	4.9E+01					5.4E+06	1.2E+03	8.2E+02	4.9E+02
Acetonitrile					6.2E+02		1.3E+03	4.2E+02					2.0E+03		1.7E+04	1.8E+03
Acrolein					1.0E-01		1.6E+03	1.0E-01					3.4E-01		2.0E+04	3.4E-01
Acrylamide	2.0E+03	4.5E-01	1.4E-01	1.1E-01	4.1E+05	5.6E+01	1.6E+01	1.2E+01	4.2E+03	9.6E-01	6.4E-01	3.8E-01	1.3E+06	3.1E+02	2.0E+02	1.2E+02
Acrylic acid					5.9E+05	1.4E+05	3.9E+04	2.9E+04					1.9E+06	7.7E+05	5.1E+05	2.7E+05
Acrylonitrile	2.5E-01		1.2E+00	2.1E-01	8.0E+00		7.8E+01	7.3E+00	5.4E-01		5.3E+00	4.9E-01	2.6E+01		1.0E+03	2.6E+01
Alachlor	1.1E+05	2.5E+01	8.0E+00	6.0E+00	2.1E+07	2.8E+03	7.8E+02	6.1E+02	2.4E+05	5.4E+01	3.6E+01	2.1E+01	6.7E+07	1.5E+04	1.0E+04	6.2E+03
Alar					3.1E+08	4.2E+04	1.2E+04	9.2E+03					1.0E+09	2.3E+05	1.5E+05	9.2E+04
Aldicarb					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Aldicarb sulfone					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Aldrin	5.2E+02	1.2E-01	3.8E-02	2.9E-02	6.2E+04	8.4E+00	2.3E+00	1.8E+00	1.1E+03	2.6E-01	1.7E-01	1.0E-01	2.0E+05	4.6E+01	3.1E+01	1.8E+01
Ally					5.1E+08	7.0E+04	2.0E+04	1.5E+04					1.7E+09	3.9E+05	2.6E+05	1.5E+05
Allyl alcohol					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Allyl chloride					5.9E+05	1.4E+04	3.9E+03	3.0E+03					1.9E+06	7.7E+04	5.1E+04	3.0E+04
Aluminum					2.9E+06		7.8E+04	7.6E+04					9.4E+06		1.0E+06	9.2E+05
Aluminum phosphide							3.1E+01	3.1E+01							4.1E+02	4.1E+02
Amdro					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
Ametryn					1.9E+07	2.5E+03	7.0E+02	5.5E+02					6.1E+07	1.4E+04	9.2E+03	5.5E+03
m-Aminophenol					1.4E+08	2.0E+04	5.5E+03	4.3E+03					4.7E+08	1.1E+05	7.2E+04	4.3E+04
4-Aminopyridine					4.1E+04	5.6E+00	1.6E+00	1.2E+00					1.3E+05	3.1E+01	2.0E+01	1.2E+01
Amitraz					5.1E+06	7.0E+02	2.0E+02	1.5E+02					1.7E+07	3.9E+03	2.6E+03	1.5E+03
Ammonia																
Ammonium sulfamate						5.6E+04	1.6E+04	1.2E+04						3.1E+05	2.0E+05	1.2E+05
Aniline	1.6E+06	3.5E+02	1.1E+02	8.5E+01	5.9E+05	2.0E+03	5.5E+02	4.3E+02	3.3E+06	7.6E+02	5.0E+02	3.0E+02	1.9E+06	1.1E+04	7.2E+03	4.3E+03
Antimony and compounds							3.1E+01	3.1E+01							4.1E+02	4.1E+02
Antimony pentoxide							3.9E+01	3.9E+01							5.1E+02	5.1E+02
Antimony potassium tartrate							7.0E+01	7.0E+01							9.2E+02	9.2E+02
Antimony tetroxide							3.1E+01	3.1E+01							4.1E+02	4.1E+02
Antimony trioxide					1.2E+05		3.1E+01	3.1E+01					3.8E+05		4.1E+02	4.1E+02
Apollo					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Aramite	3.6E+05	8.1E+01	2.6E+01	1.9E+01	1.0E+08	1.4E+04	3.9E+03	3.1E+03	7.6E+05	1.7E+02	1.1E+02	6.9E+01	3.4E+08	7.7E+04	5.1E+04	3.1E+04
Arsenic (noncancer endpoint)						2.8E+02	2.3E+01	2.2E+01						1.5E+03	3.1E+02	2.6E+02
Arsenic (cancer endpoint)	5.9E+02	4.5E+00	4.3E-01	3.9E-01		2.8E+02	2.3E+01	2.2E+01	1.3E+03	9.6E+00	1.9E+00	1.6E+00		1.5E+03	3.1E+02	2.6E+02
Arsine																
Assure					1.9E+07	2.5E+03	7.0E+02	5.5E+02					6.1E+07	1.4E+04	9.2E+03	5.5E+03
Asulam					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Atrazine	4.0E+04	9.1E+00	2.9E+00	2.2E+00	7.2E+07	9.8E+03	2.7E+03	2.1E+03	8.6E+04	2.0E+01	1.3E+01	7.8E+00	2.4E+08	5.4E+04	3.6E+04	2.2E+04
Avermectin B1					8.2E+05	1.1E+02	3.1E+01	2.4E+01					2.7E+06	6.2E+02	4.1E+02	2.5E+02
Azobenzene	8.2E+04	1.8E+01	5.8E+00	4.4E+00					1.7E+05	3.9E+01	2.6E+01	1.6E+01				
Barium and compounds					2.9E+05		5.5E+03	5.4E+03					9.6E+05		7.2E+04	6.7E+04
Baygon					8.2E+06	1.1E+03	3.1E+02	2.4E+02					2.7E+07	6.2E+03	4.1E+03	2.5E+03
Bayleton					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
Baythroid					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Benefin					6.2E+08	8.4E+04	2.3E+04	1.8E+04					2.0E+09	4.6E+05	3.1E+05	1.8E+05
Benomyl					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Bentazon					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
Benzaldehyde					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Benzene	6.3E-01		1.2E+01	6.0E-01	7.3E+00		2.3E+02	7.1E+00	1.3E+00		5.2E+01	1.3E+00	2.4E+01		3.1E+03	2.4E+01

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Benzidine	3.8E+01	8.8E-03	2.8E-03	2.1E-03	6.2E+06	8.4E+02	2.3E+02	1.8E+02	8.2E+01	1.9E-02	1.2E-02	7.5E-03	2.0E+07	4.6E+03	3.1E+03	1.8E+03
Benzoic acid					8.2E+09	1.1E+06	3.1E+05	2.4E+05					2.7E+10	6.2E+06	4.1E+06	2.5E+06
Benzotrichloride	6.8E+02	1.6E-01	4.9E-02	3.7E-02					1.4E+03	3.3E-01	2.2E-01	1.3E-01				
Benzyl alcohol					6.2E+08	8.4E+04	2.3E+04	1.8E+04					2.0E+09	4.6E+05	3.1E+05	1.8E+05
Benzyl chloride	1.2E+00		3.8E+00	8.9E-01	1.3E+02		2.3E+02	8.4E+01	2.5E+00		1.7E+01	2.2E+00	4.4E+02		3.0E+03	3.8E+02
Beryllium and compounds	1.1E+03			1.1E+03	1.2E+04		1.6E+02	1.5E+02	2.2E+03			2.2E+03	3.8E+04		2.0E+03	1.9E+03
Bidrin					2.1E+05	2.8E+01	7.8E+00	6.1E+00					6.7E+05	1.5E+02	1.0E+02	6.2E+01
Biphenthrin (Talstar)					3.1E+07	4.2E+03	1.2E+03	9.2E+02					1.0E+08	2.3E+04	1.5E+04	9.2E+03
1,1-Biphenyl					1.3E+04		3.9E+03	3.0E+03					4.3E+04		5.1E+04	2.3E+04
Bis(2-chloroethyl)ether	3.3E-01		5.8E-01	2.1E-01					7.0E-01		2.6E+00	5.5E-01				
Bis(2-chloroisopropyl)ether	4.2E+00		9.1E+00	2.9E+00	1.4E+03		3.1E+03	9.5E+02	9.0E+00		4.1E+01	7.4E+00	4.5E+03		4.1E+04	4.0E+03
Bis(chloromethyl)ether	2.1E-04		2.9E-03	1.9E-04					4.4E-04		1.3E-02	4.3E-04				
Bis(2-chloro-1-methylethyl)ether	4.2E+00		9.1E+00	2.9E+00	1.4E+03		3.1E+03	9.5E+02	9.0E+00		4.1E+01	7.4E+00	4.5E+03		4.1E+04	4.0E+03
Bis(2-ethylhexyl)phthalate (DEHP)	6.3E+05	1.4E+02	4.6E+01	3.5E+01	4.5E+07	5.6E+03	1.6E+03	1.2E+03	1.3E+06	3.1E+02	2.0E+02	1.2E+02	1.5E+08	3.1E+04	2.0E+04	1.2E+04
Bisphenol A					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Boron					1.2E+07		1.6E+04	1.6E+04					3.8E+07		2.0E+05	2.0E+05
Boron trifluoride																
Bromate							3.1E+02	3.1E+02							4.1E+03	4.1E+03
Bromobenzene					2.8E+01		1.6E+03	2.8E+01					9.3E+01		2.0E+04	9.2E+01
Bromodichloromethane	9.0E-01		1.0E+01	8.2E-01	2.6E+02		1.6E+03	2.2E+02	1.9E+00		4.6E+01	1.8E+00	8.4E+02		2.0E+04	8.1E+02
Bromoform (tribromomethane)	2.3E+06	2.6E+02	8.1E+01	6.2E+01	4.1E+07	5.6E+03	1.6E+03	1.2E+03	4.9E+06	5.5E+02	3.6E+02	2.2E+02	1.3E+08	3.1E+04	2.0E+04	1.2E+04
Bromomethane					4.0E+00		1.1E+02	3.9E+00					1.3E+01		1.4E+03	1.3E+01
Bromophos					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Bromoxynil					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Bromoxynil octanoate					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
1,3-Butadiene	6.6E-03		6.5E-01	6.5E-03					1.4E-02		2.9E+00	1.4E-02				
1-Butanol					5.4E+06	2.8E+04	7.8E+03	6.1E+03					1.7E+07	1.5E+05	1.0E+05	6.1E+04
Butylate					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
n-Butylbenzene					7.1E+02		3.1E+03	5.8E+02					2.3E+03		4.1E+04	2.2E+03
sec-Butylbenzene					5.2E+02		3.1E+03	4.5E+02					1.7E+03		4.1E+04	1.6E+03
tert-Butylbenzene					6.3E+02		3.1E+03	5.3E+02					2.1E+03		4.1E+04	2.0E+03
Butyl benzyl phthalate					4.1E+08	5.6E+04	1.6E+04	1.2E+04					1.3E+09	3.1E+05	2.0E+05	1.2E+05
Butylphthalyl butylglycolate					2.1E+09	2.8E+05	7.8E+04	6.1E+04					6.7E+09	1.5E+06	1.0E+06	6.2E+05
Cacodylic acid	3.5E+04	8.1E+00	2.6E+00	1.9E+00	6.2E+05	8.4E+01	2.3E+01	1.8E+01	7.5E+04	1.7E+01	1.1E+01	6.9E+00	2.0E+06	4.6E+02	3.1E+02	1.8E+02
Cadmium and compounds	1.4E+03			1.4E+03		7.0E+02	3.9E+01	3.7E+01	3.0E+03			3.0E+03		3.9E+03	5.1E+02	4.5E+02
"CAL-Modified PRG"	5.9E+02	5.3E+02	1.7E+00	1.7E+00				1.7E+00	1.3E+03	1.1E+03	7.5E+00	7.4E+00				
Caprolactam					1.0E+09	1.4E+05	3.9E+04	3.1E+04					3.4E+09	7.7E+05	5.1E+05	3.1E+05
Captafol	1.0E+06	2.4E+02	7.4E+01	5.7E+01	4.1E+06	5.6E+02	1.6E+02	1.2E+02	2.2E+06	5.0E+02	3.3E+02	2.0E+02	1.3E+07	3.1E+03	2.0E+03	1.2E+03
Captan	2.5E+06	5.8E+02	1.8E+02	1.4E+02	2.7E+08	3.6E+04	1.0E+04	7.9E+03	5.4E+06	1.2E+03	8.2E+02	4.9E+02	8.7E+08	2.0E+05	1.3E+05	8.0E+04
Carbaryl					2.3E+08	2.8E+04	7.8E+03	6.1E+03					7.4E+08	1.5E+05	1.0E+05	6.2E+04
Carbazole	4.4E+05	1.0E+02	3.2E+01	2.4E+01					9.4E+05	2.2E+02	1.4E+02	8.6E+01				
Carbofuran					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Carbon disulfide					3.7E+02		7.8E+03	3.6E+02					1.2E+03		1.0E+05	1.2E+03
Carbon tetrachloride	2.6E-01		4.9E+00	2.5E-01	2.3E+00		5.5E+01	2.2E+00	5.6E-01		2.2E+01	5.5E-01	7.4E+00		7.2E+02	7.3E+00
Carbosulfan					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Carboxin					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Chloramben					3.1E+07	4.2E+03	1.2E+03	9.2E+02					1.0E+08	2.3E+04	1.5E+04	9.2E+03
Chloranil	2.2E+04	5.0E+00	1.6E+00	1.2E+00					4.7E+04	1.1E+01	7.1E+00	4.3E+00				
Chlordane	2.5E+04	1.4E+01	1.8E+00	1.6E+00	4.1E+05	3.5E+02	3.9E+01	3.5E+01	5.4E+04	3.1E+01	8.2E+00	6.5E+00	1.3E+06	1.9E+03	5.1E+02	4.0E+02
Chlorimuron-ethyl					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Chlorine																
Chlorine dioxide																

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Chloroacetic acid					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
2-Chloroacetophenone					3.4E-02		6.7E-01	3.3E-02					1.1E-01		8.8E+00	1.1E-01
4-Chloroaniline					8.2E+06	1.1E+03	3.1E+02	2.4E+02					2.7E+07	6.2E+03	4.1E+03	2.5E+03
Chlorobenzene					1.7E+02		1.6E+03	1.5E+02					5.4E+02		2.0E+04	5.3E+02
Chlorobenzilate	3.3E+04	7.5E+00	2.4E+00	1.8E+00	4.1E+07	5.6E+03	1.6E+03	1.2E+03	7.0E+04	1.6E+01	1.1E+01	6.4E+00	1.3E+08	3.1E+04	2.0E+04	1.2E+04
p-Chlorobenzoic acid					4.1E+08	5.6E+04	1.6E+04	1.2E+04					1.3E+09	3.1E+05	2.0E+05	1.2E+05
4-Chlorobenzotrifluoride					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
2-Chloro-1,3-butadiene					3.6E+00		1.6E+03	3.6E+00					1.2E+01		2.0E+04	1.2E+01
1-Chlorobutane					7.3E+02		3.1E+04	7.1E+02					2.4E+03		4.1E+05	2.4E+03
1-Chloro-1,1-difluoroethane					2.4E+04		1.1E+06	2.3E+04					7.7E+04		1.5E+07	7.7E+04
Chlorodifluoromethane					2.3E+04		1.1E+06	2.3E+04					7.6E+04		1.4E+07	7.5E+04
Chloroethane	3.1E+00		2.2E+02	3.0E+00	5.9E+03		3.1E+04	5.0E+03	6.5E+00		9.9E+02	6.5E+00	1.9E+04		4.1E+05	1.8E+04
Chloroform					3.6E+00		7.8E+02	3.6E+00					1.2E+01		1.0E+04	1.2E+01
"CAL-Modified PRG"	9.4E-01			9.4E-01												
Chloromethane	1.3E+00		4.9E+01	1.2E+00					2.0E+00			2.0E+00				
4-Chloro-2-methylaniline	1.5E+04	3.5E+00	1.1E+00	8.4E-01					2.7E+00		2.2E+02	2.6E+00				
4-Chloro-2-methylaniline hydrochloride	1.9E+04	4.4E+00	1.4E+00	1.1E+00					3.2E+04	7.5E+00	4.9E+00	3.0E+00				
beta-Chloronaphthalene					2.3E+04		6.3E+03	4.9E+03	4.1E+04	9.4E+00	6.2E+00	3.7E+00				
o-Chloronitrobenzene	3.1E+01		6.6E+01	2.1E+01	1.4E+00		7.8E+01	1.4E+00					3.3E+04		8.2E+04	2.3E+04
p-Chloronitrobenzene	4.4E+01		9.6E+01	3.0E+01	1.2E+01		7.8E+01	1.0E+01	6.5E+01		3.0E+02	5.3E+01	4.5E+00		1.0E+03	4.5E+00
2-Chlorophenol					7.6E+01		3.9E+02	6.3E+01	9.4E+01		4.3E+02	7.7E+01	3.8E+01		1.0E+03	3.7E+01
2-Chloropropane					1.8E+02		2.3E+03	1.7E+02					2.5E+02		5.1E+03	2.4E+02
Chlorothalonil	8.0E+05	1.8E+02	5.8E+01	4.4E+01	3.1E+07	4.2E+03	1.2E+03	9.2E+02					6.0E+02		3.0E+04	5.9E+02
o-Chlorotoluene					1.8E+02		1.6E+03	1.6E+02	1.7E+06	3.9E+02	2.6E+02	1.6E+02	1.0E+08	2.3E+04	1.5E+04	9.2E+03
Chlorpropham					4.1E+08	5.6E+04	1.6E+04	1.2E+04					5.8E+02		2.0E+04	5.6E+02
Chlorpyrifos					6.2E+06	8.4E+02	2.3E+02	1.8E+02					1.3E+09	3.1E+05	2.0E+05	1.2E+05
Chlorpyrifos-methyl					2.1E+07	2.8E+03	7.8E+02	6.1E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
Chlorsulfuron					1.0E+08	1.4E+04	3.9E+03	3.1E+03					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Chlorthiophos					1.6E+06	2.2E+02	6.3E+01	4.9E+01					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Total Chromium (1:6 ratio Cr VI:Cr III)+++	2.1E+02			2.1E+02									5.4E+06	1.2E+03	8.2E+02	4.9E+02
Chromium III							1.2E+05	1.2E+05	4.5E+02			4.5E+02				
Chromium VI+++	3.0E+01			3.0E+01	4.5E+03		2.3E+02	2.2E+02							1.5E+06	1.5E+06
Cobalt	9.0E+02			9.0E+02	1.2E+04		1.6E+03	1.4E+03	6.4E+01			6.4E+01	1.5E+04		3.1E+03	2.5E+03
Coke Oven Emissions	4.1E+03			4.1E+03					1.9E+03			1.9E+03	3.8E+04		2.0E+04	1.3E+04
Copper and compounds									8.7E+03			8.7E+03				
Crotonaldehyde	5.4E-03		3.4E-01	5.3E-03			3.1E+03	3.1E+03							4.1E+04	4.1E+04
Cumene (isopropylbenzene)					6.2E+02		7.8E+03	5.7E+02	1.1E-02			1.1E-02				
Cyanazine	1.1E+04	2.4E+00	7.6E-01	5.8E-01	4.1E+06	5.6E+02	1.6E+02	1.2E+02					2.0E+03		1.0E+05	2.0E+03
Cyanide (free)						5.6E+03	1.6E+03	1.2E+03	2.2E+04	5.2E+00	3.4E+00	2.1E+00	1.3E+07	3.1E+03	2.0E+03	1.2E+03
Cyanide (hydrogen)					1.1E+01		1.6E+03	1.1E+01						3.1E+04	2.0E+04	1.2E+04
Cyanogen					1.3E+02		3.1E+03	1.3E+02					3.5E+01		2.0E+04	3.5E+01
Cyanogen bromide					3.0E+02		7.0E+03	2.9E+02					4.3E+02		4.1E+04	4.3E+02
Cyanogen chloride					1.7E+02		3.9E+03	1.6E+02					9.8E+02		9.2E+04	9.7E+02
Cyclohexane					9.7E+03		4.5E+05	9.5E+03					5.4E+02		5.1E+04	5.4E+02
Cyclohexanone					1.0E+10	1.4E+06	3.9E+05	3.1E+05					3.2E+04		5.8E+06	3.2E+04
Cyclohexylamine					4.1E+08	5.6E+04	1.6E+04	1.2E+04					3.4E+10	7.7E+06	5.1E+06	3.1E+06
Cyhalothrin/Karate					1.0E+07	1.4E+03	3.9E+02	3.1E+02					1.3E+09	3.1E+05	2.0E+05	1.2E+05
Cypermethrin					2.1E+07	2.8E+03	7.8E+02	6.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Cyromazine					1.5E+07	2.1E+03	5.9E+02	4.6E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Dacthal					2.1E+07	2.8E+03	7.8E+02	6.1E+02					5.0E+07	1.2E+04	7.7E+03	4.6E+03
Dalapon					6.2E+07	8.4E+03	2.3E+03	1.8E+03					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Danitol					5.1E+07	7.0E+03	2.0E+03	1.5E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
													1.7E+08	3.9E+04	2.6E+04	1.5E+04

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
DDD	3.7E+04	2.8E+01	2.7E+00	2.4E+00					7.8E+04	6.0E+01	1.2E+01	1.0E+01				
DDE	2.6E+04	2.0E+01	1.9E+00	1.7E+00					5.5E+04	4.3E+01	8.4E+00	7.0E+00				
DDT	2.6E+04	2.0E+01	1.9E+00	1.7E+00	1.0E+06	4.7E+02	3.9E+01	3.6E+01	5.5E+04	4.3E+01	8.4E+00	7.0E+00	3.4E+06	2.6E+03	5.1E+02	4.3E+02
Decabromodiphenyl ether					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Demeton					8.2E+04	1.1E+01	3.1E+00	2.4E+00					2.7E+05	6.2E+01	4.1E+01	2.5E+01
Diallate	1.5E+05	3.3E+01	1.0E+01	8.0E+00					3.1E+05	7.1E+01	4.7E+01	2.8E+01				
Diazinon					1.9E+06	2.5E+02	7.0E+01	5.5E+01					6.1E+06	1.4E+03	9.2E+02	5.5E+02
Dibenzofuran					4.1E+03		3.1E+02	2.9E+02					1.3E+04		4.1E+03	3.1E+03
1,4-Dibromobenzene					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Dibromochloromethane	1.3E+00		7.6E+00	1.1E+00	5.1E+02		1.6E+03	3.8E+02	2.8E+00		3.4E+01	2.6E+00	1.7E+03		2.0E+04	1.5E+03
1,2-Dibromo-3-chloropropane	7.1E+01		4.6E-01	4.5E-01	2.3E+00		4.5E+00	1.5E+00	1.5E+02		2.0E+00	2.0E+00	7.4E+00		5.8E+01	6.5E+00
"CAL-Modified PRG"	2.4E-02		9.1E-02	1.9E-02					5.2E-02		4.1E-01	4.6E-02				
1,2-Dibromoethane	8.0E-02		7.5E-03	6.9E-03	8.2E-01		4.5E+00	6.9E-01	1.7E-01		3.4E-02	2.8E-02	2.7E+00		5.8E+01	2.6E+00
Dibutyl phthalate					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Dicamba					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
1,2-Dichlorobenzene					1.3E+03		7.0E+03	1.1E+03					4.3E+03		9.2E+04	4.1E+03
1,3-Dichlorobenzene					2.1E+01		7.0E+01	1.6E+01					6.7E+01		9.2E+02	6.3E+01
1,4-Dichlorobenzene	4.0E+00		2.7E+01	3.4E+00	6.1E+02		2.3E+03	4.8E+02	8.4E+00		1.2E+02	7.9E+00	2.0E+03		3.1E+04	1.9E+03
3,3-Dichlorobenzidine	2.0E+04	4.5E+00	1.4E+00	1.1E+00					4.2E+04	9.6E+00	6.4E+00	3.8E+00				
4,4'-Dichlorobenzophenone					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
1,4-Dichloro-2-butene	8.9E-03		6.9E-02	7.9E-03					1.9E-02		3.1E-01	1.8E-02				
Dichlorodifluoromethane					9.4E+01		1.6E+04	9.4E+01					3.1E+02		2.0E+05	3.1E+02
1,1-Dichloroethane					5.4E+02		7.8E+03	5.1E+02					1.8E+03		1.0E+05	1.7E+03
"CAL-Modified PRG"	2.9E+00		1.1E+02	2.8E+00					6.1E+00		5.0E+02	6.0E+00				
1,2-Dichloroethane	2.9E-01		7.0E+00	2.8E-01	8.6E+00		2.3E+03	8.5E+00	6.2E-01		3.1E+01	6.0E-01	2.8E+01		3.1E+04	2.8E+01
1,1-Dichloroethylene					1.3E+02		3.9E+03	1.2E+02					4.2E+02		5.1E+04	4.1E+02
1,2-Dichloroethylene (cis)					4.5E+01		7.8E+02	4.3E+01					1.5E+02		1.0E+04	1.5E+02
1,2-Dichloroethylene (trans)					7.3E+01		1.6E+03	6.9E+01					2.4E+02		2.0E+04	2.3E+02
2,4-Dichlorophenol					6.2E+06	8.4E+02	2.3E+02	1.8E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)					1.6E+07	2.2E+03	6.3E+02	4.9E+02					5.4E+07	1.2E+04	8.2E+03	4.9E+03
2,4-Dichlorophenoxyacetic Acid (2,4-D)					2.1E+07	5.6E+03	7.8E+02	6.9E+02					6.7E+07	3.1E+04	1.0E+04	7.7E+03
1,2-Dichloropropane	3.6E-01		9.4E+00	3.4E-01	6.4E+00		8.6E+01	6.0E+00	7.6E-01		4.2E+01	7.4E-01	2.1E+01		1.1E+03	2.1E+01
1,3-Dichloropropene	8.8E-01		6.4E+00	7.8E-01	1.6E+01		2.3E+03	1.6E+01	1.9E+00		2.9E+01	1.8E+00	5.4E+01		3.1E+04	5.4E+01
2,3-Dichloropropanol					6.2E+06	8.4E+02	2.3E+02	1.8E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
Dichlorvos	3.1E+04	7.0E+00	2.2E+00	1.7E+00	2.9E+05	1.4E+02	3.9E+01	3.1E+01	6.5E+04	1.5E+01	9.9E+00	5.9E+00	9.6E+05	7.7E+02	5.1E+02	3.1E+02
Dicofol	2.0E+04	4.6E+00	1.5E+00	1.1E+00					4.3E+04	9.9E+00	6.5E+00	3.9E+00				
Dicyclopentadiene					5.4E-01		2.3E+03	5.4E-01					1.8E+00		3.1E+04	1.8E+00
Dieldrin	5.5E+02	1.3E-01	4.0E-02	3.0E-02	1.0E+05	1.4E+01	3.9E+00	3.1E+00	1.2E+03	2.7E-01	1.8E-01	1.1E-01	3.4E+05	7.7E+01	5.1E+01	3.1E+01
Diethylene glycol, monobutyl ether					1.2E+07	2.8E+03	7.8E+02	6.1E+02					3.8E+07	1.5E+04	1.0E+04	6.2E+03
Diethylene glycol, monomethyl ether					1.8E+06	1.7E+04	4.7E+03	3.7E+03					5.8E+06	9.3E+04	6.1E+04	3.7E+04
Diethylformamide					8.2E+06	1.1E+03	3.1E+02	2.4E+02					2.7E+07	6.2E+03	4.1E+03	2.5E+03
Di(2-ethylhexyl)adipate	7.4E+06	1.7E+03	5.3E+02	4.1E+02	1.2E+09	1.7E+05	4.7E+04	3.7E+04	1.6E+07	3.6E+03	2.4E+03	1.4E+03	4.0E+09	9.3E+05	6.1E+05	3.7E+05
Diethyl phthalate					1.6E+09	2.2E+05	6.3E+04	4.9E+04					5.4E+09	1.2E+06	8.2E+05	4.9E+05
Diethylstilbestrol	1.9E+00	4.3E-04	1.4E-04	1.0E-04					4.0E+00	9.2E-04	6.1E-04	3.7E-04				
Difenzoquat (Avenge)					1.6E+08	2.2E+04	6.3E+03	4.9E+03					5.4E+08	1.2E+05	8.2E+04	4.9E+04
Diflubenzuron					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
1,1-Difluoroethane																
Diisononyl phthalate					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Diisopropyl methylphosphonate					1.6E+08	2.2E+04	6.3E+03	4.9E+03					5.4E+08	1.2E+05	8.2E+04	4.9E+04
Dimethipin					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Dimethoate					4.1E+05	5.6E+01	1.6E+01	1.2E+01					1.3E+06	3.1E+02	2.0E+02	1.2E+02
3,3'-Dimethoxybenzidine	6.3E+05	1.4E+02	4.6E+01	3.5E+01					1.3E+06	3.1E+02	2.0E+02	1.2E+02				

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Dimethylamine					7.9E-02		4.5E-01	6.7E-02					2.6E-01		5.8E+00	2.5E-01
N-N-Dimethylaniline					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
2,4-Dimethylaniline	1.2E+04	2.7E+00	8.5E-01	6.5E-01					2.5E+04	5.8E+00	3.8E+00	2.3E+00				
2,4-Dimethylaniline hydrochloride	1.5E+04	3.5E+00	1.1E+00	8.4E-01					3.2E+04	7.5E+00	4.9E+00	3.0E+00				
3,3'-Dimethylbenzidine	9.6E+02	2.2E-01	7.0E-02	5.3E-02					2.0E+03	4.7E-01	3.1E-01	1.9E-01				
N,N-Dimethylformamide					1.8E+07	2.8E+04	7.8E+03	6.1E+03					5.8E+07	1.5E+05	1.0E+05	6.2E+04
Dimethylphenethylamine					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
2,4-Dimethylphenol					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
2,6-Dimethylphenol					1.2E+06	1.7E+02	4.7E+01	3.7E+01					4.0E+06	9.3E+02	6.1E+02	3.7E+02
3,4-Dimethylphenol					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Dimethyl phthalate					2.1E+10	2.8E+06	7.8E+05	6.1E+05					6.7E+10	1.5E+07	1.0E+07	6.2E+06
Dimethyl terephthalate					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
4,6-Dinitro-o-cyclohexyl phenol					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
1,2-Dinitrobenzene					2.1E+05	2.8E+01	7.8E+00	6.1E+00					6.7E+05	1.5E+02	1.0E+02	6.2E+01
1,3-Dinitrobenzene					2.1E+05	2.8E+01	7.8E+00	6.1E+00					6.7E+05	1.5E+02	1.0E+02	6.2E+01
1,4-Dinitrobenzene					2.1E+05	2.8E+01	7.8E+00	6.1E+00					6.7E+05	1.5E+02	1.0E+02	6.2E+01
2,4-Dinitrophenol					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Dinitrotoluene mixture	1.3E+04	3.0E+00	9.4E-01	7.2E-01					2.8E+04	6.4E+00	4.2E+00	2.5E+00				
2,4-Dinitrotoluene					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
2,6-Dinitrotoluene					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Dinoseb					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
di-n-Octyl phthalate					8.2E+07	1.1E+04	3.1E+03	2.4E+03					2.7E+08	6.2E+04	4.1E+04	2.5E+04
1,4-Dioxane	8.0E+05	1.8E+02	5.8E+01	4.4E+01					1.7E+06	3.9E+02	2.6E+02	1.6E+02				
Dioxin (2,3,7,8-TCDD)	5.9E-02	4.5E-05	4.3E-06	3.9E-06					1.3E-01	9.6E-05	1.9E-05	1.6E-05				
Diphenamid					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
Diphenylamine					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
N,N-Diphenyl-1,4 benzenediamine (DPPD)					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
1,2-Diphenylhydrazine	1.1E+04	2.5E+00	8.0E-01	6.1E-01					2.4E+04	5.4E+00	3.6E+00	2.2E+00				
Diphenyl sulfone					6.2E+06	8.4E+02	2.3E+02	1.8E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
Diquat					4.5E+06	6.1E+02	1.7E+02	1.3E+02					1.5E+07	3.4E+03	2.2E+03	1.4E+03
Direct black 38	1.0E+03	2.4E-01	7.4E-02	5.7E-02					2.2E+03	5.0E-01	3.3E-01	2.0E-01				
Direct blue 6	1.1E+03	2.5E-01	7.9E-02	6.0E-02					2.3E+03	5.4E-01	3.5E-01	2.1E-01				
Direct brown 95	9.5E+02	2.2E-01	6.9E-02	5.2E-02					2.0E+03	4.7E-01	3.1E-01	1.9E-01				
Disulfoton					8.2E+04	1.1E+01	3.1E+00	2.4E+00					2.7E+05	6.2E+01	4.1E+01	2.5E+01
1,4-Dithiane					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Diuron					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Dodine					8.2E+06	1.1E+03	3.1E+02	2.4E+02					2.7E+07	6.2E+03	4.1E+03	2.5E+03
Dysprosium							1.6E+04	1.6E+04							2.0E+05	2.0E+05
Endosulfan					1.2E+07	1.7E+03	4.7E+02	3.7E+02					4.0E+07	9.3E+03	6.1E+03	3.7E+03
Endothall					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Endrin					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
Epichlorohydrin	2.8E+01		6.5E+01	2.0E+01	7.9E+00		1.6E+02	7.6E+00	6.1E+01		2.9E+02	5.0E+01	2.6E+01		2.0E+03	2.6E+01
1,2-Epoxybutane					1.2E+07	1.6E+03	4.5E+02	3.5E+02					3.8E+07	8.8E+03	5.8E+03	3.5E+03
EPTC (S-Ethyl dipropylthiocarbamate)					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Ethephon (2-chloroethyl phosphonic acid)					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Ethion					1.0E+06	1.4E+02	3.9E+01	3.1E+01					3.4E+06	7.7E+02	5.1E+02	3.1E+02
2-Ethoxyethanol					1.2E+08	1.1E+05	3.1E+04	2.4E+04					3.8E+08	6.2E+05	4.1E+05	2.5E+05
2-Ethoxyethanol acetate					6.2E+08	8.4E+04	2.3E+04	1.8E+04					2.0E+09	4.6E+05	3.1E+05	1.8E+05
Ethyl acetate					2.5E+04		7.0E+04	1.9E+04					8.3E+04		9.2E+05	7.6E+04
Ethyl acrylate	2.1E-01		1.3E+01	2.1E-01					4.6E-01		6.0E+01	4.5E-01				
Ethylbenzene	9.4E+00		1.7E+02	8.9E+00	2.4E+03		7.8E+03	1.9E+03	2.0E+01		7.4E+02	2.0E+01	8.0E+03		1.0E+05	7.4E+03
Ethyl chloride	3.1E+00		2.2E+02	3.0E+00	5.9E+03		3.1E+04	5.0E+03	6.5E+00		9.9E+02	6.5E+00	1.9E+04		4.1E+05	1.8E+04

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Ethylene cyanohydrin					6.2E+08	8.4E+04	2.3E+04	1.8E+04					2.0E+09	4.6E+05	3.1E+05	1.8E+05
Ethylene diamine					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Ethylene glycol					4.1E+09	5.6E+05	1.6E+05	1.2E+05					1.3E+10	3.1E+06	2.0E+06	1.2E+06
Ethylene glycol, monobutyl ether					7.6E+09	1.4E+05	3.9E+04	3.1E+04					2.5E+10	7.7E+05	5.1E+05	3.1E+05
Ethylene oxide	1.8E-01		6.3E-01	1.4E-01					3.8E-01		2.8E+00	3.4E-01				
Ethylene thiourea (ETU)	8.0E+04	1.8E+01	5.8E+00	4.4E+00	1.6E+05	2.2E+01	6.3E+00	4.9E+00	1.7E+05	3.9E+01	2.6E+01	1.6E+01	5.4E+05	1.2E+02	8.2E+01	4.9E+01
Ethyl ether					1.2E+04		1.6E+04	6.8E+03					3.9E+04		2.0E+05	3.3E+04
Ethyl methacrylate					2.1E+02		7.0E+03	2.1E+02					7.0E+02		9.2E+04	7.0E+02
Ethyl p-nitrophenyl phenylphosphorothioate					2.1E+04	2.8E+00	7.8E-01	6.1E-01					6.7E+04	1.5E+01	1.0E+01	6.2E+00
Ethylphthalyl ethyl glycolate					6.2E+09	8.4E+05	2.3E+05	1.8E+05					2.0E+10	4.6E+06	3.1E+06	1.8E+06
Express					1.6E+07	2.2E+03	6.3E+02	4.9E+02					5.4E+07	1.2E+04	8.2E+03	4.9E+03
Fenamiphos					5.1E+05	7.0E+01	2.0E+01	1.5E+01					1.7E+06	3.9E+02	2.6E+02	1.5E+02
Fluometuron					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Fluoride						1.7E+04	4.7E+03	3.7E+03						9.3E+04	6.1E+04	3.7E+04
Fluoridone					1.6E+08	2.2E+04	6.3E+03	4.9E+03					5.4E+08	1.2E+05	8.2E+04	4.9E+04
Flurprimidol					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Flutolanil					1.0E+09	1.7E+04	4.7E+03	3.7E+03					4.0E+08	9.3E+04	6.1E+04	3.7E+04
Fluvalinate					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Folpet	2.5E+06	5.8E+02	1.8E+02	1.4E+02	2.1E+08	2.8E+04	7.8E+03	6.1E+03	5.4E+06	1.2E+03	8.2E+02	4.9E+02	6.7E+08	1.5E+05	1.0E+05	6.2E+04
Fomesafen	4.7E+04	1.1E+01	3.4E+00	2.6E+00					9.9E+04	2.3E+01	1.5E+01	9.1E+00				
Fonofos					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Formaldehyde	1.9E+05			1.9E+05		4.2E+04	1.2E+04	9.2E+03	4.1E+05			4.1E+05		2.3E+05	1.5E+05	9.2E+04
Formic Acid					4.1E+09	5.6E+05	1.6E+05	1.2E+05					1.3E+10	3.1E+06	2.0E+06	1.2E+06
Fosetyl-al					6.2E+09	8.4E+05	2.3E+05	1.8E+05					2.0E+10	4.6E+06	3.1E+06	1.8E+06
Freon 113					2.1E+04		2.3E+06	2.1E+04					6.9E+04		3.1E+07	6.9E+04
Furan					2.6E+00		7.8E+01	2.5E+00					8.6E+00		1.0E+03	8.5E+00
Furazolidone	2.3E+03	5.3E-01	1.7E-01	1.3E-01					5.0E+03	1.1E+00	7.5E-01	4.5E-01				
Furfural					2.9E+07	8.4E+02	2.3E+02	1.8E+02					3.4E+08	4.6E+03	3.1E+03	1.8E+03
Furium	1.8E+02	4.0E-02	1.3E-02	9.7E-03					3.8E+02	8.7E-02	5.7E-02	3.4E-02				
Furmecyclox	2.9E+05	6.7E+01	2.1E+01	1.6E+01					6.3E+05	1.4E+02	9.5E+01	5.7E+01				
Glufosinate-ammonium					8.2E+05	1.1E+02	3.1E+01	2.4E+01					2.7E+06	6.2E+02	4.1E+02	2.5E+02
Glycidaldehyde					5.9E+05	1.1E+02	3.1E+01	2.4E+01					1.9E+06	6.2E+02	4.1E+02	2.5E+02
Glyphosate					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Haloxyfop-methyl					1.0E+05	1.4E+01	3.9E+00	3.1E+00					3.4E+05	7.7E+01	5.1E+01	3.1E+01
Harmony					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Heptachlor	1.9E+03	4.5E-01	1.4E-01	1.1E-01	1.0E+06	1.4E+02	3.9E+01	3.1E+01	4.1E+03	9.6E-01	6.4E-01	3.8E-01	3.4E+06	7.7E+02	5.1E+02	3.1E+02
Heptachlor epoxide	9.7E+02	2.2E-01	7.0E-02	5.3E-02	2.7E+04	3.6E+00	1.0E+00	7.9E-01	2.1E+03	4.8E-01	3.1E-01	1.9E-01	8.7E+04	2.0E+01	1.3E+01	8.0E+00
Hexabromobenzene					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Hexachlorobenzene	5.5E+03	1.3E+00	4.0E-01	3.0E-01	1.6E+06	2.2E+02	6.3E+01	4.9E+01	1.2E+04	2.7E+00	1.8E+00	1.1E+00	5.4E+06	1.2E+03	8.2E+02	4.9E+02
Hexachlorobutadiene	1.1E+05	2.6E+01	8.2E+00	6.2E+00	6.2E+05	8.4E+01	2.3E+01	1.8E+01	2.4E+05	5.6E+01	3.7E+01	2.2E+01	2.0E+06	4.6E+02	3.1E+02	1.8E+02
HCH (alpha)	1.4E+03	8.0E-01	1.0E-01	9.0E-02	1.0E+06	3.5E+02	3.9E+01	3.5E+01	3.0E+03	1.7E+00	4.5E-01	3.6E-01	3.4E+06	1.9E+03	5.1E+02	4.0E+02
HCH (beta)	4.9E+03	2.8E+00	3.6E-01	3.2E-01	4.1E+05	1.4E+02	1.6E+01	1.4E+01	1.0E+04	6.0E+00	1.6E+00	1.3E+00	1.3E+06	7.7E+02	2.0E+02	1.6E+02
HCH (gamma) Lindane	6.8E+03	3.9E+00	4.9E-01	4.4E-01	6.2E+05	2.1E+02	2.3E+01	2.1E+01	1.4E+04	8.3E+00	2.2E+00	1.7E+00	2.0E+06	1.2E+03	3.1E+02	2.4E+02
HCH-technical	5.0E+03	2.8E+00	3.6E-01	3.2E-01					1.1E+04	6.0E+00	1.6E+00	1.3E+00				
Hexachlorocyclopentadiene					1.2E+05	1.7E+03	4.7E+02	3.7E+02					3.8E+05	9.3E+03	6.1E+03	3.7E+03
Hexachloroethane	6.3E+05	1.4E+02	4.6E+01	3.5E+01	2.1E+06	2.8E+02	7.8E+01	6.1E+01	1.3E+06	3.1E+02	2.0E+02	1.2E+02	6.7E+06	1.5E+03	1.0E+03	6.2E+02
Hexachlorophene					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
Hexahydro-1,3,5-trinitro-1,3,5-triazine	8.0E+04	1.8E+01	5.8E+00	4.4E+00	6.2E+06	8.4E+02	2.3E+02	1.8E+02	1.7E+05	3.9E+01	2.6E+01	1.6E+01	2.0E+07	4.6E+03	3.1E+03	1.8E+03
1,6-Hexamethylene diisocyanate					5.9E+03	8.0E-01	2.2E-01	1.7E-01					1.9E+04	4.4E+00	2.9E+00	1.8E+00
n-Hexane					1.2E+02		4.7E+03	1.2E+02					4.0E+02		6.1E+04	4.0E+02
Hexazinone					6.8E+07	9.2E+03	2.6E+03	2.0E+03					2.2E+08	5.1E+04	3.4E+04	2.0E+04
Hydrazine, hydrazine sulfate	5.2E+02	6.7E-01	2.1E-01	1.6E-01					1.1E+03	1.4E+00	9.5E-01	5.7E-01				

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Hydrazine, monomethyl	5.2E+02	6.7E-01	2.1E-01	1.6E-01					1.1E+03	1.4E+00	9.5E-01	5.7E-01				
Hydrazine, dimethyl	5.2E+02	6.7E-01	2.1E-01	1.6E-01					1.1E+03	1.4E+00	9.5E-01	5.7E-01				
Hydrogen chloride					1.2E+07			1.1E+07					3.8E+07			3.6E+07
Hydrogen cyanide					1.1E+01		1.6E+03	1.1E+01					3.5E+01		2.0E+04	3.5E+01
Hydrogen sulfide							2.3E+02	2.3E+02							3.1E+03	3.1E+03
p-Hydroquinone					8.2E+07	1.1E+04	3.1E+03	2.4E+03					2.7E+08	6.2E+04	4.1E+04	2.5E+04
Imazalil					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Imazaquin					5.1E+08	7.0E+04	2.0E+04	1.5E+04					1.7E+09	3.9E+05	2.6E+05	1.5E+05
Iprodione					8.2E+07	1.1E+04	3.1E+03	2.4E+03					2.7E+08	6.2E+04	4.1E+04	2.5E+04
Iron							2.3E+04	2.3E+04							3.1E+05	3.1E+05
Isobutanol					2.7E+04		2.3E+04	1.3E+04					8.8E+04		3.1E+05	6.8E+04
Isophorone	9.3E+06	2.1E+03	6.7E+02	5.1E+02	4.1E+08	5.6E+04	1.6E+04	1.2E+04	2.0E+07	4.6E+03	3.0E+03	1.8E+03	1.3E+09	3.1E+05	2.0E+05	1.2E+05
Isopropalin					3.1E+07	4.2E+03	1.2E+03	9.2E+02					1.0E+08	2.3E+04	1.5E+04	9.2E+03
Isopropyl methyl phosphonic acid					2.3E+08	2.8E+04	7.8E+03	6.1E+03					7.4E+08	1.5E+05	1.0E+05	6.2E+04
Isoxaben					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Kepone	1.1E+03	2.5E-01	8.0E-02	6.1E-02	6.2E+05	8.4E+01	2.3E+01	1.8E+01	2.4E+03	5.4E-01	3.6E-01	2.2E-01	2.0E+06	4.6E+02	3.1E+02	1.8E+02
Lactofen					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Lead++																
"CAL-Modified PRG"+++																
Lead (tetraethyl)						2.8E-02	7.8E-03	6.1E-03						1.5E-01	1.0E-01	6.2E-02
Linuron					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Lithium							1.6E+03	1.6E+03							2.0E+04	2.0E+04
Londax					3.4E+09	5.6E+04	1.6E+04	1.2E+04					1.3E+09	3.1E+05	2.0E+05	1.2E+05
Malathion					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Maleic anhydride					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Maleic hydrazide					1.7E+03		3.9E+04	1.7E+03					5.7E+03		5.1E+05	5.6E+03
Malononitrile					4.1E+04	5.6E+00	1.6E+00	1.2E+00					1.3E+05	3.1E+01	2.0E+01	1.2E+01
Mancozeb					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
Maneb	1.5E+05	3.4E+01	1.1E+01	8.1E+00	1.0E+07	1.4E+03	3.9E+02	3.1E+02	3.1E+05	7.2E+01	4.8E+01	2.9E+01	3.4E+07	7.7E+03	5.1E+03	3.1E+03
Manganese (non-food)+++					2.9E+04		1.9E+03	1.8E+03					9.4E+04		2.5E+04	1.9E+04
Mephosfolan					1.9E+05	2.5E+01	7.0E+00	5.5E+00					6.1E+05	1.4E+02	9.2E+01	5.5E+01
Mepiquat					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
2-Mercaptobenzothiazole	3.1E+05	7.0E+01	2.2E+01	1.7E+01	2.1E+08	2.8E+04	7.8E+03	6.1E+03	6.5E+05	1.5E+02	9.9E+01	5.9E+01	6.7E+08	1.5E+05	1.0E+05	6.2E+04
Mercury and compounds							2.3E+01	2.3E+01							3.1E+02	3.1E+02
Mercury (elemental)						2.8E+01	7.8E+00	6.1E+00					5.8E+05			5.8E+05
Mercury (methyl)					6.2E+04	8.4E+00	2.3E+00	1.8E+00						1.5E+02	1.0E+02	6.2E+01
Merphos					6.2E+04	8.4E+00	2.3E+00	1.8E+00					2.0E+05	4.6E+01	3.1E+01	1.8E+01
Merphos oxide					1.0E+09	1.7E+04	4.7E+03	3.7E+03					2.0E+05	4.6E+01	3.1E+01	1.8E+01
Metalaxyl					2.8E+00		7.8E+00	2.1E+00					4.0E+08	9.3E+04	6.1E+04	3.7E+04
Methacrylonitrile					1.0E+05	1.4E+01	3.9E+00	3.1E+00					9.1E+00		1.0E+02	8.4E+00
Methamidophos					1.0E+09	1.4E+05	3.9E+04	3.1E+04					3.4E+05	7.7E+01	5.1E+01	3.1E+01
Methanol					2.1E+06	2.8E+02	7.8E+01	6.1E+01					3.4E+09	7.7E+05	5.1E+05	3.1E+05
Methidathion					4.5E+01		2.0E+03	4.4E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Methomyl					1.0E+07	1.4E+03	3.9E+02	3.1E+02					1.5E+02		2.6E+04	1.5E+02
Methoxychlor					1.2E+07	2.8E+02	7.8E+01	6.1E+01					3.4E+07	7.7E+03	5.1E+03	3.1E+03
2-Methoxyethanol					4.1E+06	5.6E+02	1.6E+02	1.2E+02					3.8E+07	1.5E+03	1.0E+03	6.2E+02
2-Methoxyethanol acetate													1.3E+07	3.1E+03	2.0E+03	1.2E+03
2-Methoxy-5-nitroaniline	1.9E+05	4.4E+01	1.4E+01	1.1E+01					4.1E+05	9.4E+01	6.2E+01	3.7E+01				
Methyl acetate					3.1E+04		7.8E+04	2.2E+04					1.0E+05		1.0E+06	9.2E+04
Methyl acrylate					7.2E+01		2.3E+03	7.0E+01					2.3E+02		3.1E+04	2.3E+02
2-Methylaniline (o-toluidine)	3.7E+04	8.4E+00	2.7E+00	2.0E+00					7.8E+04	1.8E+01	1.2E+01	7.2E+00				
2-Methylaniline hydrochloride	4.9E+04	1.1E+01	3.6E+00	2.7E+00					1.0E+05	2.4E+01	1.6E+01	9.6E+00				

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
2-Methyl-4-chlorophenoxyacetic acid					1.0E+06	1.4E+02	3.9E+01	3.1E+01					3.4E+06	7.7E+02	5.1E+02	3.1E+02
4-(2-Methyl-4-chlorophenoxy) butyric acid (MCPB)					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
2-(2-Methyl-4-chlorophenoxy) propionic acid					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
2-(2-Methyl-1,4-chlorophenoxy) propionic acid (MCPP)					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Methylcyclohexane					2.7E+03		6.7E+04	2.6E+03					8.8E+03		8.8E+05	8.7E+03
4,4'-Methylenebisbenzeneamine	3.5E+04	8.1E+00	2.6E+00	1.9E+00					7.5E+04	1.7E+01	1.1E+01	6.9E+00				
4,4'-Methylene bis(2-chloroaniline)	6.8E+04	1.6E+01	4.9E+00	3.7E+00	1.4E+06	2.0E+02	5.5E+01	4.3E+01	1.4E+05	3.3E+01	2.2E+01	1.3E+01	4.7E+06	1.1E+03	7.2E+02	4.3E+02
4,4'-Methylene bis(N,N'-dimethyl)aniline	1.9E+05	4.4E+01	1.4E+01	1.1E+01					4.1E+05	9.4E+01	6.2E+01	3.7E+01				
Methylene bromide					7.3E+01		7.8E+02	6.7E+01					2.4E+02		1.0E+04	2.3E+02
Methylene chloride	1.0E+01		8.5E+01	9.1E+00	3.3E+03		4.7E+03	2.0E+03	2.2E+01		3.8E+02	2.1E+01	1.1E+04		6.1E+04	9.3E+03
4,4'-Methylenediphenyl isocyanate					3.5E+05	4.7E+01	1.3E+01	1.0E+01					1.1E+06	2.6E+02	1.7E+02	1.0E+02
Methyl ethyl ketone					8.7E+03		4.7E+04	7.3E+03					2.8E+04		6.1E+05	2.7E+04
Methyl isobutyl ketone					9.0E+02		6.3E+03	7.9E+02					2.9E+03		8.2E+04	2.8E+03
Methyl mercaptan					1.2E+06	1.6E+02	4.5E+01	3.5E+01					3.8E+06	8.8E+02	5.8E+02	3.5E+02
Methyl methacrylate					2.2E+03		1.1E+05	2.2E+03					7.3E+03		1.4E+06	7.3E+03
2-Methyl-5-nitroaniline	2.7E+05	6.1E+01	1.9E+01	1.5E+01					5.7E+05	1.3E+02	8.7E+01	5.2E+01				
Methyl parathion					5.1E+05	7.0E+01	2.0E+01	1.5E+01					1.7E+06	3.9E+02	2.6E+02	1.5E+02
2-Methylphenol					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
3-Methylphenol					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
4-Methylphenol					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Methyl phosphonic acid					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Methyl styrene (mixture)					1.8E+02		4.7E+02	1.3E+02					5.9E+02		6.1E+03	5.4E+02
Methyl styrene (alpha)					1.1E+03		5.5E+03	9.2E+02					3.6E+03		7.2E+04	3.4E+03
Methyl tertbutyl ether (MTBE)	9.0E+01		1.9E+02	6.2E+01	6.3E+03		6.7E+04	5.7E+03	1.9E+02		8.7E+02	1.6E+02	2.1E+04		8.8E+05	2.0E+04
"CAL-Modified PRG"	1.8E+01		3.6E+02	1.7E+01					3.7E+01		1.6E+03	3.6E+01				
Metolaclor (Dual)					3.1E+08	4.2E+04	1.2E+04	9.2E+03					1.0E+09	2.3E+05	1.5E+05	9.2E+04
Metribuzin					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Mirex	4.9E+03	1.1E+00	3.6E-01	2.7E-01	4.1E+05	5.6E+01	1.6E+01	1.2E+01	1.0E+04	2.4E+00	1.6E+00	9.6E-01	1.3E+06	3.1E+02	2.0E+02	1.2E+02
Molinate					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Molybdenum							3.9E+02	3.9E+02							5.1E+03	5.1E+03
Monochloramine					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Naled					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Napropamide					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
Nickel and compounds							1.6E+03	1.6E+03							2.0E+04	2.0E+04
Nickel refinery dust	1.1E+04			1.1E+04					2.2E+04			2.2E+04				
Nickel subsulfide	5.2E+03			5.2E+03					1.1E+04			1.1E+04				
Nitrate+++																
Nitrite+++																
2-Nitroaniline					5.9E+04	8.0E+00	2.2E+00	1.7E+00					1.9E+05	4.4E+01	2.9E+01	1.8E+01
Nitrobenzene					3.9E+01		3.9E+01	2.0E+01					1.3E+02		5.1E+02	1.0E+02
Nitrofurantoin					1.4E+08	2.0E+04	5.5E+03	4.3E+03					4.7E+08	1.1E+05	7.2E+04	4.3E+04
Nitrofurazone	5.9E+03	1.3E+00	4.3E-01	3.2E-01					1.3E+04	2.9E+00	1.9E+00	1.1E+00				
Nitroglycerin	6.3E+05	1.4E+02	4.6E+01	3.5E+01					1.3E+06	3.1E+02	2.0E+02	1.2E+02				
Nitroguanidine					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
2-Nitropropane																
N-Nitrosodi-n-butylamine	3.1E-02		1.2E-01	2.4E-02					6.5E-02		5.3E-01	5.8E-02				
N-Nitrosodiethanolamine	3.2E+03	7.2E-01	2.3E-01	1.7E-01					6.7E+03	1.5E+00	1.0E+00	6.2E-01				
N-Nitrosodiethylamine	5.9E+01	1.3E-02	4.3E-03	3.2E-03					1.3E+02	2.9E-02	1.9E-02	1.1E-02				
N-Nitrosodimethylamine	1.8E+02	4.0E-02	1.3E-02	9.5E-03					3.8E+02	8.5E-02	5.6E-02	3.4E-02				
N-Nitrosodiphenylamine	1.8E+06	4.1E+02	1.3E+02	9.9E+01					3.8E+06	8.8E+02	5.8E+02	3.5E+02				
N-Nitroso di-n-propylamine	1.3E+03	2.9E-01	9.1E-02	6.9E-02					2.7E+03	6.2E-01	4.1E-01	2.5E-01				
N-Nitroso-N-methylethylamine	4.0E+02	9.2E-02	2.9E-02	2.2E-02					8.6E+02	2.0E-01	1.3E-01	7.8E-02				

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
N-Nitrosopyrrolidine	4.1E+03	9.6E-01	3.0E-01	2.3E-01					8.8E+03	2.1E+00	1.4E+00	8.2E-01				
m-Nitrotoluene					6.9E+02		7.8E+02	3.7E+02					2.3E+03		1.0E+04	1.8E+03
o-Nitrotoluene					6.9E+02		7.8E+02	3.7E+02					2.3E+03		1.0E+04	1.8E+03
p-Nitrotoluene					6.9E+02		7.8E+02	3.7E+02					2.3E+03		1.0E+04	1.8E+03
Norflurazon					8.2E+07	1.1E+04	3.1E+03	2.4E+03					2.7E+08	6.2E+04	4.1E+04	2.5E+04
NuStar					1.4E+06	2.0E+02	5.5E+01	4.3E+01					4.7E+06	1.1E+03	7.2E+02	4.3E+02
Octabromodiphenyl ether					6.2E+06	8.4E+02	2.3E+02	1.8E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Octamethylpyrophosphoramide					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Oryzalin					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Oxadiazon					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Oxamyl					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Oxyfluorfen					6.2E+06	8.4E+02	2.3E+02	1.8E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
Paclobutrazol					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Paraquat					9.3E+06	1.3E+03	3.5E+02	2.7E+02					3.0E+07	7.0E+03	4.6E+03	2.8E+03
Parathion					1.2E+07	1.7E+03	4.7E+02	3.7E+02					4.0E+07	9.3E+03	6.1E+03	3.7E+03
Pebulate					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Pendimethalin					8.2E+07	1.1E+04	3.1E+03	2.4E+03					2.7E+08	6.2E+04	4.1E+04	2.5E+04
Pentabromo-6-chloro cyclohexane	3.8E+05	8.8E+01	2.8E+01	2.1E+01					8.2E+05	1.9E+02	1.2E+02	7.5E+01				
Pentabromodiphenyl ether					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Pentachlorobenzene					1.6E+06	2.2E+02	6.3E+01	4.9E+01					5.4E+06	1.2E+03	8.2E+02	4.9E+02
Pentachloronitrobenzene	3.4E+04	7.8E+00	2.5E+00	1.9E+00	6.2E+06	8.4E+02	2.3E+02	1.8E+02	7.2E+04	1.7E+01	1.1E+01	6.6E+00	2.0E+07	4.6E+03	3.1E+03	1.8E+03
Pentachlorophenol	7.4E+04	6.7E+00	5.3E+00	3.0E+00	6.2E+07	3.4E+03	2.3E+03	1.4E+03	1.6E+05	1.4E+01	2.4E+01	9.0E+00	2.0E+08	1.9E+04	3.1E+04	1.2E+04
Perchlorate							7.8E+00	7.8E+00							1.0E+02	1.0E+02
Permethrin					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Phenmedipham					5.1E+08	7.0E+04	2.0E+04	1.5E+04					1.7E+09	3.9E+05	2.6E+05	1.5E+05
Phenol					1.2E+09	1.7E+05	4.7E+04	3.7E+04					4.0E+09	9.3E+05	6.1E+05	3.7E+05
Phenothiazine					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
m-Phenylenediamine					1.2E+07	1.7E+03	4.7E+02	3.7E+02					4.0E+07	9.3E+03	6.1E+03	3.7E+03
p-Phenylenediamine					3.9E+08	5.3E+04	1.5E+04	1.2E+04					1.3E+09	2.9E+05	1.9E+05	1.2E+05
Phenylmercuric acetate					1.6E+05	2.2E+01	6.3E+00	4.9E+00					5.4E+05	1.2E+02	8.2E+01	4.9E+01
2-Phenylphenol	4.7E+06	1.0E+03	3.3E+02	2.5E+02					9.9E+06	2.2E+03	1.5E+03	8.9E+02				
Phorate					4.1E+05	5.6E+01	1.6E+01	1.2E+01					1.3E+06	3.1E+02	2.0E+02	1.2E+02
Phosmet					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Phosphine					1.8E+05	8.4E+01	2.3E+01	1.8E+01					5.8E+05	4.6E+02	3.1E+02	1.8E+02
Phosphoric acid							1.6E+00	1.6E+00							2.0E+01	2.0E+01
Phosphorus (white)					2.1E+09	2.8E+05	7.8E+04	6.1E+04					6.7E+09	1.5E+06	1.0E+06	6.2E+05
p-Phthalic acid					7.0E+07	5.6E+05	1.6E+05	1.2E+05					2.3E+08	3.1E+06	2.0E+06	1.2E+06
Phthalic anhydride					1.4E+08	2.0E+04	5.5E+03	4.3E+03					4.7E+08	1.1E+05	7.2E+04	4.3E+04
Picloram					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Pirimiphos-methyl					1.4E+04	2.0E+00	5.5E-01	4.3E-01					4.7E+04	1.1E+01	7.2E+00	4.3E+00
Polybrominated biphenyls	9.9E+02	2.3E-01	7.2E-02	5.5E-02					2.1E+03	4.9E-01	3.2E-01	1.9E-01				
Polychlorinated biphenyls (PCBs)	4.4E+03	7.2E-01	3.2E-01	2.2E-01					9.4E+03	1.5E+00	1.4E+00	7.4E-01				
Aroclor 1016	1.3E+05	2.1E+01	9.1E+00	6.3E+00	1.4E+05	1.4E+01	5.5E+00	3.9E+00	2.7E+05	4.4E+01	4.1E+01	2.1E+01	4.7E+05	7.7E+01	7.2E+01	3.7E+01
Aroclor 1221	4.4E+03	7.2E-01	3.2E-01	2.2E-01					9.4E+03	1.5E+00	1.4E+00	7.4E-01				
Aroclor 1232	4.4E+03	7.2E-01	3.2E-01	2.2E-01					9.4E+03	1.5E+00	1.4E+00	7.4E-01				
Aroclor 1242	4.4E+03	7.2E-01	3.2E-01	2.2E-01					9.4E+03	1.5E+00	1.4E+00	7.4E-01				
Aroclor 1248	4.4E+03	7.2E-01	3.2E-01	2.2E-01					9.4E+03	1.5E+00	1.4E+00	7.4E-01				
Aroclor 1254	4.4E+03	7.2E-01	3.2E-01	2.2E-01					9.4E+03	1.5E+00	1.4E+00	7.4E-01				
Aroclor 1260	4.4E+03	7.2E-01	3.2E-01	2.2E-01	4.1E+04	4.0E+00	1.6E+00	1.1E+00					1.3E+05	2.2E+01	2.0E+01	1.1E+01
Polychlorinated terphenyls	2.0E+03	4.5E-01	1.4E-01	1.1E-01					4.2E+03	9.6E-01	6.4E-01	3.8E-01				
Polynuclear aromatic hydrocarbons																

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Acenaphthene					1.7E+04		4.7E+03	3.7E+03					5.6E+04		6.1E+04	2.9E+04
Anthracene					3.3E+05		2.3E+04	2.2E+04					1.1E+06		3.1E+05	2.4E+05
Benz[a]anthracene	1.2E+04	2.1E+00	8.8E-01	6.2E-01					2.6E+04	4.6E+00	3.9E+00	2.1E+00				
Benzo[b]fluoranthene	1.2E+04	2.1E+00	8.8E-01	6.2E-01					2.6E+04	4.6E+00	3.9E+00	2.1E+00				
Benzo[k]fluoranthene	1.2E+05	2.1E+01	8.8E+00	6.2E+00					2.6E+05	4.6E+01	3.9E+01	2.1E+01				
"CAL-Modified PRG"	2.3E+04	1.3E+00	5.3E-01	3.8E-01					4.8E+04	2.8E+00	2.4E+00	1.3E+00				
Benzo[a]pyrene	1.2E+03	2.1E-01	8.8E-02	6.2E-02					2.6E+03	4.6E-01	3.9E-01	2.1E-01				
Chrysene	1.2E+06	2.1E+02	8.8E+01	6.2E+01					2.6E+06	4.6E+02	3.9E+02	2.1E+02				
"CAL-Modified PRG"	2.3E+05	1.3E+01	5.3E+00	3.8E+00					4.8E+05	2.8E+01	2.4E+01	1.3E+01				
Dibenz[ah]anthracene	1.2E+03	2.1E-01	8.8E-02	6.2E-02					2.6E+03	4.6E-01	3.9E-01	2.1E-01				
Fluoranthene					8.2E+07	8.6E+03	3.1E+03	2.3E+03					2.7E+08	4.8E+04	4.1E+04	2.2E+04
Fluorene					2.3E+04		3.1E+03	2.7E+03					7.4E+04		4.1E+04	2.6E+04
Indeno[1,2,3-cd]pyrene	1.2E+04	2.1E+00	8.8E-01	6.2E-01					2.6E+04	4.6E+00	3.9E+00	2.1E+00				
Naphthalene					5.8E+01		1.6E+03	5.6E+01					1.9E+02		2.0E+04	1.9E+02
Pyrene					1.8E+05		2.3E+03	2.3E+03					5.8E+05		3.1E+04	2.9E+04
Prochloraz	5.9E+04	1.3E+01	4.3E+00	3.2E+00	1.9E+07	2.5E+03	7.0E+02	5.5E+02	1.3E+05	2.9E+01	1.9E+01	1.1E+01	6.1E+07	1.4E+04	9.2E+03	5.5E+03
Profluralin					1.2E+07	1.7E+03	4.7E+02	3.7E+02					4.0E+07	9.3E+03	6.1E+03	3.7E+03
Prometon					3.1E+07	4.2E+03	1.2E+03	9.2E+02					1.0E+08	2.3E+04	1.5E+04	9.2E+03
Prometryn					8.2E+06	1.1E+03	3.1E+02	2.4E+02					2.7E+07	6.2E+03	4.1E+03	2.5E+03
Pronamide					1.5E+08	2.1E+04	5.9E+03	4.6E+03					5.0E+08	1.2E+05	7.7E+04	4.6E+04
Propachlor					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Propanil					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Propargite					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Propargyl alcohol					4.1E+06	5.6E+02	1.6E+02	1.2E+02					1.3E+07	3.1E+03	2.0E+03	1.2E+03
Propazine					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Propham					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Propiconazole					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
iso-Propylbenzene					1.6E+02		7.8E+03	1.6E+02					5.2E+02		1.0E+05	5.2E+02
n-Propylbenzene					7.1E+02		3.1E+03	5.8E+02					2.3E+03		4.1E+04	2.2E+03
Propylene glycol					1.8E+06	1.4E+05	3.9E+04	3.0E+04					5.8E+06	7.7E+05	5.1E+05	2.9E+05
Propylene glycol, monoethyl ether					1.4E+09	2.0E+05	5.5E+04	4.3E+04					4.7E+09	1.1E+06	7.2E+05	4.3E+05
Propylene glycol, monomethyl ether					1.2E+09	2.0E+05	5.5E+04	4.3E+04					3.8E+09	1.1E+06	7.2E+05	4.3E+05
Propylene oxide	7.0E+00		2.7E+00	1.9E+00	1.8E+02		6.7E+02	1.4E+02	1.5E+01		1.2E+01	6.6E+00	5.9E+02		8.8E+03	5.5E+02
Pursuit					5.1E+08	7.0E+04	2.0E+04	1.5E+04					1.7E+09	3.9E+05	2.6E+05	1.5E+05
Pydrin					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Pyridine					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Quinalphos					1.0E+06	1.4E+02	3.9E+01	3.1E+01					3.4E+06	7.7E+02	5.1E+02	3.1E+02
Quinoline	2.9E+03	6.7E-01	2.1E-01	1.6E-01					6.3E+03	1.4E+00	9.5E-01	5.7E-01				
RDX (Cyclonite)	8.0E+04	1.8E+01	5.8E+00	4.4E+00	6.2E+06	8.4E+02	2.3E+02	1.8E+02	1.7E+05	3.9E+01	2.6E+01	1.6E+01	2.0E+07	4.6E+03	3.1E+03	1.8E+03
Resmethrin					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
Ronnel					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Rotenone					8.2E+06	1.1E+03	3.1E+02	2.4E+02					2.7E+07	6.2E+03	4.1E+03	2.5E+03
Savey					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Selenious Acid						1.4E+03	3.9E+02	3.1E+02						7.7E+03	5.1E+03	3.1E+03
Selenium							3.9E+02	3.9E+02							5.1E+03	5.1E+03
Selenourea						1.4E+03	3.9E+02	3.1E+02						7.7E+03	5.1E+03	3.1E+03
Sethoxydim					1.9E+08	2.5E+04	7.0E+03	5.5E+03					6.1E+08	1.4E+05	9.2E+04	5.5E+04
Silver and compounds							3.9E+02	3.9E+02							5.1E+03	5.1E+03
Simazine	7.4E+04	1.7E+01	5.3E+00	4.1E+00	4.1E+06	1.4E+03	3.9E+02	3.1E+02	1.6E+05	3.6E+01	2.4E+01	1.4E+01	1.3E+07	7.7E+03	5.1E+03	3.1E+03
Sodium azide																
Sodium diethyldithiocarbamate	3.3E+04	7.5E+00	2.4E+00	1.8E+00	6.2E+07	8.4E+03	2.3E+03	1.8E+03	7.0E+04	1.6E+01	1.1E+01	6.4E+00	2.0E+08	4.6E+04	3.1E+04	1.8E+04
Sodium fluoroacetate					4.1E+04	5.6E+00	1.6E+00	1.2E+00					1.3E+05	3.1E+01	2.0E+01	1.2E+01

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
Sodium metavanadate					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Strontium, stable							4.7E+04	4.7E+04							6.1E+05	6.1E+05
Strychnine					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
Styrene					6.1E+03		1.6E+04	4.4E+03					2.0E+04		2.0E+05	1.8E+04
1,1'-Sulfonylbis (4-chlorobenzene)					2.1E+06		7.8E+01	7.8E+01					6.7E+06		1.0E+03	1.0E+03
Systhane					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
2,3,7,8-TCDD (dioxin)	5.9E-02	4.5E-05	4.3E-06	3.9E-06					1.3E-01	9.6E-05	1.9E-05	1.6E-05				
Tebuthiuron					1.4E+08	2.0E+04	5.5E+03	4.3E+03					4.7E+08	1.1E+05	7.2E+04	4.3E+04
Temephos					4.1E+07	5.6E+03	1.6E+03	1.2E+03					1.3E+08	3.1E+04	2.0E+04	1.2E+04
Terbacil					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Terbufos					5.1E+04	7.0E+00	2.0E+00	1.5E+00					1.7E+05	3.9E+01	2.6E+01	1.5E+01
Terbutryn					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
1,2,4,5-Tetrachlorobenzene					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
1,1,1,2-Tetrachloroethane	3.7E+00		2.5E+01	3.2E+00	6.6E+02		2.3E+03	5.2E+02	7.8E+00		1.1E+02	7.3E+00	2.2E+03		3.1E+04	2.0E+03
1,1,2,2-Tetrachloroethane	4.7E-01		3.2E+00	4.1E-01	1.3E+03		4.7E+03	1.0E+03	9.9E-01		1.4E+01	9.3E-01	4.3E+03		6.1E+04	4.0E+03
Tetrachloroethylene (PCE)	1.7E+00		1.2E+01	1.5E+00	6.8E+02		7.8E+02	3.6E+02	3.6E+00		5.5E+01	3.4E+00	2.2E+03		1.0E+04	1.8E+03
2,3,4,6-Tetrachlorophenol					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
p,a,a,a-Tetrachlorotoluene	4.4E+02	1.0E-01	3.2E-02	2.4E-02					9.4E+02	2.2E-01	1.4E-01	8.6E-02				
Tetrachlorovinphos	3.7E+05	8.4E+01	2.7E+01	2.0E+01	6.2E+07	8.4E+03	2.3E+03	1.8E+03	7.8E+05	1.8E+02	1.2E+02	7.2E+01	2.0E+08	4.6E+04	3.1E+04	1.8E+04
Tetraethyldithiopyrophosphate					1.0E+06	1.4E+02	3.9E+01	3.1E+01					3.4E+06	7.7E+02	5.1E+02	3.1E+02
Tetrahydrofuran	1.1E+01		8.4E+01	9.4E+00	1.4E+03		1.6E+04	1.3E+03	2.2E+01		3.8E+02	2.1E+01	4.7E+03		2.1E+05	4.6E+03
Thallium and compounds+++							5.2E+00	5.2E+00							6.7E+01	6.7E+01
Thiobencarb					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
Thiocyanate					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04
Thiofanox					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
Thiophanate-methyl					1.6E+08	2.2E+04	6.3E+03	4.9E+03					5.4E+08	1.2E+05	8.2E+04	4.9E+04
Thiram					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Tin and compounds							4.7E+04	4.7E+04							6.1E+05	6.1E+05
Toluene					6.8E+02		1.6E+04	6.6E+02					2.2E+03		2.0E+05	2.2E+03
Toluene-2,4-diamine	2.8E+03	6.3E-01	2.0E-01	1.5E-01					5.9E+03	1.4E+00	8.9E-01	5.4E-01				
Toluene-2,5-diamine					1.2E+09	1.7E+05	4.7E+04	3.7E+04					4.0E+09	9.3E+05	6.1E+05	3.7E+05
Toluene-2,6-diamine					4.1E+08	5.6E+04	1.6E+04	1.2E+04					1.3E+09	3.1E+05	2.0E+05	1.2E+05
p-Toluidine	4.7E+04	1.1E+01	3.4E+00	2.6E+00					9.9E+04	2.3E+01	1.5E+01	9.1E+00				
Toxaphene	7.9E+03	1.8E+00	5.8E-01	4.4E-01					1.7E+04	3.9E+00	2.6E+00	1.6E+00				
Tralomethrin					1.5E+07	2.1E+03	5.9E+02	4.6E+02					5.0E+07	1.2E+04	7.7E+03	4.6E+03
Triallate					2.7E+07	3.6E+03	1.0E+03	7.9E+02					8.7E+07	2.0E+04	1.3E+04	8.0E+03
Triasulfuron					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
1,2,4-Tribromobenzene					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Tributyltin oxide (TBTO)						8.4E+01	2.3E+01	1.8E+01						4.6E+02	3.1E+02	1.8E+02
2,4,6-Trichloroaniline	2.6E+05	6.0E+01	1.9E+01	1.4E+01					5.5E+05	1.3E+02	8.4E+01	5.1E+01				
2,4,6-Trichloroaniline hydrochloride	3.1E+05	7.0E+01	2.2E+01	1.7E+01					6.5E+05	1.5E+02	9.9E+01	5.9E+01				
1,2,4-Trichlorobenzene					3.8E+03		7.8E+02	6.5E+02					1.3E+04		1.0E+04	5.6E+03
1,1,1-Trichloroethane					2.2E+03		2.2E+04	2.0E+03					7.1E+03		2.9E+05	6.9E+03
1,1,2-Trichloroethane	7.8E-01		1.1E+01	7.3E-01	4.1E+01		3.1E+02	3.6E+01	1.7E+00		5.0E+01	1.6E+00	1.3E+02		4.1E+03	1.3E+02
Trichloroethylene (TCE)	5.5E-02		1.6E+00	5.3E-02	5.1E+01		2.3E+01	1.6E+01	1.2E-01		7.2E+00	1.1E-01	1.7E+02		3.1E+02	1.1E+02
Trichlorofluoromethane					3.9E+02		2.3E+04	3.9E+02					1.3E+03		3.1E+05	1.3E+03
2,4,5-Trichlorophenol					2.1E+08	2.8E+04	7.8E+03	6.1E+03					6.7E+08	1.5E+05	1.0E+05	6.2E+04
2,4,6-Trichlorophenol	8.2E+05	1.8E+02	5.8E+01	4.4E+01	2.1E+05	2.8E+01	7.8E+00	6.1E+00	1.7E+06	3.9E+02	2.6E+02	1.6E+02	6.7E+05	1.5E+02	1.0E+02	6.2E+01
"CAL-Modified PRG"	1.3E+05	2.9E+01	9.1E+00	6.9E+00					2.7E+05	6.2E+01	4.1E+01	2.5E+01				
2,4,5-Trichlorophenoxyacetic Acid					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
2-(2,4,5-Trichlorophenoxy) propionic acid					1.6E+07	2.2E+03	6.3E+02	4.9E+02					5.4E+07	1.2E+04	8.2E+03	4.9E+03
1,1,2-Trichloropropane					1.6E+01		3.9E+02	1.5E+01					5.1E+01		5.1E+03	5.1E+01

CONTAMINANT	RESIDENTIAL SOIL								INDUSTRIAL SOIL							
	Cancer Risk = 1E-06				Chronic HQ = 1				Cancer Risk = 1E-06				Chronic HQ = 1			
	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)	soil-inhale (mg/kg)	soil-dermal (mg/kg)	soil-ingest (mg/kg)	combined (mg/kg)
1,2,3-Trichloropropane	5.1E-03		3.2E-01	5.0E-03	3.3E+00		4.7E+02	3.3E+00	1.1E-02		1.4E+00	1.1E-02	1.1E+01		6.1E+03	1.1E+01
1,2,3-Trichloropropene					1.2E+01		3.9E+02	1.2E+01					3.9E+01		5.1E+03	3.8E+01
Tridiphane					6.2E+06	8.4E+02	2.3E+02	1.8E+02					2.0E+07	4.6E+03	3.1E+03	1.8E+03
Triethylamine					2.8E+01		1.6E+02	2.3E+01					9.0E+01		2.0E+03	8.6E+01
Trifluralin	1.1E+06	2.6E+02	8.3E+01	6.3E+01	1.5E+07	2.1E+03	5.9E+02	4.6E+02	2.4E+06	5.6E+02	3.7E+02	2.2E+02	5.0E+07	1.2E+04	7.7E+03	4.6E+03
Trimellitic Anhydride (TMAN)					2.9E+05	3.9E+01	1.1E+01	8.6E+00					9.4E+05	2.2E+02	1.4E+02	8.6E+01
1,2,4-Trimethylbenzene					5.2E+01		3.9E+03	5.2E+01					1.7E+02		5.1E+04	1.7E+02
1,3,5-Trimethylbenzene					2.1E+01		3.9E+03	2.1E+01					7.0E+01		5.1E+04	7.0E+01
Trimethyl phosphate	2.4E+05	5.5E+01	1.7E+01	1.3E+01					5.1E+05	1.2E+02	7.7E+01	4.7E+01				
1,3,5-Trinitrobenzene					6.2E+07	8.4E+03	2.3E+03	1.8E+03					2.0E+08	4.6E+04	3.1E+04	1.8E+04
Trinitrophenylmethylnitramine					2.1E+07	2.8E+03	7.8E+02	6.1E+02					6.7E+07	1.5E+04	1.0E+04	6.2E+03
2,4,6-Trinitrotoluene	2.9E+05	6.7E+01	2.1E+01	1.6E+01	1.0E+06	1.4E+02	3.9E+01	3.1E+01	6.3E+05	1.4E+02	9.5E+01	5.7E+01	3.4E+06	7.7E+02	5.1E+02	3.1E+02
Triphenylphosphine oxide					1.0E+07	1.4E+03	3.9E+02	3.1E+02					3.4E+07	7.7E+03	5.1E+03	3.1E+03
Tris(2-chloroethyl) phosphate	2.8E+06	6.3E+02	2.0E+02	1.5E+02	2.3E+08	3.1E+04	8.6E+03	6.7E+03	5.9E+06	1.4E+03	8.9E+02	5.4E+02	7.4E+08	1.7E+05	1.1E+05	6.8E+04
Uranium (chemical toxicity only)	SEE RAD GUIDANCE						1.6E+01	1.6E+01	SEE RAD GUIDANCE						2.0E+02	2.0E+02
Vanadium and compounds							5.5E+02	5.5E+02							7.2E+03	7.2E+03
Vernam					2.1E+06	2.8E+02	7.8E+01	6.1E+01					6.7E+06	1.5E+03	1.0E+03	6.2E+02
Vinclozolin					5.1E+07	7.0E+03	2.0E+03	1.5E+03					1.7E+08	3.9E+04	2.6E+04	1.5E+04
Vinyl acetate					4.3E+02		7.8E+04	4.3E+02					1.4E+03		1.0E+06	1.4E+03
Vinyl bromide	2.0E-01		5.8E+00	1.9E-01	4.4E+00		6.7E+01	4.1E+00	4.3E-01		2.6E+01	4.2E-01	1.4E+01		8.8E+02	1.4E+01
Vinyl chloride (child/adult)+++	1.1E-01		2.8E-01	7.9E-02	4.6E+01		2.3E+02	3.9E+01								
Vinyl chloride (adult)									9.3E-01		3.8E+00	7.5E-01	1.5E+02		3.1E+03	1.4E+02
Warfarin					6.2E+05	8.4E+01	2.3E+01	1.8E+01					2.0E+06	4.6E+02	3.1E+02	1.8E+02
Xylenes					2.8E+02	2.0E+05	5.5E+04	2.7E+02					9.0E+02	1.1E+06	7.2E+05	9.0E+02
Zinc							2.3E+04	2.3E+04							3.1E+05	3.1E+05
Zinc phosphide							2.3E+01	2.3E+01							3.1E+02	3.1E+02
Zineb					1.0E+08	1.4E+04	3.9E+03	3.1E+03					3.4E+08	7.7E+04	5.1E+04	3.1E+04

PHYSICAL CHEMICAL DATA FOR VOLATILE ORGANIC COMPOUNDS

CONTAMINANT		MW (g/mol)	H (atm-m3/mol)	H' (dimensionless)	Di (cm^2/s)	Dw (cm^2/s)	Koc (cm^3/g)	Kd (cm^3/g)	S (mg/L-water)	DA (cm^2/s)	VF (m^3/kg)	SAT (mg/kg)
Acetaldehyde		4.4E+01	7.9E-05	3.2E-03	1.2E-01	1.4E-05	1.8E+01	1.1E-01	1.0E+06	1.0E-04	1.3E+04	2.1E+05
Acetone		5.8E+01	3.9E-05	1.6E-03	1.2E-01	1.1E-05	5.8E-01	3.5E-03	1.0E+06	1.0E-04	1.3E+04	1.0E+05
Acetonitrile		4.1E+01	2.0E-05	8.2E-04	1.3E-01	1.7E-05	1.6E+01	9.4E-02	1.0E+06	2.9E-05	2.3E+04	1.9E+05
Acrolein		5.6E+01	1.2E-04	4.9E-03	1.1E-01	1.2E-05	2.1E+01	1.3E-01	2.1E+05	1.2E-04	1.2E+04	4.8E+04
Acrylonitrile		5.3E+01	8.8E-05	3.6E-03	1.1E-01	1.3E-05	8.5E-01	5.1E-03	7.9E+04	1.9E-04	9.0E+03	8.4E+03
Benzene		7.8E+01	5.6E-03	2.3E-01	8.8E-02	9.8E-06	5.9E+01	3.5E-01	1.8E+03	2.1E-03	2.7E+03	8.7E+02
Benzyl chloride		1.3E+02	5.1E-05	2.1E-03	6.7E-02	7.8E-06	5.0E+01	3.0E-01	3.3E+03	1.8E-05	2.9E+04	1.3E+03
1,1-Biphenyl		1.5E+02	3.0E-04	1.2E-02	4.0E-02	8.2E-06	7.8E+03	4.7E+01	7.5E+00	5.5E-07	1.7E+05	3.5E+02
Bis(2-chloroethyl)ether		1.4E+02	1.8E-05	7.4E-04	6.9E-02	7.5E-06	7.6E+01	4.6E-01	1.7E+04	4.9E-06	5.7E+04	9.6E+03
Bis(2-chloroisopropyl)ether		1.7E+02	1.1E-04	4.6E-03	6.3E-02	6.4E-06	6.1E+01	3.7E-01	1.7E+03	3.3E-05	2.2E+04	7.9E+02
Bis(chloromethyl)ether		1.2E+02	2.0E-04	8.2E-03	8.9E-02	9.4E-06	1.2E+00	7.2E-03	2.2E+04	3.5E-04	6.7E+03	2.4E+03
Bis(2-chloro-1-methylethyl)ether		1.7E+02	1.1E-04	4.6E-03	6.3E-02	6.4E-06	6.1E+01	3.7E-01	1.7E+03	3.3E-05	2.2E+04	7.9E+02
Bromobenzene	SURROGATE = chlorobenzene	MW < 200	3.7E-03	1.5E-01	7.3E-02	8.7E-06	2.2E+02	1.3E+00	4.7E+02	3.9E-04	6.3E+03	6.9E+02
Bromodichloromethane		1.6E+02	1.6E-03	6.6E-02	3.0E-02	1.1E-05	5.5E+01	3.3E-01	6.7E+03	2.3E-04	8.3E+03	3.0E+03
Bromomethane		9.5E+01	6.2E-03	2.6E-01	7.3E-02	1.2E-05	9.0E+00	5.4E-02	1.5E+04	4.8E-03	1.8E+03	3.1E+03
1,3-Butadiene		5.4E+01	1.8E-01	7.3E+00	9.8E-02	1.1E-05	1.2E+02	7.2E-01	7.4E+02	1.7E-02	9.6E+02	1.6E+03
n-Butylbenzene		1.3E+02	1.3E-02	5.4E-01	7.5E-02	7.8E-06	2.8E+03	1.7E+01	1.4E+01	1.2E-04	1.1E+04	2.4E+02
sec-Butylbenzene		1.3E+02	1.9E-02	7.7E-01	7.5E-02	7.8E-06	2.2E+03	1.3E+01	1.7E+01	2.3E-04	8.3E+03	2.2E+02
tert-Butylbenzene		1.3E+02	1.3E-02	5.2E-01	7.5E-02	7.8E-06	2.2E+03	1.3E+01	3.0E+01	1.5E-04	1.0E+04	3.9E+02
Carbon disulfide		7.6E+01	3.0E-02	1.2E+00	1.0E-01	1.0E-05	4.6E+01	2.7E-01	1.2E+03	1.1E-02	1.2E+03	7.2E+02
Carbon tetrachloride		1.5E+02	3.0E-02	1.2E+00	7.8E-02	8.8E-06	1.7E+02	1.0E+00	7.9E+02	3.7E-03	2.1E+03	1.1E+03
2-Chloroacetophenone	SURROGATE = Chlorobenzene	MW < 200	3.7E-02	1.5E+00	7.2E-02	6.8E-06	3.3E+02	2.0E+00	4.7E+02	2.4E-03	2.6E+03	1.1E+03
Chlorobenzene		1.1E+02	3.7E-03	1.5E-01	7.3E-02	8.7E-06	2.2E+02	1.3E+00	4.7E+02	4.0E-04	6.3E+03	6.8E+02
2-Chloro-1,3-butadiene		8.8E+01	3.2E-02	1.3E+00	1.1E-01	1.1E-05	5.0E+01	3.0E-01	7.4E+02	1.2E-02	1.2E+03	4.8E+02
1-Chlorobutane	SURROGATE = 2-Chloro-1,3-butadiene	MW < 200	3.2E-02	1.3E+00	1.1E-01	1.1E-05	5.0E+01	3.0E-01	7.4E+02	1.2E-02	1.2E+03	4.8E+02
1-Chloro-1,1-difluoroethane	SURROGATE = Dichlorodifluoromethane	MW < 200	1.0E-01	4.1E+00	8.0E-02	1.1E-05	5.8E+01	3.5E-01	2.8E+02	1.4E-02	1.1E+03	3.4E+02
Chlorodifluoromethane	SURROGATE = Dichlorodifluoromethane	MW < 200	1.0E-01	4.1E+00	8.0E-02	1.1E-05	5.8E+01	3.5E-01	2.8E+02	1.4E-02	1.1E+03	3.4E+02
Chloroethane		6.5E+01	1.1E-02	4.5E-01	1.0E-01	1.2E-05	1.5E+01	8.8E-02	5.7E+03	9.0E-03	1.3E+03	1.6E+03
Chloroform		1.2E+02	3.7E-03	1.5E-01	1.0E-01	1.0E-05	4.0E+01	2.4E-01	7.9E+03	2.2E-03	2.7E+03	2.9E+03
"CAL-Modified PRG"		1.2E+02	3.7E-03	1.5E-01	1.0E-01	1.0E-05	4.0E+01	2.4E-01	7.9E+03	2.2E-03	2.7E+03	2.9E+03
Chloromethane		5.1E+01	2.4E-02	9.8E-01	1.1E-01	6.5E-06	3.5E+01	2.1E-01	8.2E+03	1.1E-02	1.2E+03	4.0E+03
beta-Chloronaphthalene		1.6E+02	3.1E-04	1.3E-02	3.5E-02	8.8E-06	1.6E+03	9.3E+00	1.2E+01	2.4E-06	8.0E+04	1.1E+02
o-Chloronitrobenzene	SURROGATE = Nitrobenzene	MW < 200	2.4E-05	9.8E-04	7.6E-02	8.6E-06	6.5E+01	3.9E-01	2.1E+03	8.1E-06	4.4E+04	1.0E+03
p-Chloronitrobenzene	SURROGATE = Nitrobenzene	MW < 200	2.4E-05	9.8E-04	7.6E-02	8.6E-06	6.5E+01	3.9E-01	2.1E+03	8.1E-06	4.4E+04	1.0E+03
2-Chlorophenol		1.3E+02	3.9E-04	1.6E-02	5.0E-01	9.5E-06	4.0E+02	2.4E+00	2.2E+04	1.7E-04	9.7E+03	5.5E+04
2-Chloropropane	SURROGATE = 1,2-Dichloropropane	MW < 200	2.3E-03	9.4E-02	8.0E-02	1.0E-05	5.1E+01	3.1E-01	2.7E+03	9.3E-04	4.1E+03	1.1E+03
o-Chlorotoluene	SURROGATE = Chlorobenzene	MW < 200	3.5E-03	1.4E-01	7.2E-02	8.7E-06	1.6E+02	9.6E-01	4.7E+02	4.9E-04	5.6E+03	5.1E+02
Crotonaldehyde	SURROGATE = Methyl methacrylate	MW < 200	2.4E-01	1.0E+01	9.1E-02	1.0E-05	8.4E+02	5.0E+00	2.0E+01	6.8E-03	1.5E+03	1.4E+02
Cumene (isopropylbenzene)		1.2E+02	1.2E-02	4.7E-01	7.5E-02	7.1E-06	2.2E+02	1.3E+00	6.1E+01	1.2E-03	3.6E+03	9.2E+01
Cyanide (hydrogen)		2.7E+01	1.3E-04	5.3E-03	1.8E-01	1.8E-05	1.7E+01	1.0E-01	1.0E+06	2.4E-04	8.1E+03	2.1E+05
Cyanogen		5.2E+01	5.0E-03	2.1E-01	9.6E-02	1.0E-05	2.6E+01	1.6E-01	8.5E+03	3.5E-03	2.1E+03	2.5E+03
Cyanogen bromide		5.2E+01	5.0E-03	2.1E-01	9.6E-02	1.0E-05	2.6E+01	1.6E-01	8.5E+03	3.5E-03	2.1E+03	2.5E+03
Cyanogen chloride		5.2E+01	5.0E-03	2.1E-01	9.6E-02	1.0E-05	2.6E+01	1.6E-01	8.5E+03	3.5E-03	2.1E+03	2.5E+03

CONTAMINANT		PHYSICAL CHEMICAL DATA FOR VOLATILE ORGANIC COMPOUNDS										
		MW (g/mol)	H (atm-m3/mol)	H' (dimensionless)	Di (cm^2/s)	Dw (cm^2/s)	Koc (cm^3/g)	Kd (cm^3/g)	S (mg/L-water)	DA (cm^2/s)	VF (m^3/kg)	SAT (mg/kg)
Cyclohexane		8.4E+01	2.0E-01	8.2E+00	8.0E-02	9.0E-06	1.6E+02	9.6E-01	5.5E+01	1.3E-02	1.1E+03	1.4E+02
Dibenzofuran		1.7E+02	1.3E-05	5.3E-04	6.0E-02	1.0E-05	7.8E+03	4.7E+01	3.1E+00	3.7E-08	6.5E+05	1.4E+02
Dibromochloromethane		2.1E+02	8.5E-04	3.5E-02	9.6E-02	1.0E-05	4.7E+02	2.8E+00	4.4E+03	6.0E-05	1.6E+04	1.3E+04
1,2-Dibromo-3-chloropropane		2.4E+02	1.5E-04	6.0E-03	2.1E-02	7.0E-06	2.8E+01	1.7E-01	1.2E+03	2.5E-05	2.5E+04	3.3E+02
"CAL-Modified PRG"		2.4E+02	1.5E-04	6.0E-03	2.1E-02	7.0E-06	2.8E+01	1.7E-01	1.2E+03	2.5E-05	2.5E+04	3.3E+02
1,2-Dibromoethane		1.9E+02	3.2E-04	1.3E-02	7.3E-02	8.1E-06	2.8E+01	1.7E-01	3.4E+03	1.8E-04	9.2E+03	9.2E+02
1,2-Dichlorobenzene		1.5E+02	1.9E-03	7.8E-02	6.9E-02	7.9E-06	6.2E+02	3.7E+00	1.6E+02	7.3E-05	1.5E+04	6.0E+02
1,3-Dichlorobenzene		1.5E+02	1.9E-03	7.8E-02	6.9E-02	7.9E-06	6.2E+02	3.7E+00	1.6E+02	7.3E-05	1.5E+04	6.0E+02
1,4-Dichlorobenzene		1.5E+02	2.4E-03	1.0E-01	6.9E-02	7.9E-06	6.2E+02	3.7E+00	7.4E+01	9.4E-05	1.3E+04	2.8E+02
1,4-Dichloro-2-butene		1.3E+02	2.6E-04	1.1E-02	7.3E-02	8.1E-06	4.8E+01	2.9E-01	2.8E+03	1.0E-04	1.2E+04	1.1E+03
Dichlorodifluoromethane		1.2E+02	1.0E-01	4.1E+00	8.0E-02	1.1E-05	5.8E+01	3.5E-01	2.8E+02	1.4E-02	1.1E+03	3.4E+02
1,1-Dichloroethane		9.9E+01	5.6E-03	2.3E-01	7.4E-02	1.1E-05	3.2E+01	1.9E-01	5.1E+03	2.7E-03	2.4E+03	1.7E+03
1,2-Dichloroethane		9.9E+01	9.8E-04	4.0E-02	1.0E-01	9.9E-06	1.7E+01	1.0E-01	8.5E+03	1.0E-03	3.9E+03	1.8E+03
1,1-Dichloroethylene		9.7E+01	2.6E-02	1.1E+00	9.0E-02	1.0E-05	5.9E+01	3.5E-01	2.3E+03	7.7E-03	1.4E+03	1.5E+03
1,2-Dichloroethylene (cis)		9.7E+01	4.1E-03	1.7E-01	7.4E-02	1.1E-05	3.6E+01	2.1E-01	3.5E+03	1.9E-03	2.9E+03	1.2E+03
1,2-Dichloroethylene (trans)		9.7E+01	9.4E-03	3.8E-01	7.1E-02	1.2E-05	5.3E+01	3.2E-01	6.3E+03	2.9E-03	2.3E+03	3.1E+03
1,2-Dichloropropane		1.1E+02	2.8E-03	1.1E-01	7.8E-02	8.7E-06	4.4E+01	2.6E-01	2.8E+03	1.2E-03	3.6E+03	1.1E+03
1,3-Dichloropropene		1.1E+02	1.8E-02	7.3E-01	6.3E-02	1.0E-05	4.6E+01	2.7E-01	2.8E+03	4.6E-03	1.8E+03	1.4E+03
Dicyclopentadiene		1.3E+02	1.1E-02	4.4E-01	6.7E-02	1.0E-05	5.7E+02	3.4E+00	1.8E+03	4.2E-04	6.1E+03	6.5E+03
Dimethylamine		4.5E+01	9.0E-05	3.7E-03	1.2E-01	1.3E-05	2.2E+00	1.3E-02	1.0E+06	2.0E-04	8.8E+03	1.1E+05
Epichlorohydrin		9.3E+01	3.2E-05	1.3E-03	8.8E-02	9.8E-06	3.5E+00	2.1E-02	6.0E+04	5.0E-05	1.8E+04	7.3E+03
Ethyl acetate		8.8E+01	1.4E-04	5.7E-03	7.3E-02	9.7E-06	5.9E+01	3.6E-01	8.0E+04	4.8E-05	1.8E+04	3.7E+04
Ethyl acrylate	SURROGATE = Methyl methacrylate	MW < 200	2.4E-01	9.8E+00	9.1E-02	8.6E-06	8.4E+02	5.0E+00	2.0E+01	6.7E-03	1.5E+03	1.4E+02
Ethylbenzene		1.1E+02	7.9E-03	3.2E-01	7.5E-02	7.8E-06	3.6E+02	2.2E+00	1.7E+02	5.4E-04	5.4E+03	4.0E+02
Ethyl chloride		6.5E+01	1.1E-02	4.5E-01	1.0E-01	1.2E-05	1.5E+01	8.8E-02	5.7E+03	9.0E-03	1.3E+03	1.6E+03
Ethylene oxide		4.4E+01	7.6E-05	3.1E-03	1.3E-01	1.5E-05	2.2E+00	1.3E-02	1.0E+06	1.8E-04	9.4E+03	1.1E+05
Ethyl ether	SURROGATE = Bis(2-chloroethyl)ether	MW < 200	1.3E-05	5.3E-04	7.0E-02	9.3E-06	1.4E+01	8.4E-02	1.0E+04	1.1E-05	3.8E+04	1.8E+03
Ethyl methacrylate	SURROGATE = Methyl methacrylate	MW < 200	2.4E-01	1.0E+01	9.1E-02	8.6E-06	8.4E+02	5.0E+00	2.0E+01	6.8E-03	1.5E+03	1.4E+02
Freon 113		1.9E+02	5.2E-01	2.1E+01	2.9E-02	8.1E-06	1.6E+02	9.6E-01	1.1E+03	6.3E-03	1.6E+03	5.6E+03
Furan		6.8E+01	5.4E-03	2.2E-01	1.0E-01	1.2E-05	1.2E+01	7.4E-02	1.0E+04	5.6E-03	1.7E+03	2.2E+03
n-Hexane		8.6E+01	1.2E-01	5.0E+00	2.0E-01	7.8E-06	8.9E+02	5.3E+00	1.8E+01	8.2E-03	1.4E+03	1.1E+02
Hydrogen cyanide		2.7E+01	1.3E-04	5.3E-03	1.8E-01	1.8E-05	1.7E+01	1.0E-01	1.0E+06	2.4E-04	8.1E+03	2.1E+05
Isobutanol		7.4E+01	1.2E-05	4.9E-04	8.6E-02	9.3E-06	6.2E+01	3.7E-01	8.5E+04	4.8E-06	5.7E+04	4.0E+04
Maleic hydrazide		1.1E+02	6.6E-03	2.7E-01	9.0E-02	1.1E-05	4.2E+01	2.5E-01	6.0E+03	3.2E-03	2.2E+03	2.4E+03
Methacrylonitrile	SURROGATE = Acrylonitrile	MW < 200	8.8E-05	3.6E-03	1.1E-01	1.3E-05	8.5E-01	5.1E-03	7.9E+04	2.0E-04	8.9E+03	8.4E+03
Methomyl		1.6E+02	3.8E-02	1.6E+00	6.9E-02	1.0E-05	1.5E+01	8.9E-02	1.7E+05	1.2E-02	1.2E+03	8.2E+04
Methyl acetate	SURROGATE = Acetone	MW < 200	2.1E-05	8.4E-04	1.0E-01	1.0E-05	2.2E+00	1.3E-02	1.0E+06	4.1E-05	2.0E+04	1.1E+05
Methyl acrylate	SURROGATE = Methyl methacrylate	MW < 200	2.4E-01	9.8E+00	9.1E-02	8.6E-06	8.4E+02	5.0E+00	6.0E+01	6.7E-03	1.5E+03	4.2E+02
Methylcyclohexane		9.8E+01	4.3E-01	1.8E+01	7.0E-02	9.0E-06	2.2E+03	1.3E+01	1.4E+01	3.9E-03	2.0E+03	2.3E+02
Methylene bromide		1.7E+02	9.0E-04	3.7E-02	9.6E-02	1.0E-05	2.5E+01	1.5E-01	1.2E+04	7.2E-04	4.7E+03	3.0E+03
Methylene chloride		8.5E+01	2.2E-03	9.0E-02	1.0E-01	1.2E-05	1.2E+01	7.0E-02	1.3E+04	2.5E-03	2.5E+03	2.5E+03
Methyl ethyl ketone		7.2E+01	2.7E-05	1.1E-03	9.0E-02	9.8E-06	4.5E+00	2.7E-02	2.7E+05	4.2E-05	1.9E+04	3.4E+04
Methyl isobutyl ketone		1.0E+02	1.4E-04	5.7E-03	7.5E-02	7.8E-06	1.3E+02	8.0E-01	1.9E+04	2.5E-05	2.5E+04	1.7E+04

PHYSICAL CHEMICAL DATA FOR VOLATILE ORGANIC COMPOUNDS

CONTAMINANT		MW (g/mol)	H (atm-m3/mol)	H' (dimensionless)	Di (cm^2/s)	Dw (cm^2/s)	Koc (cm^3/g)	Kd (cm^3/g)	S (mg/L-water)	DA (cm^2/s)	VF (m^3/kg)	SAT (mg/kg)
Methyl methacrylate		1.0E+02	3.4E-04	1.4E-02	7.7E-02	8.6E-06	1.3E+01	7.9E-02	1.5E+04	3.1E-04	7.1E+03	2.7E+03
Methyl styrene (mixture)	SURROGATE = Nitrobenzene	MW < 200	2.3E-03	9.4E-02	7.1E-02	8.0E-06	3.6E+02	2.2E+00	3.0E+02	1.5E-04	1.0E+04	6.8E+02
Methyl styrene (alpha)	SURROGATE = Styrene	MW < 200	2.3E-03	9.4E-02	7.1E-02	8.0E-06	3.6E+02	2.2E+00	3.0E+02	1.5E-04	1.0E+04	6.8E+02
Methyl tertbutyl ether (MTBE)		8.5E+01	5.9E-04	2.4E-02	8.0E-02	1.0E-05	6.0E+00	3.6E-02	1.5E+05	7.1E-04	4.7E+03	2.1E+04
"CAL-Modified PRG"		8.5E+01	5.9E-04	2.4E-02	8.0E-02	1.0E-05	6.0E+00	3.6E-02	1.5E+05	7.1E-04	4.7E+03	2.1E+04
Nitrobenzene		1.2E+02	2.4E-05	9.8E-04	7.6E-02	8.6E-06	6.5E+01	3.9E-01	2.1E+03	8.1E-06	4.4E+04	1.0E+03
N-Nitrosodi-n-butylamine		1.6E+02	3.2E-04	1.3E-02	5.8E-02	9.7E-06	2.6E+02	1.5E+00	1.3E+03	2.4E-05	2.6E+04	2.1E+03
m-Nitrotoluene	SURROGATE = Nitrobenzene	MW < 200	2.4E-05	9.8E-04	7.6E-02	8.6E-06	6.5E+01	3.9E-01	2.1E+03	8.1E-06	4.4E+04	1.0E+03
o-Nitrotoluene	SURROGATE = Nitrobenzene	MW < 200	2.4E-05	9.8E-04	7.6E-02	8.6E-06	6.5E+01	3.9E-01	2.1E+03	8.1E-06	4.4E+04	1.0E+03
p-Nitrotoluene	SURROGATE = Nitrobenzene	MW < 200	2.4E-05	9.8E-04	7.6E-02	8.6E-06	6.5E+01	3.9E-01	2.1E+03	8.1E-06	4.4E+04	1.0E+03
Polynuclear aromatic hydrocarbons												
Acenaphthene		1.5E+02	1.6E-04	6.4E-03	4.2E-02	7.7E-06	4.9E+03	2.9E+01	4.2E+00	4.7E-07	1.8E+05	1.3E+02
Anthracene		1.8E+02	6.5E-05	2.7E-03	3.2E-02	7.7E-06	2.4E+04	1.4E+02	4.3E-02	3.2E-08	7.0E+05	6.1E+00
Chrysene		2.3E+02	9.5E-05	3.9E-03	2.5E-02	6.2E-06	4.0E+05	2.4E+03	1.6E-03	2.1E-09	2.7E+06	3.8E+00
Fluorene		1.7E+02	7.7E-05	3.2E-03	6.1E-02	7.9E-06	1.4E+04	8.3E+01	1.9E+00	1.2E-07	3.6E+05	1.6E+02
Naphthalene		1.3E+02	4.8E-04	2.0E-02	5.9E-02	7.5E-06	1.2E+03	7.1E+00	3.1E+01	8.4E-06	4.3E+04	2.2E+02
Pyrene		2.0E+02	1.1E-05	4.5E-04	2.7E-02	7.2E-06	1.1E+05	6.3E+02	1.4E-01	1.1E-09	3.8E+06	8.5E+01
iso-Propylbenzene		1.2E+02	1.2E+00	4.9E+01	7.5E-02	7.1E-06	2.2E+02	1.3E+00	6.1E+01	1.8E-02	9.3E+02	6.5E+02
n-Propylbenzene	SURROGATE = n-Butylbenzene	MW < 200	1.3E-02	5.4E-01	7.5E-02	7.8E-06	2.8E+03	1.7E+01	1.4E+01	1.2E-04	1.1E+04	2.4E+02
Propylene oxide		5.8E+01	8.5E-05	3.5E-03	1.2E-01	1.3E-05	2.5E+01	1.5E-01	4.8E+05	8.7E-05	1.3E+04	1.2E+05
Styrene		1.0E+02	2.8E-03	1.1E-01	7.1E-02	8.0E-06	7.8E+02	4.7E+00	3.1E+02	8.7E-05	1.3E+04	1.5E+03
1,1,1,2-Tetrachloroethane		1.7E+02	3.5E-04	1.4E-02	7.1E-02	7.9E-06	9.3E+01	5.6E-01	3.0E+03	7.9E-05	1.4E+04	2.0E+03
1,1,2,2-Tetrachloroethane		1.7E+02	3.5E-04	1.4E-02	7.1E-02	7.9E-06	9.3E+01	5.6E-01	3.0E+03	7.9E-05	1.4E+04	2.0E+03
Tetrachloroethylene (PCE)		1.7E+02	1.8E-02	7.5E-01	7.2E-02	8.2E-06	1.6E+02	9.3E-01	2.0E+02	2.4E-03	2.6E+03	2.3E+02
Tetrahydrofuran		7.2E+01	7.0E-05	2.9E-03	9.8E-02	1.1E-05	9.5E-01	5.7E-03	1.0E+06	1.4E-04	1.1E+04	1.1E+05
Toluene		9.2E+01	6.6E-03	2.7E-01	8.7E-02	8.6E-06	1.8E+02	1.1E+00	5.3E+02	9.9E-04	4.0E+03	6.5E+02
1,2,4-Trichlorobenzene		1.8E+02	1.4E-03	5.8E-02	3.0E-02	8.2E-06	1.8E+03	1.1E+01	3.0E+02	8.4E-06	4.3E+04	3.2E+03
1,1,1-Trichloroethane		1.3E+02	1.7E-02	7.1E-01	7.8E-02	8.8E-06	1.1E+02	6.6E-01	1.3E+03	3.2E-03	2.2E+03	1.2E+03
1,1,2-Trichloroethane		1.3E+02	9.1E-04	3.7E-02	7.8E-02	8.8E-06	5.0E+01	3.0E-01	4.4E+03	3.7E-04	6.5E+03	1.8E+03
Trichloroethylene (TCE)		1.3E+02	1.0E-02	4.2E-01	7.9E-02	9.1E-06	1.7E+02	1.0E+00	1.1E+03	1.5E-03	3.3E+03	1.3E+03
Trichlorofluoromethane		1.4E+02	9.7E-02	4.0E+00	8.7E-02	1.3E-05	1.6E+02	9.6E-01	1.1E+03	1.0E-02	1.3E+03	2.0E+03
1,1,2-Trichloropropane		1.5E+02	2.9E-02	1.2E+00	4.0E-02	9.3E-06	5.1E+01	3.1E-01	2.7E+03	3.9E-03	2.0E+03	1.7E+03
1,2,3-Trichloropropane		1.5E+02	2.8E-02	1.1E+00	7.1E-02	7.9E-06	5.1E+01	3.1E-01	2.7E+03	6.8E-03	1.5E+03	1.7E+03
1,2,3-Trichloropropene	SURROGATE = 1,2,3-Trichloropropane	MW < 200	2.8E-02	1.1E+00	7.1E-02	7.9E-06	5.1E+01	3.1E-01	2.7E+03	6.8E-03	1.5E+03	1.7E+03
Triethylamine	SURROGATE = Dimethylamine	MW < 200	9.0E-05	3.7E-03	1.2E-01	1.3E-05	2.2E+00	1.3E-02	1.0E+06	2.0E-04	8.8E+03	1.1E+05
1,2,4-Trimethylbenzene		1.2E+02	5.7E-03	2.3E-01	7.5E-02	7.1E-06	3.7E+03	2.2E+01	5.7E+01	4.1E-05	2.0E+04	1.3E+03
1,3,5-Trimethylbenzene		1.2E+02	7.7E-03	3.2E-01	7.5E-02	7.1E-06	8.2E+02	4.9E+00	4.8E+01	2.4E-04	8.0E+03	2.4E+02
Vinyl acetate		8.6E+01	5.1E-04	2.1E-02	8.5E-02	9.2E-06	5.3E+00	3.2E-02	2.0E+04	6.8E-04	4.8E+03	2.7E+03
Vinyl bromide	SURROGATE = Bromomethane	MW < 200	6.2E-03	2.6E-01	1.0E-01	1.2E-05	1.3E+02	7.6E-01	1.8E+04	1.5E-03	3.3E+03	1.6E+04
Vinyl chloride (child/adult)+++		6.3E+01	2.7E-02	1.1E+00	1.1E-01	1.2E-06	1.9E+01	1.1E-01	2.8E+03	1.5E-02	1.0E+03	1.2E+03
Xylenes		1.1E+02	7.3E-03	3.0E-01	7.0E-02	7.8E-06	4.1E+02	2.4E+00	1.6E+02	4.2E-04	6.1E+03	4.2E+02

Attachment H3

Risk Characterization Tables

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 1 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.1. RME
Calculation of Noncancer Hazards
Worker: Reasonable Maximum Exposure Scenario
Treatment Area 1 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	16	mg/kg	--	16	mg/kg	M	7.8E-6	mg/kg-day	0.0003	mg/kg-day	--	--	0.026
	Organic Compounds													
	Pentachlorophenol	780	mg/kg	--	780	mg/kg	M	3.8E-4	mg/kg-day	0.03	mg/kg-day	--	--	0.013
	PAHs													
	2-Methylnapthalene	11	mg/kg	--	11	mg/kg	M	5.4E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00027
													Hazard Index:	0.039
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	16	mg/kg	0.03	16	mg/kg	M	3.1E-6	mg/kg-day	0.0003	mg/kg-day	--	--	0.010
	Organic Compounds													
	Pentachlorophenol	780	mg/kg	0.25	780	mg/kg	M	1.3E-3	mg/kg-day	0.03	mg/kg-day	--	--	0.042
	PAHs													
	2-Methylnapthalene	11	mg/kg	0.13	11	mg/kg	M	9.2E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00046
													Hazard Index:	0.053
													Total Hazard Index Across All Exposure Routes/Pathways:	0.092

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 2 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.2. RME
Calculation of Noncancer Hazards
Worker: Reasonable Maximum Exposure Scenario
Treatment Area 2 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Organic Compounds**													
	PAHs													
	Benz[a]anthracene	32	mg/kg	--	32	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	11	mg/kg	--	11	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	27	mg/kg	--	27	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[k]fluoranthene	12	mg/kg	--	12	mg/kg	M	--	--	ND	--	--	--	--
	Phenanthrene	220	mg/kg	--	220	mg/kg	M	1.1E-4	mg/kg-day	0.02	mg/kg-day	--	--	0.0054
													Hazard Index:	0.0054
Dermal	**Organic Compounds**													
	PAHs													
	Benz[a]anthracene	32	mg/kg	0.13	32	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	11	mg/kg	0.13	11	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	27	mg/kg	0.13	27	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[k]fluoranthene	12	mg/kg	0.13	12	mg/kg	M	--	--	ND	--	--	--	--
	Phenanthrene	220	mg/kg	0.13	220	mg/kg	M	2.E-04	mg/kg-day	0.02	mg/kg-day	--	--	0.0092
													Hazard Index:	0.0092
													Total Hazard Index Across All Exposure Routes/Pathways:	0.015

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Sce... Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 1 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Tab... 1.3.3. RME
Calculation of Noncancer Hazards
Adult Soil Exposure: Reasonable Maximum Exposure Scenario
Treatment Area 1 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	3.6	mg/kg	--	3.6	mg/kg	M	3.5E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.00116
	Chromium	20.6	mg/kg	--	20.6	mg/kg	M	2.0E-6	mg/kg-day	0.003	mg/kg-day	--	--	0.00067
	Organic Compounds													
	Pentachlorophenol	782	mg/kg	--	782	mg/kg	M	7.7E-5	mg/kg-day	0.03	mg/kg-day	--	--	0.00255
	PAHs													
	2-Methylnaphthalene	11.2	mg/kg	--	11.2	mg/kg	M	1.1E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00005
													Hazard Index:	0.00444
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	3.6	mg/kg	0.03	3.6	mg/kg	M	6.9E-8	mg/kg-day	0.0003	mg/kg-day	--	--	0.00023
	Chromium	20.6	mg/kg	0.01	20.6	mg/kg	M	1.3E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.00044
	Organic Compounds													
	Pentachlorophenol	782	mg/kg	0.25	782	mg/kg	M	1.3E-4	mg/kg-day	0.03	mg/kg-day	--	--	0.00421
	PAHs													
	2-Methylnaphthalene	11.2	mg/kg	0.13	11.2	mg/kg	M	9.4E-7	mg/kg-day	0.02	mg/kg-day	--	--	0.00005
													Hazard Index:	0.00493
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0094

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 2 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table 11.3.4. RME
Calculation of Noncancer Hazards
Adult Soil Exposure: Reasonable Maximum Exposure Scenario
Treatment Area 2 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	1.3	mg/kg	--	1.3	mg/kg	M	1.3E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.00044
	Chromium	19	mg/kg	--	19	mg/kg	M	1.9E-6	mg/kg-day	0.003	mg/kg-day	--	--	0.00063
	Organic Compounds													
	Benzene	0.70	mg/kg	--	0.70	mg/kg	M	6.8E-8	mg/kg-day	0.003	mg/kg-day	--	--	0.00002
	Pentachlorophenol	542	mg/kg	--	542	mg/kg	M	5.3E-5	mg/kg-day	0.03	mg/kg-day	--	--	0.00177
	PAHs													
	2-Methylnaphthalene	194	mg/kg	--	194	mg/kg	M	1.9E-5	mg/kg-day	0.02	mg/kg-day	--	--	0.00095
	Acenaphthylene	11.2	mg/kg	--	11.2	mg/kg	M	1.1E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00005
	Benz[a]anthracene	33.9	mg/kg	--	33.9	mg/kg	M	--	--	ND	--	--	--	--
	Benz[a]pyrene	11.4	mg/kg	--	11.4	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(b)fluoranthene	26.7	mg/kg	--	26.7	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(k)fluoranthene	11.6	mg/kg	--	11.6	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Fluoranthene	268	mg/kg	--	268	mg/kg	M	2.6E-5	mg/kg-day	0.04	mg/kg-day	--	--	0.00066
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Naphthalene	154	mg/kg	--	154	mg/kg	M	1.5E-5	mg/kg-day	0.02	mg/kg-day	--	--	0.00075
	Phenanthrene	499	mg/kg	--	499	mg/kg	M	4.9E-5	mg/kg-day	0.02	mg/kg-day	--	--	0.00244
													Hazard Index:	0.0077
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	1.3	mg/kg	0.03	1.3	mg/kg	M	2.6E-8	mg/kg-day	0.0003	mg/kg-day	--	--	0.000087
	Chromium	19	mg/kg	0.01	19	mg/kg	M	1.3E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.000418
	Organic Compounds													
	Benzene	0.70	mg/kg	1.0	0.70	mg/kg	M	4.5E-7	mg/kg-day	0.003	mg/kg-day	--	--	0.000150
	Pentachlorophenol	542	mg/kg	0.25	542	mg/kg	M	8.8E-5	mg/kg-day	0.03	mg/kg-day	--	--	0.002917
	PAHs													
	2-Methylnaphthalene	194	mg/kg	0.13	194	mg/kg	M	1.6E-5	mg/kg-day	0.02	mg/kg-day	--	--	0.000814
	Acenaphthylene	11.2	mg/kg	0.13	11.2	mg/kg	M	9.4E-7	mg/kg-day	0.02	mg/kg-day	--	--	0.000047
	Benz[a]anthracene	33.9	mg/kg	0.13	33.9	mg/kg	M	--	--	ND	--	--	--	--
	Benz[a]pyrene	11.4	mg/kg	0.13	11.4	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(b)fluoranthene	26.7		0.13	26.7	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(k)fluoranthene	11.6		0.13	11.6	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Fluoranthene	268	mg/kg	0.13	268	mg/kg	M	2.2E-5	mg/kg-day	0.04	mg/kg-day	--	--	0.000562
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Naphthalene	154	mg/kg	0.13	154	mg/kg	M	1.3E-5	mg/kg-day	0.02	mg/kg-day	--	--	0.000646
	Phenanthrene	499	mg/kg	0.13	499	mg/kg	M	4.2E-5	mg/kg-day	0.02	mg/kg-day	--	--	0.002095
													Hazard Index:	0.0077
													Total Hazard Index Across All Exposure Routes/Pathways:	0.015

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
PAHs - Polycyclic aromatic hydrocarbons
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b). Toxicity values were adjusted for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Visitor Surface Soil Ingestion / Dermal

Table H.3.5. RME
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Church House Branch Sediments

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	4.9E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.0016
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.0016
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	1.3E-07	mg/kg-day	0.0003	mg/kg-day	--	--	0.00043
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.00043
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0021

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Visitor Surface Soil Ingestion / Dermal

Table H.3.6. RME
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Church House Branch Sediments

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	3.5E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.0012
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.0012
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	4.2E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00014
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.00014
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0013

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.7. RME
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	--	18	mg/kg	M	1.4E-6	mg/kg-day	0.0003	mg/kg-day	--	--	0.0047
	Chromium	32	mg/kg	--	32	mg/kg	M	2.5E-6	mg/kg-day	0.003	mg/kg-day	--	--	0.00083
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	6.1E-8	mg/kg-day	0.02	mg/kg-day	--	--	0.0000031
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	4.8E-7	mg/kg-day	0.02	mg/kg-day	--	--	0.000024
													Hazard Index:	0.0056
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	3.7E-07	mg/kg-day	0.0003	mg/kg-day	--	--	0.0012
	Chromium	32	mg/kg	0.01	32	mg/kg	M	2.2E-07	mg/kg-day	0.0003	mg/kg-day	--	--	0.00073
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	7.0E-08	mg/kg-day	0.02	mg/kg-day	--	--	0.0000035
	2-Methylnapthalene	6.1	mg/kg	0.13	6.1	mg/kg	M	5.5E-07	mg/kg-day	0.02	mg/kg-day	--	--	0.000027
													Hazard Index:	0.0020
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0076

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Visitor Surface Soil Ingestion / Dermal

Table H.3.8. RME
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Drainage Ditch Sediments

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	--	18	mg/kg	M	9.9E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.0033
	Chromium	32	mg/kg	--	32	mg/kg	M	1.8E-6	mg/kg-day	0.003	mg/kg-day	--	--	0.00058
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	4.3E-8	mg/kg-day	0.02	mg/kg-day	--	--	0.0000021
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	3.3E-7	mg/kg-day	0.02	mg/kg-day	--	--	0.000017
													Hazard Index:	0.0039
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	1.2E-07	mg/kg-day	0.0003	mg/kg-day	--	--	0.00040
	Chromium	32	mg/kg	0.01	32	mg/kg	M	7.1E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00024
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	2.3E-08	mg/kg-day	0.02	mg/kg-day	--	--	0.0000011
	2-Methylnapthalene	6.1	mg/kg	0.13	6.1	mg/kg	M	1.8E-07	mg/kg-day	0.02	mg/kg-day	--	--	0.0000088
													Hazard Index:	0.00065
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0045

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 1 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.9. RME
Calculation of Cancer Risks
Worker: Reasonable Maximum Exposure Scenario
Treatment Area 1 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	16	mg/kg	--	16	mg/kg	M	2.8E-6	mg/kg-day	1.5	(mg/kg-day)-1	4E-6
	Organic Compounds											
	Pentachlorophenol	780	mg/kg	--	780	mg/kg	M	1.4E-4	mg/kg-day	0.12	(mg/kg-day)-1	2E-5
	PAHs											
	2-Methylnapthalene	11	mg/kg	--	11	mg/kg	M	--	--	ND	--	--
											Total Risk:	2E-5
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	16	mg/kg	0.03	16	mg/kg	M	1.1E-6	mg/kg-day	1.5	(mg/kg-day)-1	2E-6
	Organic Compounds											
	Pentachlorophenol	780	mg/kg	0.25	780	mg/kg	M	4.5E-4	mg/kg-day	0.12	(mg/kg-day)-1	5E-5
	PAHs											
	2-Methylnapthalene	11	mg/kg	0.13	11	mg/kg	M	--	--	ND	--	--
											Total Risk:	6E-5
											Total Risk Across all Exposure Pathways:	8E-5

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b). Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 2 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.10. RME
Calculation of Cancer Risks
Worker: Reasonable Maximum Exposure Scenario
Treatment Area 2 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Organic Compounds**											
	PAHs											
	Benz[a]anthracene	32	mg/kg	--	32	mg/kg	M	5.6E-6	mg/kg-day	0.73	(mg/kg-day)-1	4E-6
	Benzo[a]pyrene	11	mg/kg	--	11	mg/kg	M	1.9E-6	mg/kg-day	7.3	(mg/kg-day)-1	1E-5
	Benzo[b]fluoranthene	27	mg/kg	--	27	mg/kg	M	4.7E-6	mg/kg-day	0.73	(mg/kg-day)-1	3E-6
	Benzo[k]fluoranthene	12	mg/kg	--	12	mg/kg	M	2.1E-6	mg/kg-day	0.073	(mg/kg-day)-1	2E-7
	Phenanthrene	220	mg/kg	--	220	mg/kg	M	--	--	ND	--	--
											Total Risk:	2E-5
Dermal	**Organic Compounds**											
	PAHs											
	Benz[a]anthracene	32	mg/kg	0.13	32	mg/kg	M	9.6E-06	mg/kg-day	0.73	(mg/kg-day)-1	7E-6
	Benzo[a]pyrene	11	mg/kg	0.13	11	mg/kg	M	3.3E-06	mg/kg-day	7.3	(mg/kg-day)-1	2E-5
	Benzo[b]fluoranthene	27	mg/kg	0.13	27	mg/kg	M	8.1E-06	mg/kg-day	0.73	(mg/kg-day)-1	6E-6
	Benzo[k]fluoranthene	12	mg/kg	0.13	12	mg/kg	M	3.6E-06	mg/kg-day	0.073	(mg/kg-day)-1	3E-7
	Phenanthrene	220	mg/kg	0.13	220	mg/kg	M	--	--	ND	--	--
											Total Risk:	4E-5
											Total Risk Across all Exposure Pathways:	6E-5

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 1 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table H.3.11. RME
Calculation of Cancer Risks
Adult Soil Exposure: Reasonable Maximum Exposure Scenario
Treatment Area 1 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	3.6	mg/kg	--	3.6	mg/kg	M	1.0E-8	mg/kg-day	1.5	(mg/kg-day)-1	1E-8
	Chromium	20.6	mg/kg	--	20.6	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	Pentachlorophenol	782	mg/kg	--	782	mg/kg	M	2.2E-6	mg/kg-day	0.12	(mg/kg-day)-1	3E-7
	PAHs											
	2-Methylnaphthalene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	(mg/kg-day)-1	--
											Total Risk:	3E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	3.6	mg/kg	0.03	3.6	mg/kg	M	2.0E-9	mg/kg-day	1.5	(mg/kg-day)-1	3E-9
	Chromium	20.6	mg/kg	0.01	20.6	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	Pentachlorophenol	782	mg/kg	0.25	782	mg/kg	M	3.6E-6	mg/kg-day	0.12	(mg/kg-day)-1	4E-7
	PAHs											
	2-Methylnaphthalene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	(mg/kg-day)-1	--
											Total Risk:	4E-7
											Total Risk Across all Exposure Pathways:	7E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 2 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table H.3.12. RME
Calculation of Cancer Risks
Adult Soil Exposure: Reasonable Maximum Exposure Scenario
Treatment Area 2 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	1.3	mg/kg	--	1.3	mg/kg	M	3.7E-9	mg/kg-day	1.5	(mg/kg-day)-1	6E-9
	Chromium	19	mg/kg	--	19	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	Benzene	0.70	mg/kg	--	0.70	mg/kg	M	2.0E-9	mg/kg-day	0.055	(mg/kg-day)-1	1E-10
	Pentachlorophenol	542	mg/kg	--	542	mg/kg	M	1.5E-6	mg/kg-day	0.12	(mg/kg-day)-1	2E-7
	PAHs											
	2-Methylnaphthalene	194	mg/kg	--	194	mg/kg	M	--	--	ND	--	--
	Acenaphthylene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	--	--
	Benz[a]anthracene	33.9	mg/kg	--	33.9	mg/kg	M	9.5E-8	mg/kg-day	0.73	(mg/kg-day)-1	7E-8
	Benz[a]pyrene	11.4	mg/kg	--	11.4	mg/kg	M	3.2E-8	mg/kg-day	7.3	(mg/kg-day)-1	2E-7
	Benzo(b)fluoranthene	26.7	mg/kg	--	26.7	mg/kg	M	7.5E-8	mg/kg-day	0.73	(mg/kg-day)-1	5E-8
	Benzo(k)fluoranthene	11.6	mg/kg	--	11.6	mg/kg	M	3.2E-8	mg/kg-day	0.073	(mg/kg-day)-1	2E-9
	Dibenz[a,h]anthracene	11.2	mg/kg	--	11.2	mg/kg	M	3.1E-8	mg/kg-day	7.3	(mg/kg-day)-1	2E-7
	Fluoranthene	268	mg/kg	--	268	mg/kg	M	--	--	ND	--	--
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	--	11.2	mg/kg	M	3.1E-8	mg/kg-day	0.73	(mg/kg-day)-1	2E-8
	Naphthalene	154	mg/kg	--	154	mg/kg	M	--	--	ND	--	--
	Phenanthrene	499	mg/kg	--	499	mg/kg	M	--	--	ND	--	--
											Total Risk:	8E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	1.3	mg/kg	0.03	1.3	mg/kg	M	7.4E-10	mg/kg-day	1.5	(mg/kg-day)-1	1.E-09
	Chromium	19	mg/kg	0.01	19	mg/kg	M	--	--	ND	--	
	Organic Compounds											
	Benzene	0.70	mg/kg	1.0	0.70	mg/kg	M	1.3E-8	mg/kg-day	0.055	(mg/kg-day)-1	7.E-10
	Pentachlorophenol	542	mg/kg	0.25	542	mg/kg	M	2.5E-6	mg/kg-day	0.12	(mg/kg-day)-1	3.E-07
	PAHs											
	2-Methylnaphthalene	194	mg/kg	0.13	194	mg/kg	M	--	--	ND	--	--
	Acenaphthylene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	--	--
	Benz[a]anthracene	33.9	mg/kg	0.13	33.9	mg/kg	M	8.1E-8	mg/kg-day	0.73	(mg/kg-day)-1	6.E-08
	Benz[a]pyrene	11.4	mg/kg	0.13	11.4	mg/kg	M	2.7E-8	mg/kg-day	7.3	(mg/kg-day)-1	2.E-07
	Benzo(b)fluoranthene	26.7	mg/kg	0.13	26.7	mg/kg	M	6.4E-8	mg/kg-day	0.73	(mg/kg-day)-1	5.E-08
	Benzo(k)fluoranthene	11.6	mg/kg	0.13	11.6	mg/kg	M	2.8E-8	mg/kg-day	0.073	(mg/kg-day)-1	2.E-09
	Dibenz[a,h]anthracene	11.2	mg/kg	0.13	11.2	mg/kg	M	2.7E-8	mg/kg-day	7.3	(mg/kg-day)-1	2.E-07
	Fluoranthene	268	mg/kg	0.13	268	mg/kg	M	--	--	ND	--	--
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	0.13	11.2	mg/kg	M	2.7E-8	mg/kg-day	0.73	(mg/kg-day)-1	2.E-08
	Naphthalene	154	mg/kg	0.13	154	mg/kg	M	--	--	ND	--	--
	Phenanthrene	499	mg/kg	0.13	499	mg/kg	M	--	--	ND	--	--
											Total Risk:	8E-7
											Total Risk Across all Exposure Pathways:	2E-6

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
PAHs - Polycyclic aromatic hydrocarbons
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b). Toxicity values were adjusted for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.13. RME
Calculation of Cancer Risks
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Church House Branch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	6.3E-8	mg/kg-day	1.5	(mg/kg-day)-1	1.E-07
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	1.7E-9	mg/kg-day	7.3	(mg/kg-day)-1	1.E-08
											Total Risk:	1E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	1.7E-08	mg/kg-day	1.5	(mg/kg-day)-1	3.E-08
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	2.0E-09	mg/kg-day	7.3	(mg/kg-day)-1	1.E-08
											Total Risk:	4E-8
											Total Risk Across all Exposure Pathways:	1E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Table H.3.14. RME
Calculation of Cancer Risks
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Church House Branch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	1.5E-7	mg/kg-day	1.5	(mg/kg-day)-1	2E-7
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	4.0E-9	mg/kg-day	7.3	(mg/kg-day)-1	3E-8
											Total Risk:	3E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	1.8E-08	mg/kg-day	1.5	(mg/kg-day)-1	3E-8
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	2.1E-09	mg/kg-day	7.3	(mg/kg-day)-1	2E-8
											Total Risk:	4E-8
											Total Risk Across all Exposure Pathways:	3E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b). Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.15. RME
Calculation of Cancer Risks
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	--	18	mg/kg	M	1.8E-7	mg/kg-day	1.5	(mg/kg-day)-1	3E-7
	Chromium	32	mg/kg	--	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	6.1E-9	mg/kg-day	0.73	(mg/kg-day)-1	4E-9
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	5.4E-9	mg/kg-day	7.3	(mg/kg-day)-1	4E-8
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	1.3E-8	mg/kg-day	0.73	(mg/kg-day)-1	1E-8
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	6.7E-10	mg/kg-day	7.3	(mg/kg-day)-1	5E-9
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	--	--	ND	--	--
											Total Risk:	3E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	4.8E-08	mg/kg-day	1.5	(mg/kg-day)-1	7E-8
	Chromium	32	mg/kg	0.010	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	7.0E-09	mg/kg-day	0.73	(mg/kg-day)-1	5E-9
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	6.2E-09	mg/kg-day	7.3	(mg/kg-day)-1	5E-8
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	1.5E-08	mg/kg-day	0.73	(mg/kg-day)-1	1E-8
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	7.7E-10	mg/kg-day	7.3	(mg/kg-day)-1	6E-9
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	0.13	6.10	mg/kg	M	--	--	ND	--	--
											Total Risk:	1E-7
											Total Risk Across all Exposure Pathways:	5E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Table H.3.16. RME
Calculation of Cancer Risks
Trespasser Sediment Exposure: Reasonable Maximum Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	--	18	mg/kg	M	4.2E-7	mg/kg-day	1.5	(mg/kg-day)-1	6E-7
	Chromium	32	mg/kg	--	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	1.4E-8	mg/kg-day	0.73	(mg/kg-day)-1	1E-8
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	1.3E-8	mg/kg-day	7.3	(mg/kg-day)-1	9E-8
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	3.1E-8	mg/kg-day	0.73	(mg/kg-day)-1	2E-8
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	1.6E-9	mg/kg-day	7.3	(mg/kg-day)-1	1E-8
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	--	--	ND	--	--
											Total Risk:	8E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	5.1E-08	mg/kg-day	1.5	(mg/kg-day)-1	8E-8
	Chromium	32	mg/kg	0.010	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	7.6E-09	mg/kg-day	0.73	(mg/kg-day)-1	6E-9
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	6.7E-09	mg/kg-day	7.3	(mg/kg-day)-1	5E-8
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	1.6E-08	mg/kg-day	0.73	(mg/kg-day)-1	1E-8
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	8.3E-10	mg/kg-day	7.3	(mg/kg-day)-1	6E-9
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	0.13	6.1	mg/kg	M	--	--	ND	--	--
											Total Risk:	1E-7
											Total Risk Across all Exposure Pathways:	9E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 1 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.1. Typical
Calculation of Noncancer Hazards
Worker: Typical Exposure Scenario
Treatment Area 1 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	16	mg/kg	--	16	mg/kg	M	7.8E-6	mg/kg-day	0.0003	mg/kg-day	--	--	0.026
	Organic Compounds													
	Pentachlorophenol	780	mg/kg	--	780	mg/kg	M	3.8E-4	mg/kg-day	0.03	mg/kg-day	--	--	0.013
	PAHs													
	2-Methylnapthalene	11	mg/kg	--	11	mg/kg	M	5.4E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00027
													Hazard Index:	0.039
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	16	mg/kg	0.03	16	mg/kg	M	3.1E-6	mg/kg-day	0.0003	mg/kg-day	--	--	0.010
	Organic Compounds													
	Pentachlorophenol	780	mg/kg	0.25	780	mg/kg	M	1.3E-3	mg/kg-day	0.03	mg/kg-day	--	--	0.042
	PAHs													
	2-Methylnapthalene	11	mg/kg	0.13	11	mg/kg	M	9.2E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00046
													Hazard Index:	0.053
													Total Hazard Index Across All Exposure Routes/Pathways:	0.092

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 2 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.2. Typical
Calculation of Noncancer Hazards
Worker: Typical Exposure Scenario
Treatment Area 2 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Organic Compounds**													
	PAHs													
	Benz[a]anthracene	32	mg/kg	--	32	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	11	mg/kg	--	11	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	27	mg/kg	--	27	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[k]fluoranthene	12	mg/kg	--	12	mg/kg	M	--	--	ND	--	--	--	--
	Phenanthrene	220	mg/kg	--	220	mg/kg	M	1.1E-4	mg/kg-day	0.02	mg/kg-day	--	--	0.0054
													Hazard Index:	0.0054
Dermal	**Organic Compounds**													
	PAHs													
	Benz[a]anthracene	32	mg/kg	0.13	32	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	11	mg/kg	0.13	11	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	27	mg/kg	0.13	27	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[k]fluoranthene	12	mg/kg	0.13	12	mg/kg	M	--	--	ND	--	--	--	--
	Phenanthrene	220	mg/kg	0.13	220	mg/kg	M	2.E-04	mg/kg-day	0.02	mg/kg-day	--	--	0.0092
													Hazard Index:	0.0092
													Total Hazard Index Across All Exposure Routes/Pathways:	0.015

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 1 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table H.3.3. Typical
Calculation of Noncancer Hazards
Adult Soil Exposure: Typical Exposure Scenario
Treatment Area 1 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	3.6	mg/kg	--	3.6	mg/kg	M	7.0E-8	mg/kg-day	0.0003	mg/kg-day	--	--	0.00023
	Chromium	20.6	mg/kg	--	20.6	mg/kg	M	4.0E-7	mg/kg-day	0.003	mg/kg-day	--	--	0.00013
	Organic Compounds													
	Pentachlorophenol	782	mg/kg	--	782	mg/kg	M	1.5E-5	mg/kg-day	0.03	mg/kg-day	--	--	0.00051
	PAHs													
	2-Methylnaphthalene	11.2	mg/kg	--	11.2	mg/kg	M	2.2E-7	mg/kg-day	0.02	mg/kg-day	--	--	0.000011
													Hazard Index:	0.00089
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	3.6	mg/kg	0.03	3.6	mg/kg	M	2.8E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.000092
	Chromium	20.6	mg/kg	0.01	20.6	mg/kg	M	5.3E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00018
	Organic Compounds													
	Pentachlorophenol	782	mg/kg	0.25	782	mg/kg	M	5.1E-05	mg/kg-day	0.03	mg/kg-day	--	--	0.00168
	PAHs													
	2-Methylnaphthalene	11.2	mg/kg	0.13	11.2	mg/kg	M	3.8E-07	mg/kg-day	0.02	mg/kg-day	--	--	0.000019
													Hazard Index:	0.00197
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0029

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 2 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table H.3.4. Typical
Calculation of Noncancer Hazards
Adult Soil Exposure: Typical Exposure Scenario
Treatment Area 2 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	1.3	mg/kg	--	1.3	mg/kg	M	2.6E-8	mg/kg-day	0.0003	mg/kg-day	--	--	0.000087
	Chromium	19	mg/kg	--	19	mg/kg	M	3.8E-7	mg/kg-day	0.003	mg/kg-day	--	--	0.00013
	Organic Compounds													
	Benzene	0.70	mg/kg	--	0.70	mg/kg	M	1.4E-8	mg/kg-day	0.003	mg/kg-day	--	--	0.0000046
	Pentachlorophenol	542	mg/kg	--	542	mg/kg	M	1.1E-5	mg/kg-day	0.03	mg/kg-day	--	--	0.00035
	PAHs													
	2-Methylnaphthalene	194	mg/kg	--	194	mg/kg	M	3.8E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00019
	Acenaphthylene	11.2	mg/kg	--	11.2	mg/kg	M	2.2E-7	mg/kg-day	0.02	mg/kg-day	--	--	0.000011
	Benz[a]anthracene	33.9	mg/kg	--	33.9	mg/kg	M	--	--	ND	--	--	--	--
	Benz[a]pyrene	11.4	mg/kg	--	11.4	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(b)fluoranthene	26.7	mg/kg	--	26.7	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(k)fluoranthene	11.6	mg/kg	--	11.6	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Fluoranthene	268	mg/kg	--	268	mg/kg	M	5.2E-6	mg/kg-day	0.04	mg/kg-day	--	--	0.00013
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Naphthalene	154	mg/kg	--	154	mg/kg	M	3.0E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00015
	Phenanthrene	499	mg/kg	--	499	mg/kg	M	9.8E-6	mg/kg-day	0.02	mg/kg-day	--	--	0.00049
													Hazard Index:	0.0015
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	1.3	mg/kg	0.03	1.3	mg/kg	M	1.0E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.000035
	Chromium	19	mg/kg	0.01	19	mg/kg	M	5.0E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00017
	Organic Compounds													
	Benzene	0.70	mg/kg	1.0	0.70	mg/kg	M	1.8E-07	mg/kg-day	0.003	mg/kg-day	--	--	0.000060
	Pentachlorophenol	542	mg/kg	0.25	542	mg/kg	M	3.5E-05	mg/kg-day	0.03	mg/kg-day	--	--	0.0012
	PAHs													
	2-Methylnaphthalene	194	mg/kg	0.13	194	mg/kg	M	6.5E-06	mg/kg-day	0.02	mg/kg-day	--	--	0.00033
	Acenaphthylene	11.2	mg/kg	0.13	11.2	mg/kg	M	3.8E-07	mg/kg-day	0.02	mg/kg-day	--	--	0.000019
	Benz[a]anthracene	33.9	mg/kg	0.13	33.9	mg/kg	M	--	--	ND	--	--	--	--
	Benz[a]pyrene	11.4	mg/kg	0.13	11.4	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(b)fluoranthene	26.7	mg/kg	0.13	26.7	mg/kg	M	--	--	ND	--	--	--	--
	Benzo(k)fluoranthene	11.6	mg/kg	0.13	11.6	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Fluoranthene	268	mg/kg	0.13	268	mg/kg	M	9.0E-06	mg/kg-day	0.04	mg/kg-day	--	--	0.00022
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	--	--	--	--
	Naphthalene	154	mg/kg	0.13	154	mg/kg	M	5.2E-06	mg/kg-day	0.02	mg/kg-day	--	--	0.00026
	Phenanthrene	499	mg/kg	0.13	499	mg/kg	M	1.7E-05	mg/kg-day	0.02	mg/kg-day	--	--	0.00084
													Hazard Index:	0.0031
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0046

Note:

-- - not applicable
EPA - U.S. Environmental Protection Ag
EPC - exposure point concentration
M - medium-specific
PAHs - Polycyclic aromatic hydrocarbons
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b). Toxicity values were adjusted for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.5. Typical
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Typical Exposure Scenario
Church House Branch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	8.8E-8	mg/kg-day	0.0003	mg/kg-day	--	--	0.00029
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	--	0.2	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.00029
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	3.8E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00013
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.2	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.00013
													Total Hazard Index Across All Exposure Routes/Pathways:	0.00042

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Table H.3.6. Typical
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Typical Exposure Scenario
Church House Branch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	6.2E-8	mg/kg-day	0.0003	mg/kg-day	--	--	0.00021
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.00021
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	1.3E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.000043
	Organic Compounds													
	PAHs													
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	--	--	ND	--	--	--	--
													Hazard Index:	0.000043
													Total Hazard Index Across All Exposure Routes/Pathways:	0.00025

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.7. Typical
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Typical Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	--	18	mg/kg	M	2.5E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.00084
	Chromium	32	mg/kg	--	32	mg/kg	M	4.5E-7	mg/kg-day	0.003	mg/kg-day	--	--	0.00015
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.30	mg/kg	--	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	1.1E-8	mg/kg-day	0.02	mg/kg-day	--	--	0.00000055
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	8.5E-8	mg/kg-day	0.02	mg/kg-day	--	--	0.0000043
													Hazard Index:	0.0010
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	1.1E-07	mg/kg-day	0.0003	mg/kg-day	--	--	0.00036
	Chromium	32	mg/kg	0.01	32	mg/kg	M	6.4E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00021
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	2.0E-08	mg/kg-day	0.02	mg/kg-day	--	--	0.0000010
	2-Methylnapthalene	6.1	mg/kg	0.13	6.1	mg/kg	M	1.6E-07	mg/kg-day	0.02	mg/kg-day	--	--	0.0000080
													Hazard Index:	0.00059
													Total Hazard Index Across All Exposure Routes/Pathways:	0.0016

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Table H.3.8. Typical
Calculation of Noncancer Hazards
Trespasser Sediment Exposure: Typical Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Non-cancer)	Intake (Non-cancer) Units	Reference Dose[c]	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	--	18	mg/kg	M	1.8E-7	mg/kg-day	0.0003	mg/kg-day	--	--	0.00059
	Chromium	32	mg/kg	--	32	mg/kg	M	3.1E-7	mg/kg-day	0.003	mg/kg-day	--	--	0.00010
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	7.6E-9	mg/kg-day	0.02	mg/kg-day	--	--	0.00000038
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	6.0E-8	mg/kg-day	0.02	mg/kg-day	--	--	0.0000030
													Hazard Index:	0.00069
Dermal	**Metals and Organometallic Compounds**													
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	3.7E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.00012
	Chromium	32	mg/kg	0.01	32	mg/kg	M	2.2E-08	mg/kg-day	0.0003	mg/kg-day	--	--	0.000073
	Organic Compounds													
	PAHs													
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	--	--	ND	--	--	--	--
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	--	--	ND	--	--	--	--
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	--	--	ND	--	--	--	--
	Napthalene	0.78	mg/kg	0.13	0.8	mg/kg	M	6.9E-09	mg/kg-day	0.02	mg/kg-day	--	--	0.00000035
	2-Methylnapthalene	6.1	mg/kg	0.13	6.1	mg/kg	M	5.4E-08	mg/kg-day	0.02	mg/kg-day	--	--	0.0000027
													Hazard Index:	0.00020
													Total Hazard Index Across All Exposure Routes/Pathways:	0.00089

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 1 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.9. Typical
Calculation of Cancer Risks
Worker: Typical Exposure Scenario
Treatment Area 1 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	16	mg/kg	--	16	mg/kg	M	7.4E-7	mg/kg-day	1.5	(mg/kg-day)-1	1E-6
	Organic Compounds											
	Pentachlorophenol	780	mg/kg	--	780	mg/kg	M	3.6E-5	mg/kg-day	0.12	(mg/kg-day)-1	4E-6
	PAHs											
	2-Methylnapthalene	11	mg/kg	--	11	mg/kg	M	--	--	ND	--	--
											Total Risk:	5E-6
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	16	mg/kg	0.03	16	mg/kg	M	2.9E-7	mg/kg-day	1.5	(mg/kg-day)-1	4E-7
	Organic Compounds											
	Pentachlorophenol	780	mg/kg	0.25	780	mg/kg	M	1.2E-4	mg/kg-day	0.12	(mg/kg-day)-1	1E-5
	PAHs											
	2-Methylnapthalene	11	mg/kg	0.13	11	mg/kg	M	--	--	ND	--	--
											Total Risk:	1E-5
											Total Risk Across all Exposure Pathways:	2E-5

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface soil
Exposure Point: Treatment Area 2 Surface Soil
Receptor Population: Worker
Receptor Age: Adults

Table H.3.10. Typical
Calculation of Cancer Risks
Worker: Typical Exposure Scenario
Treatment Area 2 Surface Soil

Worker Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Organic Compounds**											
	PAHs											
	Benz[a]anthracene	32	mg/kg	--	32	mg/kg	M	1.5E-6	mg/kg-day	0.73	(mg/kg-day)-1	1E-6
	Benzo[a]pyrene	11	mg/kg	--	11	mg/kg	M	5.1E-7	mg/kg-day	7.3	(mg/kg-day)-1	4E-6
	Benzo[b]fluoranthene	27	mg/kg	--	27	mg/kg	M	1.2E-6	mg/kg-day	0.73	(mg/kg-day)-1	9E-7
	Benzo[k]fluoranthene	12	mg/kg	--	12	mg/kg	M	5.5E-7	mg/kg-day	0.073	(mg/kg-day)-1	4E-8
	Phenanthrene	220	mg/kg	--	220	mg/kg	M	--	--	ND	--	--
											Total Risk:	6E-6
Dermal	**Organic Compounds**											
	PAHs											
	Benz[a]anthracene	32	mg/kg	0.13	32	mg/kg	M	2.5E-6	mg/kg-day	0.73	(mg/kg-day)-1	2E-6
	Benzo[a]pyrene	11	mg/kg	0.13	11	mg/kg	M	8.7E-7	mg/kg-day	7.3	(mg/kg-day)-1	6E-6
	Benzo[b]fluoranthene	27	mg/kg	0.13	27	mg/kg	M	2.1E-6	mg/kg-day	0.73	(mg/kg-day)-1	2E-6
	Benzo[k]fluoranthene	12	mg/kg	0.13	12	mg/kg	M	9.5E-7	mg/kg-day	0.073	(mg/kg-day)-1	7E-8
	Phenanthrene	220	mg/kg	0.13	220	mg/kg	M	--	--	ND	--	--
											Total Risk:	1E-5
											Total Risk Across all Exposure Pathways:	2E-5

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 1 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table H.3.11. Typical
Calculation of Cancer Risks
Adult Soil Exposure: Typical Exposure
Treatment Area 1 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	3.6	mg/kg	--	3.6	mg/kg	M	2.0E-9	mg/kg-day	1.5	(mg/kg-day)-1	3E-9
	Chromium	20.6	mg/kg	--	20.6	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	Pentachlorophenol	782	mg/kg	--	782	mg/kg	M	4.4E-7	mg/kg-day	0.12	(mg/kg-day)-1	5E-8
	PAHs											
	2-Methylnaphthalene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	(mg/kg-day)-1	--
											Total Risk:	6E-8
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	3.6	mg/kg	0.03	3.6	mg/kg	M	7.9E-10	mg/kg-day	1.5	(mg/kg-day)-1	1E-9
	Chromium	20.6	mg/kg	0.01	20.6	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	Pentachlorophenol	782	mg/kg	0.25	782	mg/kg	M	1.4E-06	mg/kg-day	0.12	(mg/kg-day)-1	2E-7
	PAHs											
	2-Methylnaphthalene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	(mg/kg-day)-1	--
											Total Risk:	2E-7
											Total Risk Across all Exposure Pathways:	2E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Soil 0-17 feet bgs
Exposure Point: Treatment Area 2 Soil 0-17 feet bgs
Receptor Population: Construction Worker
Receptor Age: Adults

Table H.3.12. Typical
Calculation of Cancer Risks
Adult Soil Exposure: Typical Exposure
Treatment Area 2 Soil 0-17 feet bgs

Construction Worker Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	1.3	mg/kg	--	1.3	mg/kg	M	7.5E-10	mg/kg-day	1.5	(mg/kg-day)-1	1E-9
	Chromium	19	mg/kg	--	19	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	Benzene	0.70	mg/kg	--	0.70	mg/kg	M	3.9E-10	mg/kg-day	0.055	(mg/kg-day)-1	2E-11
	Pentachlorophenol	542	mg/kg	--	542	mg/kg	M	3.0E-7	mg/kg-day	0.12	(mg/kg-day)-1	4E-8
	PAHs											
	2-Methylnaphthalene	194	mg/kg	--	194	mg/kg	M	--	--	ND	--	--
	Acenaphthylene	11.2	mg/kg	--	11.2	mg/kg	M	--	--	ND	--	--
	Benz[a]anthracene	33.9	mg/kg	--	33.9	mg/kg	M	1.9E-8	mg/kg-day	0.73	(mg/kg-day)-1	1E-8
	Benz[a]pyrene	11.4	mg/kg	--	11.4	mg/kg	M	6.4E-9	mg/kg-day	7.3	(mg/kg-day)-1	5E-8
	Benzo(b)fluoranthene	26.7	mg/kg	--	26.7	mg/kg	M	1.5E-8	mg/kg-day	0.73	(mg/kg-day)-1	1E-8
	Benzo(k)fluoranthene	11.6	mg/kg	--	11.6	mg/kg	M	6.5E-9	mg/kg-day	0.073	(mg/kg-day)-1	5E-10
	Dibenz[a,h]anthracene	11.2	mg/kg	--	11.2	mg/kg	M	6.3E-9	mg/kg-day	7.3	(mg/kg-day)-1	5E-8
	Fluoranthene	268	mg/kg	--	268	mg/kg	M	--	--	ND	--	--
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	--	11.2	mg/kg	M	6.3E-9	mg/kg-day	0.73	(mg/kg-day)-1	5E-9
	Naphthalene	154	mg/kg	--	154	mg/kg	M	--	--	ND	--	--
	Phenanthrene	499	mg/kg	--	499	mg/kg	M	--	--	ND	--	--
											Total Risk:	2E-7
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	1.3	mg/kg	0.03	1.3	mg/kg	M	3.0E-10	mg/kg-day	1.5	(mg/kg-day)-1	4E-10
	Chromium	19	mg/kg	0.01	19	mg/kg	M	--	--	ND	--	
	Organic Compounds											
	Benzene	0.70	mg/kg	1.0	0.70	mg/kg	M	5.2E-09	mg/kg-day	0.055	(mg/kg-day)-1	3E-10
	Pentachlorophenol	542	mg/kg	0.25	542	mg/kg	M	1.0E-06	mg/kg-day	0.12	(mg/kg-day)-1	1E-7
	PAHs											
	2-Methylnaphthalene	194	mg/kg	0.13	194	mg/kg	M	--	--	ND	--	--
	Acenaphthylene	11.2	mg/kg	0.13	11.2	mg/kg	M	--	--	ND	--	--
	Benz[a]anthracene	33.9	mg/kg	0.13	33.9	mg/kg	M	3.3E-08	mg/kg-day	0.73	(mg/kg-day)-1	2E-8
	Benz[a]pyrene	11.4	mg/kg	0.13	11.4	mg/kg	M	1.1E-08	mg/kg-day	7.3	(mg/kg-day)-1	8E-8
	Benzo(b)fluoranthene	26.7	mg/kg	0.13	26.7	mg/kg	M	2.6E-08	mg/kg-day	0.73	(mg/kg-day)-1	2E-8
	Benzo(k)fluoranthene	11.6	mg/kg	0.13	11.6	mg/kg	M	1.1E-08	mg/kg-day	0.073	(mg/kg-day)-1	8E-10
	Dibenz[a,h]anthracene	11.2	mg/kg	0.13	11.2	mg/kg	M	1.1E-08	mg/kg-day	7.3	(mg/kg-day)-1	8E-8
	Fluoranthene	268	mg/kg	0.13	268	mg/kg	M	--	--	ND	--	--
	Indeno[1,2,3-cd]pyrene	11.2	mg/kg	0.13	11.2	mg/kg	M	1.1E-08	mg/kg-day	0.73	(mg/kg-day)-1	8E-9
	Naphthalene	154	mg/kg	0.13	154	mg/kg	M	--	--	ND	--	--
	Phenanthrene	499	mg/kg	0.13	499	mg/kg	M	--	--	ND	--	--
											Total Risk:	3E-7
											Total Risk Across all Exposure Pathways:	5E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
PAHs - Polycyclic aromatic hydrocarbons
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b). Toxicity values were adjusted for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.13. Typical
Calculation of Cancer Risks
Trespasser Sediment Exposure: Typical Exposure Scenario
Church House Branch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	1.1E-8	mg/kg-day	1.5	(mg/kg-day)-1	2E-8
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	3.1E-10	mg/kg-day	7.3	(mg/kg-day)-1	2E-9
											Total Risk:	2E-8
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	4.9E-09	mg/kg-day	1.5	(mg/kg-day)-1	7E-9
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	5.7E-10	mg/kg-day	7.3	(mg/kg-day)-1	4E-9
											Total Risk:	1E-8
											Total Risk Across all Exposure Pathways:	3E-8

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Church House Branch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Table H.3.14. Typical
Calculation of Cancer Risks
Trespasser Sediment Exposure: Typical Exposure Scenario
Church House Branch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	--	6.3	mg/kg	M	7.9E-9	mg/kg-day	1.5	(mg/kg-day)-1	1E-8
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	--	0.17	mg/kg	M	2.1E-10	mg/kg-day	7.3	(mg/kg-day)-1	2E-9
											Total Risk:	1E-8
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	6.3	mg/kg	0.03	6.3	mg/kg	M	1.7E-09	mg/kg-day	1.5	(mg/kg-day)-1	2E-9
	Organic Compounds											
	PAHs											
	Benzo[a]pyrene	0.17	mg/kg	0.13	0.17	mg/kg	M	1.9E-10	mg/kg-day	7.3	(mg/kg-day)-1	1E-9
											Total Risk:	4E-9
											Total Risk Across all Exposure Pathways:	2E-8

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Older Child

Table H.3.15. Typical
Calculation of Cancer Risks
Trespasser Sediment Exposure: Typical Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	--	18	mg/kg	M	3.2E-8	mg/kg-day	1.5	(mg/kg-day)-1	5E-8
	Chromium	32	mg/kg	--	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	--	0.61	mg/kg	M	1.1E-9	mg/kg-day	0.73	(mg/kg-day)-1	8E-10
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	9.7E-10	mg/kg-day	7.3	(mg/kg-day)-1	7E-9
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	2.3E-9	mg/kg-day	0.73	(mg/kg-day)-1	2E-9
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	1.2E-10	mg/kg-day	7.3	(mg/kg-day)-1	9E-10
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	--	--	ND	--	--
											Total Risk:	6E-8
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	1.4E-08	mg/kg-day	1.5	(mg/kg-day)-1	2E-8
	Chromium	32	mg/kg	0.010	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	2.1E-09	mg/kg-day	0.73	(mg/kg-day)-1	1E-9
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	1.8E-09	mg/kg-day	7.3	(mg/kg-day)-1	1E-8
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	4.4E-09	mg/kg-day	0.73	(mg/kg-day)-1	3E-9
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.07	mg/kg	M	2.3E-10	mg/kg-day	7.3	(mg/kg-day)-1	2E-9
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	0.13	6.10	mg/kg	M	--	--	ND	--	--
											Total Risk:	4E-8
											Total Risk Across all Exposure Pathways:	1E-7

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen
PAHs - Polycyclic aromatic hydrocarbons

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.

[b]Absorption factors from U.S. EPA (1999a).

[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

Scenario Timeframe: Future
Medium: Sediments
Exposure Medium: Sediments
Exposure Point: Drainage Ditch Sediments
Receptor Population: Trespasser
Receptor Age: Adults

Table H.3.16. Typical
Calculation of Cancer Risks
Trespasser Sediment Exposure: Typical Exposure Scenario
Drainage Ditch Sediments

Visitor Surface Soil Ingestion / Dermal

Exposure Route	Chemical of Concern	Medium EPC Value[a]	Medium Units	Dermal Absorption Factor[b]	Route EPC	Route EPC Units	EPC Applied	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor[c]	Cancer Slope Factor Units	Cancer Risk
Ingestion	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	--	18	mg/kg	M	2.3E-8	mg/kg-day	1.5	(mg/kg-day)-1	3E-8
	Chromium	32	mg/kg	--	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	--	0.6	mg/kg	M	7.7E-10	mg/kg-day	0.73	(mg/kg-day)-1	6E-10
	Benzo[a]pyrene	0.54	mg/kg	--	0.54	mg/kg	M	6.8E-10	mg/kg-day	7.3	(mg/kg-day)-1	5E-9
	Benzo[b]fluoranthene	1.3	mg/kg	--	1.3	mg/kg	M	1.6E-9	mg/kg-day	0.73	(mg/kg-day)-1	1E-9
	Dibenz[a,h]anthracene	0.067	mg/kg	--	0.067	mg/kg	M	8.4E-11	mg/kg-day	7.3	(mg/kg-day)-1	6E-10
	Napthalene	0.78	mg/kg	--	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	--	6.1	mg/kg	M	--	--	ND	--	--
											Total Risk:	4E-8
Dermal	**Metals and Organometallic Compounds**											
	Arsenic	18	mg/kg	0.03	18	mg/kg	M	4.8E-09	mg/kg-day	1.5	(mg/kg-day)-1	7E-9
	Chromium	32	mg/kg	0.010	32	mg/kg	M	--	--	ND	--	--
	Organic Compounds											
	PAHs											
	Benz[a]anthracene	0.61	mg/kg	0.13	0.61	mg/kg	M	7.0E-10	mg/kg-day	0.73	(mg/kg-day)-1	5E-10
	Benzo[a]pyrene	0.54	mg/kg	0.13	0.54	mg/kg	M	6.2E-10	mg/kg-day	7.3	(mg/kg-day)-1	5E-9
	Benzo[b]fluoranthene	1.3	mg/kg	0.13	1.3	mg/kg	M	1.5E-09	mg/kg-day	0.73	(mg/kg-day)-1	1E-9
	Dibenz[a,h]anthracene	0.067	mg/kg	0.13	0.067	mg/kg	M	7.7E-11	mg/kg-day	7.3	(mg/kg-day)-1	6E-10
	Napthalene	0.78	mg/kg	0.13	0.78	mg/kg	M	--	--	ND	--	--
	2-Methylnapthalene	6.1	mg/kg	0.13	6.1	mg/kg	M	--	--	ND	--	--
											Total Risk:	1E-8
											Total Risk Across all Exposure Pathways:	6E-8

Note:

-- - not applicable
EPA - U.S. Environmental Protection Agency
EPC - exposure point concentration
M - medium-specific
ND - not determined by EPA or not considered to be a carcinogen

[a]Values for all chemicals reflect the lower of either the 95th percentile UCL on the mean or the maximum concencentration.
[b]Absorption factors from U.S. EPA (1999a).
[c]Toxicity values obtained from either the EPA Health Effects Assessment Summary Tables (HEAST) (July 1997a) or EPA Integrated Risk Information System (IRIS) (2002b).
Toxicity values were adjusted to account for oral absorption in order to calculate risks for dermal exposure on the bases of absorbed doses (U.S. EPA 1999a).

APPENDIX I

Appendix I

Data Quality Assurance Review

Introduction

This quality assurance review discusses the results from the analyses for volatile organic compounds, semivolatile organic compounds (polycyclic aromatic hydrocarbons, chlorinated phenols, and pentachloroanisole), diesel range organics, petroleum hydrocarbon identification, metals (arsenic, chromium, copper, nickel, and lead), conventional parameters (pH, total solids and total organic carbon [TOC]), and physical parameters (grain size) for soil and sediment samples collected February 2001. One sample was analyzed for toxicity characteristic leach procedure (TCLP) volatile organics, semivolatile organics, and metals.

One hundred and fifty eight solid samples, including 8 field duplicates, and 8 rinsate blanks were collected between February 5 and 9, 2001. In addition, two trip blanks, carried through the sampling events, were analyzed for volatile organic compounds. With the exception of grain size, the analyses were performed by Gulf Coast Analytical Laboratories (GCAL), Incorporated, located in Baton Rouge, Louisiana. The grain size analyses were preformed by Soil Testing Engineers, Inc., located in Baton Rouge, Louisiana. The samples were analyzed in accordance with the methods listed in the following table:

Table I-1. Analytical Methods

Constituent	Method
Volatile organic compounds	SW-846 8260B[a]
Semivolatile organic compounds	SW-846 8270[a] SIM[d]
Petroleum hydrocarbon identification	SW-846 8015B[a]
Diesel range organics	SW-846 8015B[a]
Metals	SW-846 6010B[a] and 7060A[a]
PH	SW-846 9045[a]
TCLP[c] sample preparation	SW-846 1311[a]
Total solids	Standard Methods 2540G[b]
Grain Size	ASTM D422
Total organic carbon	SW-846 9060[a]

[a] USEPA 1996
[b] APAH 1998
[c] Toxicity characteristic leaching procedure
[d] Selective ion monitoring

A modified U. S. Environmental Protection Agency (USEPA) Level III validation was completed on five sample delivery group (SDG) reports containing sample results and associated quality control results. The validation was performed in accordance with the procedures established in the *Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review* (Functional Guidelines) (USEPA 1994a, b). Data quality objectives, project detection limits, and quality control (QC) sample frequencies are from the *Appendix E Quality Assurance Project Plan* (QAPP) (Exponent 2000). The criteria used to qualify data are from Functional Guidelines, the QAPP, the analytical methods, or the professional judgment of the validation chemist. The following laboratory deliverables were reviewed during the validation process:

- Chain-of-custody (COC) documentation to assess holding times and verify report completeness
- Laboratory QC sample results, including method blanks, surrogate spikes, laboratory control samples (LCSs), matrix spike/matrix spike duplicates (MS/MSDs), and laboratory duplicates
- Analytical results to verify reporting limits
- Field QC samples for field blank contamination and field duplicate precision

In addition, the data quality objectives (DQOs) of precision, accuracy, representativeness, comparability, and completeness were evaluated against the criteria set forth in the QAPP. The qualified data are summarized in a table at the end of this appendix. Data qualifier flags have been added to the sample results in the original reports and the tabular summaries in the main document.

Data Quality Assurance Review

Custody, Preservation, Holding Times, and Completeness

Except as noted below, all samples were extracted and analyzed within the required holding times. Sample custody was maintained as required and all samples were received intact and were properly preserved.

- The pH analysis of sample SP2 was performed past the holding time. Method 9045 (USEPA 1996) recommends that pH analysis be perform as soon as possible after collection. Sample SP2 was analyzed for pH 12 days after collection. The result has been qualified as estimated (J).

The reports are complete and, with the exceptions listed below, contain results for all samples and tests requested on the COC. Notes regarding the COCs and reports are listed below; none of these anomalies affect data quality.

- For SDG 20010915, the resubmitted cover letter was not signed by a laboratory representative.
- For SDG 20010818, the COCs were not signed by the laboratory to indicate that sample custody was received. The laboratory resubmitted complete COCs.
- For the semivolatile organic analyses of SDG 20010951, the extraction date was incorrect on the sample analysis sheets. The laboratory resubmitted corrected sample analysis sheets.
- The dilution factor for the diesel range organics analysis of sample GP34SO02 was incorrectly reported as 10. The laboratory resubmitted the results sheet with the correct dilution factor of 1.

- For SDG 20010818, the diesel range organics water LCS surrogate recovery value was reported as 170 percent. The laboratory resubmitted the QC results sheet with the correct recovery of 85 percent.
- For SDG 20010908, the case narrative states that several diesel range organics results are above the calibration range. When the laboratory was contacted to obtain the affected samples, they replied that all results are within the calibration range. However, the laboratory stated that several samples of SDG 20010818 have diesel range organics results above the calibration range. The laboratory resubmitted the case narrative of SDGs 20010818 and 20010908.
- For the petroleum hydrocarbon scan analyses, the laboratory did not report laboratory control samples or matrix spikes. The laboratory was contacted and explained that the petroleum hydrocarbon scan uses the same extraction as the diesel range organics and the diesel range organics QC should be used for the petroleum hydrocarbon scan analyses. This approach verifies that the extraction process is in-control but does not address the performance of the petroleum hydrocarbon scan instrumentation.
- For the petroleum hydrocarbon scan analyses, the resubmitted water method blanks had reporting limits greater than the associated sample reporting limits. The laboratory resubmitted (for a second time) corrected water method blank results sheets.
- Several discrepancies exist between the QAPP, COCs, and reports. The QAPP lists gasoline as a target analyte for the petroleum hydrocarbon scan analyses. The COC requests diesel range organics analysis of samples EXSO01 and EXSO02, however, the laboratory analyzed these samples for petroleum hydrocarbon scan. The samples of SDG 20010935 were not analyzed for diesel range organics as requested on the COC. Les Brewer, of Premier Environmental, confirmed that these changes are acceptable.
- The grain size results for sample CHBSD401 were missing. GCAL resubmitted the results.

Method Blank Analyses

Method blanks were analyzed at the required frequency for all analyses. Except as noted below, target analytes were not detected above the reporting limits.

- Method blank results were not present in the original reports. The laboratory resubmitted the method blank results.
- For SDG 20010818, the semivolatile organics water method blank detection limits are higher than the associated sample detection limits. The laboratory was contacted and replied that the method blank, LCS, and sample (GPRB01) were extracted for a regular Method 8270 analysis and not for a SIM 8270 analysis. The sample was analyzed by the SIM 8270 method, but the method blank and LCS were only analyzed by the regular 8270 method. Data qualifiers are not required because the associated sample is a rinsate blank and is free of target analytes above the detection limit.
- For SDG 20010818, the laboratory method blank contained diesel range organics at 15.4 mg/kg. Since the laboratory subtracted the method blank concentration from the sample results, the associated sample results have been qualified as estimated (J) or estimated detection limit (UJ). Good laboratory practices requires re-extraction and reanalysis when method blanks are contaminated above the reporting limits.
- For SDG 20010818, the laboratory method blank contained non-petroleum hydrocarbons as diesel at 8.50 mg/kg. Since the laboratory subtracted the method blank concentration from the sample results, all associated sample results have been qualified as estimated (J) or estimated detection limit (UJ). Good laboratory practices requires re-extraction and reanalysis when method blanks are contaminated above the reporting limits.

Surrogate Spike Analyses

Surrogate compounds were added to all samples, blanks, and QC samples as required for organic analyses. All percent recovery values are within the laboratory's control limits, with the following exceptions:

- Surrogate recovery values were not reported for the QC samples (method blanks, laboratory control samples, or matrix spikes). Data qualifiers are not required for QC samples.

- For the TCLP semivolatile organic analysis of sample SP2, the phenol-d_6, and 2-fluorophenol surrogate recovery values are below the QAPP criteria at 26 and 39 percent, respectively. Since these surrogates are associated with the acid fraction analytes; the cresols, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol, were qualified as estimated detection limit (UJ).

- For the semivolatile organics analyses, one or both surrogate recovery values are below the QAPP criteria. Functional Guidelines requires rejecting non-detected results associated with a surrogate recovery value below 10 percent. Positive results associated with a surrogate recovery value below 10 percent were qualified as estimated (J). Analytes associated with a surrogate recovery below the QAPP criteria and equal to or great than 10 percent were qualified as estimated (J) or estimated detection limit (UJ). The surrogate 2,4,6-tribromophenol is associated with the acid analytes (pentachlorophenol, 2,3,5,6-tetrachlorophneol, 2,3,4,5/2,3,4,6-tetrachlorophenol, and pentachloroanisole) and terphynyl-d_{14} is associated with the polycyclic aromatic hydrocarbon analytes.

- The o-terphenyl surrogate recovery from the petroleum hydrocarbon scan analysis of sample EXS002 is below the QAPP criteria at 15 percent. Positive results were qualified as estimated (J) and non-detected results were qualified as estimated detection limit (UJ).

- For the petroleum hydrocarbon scan analyses, two o-terphenyl surrogate recovery values were reported as "MI", which the laboratory defines as "matrix interference". The laboratory provided the surrogate recovery values via fax. The o-terphenyl recovery value for sample GP44SO05 is 208 percent resulting in all positive results being qualified as estimated (J). The o-terphenyl recovery value for sample CHSD101 is 52 percent which is within the QAPP criteria (data qualifiers are not required).

- For the diesel range organics, several o-terphenyl surrogate recovery values were reported as "MI", which the laboratory defines as "matrix interference". The laboratory

was contacted to obtain the percent recovery values and replied that the recovery values are between 400 and 600 percent, with the recovery for sample GP32SO01 at 771 percent. Data qualifiers are not required because the high level of target analyte in the samples interferes with the surrogate quantitation.

- For the diesel range organics, the o-terphenyl surrogate recovery value for samples GPRB01 is above the QAPP limit at 166 percent. The positive diesel range organics result was qualified as estimated (J).
- For the diesel range organics, the o-terphenyl surrogate recovery value for samples GP18SO01 is above the QAPP limit at 152 percent. Data qualifiers are not required because the high level of diesel range organics interferes with surrogate quantitation.
- For the diesel range organics, the o-terphenyl surrogate recovery value for sample GP39SO02 is below the QAPP criteria at 49 percent. The positive diesel range organics result was qualified as estimated (J).

Matrix Spike and Matrix Spike Duplicate Analyses

Matrix spike/matrix spike duplicates were analyzed as required for organics analyses and matrix spikes were analyzed as the required for inorganics and conventionals analyses. The recovery and RPD values were compared to the QAPP criteria. Except as noted below, all percent recovery and RPD values are acceptable.

- For the diesel range organics and semivolatile organics analyses, water MS/MSD analyses were not analyzed as required due to insufficient sample volume. Data qualifiers are not required because the laboratory control samples demonstrate the analytical system is in-control.
- For the TCLP semivolatile analyses, the phenol and 4-nitrophenol MS and MSD recovery values are below the QAPP criteria. Data qualifiers are not required because these are not target analytes for TCLP analyses.

- The acenaphthene and pentachlorophenol MS and MSD recovery values and the pyrene MS recovery value in the spiked analysis of sample GP42SO02 are below the QAPP criteria (values range from 32 to 48 percent). The acenaphthene and pentachlorophenol results in sample GP42SO02 have been qualified as estimated (J) or estimated detection limit (UJ). The pyrene results were not qualified because the MSD is acceptable.
- The acenaphthene MS and MSD recovery values and the pentachlorophenol MSD recovery value in the spiked analysis of sample GP50SO01 are below the QAPP criteria (values range from 34 to 46 percent). The acenaphthene result in sample GP50SO01 has been qualified as estimated detection limit (UJ). The pentachlorophenol result was not qualified because the MS is acceptable.
- The acenaphthene and pentachlorophenol recovery value in the MS and MSD analyses of sample DDSD1801 are below the QAPP criteria (values range from 41 to 48 percent). The acenaphthene and pentachlorophenol results in sample DDSD1801 have been qualified as estimated (J) or estimated detection limit (UJ).
- The nickel matrix spike recovery value for the spiked analysis of sample GP42SO02 is below the QAPP criteria at 74 percent. The nickel result of sample GP42SO02 was qualified as estimated detection limit (UJ).
- The lead and nickel matrix spike recovery values for the spiked analysis of sample BGSD101 are below the QAPP criteria at 72 percent each. The nickel result of sample BGSD101 was qualified as estimated detection limit (UJ) and the lead result was qualified as estimated (J).
- The arsenic matrix spike recovery value for the spiked analysis of sample GP31SO02 is below the QAPP criteria at 48 percent. The arsenic result of sample GP31SO02 was qualified as estimated (J).

Sample Duplicate Analyses

Sample duplicate analyses were performed as required for inorganic and conventional analyses. The RPD values were compared to the QAPP criteria. Except as noted below, all RPD values are acceptable.

- The total organic carbon RPD value of the duplicate analysis of sample GP34SO02 is above the QAPP criteria at 22 percent. The QAPP criteria for TOC is RPD values less than 20. The TOC result of sample GP23SO02 was qualified as estimated (J).
- The copper RPD value for the duplicate analysis of sample DDSD1801 is above the QAPP criteria at 49 percent. Data qualifiers are not required because the results meet the alternative Functional Guidelines criteria, i.e., the sample results are less than 5 times the reporting limit and within 2 reporting limits of each other.

Laboratory Control Sample Analyses

Laboratory control samples were analyzed as required. The recovery values of the organic and conventional analyses were compared to the QAPP criteria and the inorganic recovery values were compared to the criteria listed in Functional Guidelines (80 to 120 percent). The percent recovery values are acceptable, with the following exceptions.

- The selenium recovery value in the LCS associated with the TCLP metals analysis is above the Functional Guidelines criteria 126 percent. Data qualifiers are not required because the bias is high and selenium was not detected in the associated sample.
- The pentachlorophenol recovery values for the soil LCSs extracted on 2-16-01, 2-17-01, and 2-21-01 are below the QAPP criteria (values range from 32 to 42 percent). The pentachlorophenol results in all associated samples were qualified as estimated (J) or estimated detection limit (UJ).

Target Analytes and Laboratory Reporting Limits

The reporting limits listed in the QAPP were met by all samples that were analyzed undiluted, with the following exceptions.

- The water detection limits for the volatile organic analyses, diesel range organics, metals, and total organic carbon are above the QAPP reporting limits.
- The soil detection limits for the semivolatile organic analyses are above the QAPP reporting limits.

The following anomalies are related to sample quantitation.

- The benzo(b)fluoranthene result of sample DDSD501 was flagged by the laboratory as being above the calibration range. The result was qualified as estimated (J). Ideally, the laboratory should have analyzed the sample at a dilution.
- For SDGs 20010818 and 20010878, the case narratives state that several diesel range organics results are above the calibration range. Since the results were not flagged in the report, the laboratory was contacted to obtain the affected samples. The diesel range organics results of the affected samples were qualified as estimated (J). Ideally, the laboratory should have analyzed the samples at a dilution.
- For the petroleum hydrocarbon scan analyses, only diesel and heavy fuel oil #6 were calibrated using a multipoint calibration curve. Naphtha, hydrocarbons (JP4), mineral spirits, kerosene, and lube oil were calibrated using a 1 point curve. Due to the uncertainty associated with a 1 point calibration all positive naphtha, hydrocarbons (JP4), mineral spirits, kerosene, and lube oil results have been qualified as estimated (J).

Field Quality Control Sample Analyses

Field Blanks

Samples GPRB01, GPRB02, GPRB03, GPRB04, GPRB05, GPRB06, SDRB01, and SDRB02 were identified as rinsate blanks. At lease one trip blank is associated with each SDG that contains samples analyzed for volatile organics. The field blanks are free of target analytes above the reporting limits, with the following exceptions.

- Petroleum hydrocarbons as diesel was detected in petroleum hydrocarbon identification scan analysis of rinsate blanks GPRB01 and GPRB06 at 241 μg/L and 196 μg/L, respectively. Functional Guidelines prescribes three qualifications schemes for blank contamination: (1) associated sample concentrations greater than the action level (5 times the blank concentration) are not qualified, (2) associated sample concentrations less than the action level and greater than the reporting limit are qualified as undetected (U) at the reported value, and (3) associated sample concentrations less than the action level and less than the reporting limit are qualified as undetected (U) at the reporting limit. The petroleum hydrocarbons as diesel results of samples GP07SO02, GP48SO05, and GP48SO06 were qualified as undetected (U) at the reported value because the petroleum hydrocarbons as diesel concentrations are less than the action level and greater than the reporting limit.
- Chromium was detected in rinsate blank GPRB03 at 0.014 mg/L. Data qualifiers are not require because the level of chromium in the associated samples is greater than 5 times the rinsate blank amount.
- Copper was detected in rinsate blank GPRB04 at 0.014 mg/L. The copper results of samples GP40SO01 and GP40SO02 were qualified as undetected (U) at the reported value.
- Naphthalene and 2-methylnaphthalene were detected in rinsate blank GPRB04 at 0.460 μg/L and 1.02 μg/L, respectively. With one exception, naphthalene and 2-

methylnaphthene were not detected in the associated samples. The 2-methylnaphthalene result of sample GP43SO01 was qualified as undetected (U) at the reported value.

- Diesel range organics were detected in rinsate blank GPRB01 at 423 μg/L. The diesel range organics results of samples GP08SO02, GP09SO01, and GP11SO02 were qualified as undetected (U) at the reported value because their concentrations are less than the action level and greater than the reporting limit.

Field Duplicate Analyses

Eight field duplicate pairs are associated with this data set. The field duplicate RPD values were compared to the QAPP criterion for precision. For the volatile organics and petroleum hydrocarbons, RPD values could not be calculated because positive results were not detected in either sample. All field duplicate RPD values are within the QAPP criteria, with the exceptions listed below.

- The RPD value of the non-petroleum hydrocarbons as diesel results for field duplicate pair GP45SO01/GP45SO02 is above the QAPP criteria of RPD values less than 50 percent.
- The RPD values of pentachlorophenol in field duplicate pair GP45SO01/GP45SO02, and indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, and pentachlorophenol in field duplicate pair DDSD1401/DDSD1402 are above QAPP criteria of RPD values less than 50.
- The RPD values of chromium and lead in field duplicate pair GP48SO01/GP48SO05, arsenic in field duplicate pair DDSD801/DDSD802, and arsenic, chromium, copper, and lead in field duplicate pair DDSD1401/DDSD1402 are above the QAPP criteria of 35 percent.
- The total organic carbon RPD value for field duplicate pair DDSD801/DDSD802 is above the QAPP criteria at 33 percent.

All results associated with field duplicate RPD values above the QAPP criteria have been qualified as estimated (J). The precision of the field duplicate pairs is presented in the following table.

Table I-2. Field Duplicate Precision

Sample ID	Duplicate ID	Analyte	Sample Result[a]	Duplicate Result[a]	RPD[b]
GP07SO01	GP07SO02	Total solids	88.5	89.5	1.1
GP15SO02	GP15SO03	Total solids	86.6	86.1	0.6
GP28SO02	GP28SO03	Total solids	84.8	91.0	7.1
GP37SO02	GP37SO03	Total solids	86.3	86.2	0.1
GP45SO01	GP45SO02	Pentachlorophenol	5.73	2.93	82
		Chromium	12.8	13.4	4.6
		Copper	< 2.35[c]	2.41	NC[d]
		Lead	3.90	3.94	1.0
		Total solids	85.2	86.3	1.3
		Non-PHC[e] diesel	38.3	17.8	73
GP48SO01	GP48SO05	Phenanthrene	< 0.011	0.0253	NC
		Pentachlorophenol	< 0.058	1.02	NC
		Chromium	13.6	1.73	155
		Lead	4.15	6.12	38
		PHC[e] as diesel	< 4.68[c]	7.47	NC[d]
		Total solids	85.5	89.8	4.9
DDSD801	DDSD802	Benzo(a)anthracene	0.0373	0.0353	5.5
		Benzo(a)pyrene	0.0313	0.0302	3.6
		Benzo(b)fluoranthene	0.125	0.133	6.2
		Benzo(k)fluoranthene	0.0440	0.0450	2.3
		Chrysene	0.0865	0.0652	28
		Indeno(1,2,3-cd)pyrene	0.0280	0.0305	8.6
		Fluoranthene	0.0372	0.0497	29
		Pyrene	0.0470	0.0681	37
		Benzo(g,h,i)perylene	0.0256	0.0277	7.9
		Pentachlorophenol	0.11	0.129	16
		Lube oil	227	240	5.6
		Total solids	71.3	72.7	1.9
		Total organic carbon	11,400	15,900	33
		Arsenic	1.34	2.73	68
		Chromium	6.9	7.92	14
		Copper	8.13	9.72	18
		Lead	5.47	5.45	0.4
DDSD1401	DDSD1402	Benzo(a)anthracene	0.109	0.0975	11
		Benzo(a)pyrene	0.0488	0.0687	34
		Benzo(b)fluoranthene	0.153	0.254	50
		Benzo(k)fluoranthene	0.0589	0.0892	41
		Chrysene	0.183	0.234	29
		Indeno(1,2,3-cd)pyrene	0.0277	0.0505	58
		Fluoranthene	0.298	0.304	2.0
		Pyrene	0.324	0.323	0.3
		2-Methylnaphthalene	0.0289	0.0322	7.7
		Phenanthrene	0.0345	0.0293	16
		Anthracene	0.0110	0.0166	41
		Benzo(g,h,i)perylene	0.0247	0.0455	59

Pentachlorophenol	0.160	0.469	98
PHC[e] as diesel	45.5	30	41
Total solids	91.4	79.4	14
Arsenic	11.8	25.4	73
Chromium	18.8	55.5	99
Copper	14.4	36.1	86
Lead	1.56	3.06	65

[a] Metals, semivolatile organics, total organic carbon, and fuels results are in mg/kg, and total solids results are in percent
[b] Relative percent difference
[c] Analyte not detected above the associated reporting limit
[d] Not calculable
[e] Petroleum hydrocarbons

Overall Assessment of Data Quality

Three practices utilized by GCAL on this data set are not considered good laboratory practices and are not recommended by the methods.

- The practice of subtracting the result of a contaminated method blank from the sample results for diesel range organics and petroleum hydrocarbon scan results is discouraged by the USEPA (Method 8000B [USEPA 1996] section 8.2.6.6). The laboratory should have re-extracted and reanalyzed the entire batch or if insufficient sample volume prevented re-extraction the results should have been reported unsubtracted and flagged to alert the data user to the method blank contamination.
- Reporting results above the calibration range (whether flagged or not) introduces an unnecessary level of inaccuracy to the results. The accuracy of values quantitated above the calibration range is unknown because the relationship between instrument response and concentration is not known.
- The duel use of QC samples for the diesel range organics and petroleum hydrocarbons scan analyses is acceptable. However, the QC samples should be analyzed with each method batch to monitor the performance of the whole system, not just the extraction phase.

With the exception of one result above the calibration range, these unacceptable practices were performed on the fuels analyses.

The useability of the data is based on the guidance documents listed above. Upon consideration of the information presented here, the data are acceptable except where flagged with data qualifiers that modify the usefulness of the individual values. Results that are rejected are not useable for any purpose.

Assessment of Data Quality Objectives

Precision

Precision is a measure of the mutual agreement among individual measurements of the same property, under prescribed similar conditions. Precision is determined through analysis of matrix spike/matrix spike duplicates, sample duplicates, and field duplicate samples. Duplicate samples are evaluated for precision in terms of relative percent difference. Relative percent difference is defined as the difference between the duplicate results divided by the mean and expressed as a percent.

The precision of the volatile organics and diesel range organics data sets meet the DQO set forth in the QAPP. The precision of the MS/MSDs, sample duplicates, and field duplicates is acceptable.

The precision of the conventional chemistry data set meets the QAPP DQO, with the possible exception of the total organic carbon results. One laboratory duplicate and one field duplicate TOC RPD values are above the QAPP criterion. The precision of the pH and total solids data are acceptable.

The precision of the semivolatile organic, petroleum hydrocarbon scan data and metals data sets are mixed. The analytical or laboratory precision is acceptable as shown by the acceptable MS/MSD and laboratory duplicate RPD values. However, field precision is poor as shown by the high field duplicate RPD values. It should be noted that field duplicate precision is a combination of field precision (sampling techniques), laboratory precision, and sample homogeneity.

Accuracy

Accuracy is the degree of agreement between a measurement and the accepted reference or true value. The level of accuracy is determined by examination of surrogates, matrix spikes, matrix spike duplicates, laboratory control samples, method blanks, and field blanks. The surrogate, matrix spike, matrix spike duplicate, and laboratory control sample recovery values were compared to the criteria set forth in the QAPP, Functional Guidelines, or the analytical methods. Method and field blanks are analyzed to identify compounds that could be introduced during the sampling, laboratory extraction, or analysis phase (i.e., laboratory contaminates) and lead to inaccurate results.

The accuracy of the volatile organics and conventional chemistry data set meets the DQO of the QAPP. The surrogate, MS, MSD, and LCS recovery values are acceptable and the method blanks and field blanks are free of contamination.

The accuracy of the TCLP data set meets the QAPP DQO, with the following exceptions. The selenium results are biased high as shown by the high LCS recovery. However, sample results are not affected because selenium was not detected in the sample. The acid analytes (pentachlorophenol, the trichlorophenols, and the cresols) are biased low as shown by the low acid fraction surrogate recovery values. All other surrogate and LCS recovery values are acceptable. The matrix spikes and matrix spike duplicates recovery values are within the QAPP criteria and the method blanks are free of contamination.

The accuracy of the semivolatile organics data set meets the QAPP DQO, with the following exceptions. The results of samples with low surrogate recovery values maybe biased low. Sample results associated with low surrogate recovery were qualified as estimated or estimated detection limit to denote the bias. In the case of surrogate recovery below 10 percent, associated non-detected results were rejected. Several matrix spike and matrix spike duplicate recovery values are below the QAPP criteria. Since a pattern of bias is not evident, only the spiked samples were qualified as estimated or estimated detection limit. The pentachlorophenol LCS recovery from three extraction batches is below the QAPP criteria. The associated

pentachlorophenol results were qualified as estimate or estimated detection limit to alert the data used to the low bias. The effect of the rinsate blank contamination has been minimized by the proper use of data qualifiers as prescribed by Functional Guidelines. Qualifying contaminates in the associated samples as undetected when their concentration is less than 5 times the field blank concentration minimizes the possibility of false positive results. The method blanks are free of contamination.

The accuracy of the diesel range organics data set meets the QAPP DQO, with several exceptions. Several samples have surrogate recovery values outside the QAPP criteria. The accuracy of the results is not compromised when high levels of diesel range organics are present because they interfere with the accurate quantitation of the surrogate. One sample (GP39SO02) was qualified as estimated due to low surrogate recovery and one field blank (GPRB01) was qualified as estimated due to high surrogate recovery. The method blank subtraction performed by the laboratory could introduced inaccuracy to the results or produce false negative results. All blank subtracted results were qualified as estimated or estimated detection limits. The effect of the rinsate blank contamination has been minimized by the proper use of data qualifiers as prescribed by Functional Guidelines.

The accuracy of the petroleum hydrocarbon scan data set meets the QAPP DQO, with several exceptions. The naphtha, hydrocarbons (JP4), mineral spirits, kerosene, and lube oil results maybe inaccurate because the one point calibration used for quantitation does not define the instrument response over the range of results. Several samples have surrogate recovery values outside the QAPP criteria. One sample (EXSO02) was qualified as estimated due to low surrogate recovery and one sample (GP44SO05) was qualified as estimated due to high surrogate recovery. The method blank subtraction performed by the laboratory could introduced inaccuracy to the results or produce false negative results. All blank subtracted results were qualified as estimated or estimated detection limits. The effect of the rinsate blank contamination has been minimized by the proper use of data qualifiers as prescribed by Functional Guidelines.

The accuracy of the metals data set meets the DQO set forth in the QAPP, with the following exceptions. Several matrix spike recovery values for arsenic, nickel, and lead are below the QAPP criteria. Since a pattern of low bias was not observed, only the spiked sample results were qualified as estimated or estimated detection limit. The effect of the chromium and copper detected in the rinsate blanks has been minimized by the proper use of data qualifiers as prescribed by Functional Guidelines. The LCS recovery values are within the QAPP criteria and the method blanks are free of contamination.

Representativeness

Representativeness is the extent to which the data reflect the actual contaminate levels present in the samples. Representativeness is assessed through method and field blanks, and proper preservation and handling. Method and field blank analyses allow for the detection of artifacts that may be reported as false positive results. Proper sample preservation and handling ensure that sample results reflect the actual sample concentrations.

The data are assumed to be representative, with the exception of the pH result. Since the pH analysis of sample SP2 was analyzed past the holding time, the results may not be representative. The remaining data are representative since the samples were analyzed within the required holding time, and the samples were properly preserved and handled. The method blank and field blank contamination does not impact the data because the procedures in Functional Guidelines were followed to minimize the impact of the blank contamination.

Comparability

Comparability is a measure of how easily the data set can be compared and combined with other data sets. The data are assumed to be comparable since standard EPA methods were used to analyze the samples, the method QC criteria were generally met, and routine detection limits were reported.

Completeness

Completeness is expressed as the ratio of valid results to the amount of data expected to be obtained under normal conditions. Completeness is determined by assessing the number of samples for which valid results were obtained versus the number of samples that were submitted to the laboratory for analysis. Valid results are results that are determined to be usable during the data validation review process.

The 90 percent completeness goal was met. The completeness of this data set is 99.6 percent. The completeness is less than 100 percent because 15 semivolatile acid fraction results were rejected due to very low surrogate recovery.

Data Qualifier Definitions

Inorganic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are taken from Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 1994a).

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J - The associated value is an estimated quantity.

UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

R - The data are unusable. (Note: Analyte may or may not be present)

Organic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are taken from Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA 1994b).

U - The analyte was analyzed for but not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the samples and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table I-3. Summary of Qualified Data

Sample ID	Analyte	Qualifier	Reason for Qualification
SP2	PH	J	Analysis hold time exceeded
GP01SO02 GP04SO01 GP04SO02 GP06SO02 GP07SO02 GP08SO02 GP10SO01 GP10SO02	Diesel range organics Non-PHC[a] as diesel	J positive results, UJ detection limits	Method blank result subtracted from sample result

Sample ID	Analyte	Qualifier	Reason for Qualification
GP02SO01 GP02SO02 GP03SO01 GP03SO02 GP05SO01 GP05SO02 GP06SO01 GP07SO01 GP07SO03 GP08SO01 GP09SO01 GP09SO02 GP11SO01 GP11SO02	Diesel range organics	J positive results, UJ detection limits	Method blank result subtracted from sample result
SP2	o-Cresol m & p-Cresol Cresols Pentachlorophenol 2,4,5-trichlorophenol 2,4,6-trichlorophenol	UJ	Acid fraction surrogate recovery values below QAPP criteria
GP32SO02 GP33SO02 GP38SO02 GP40SO01	Pentachloroanisole Pentachlorophenol 2,3,5,6-tetrachlorophenol 2,3,4,5/2,3,4,6-tetrachlorophenol	J positive results, R detection limits	2,4,6-tribromophenol surrogate recovery below 10 percent

Sample ID	Analyte	Qualifier	Reason for Qualification
GP07SO02 GP08SO02 GP10SO02 GPRB01 GP12SO02 GP13SO02 GP15SO02 GP21SO02 GP23SO02 GP26SO02 GP28SO01 GP31SO02 GP36SO02 GP43SO01 GP45SO08 GP46SO04 GP48SO06 GP50SO02 EXSO09 EXSO05 EXSO10 EXSO03 SP1 GP53SO02 DDSD601 DDSD801 DDSD1801 DDSD1601 DDSD1201 DDSD1401 DDSD1501 DDSD101 DDSD401	Pentachloroanisole Pentachlorophenol 2,3,5,6-tetrachlorophenol 2,3,4,5/2,3,4,6-tetrachlorophenol	J positive results, UJ detection limits	2,4,6-tribromophenol surrogate recovery below QAPP criteria
GP48SO06 EXSO09 DDSD501 BGSS301 BGSS401 DDSD801 DDSD1701 DDSD1601 CHBSD401 DDSD101 DDSD401 DDSD1101	PAHs[b]	J positive results, UJ detection limits	Terphenyl-d_{14} surrogate recovery below QAPP criteria
EXSO02	Petroleum hydrocarbon identification scan	J positive results UJ detection limits	Surrogate recovery below QAPP criteria
GP44SO05	PHC[a] as diesel	J	Surrogate recovery above QAPP criteria
GPRB01	Diesel range organics	J	Surrogate recovery above QAPP criteria
GP39SO02	Diesel range organics	J	Surrogate recovery below QAPP criteria

Sample ID	Analyte	Qualifier	Reason for Qualification
GP42SO02 DDSD1801	Acenaphthene Pentachlorophenol	J positive results UJ detection limits	MS and MSD recovery below QAPP criteria
GP50SO01	Acenaphthene	UJ	MS and MSD recovery below QAPP criteria
GP42SO02	Nickel	UJ	MS recovery below QAPP criteria
BGSD101	Nickel	UJ	MS recovery below QAPP criteria
BGSD101	Lead	J	MS recovery below QAPP criteria
GP31SO02	Arsenic	J	MS recovery below QAPP criteria
GP34SO02	Total organic carbon	J	Laboratory duplicate RPD value greater than QAPP criteria

Sample ID	Analyte	Qualifier	Reason for Qualification
GP01SO02	Pentachlorophenol	J positive results, UJ detection limits	LCS recovery below QAPP criteria
GP04SO01			
GP04SO02			
GP06SO02			
GP07SO02			
GP08SO02			
GP10SO01			
GP10SO02			
GP12SO01			
GP12SO02			
GP13SO02			
GP14SO01			
GP15SO02			
GP18SO01			
GP18SO02			
GP20SO01			
GP21SO02			
GP23SO02			
GP26SO02			
GP28SO01			
GP31SO02			
GP32SO02			
GP34SO02			
GP36SO02			
GP40SO02			
DDSD1801			
DDSD1601			
DDSD1301			
DDSD1001			
BGSS601			
DDSD1201			
BGSS701			
DDSD1401			
DDSD1402			
DDSD1501			
CHBSD401			
DDSD101			
DDSD1401			
DDSD901			
DDSD1101			
DDSD501	Benzo(b)fluoranthene	J	Result above calibration range

Sample ID	Analyte	Qualifier	Reason for Qualification
GP01SO01 GP03SO01 GP04SO01 GP04SO02 GP10SO01 GP12SO01 GP14SO01 GP14SO02 GP18SO01 GP18SO02 GP20SO01 GP32SO01 GP34SO02 GP38SO01	Diesel Range Organics	J	Result above calibration range
DDSD801 DDSD802 BGSS501 DDSD1701 DDSD1801 DDSD1601 DDSD1001 DDSD901 DDSD1101	Lube oil	J	1 point calibration
GP08SO02 GP09SO01 GP11SO02	Diesel range organics	U at reported value	Result less than 5 times the field blank level and greater than the reporting limit
GP07SO02 GP48SO05 GP48SO06	PHC[a] as Diesel	U at reported value	Result less than 5 times the field blank level and greater than the reporting limit
GP40SO01 GP40SO02	Copper	U at reported value	Result less than 5 times the field blank level and greater than the reporting limit
GP43SO01	2-methylnaphthalene	U at reported value	Result less than 5 times the field blank level and greater than the reporting limit
GP45SO01 GP45SO02	Non-PHC as diesel Pentachlorophenol	J	Field duplicate RPD greater than QAPP criteria
GP48SO01 GP48SO05	Chromium Lead	J	Field duplicate RPD greater than QAPP criteria
DDSD801 DDSD802	Arsenic Total organic carbon	J	Field duplicate RPD greater than QAPP criteria
DDSD1401 DDSD1402	Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene Pentachlorophenol Arsenic Chromium Copper Lead	J	Field duplicate RPD greater than QAPP criteria

a Petroleum hydrocarbons b Polycyclic aromatic hydrocarbon

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