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TURKEY CREEK
HUMAN HEALTH RISK ASSESSMENT

Cavenham Forest Industries
Gulfport, Mississippi
and
Environmental Management Services, Inc.

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Prepared for:
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Prepared by:
Center for Toxicology and Environmental Health, L.L.C.

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1.0 INTRODUCTION AND OBJECTIVES

This human health risk assessment (HHRA) was prepared by the Center for Toxicology and Environmental Health, L.L.C. (CTEH) on behalf of Cavenham Forest Industries (CFI) for their Gulfport, Mississippi facility (the Site). The HHRA was prepared according to the HHRA Work Plan and its subsequent revisions prepared for the United States Environmental Protection Agency (EPA) in 2011 (CTEH, 2011).

The HHRA is intended to determine if chemicals detected in Turkey Creek surface water, sediment, and edible aquatic species (i.e., fish and crabs) present a risk to human health. The HHRA includes the following elements in accordance with EPA risk assessment guidance:

- Data Evaluation
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization and Uncertainties Analysis

The HHRA reviews and evaluates surface water, sediment, and fish data to determine possible chemicals that pose a human health concern and assesses current and potential future exposure scenarios and quantify the potential risk and hazard to human health. The HHRA uses health protective assumptions to calculate estimates of exposure and the resulting hazard and risk to potentially exposed populations in the absence of any further cleanup action. However, this assumption is conservative given that several remedial actions are currently being performed (groundwater recovery, SediMite application) and others are planned (capping, sheet pile wall) for the SWMU 3-1/3-4/Turkey Creek area.

The HHRA follows EPA risk assessment guidance and supports risk-based management decisions. The HHRA presents the degree of non-cancer (hazard) or carcinogenic risk posed by the Site and identifies and discusses uncertainties in the exposure assumptions and hazard and risk estimates.

1.1 Site Description and History

CFI owns and maintains the Site which formerly produced treated wood products using the preservatives creosote and pentachlorophenol. The CFI facility is located in Sections 15, 22, and 23 of Township 7 South, Range 11 West, in Harrison County, Mississippi (Figure 1). All manufacturing operations at the Site ceased during November, 1987 and the former plant has been demolished. Presently, groundwater corrective action and monitoring are being performed as the Site in accordance with a RCRA Post Closure Permit. Cavenham maintains treatment systems at the Site to treat the groundwater recovered by the on-site remediation. Cavenham currently plans to maintain ownership of the property indefinitely; therefore the future operations on the property are assumed to be the same as current operations (i.e. maintenance of the property grounds and remedial activities).

The approximately 78-acre former wood treating plant site occupies a gently sloping point of land between Bayou Bernard (Harrison County Industrial Seaway, HCIS) to the north and Turkey Creek to the south. The Site is bounded to the west by Creosote Road and to the south by Rippy Road and Turkey Creek. Turkey Creek runs into Bayou Bernard just east of the Site. Properties surrounding the Site are zoned commercial and residential. Properties west of the Site are used for commercial purposes. Residential properties and undeveloped wooded properties bound the Site to the south and southeast.

The lower reaches of Turkey Creek are estuarine. Estuaries exhibit temporal and spatial variability related to the mixing of fresh water with saltwater and the influence of tides. Much of the area west of Highway 49 that forms the Turkey Creek drainage basin is undeveloped wetlands. East of Highway 49, the creek passes through mainly commercial property including the Gulfport-Biloxi Regional Airport. Turkey Creek joins Bayou Bernard just east of the CFI facility.

The CFI facility was originally founded around 1906 by Captain J.T. Jones. The facility was a wood treating operation that initially treated pilings, timbers, and cross-ties for local railroads and piers. The facility primarily used creosote as a preservative for wood treatment although pentachlorophenol was used as a preservative in the later years of the facility's operation.

Captain Jones sold his interest in the facility to Gulfport Creosoting Company. Crown Zellerbach Corporation acquired the facility in 1972 from Gulfport Creosoting Company and retained ownership until CFI acquired the facility on May 5, 1986. CFI operated the plant for approximately a year and a half before closing the Site in November, 1987.

1.2 Environmental Investigations and Remedial Activities

Both CFI and Crown Zellerbach performed separately funded environmental investigations and on-site remediation of various areas at the Site. These investigations were primarily centered on identifying areas where soil and groundwater were impacted as a result of previous wood-treating operations. These remedial actions resulted in closure of the surface impoundment, installation of two soil-bentonite cut-off walls, the treatment, containment, and/or removal of contaminated soils, the installation of recovery wells used to remove groundwater, the installation of subsurface groundwater injection trenches, the installation of a subsurface air-sparging system, and the installation and maintenance of three groundwater treatment systems. CFI follows regimented protocols as outlined in permits issued by the MDEQ (Mississippi Department of Environmental Quality) for the sampling, treatment, and water discharge associated with the permitted remedial activities at this Site.

The closed RCRA units are located in the central eastern portion of the Site. This area formerly had sand filtration beds and a surface impoundment to treat waste water generated in the wood treating process. The contact cooling water entering this impoundment contained residual wood treating chemicals from the process. The impoundment was approximately 240 feet long, 75 feet wide and of varying depth between five and eight feet.

The sand filtration beds and former surface impoundment were closed during 1987. Certification of closure was submitted to MDEQ in January, 1988. Closure included removal and treatment of water contained in the surface impoundment; solidification/stabilization of remaining sludges; demolition and solidification of the sand filtration beds; installation of a gas collection/venting system; installation of a 40-mil HDPE; installation of a topsoil drainage layer; and placement and seeding of an eighteen inch thick topsoil layer.

The closed RCRA units are located within a soil bentonite slurry wall (cutoff wall) which encloses an area of impacted groundwater. This cutoff wall isolates an area of approximately 12

acres. The cutoff walls extend from ground surface to approximately three feet into the Horizon 4 marine clay stratum which underlies the Site. Groundwater in this area exhibits predominantly PAHs typically found in creosote.

Groundwater remediation at this Site is occurring through a system of recovery and injection wells which were activated in the fall of 1990. The remediation system has been upgraded in accordance with the *Revised Corrective Action Plan* of May 10, 1996.

The closed RCRA units are briefly discussed below.

1.2.1 Old Pond (SWMU No. 6)

The Old Pond SWMU is located on the west side of the Site. Available information indicates that it was originally constructed around 1940 as a shallow surface impoundment of approximately 4.5 acres and was utilized to contain contaminated stormwater runoff from the former process area. The area has been investigated and determined to contain wood treating oils and contaminated media. The area has been closed by excavating the adjacent contaminated soils and placing them inside an area which has a soil-bentonite cutoff wall and RCRA style cap. The Old Pond closure area comprises approximately 13 acres. The closure has three internal subsurface elements to remediate the contaminated media:

- an internal hydraulic gradient control system which is utilized to remove contaminants and maintain an inward hydraulic gradient across the cutoff wall;
- two layers of infiltration galleries which allow the introduction of fluids back into the closure area at elevations higher than the gradient control system; and
- groundwater recovery wells which are screened below the gradient control system and immediately above a clay layer which provide a confining unit for the bottom of the closure.

Closure construction activities were conducted July, 1988 through October, 1992. During 1993, a groundwater recovery and treatment system was activated.

1.2.2 Seaway Area North of SWMU No. 1

An area located on the northeastern portion of the property, along the Harrison County Industrial Seaway (HCIS) was determined to have detections of wood treating constituents during the RCRA Facility investigation. This area is north of the former Pole Buggy Storage Area. This area, located outside of the soil-bentonite cutoff wall, has two recovery wells. The recovery wells, RW-21 and RW-22, are located on the narrow strip of land between the HCIS and the RCRA facility soil-bentonite cutoff wall. Groundwater recovery began in this area in August, 1994.

In September, 2009 well PW-2 was plugged and abandoned. The PVC well casing was determined to have failed. The well was replaced by wells RW-38 and RW-39. Additionally, a new recovery well RW-40 was installed in this area.

1.2.3 Wood Waste Landfill No. 3, Area 1 (SWMU No. 3-1) and Area 4 (SWMU No. 3-4)

The RFI investigated an area on the southeastern part of the Site that was referred to in the RCRA Facility Assessment (RFA) as Area 1 of three wood waste landfills. The area is located on the north bank of Turkey Creek in the southeastern portion of the Site. The RFI revealed that this area is underlain by wood chips, pole cutoffs, and other debris from the former process. Additionally, the groundwater in this area has been impacted by wood treating constituents. The majority of the contaminants in this area are located within the confines of the RCRA soil-bentonite cutoff wall, which is being remediated by RCRA recovery well RW-12. Three additional recovery wells were installed during the RFI to remediate the groundwater outside of the soil bentonite cutoff wall. Two additional wells were installed in this area, RW-30 and RW-31, as part of the *Revised Corrective Action Plan* of May 10, 1996. During 1993 and 1994, a groundwater recovery and treatment system was installed for this area of the Site. The treatment system is referred to as the Turkey Creek Treatment system. The treatment system includes a physical separation unit located near SWMU No. 3-1, and fixed-film and “rock-reed” biological treatment units located in the RCRA treatment area.

The Wood Waste Landfill Location No. 4 (SWMU No. 3-4) is located on a point of land east of the Wood Waste Landfill SWMU No. 3-1, and is bordered by Turkey Creek to the south, west, and east. This area was initially a low lying swampy area which was reclaimed as usable land

around 1940 by placing fill in this area. The fill consisted predominantly of wood chips, bark, and debris from on-site pole pealing and the wood treating process. The results from the RFI indicated that groundwater has been impacted in this area with organic wood treating constituents. Recovery wells RW-14, RW-15, RW-16, RW-17, RW-18, RW-23, and RW-25 were installed to remediate the groundwater in this area. Groundwater remediation in this area began in the fall of 1994.

In 2007 and 2008, an Interim Measures Investigation was conducted at SWMU No. 3-1 and 3-4 to:

- Evaluate the shallow soils to determine if releases from the SWMUs or former site operations have impacted the shallow soils at concentrations that may pose a significant risk to on-site workers.
- Evaluate the shallow sediments of Turkey Creek to determine if releases from these SWMUs have significantly impacted the creek sediments.
- Further evaluate the groundwater in the vicinity of SWMU 3-1 and SWMU 3-4 to provide additional delineation of the impact due to releases from these SWMUs.
- Characterize the subsurface geology and hydrogeology in the area of SWMU 3-1 and SWMU 3-4 to evaluate the feasibility of engineered barriers to mitigate releases from these SWMUs.

The investigation indicated there was minimal risk to on-site workers for COPCs in shallow soil. The investigation led to the development of additional remedial measures to address the free product observed in deeper soils and constituents in groundwater. Remedial measures include newly installed recovery wells (RW-41, RW-42 and RW-43), evaluation of in-situ chemical oxidation, and the design of engineering barriers to isolate the SWMU 3-1 and 3-4 source areas and affected soil/groundwater.

1.2.4 Recent Investigations

In 2009 and 2010, Environmental Management Services, Inc. (EMS), consultants for the CFI facility, conducted a series of investigations in Turkey Creek and presented results in the March 3, 2010 *Turkey Creek Sediment and Pore Water Sampling Report* (EMS, 2010a) and the December 3, 2010 Addendum (EMS, 2010b). The field investigations included sediment and pore water sampling, surface water sampling, biota sampling, soil boring and piezometer installations, and side scan sonar survey. An ecological risk assessment was conducted which

evaluated risks to benthic organisms, fish, birds, and mammals. Results of the investigation indicated that the impact to Turkey Creek is limited to creek bottom sediments and risk is limited to the benthic community in areas where polycyclic aromatic hydrocarbons (PAHs) have accumulated adjacent to CFI. The area of potential risk to benthic organisms (designated as Area 6) is along a 300 feet reach of Turkey Creek (Figure 1). EPA agreed with the findings of the investigation, but determined that based on whole body fish data and the concerns of the surrounding community, an assessment of risk to human health from the consumption of aquatic biota from Turkey Creek (USEPA, 2011d) was needed. EPA also requested that the human health risk assessment (HHRA) address exposure to surface water and sediment from all constituents present in Turkey Creek adjacent to CFI.

To obtain additional environmental data for the HHRA, EMS conducted surface water, sediment, and fish sampling in Turkey Creek and Bayou Bernard in 2011. Only surface water and sediment samples collected in Turkey Creek are used in the HHRA. Because fish may swim upstream or downstream of the CFI facility, fish collected both upstream and adjacent to the CFI facility in Turkey Creek and Bayou Bernard are evaluated. In addition, for the possible purpose of providing a point of comparison in a much less industrialized area, EMS collected fish samples in Old Fort Bayou, located east of the CFI facility and north of Ocean Springs, MS. Samples were collected from two locations in Old Fort Bayou. One group of samples was collected approximately 13 miles east of the site and a second group was collected further upstream approximately 20 miles from the Site.

Past investigations have identified PAHs as chemicals of potential concern (COPC) in environmental media (surface water and sediment) at the Site. Although polychlorinated dibenzo-p-dioxins (PCDD, dioxins), and polychlorinated dibenzofurans (PCDFs; dioxin-like compounds) have been reported in analyses of environmental media, their presence has not been directly linked to site activities. Although PCDDs and PCDFs may be contaminants of pentachlorophenol, data show that pentachlorophenol and other phenolic compounds are not COPCs in Turkey Creek environmental media. However, PCDDs and PCDFs were considered possible COPCs for the purpose of evaluating human health risks from contact with Turkey Creek surface water, sediment, and from consumption of fish, crabs, and other edible aquatic species.

2.0 DATA SUMMARY AND EVALUATION

The surface water, sediment, and fish data used in the HHRA are compiled and reviewed to verify the adequacy of the available data to support HHRA. To date, there have been a number of investigations conducted at the Site to assess and evaluate potential contamination in soil, surface water, sediment, and aquatic organisms. While the historical investigations provide useful information on COPC concentration trends in various media, environmental data collected during recent Site investigations (from 2009 through 2011) and representing the most current conditions will be evaluated for use in the HHRA. As part of this review, summary information (i.e., maximum concentration detected, minimum concentration detected, and detection frequency) are compiled for the constituents found in each medium. Surface water, sediment, and fish sampling data used in the HHRA are compiled in Appendix A.

Based on past Site activities and previous Site investigations, identified COPCs include semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs) as well as polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). The HHRA evaluates detected and non-detected SVOCs, PCDDs, and PCDFs in surface water, sediment, and fish samples collected at various locations along Turkey Creek upstream from the Site, adjacent to the Site, and downstream from the Site. In the case of fish sampling data, fish samples from Bayou Bernard are also included due to the proximity of Bayou Bernard to Turkey Creek and the fact that Turkey Creek runs into Bayou Bernard. Fish are not necessarily confined to a specific location in Turkey Creek or Bayou Bernard and may migrate upstream or downstream within and between these water bodies

Health risks posed by individual PCDDs and PCDFs (known as congeners) are related to their toxicological similarity and potency to the most studied PCDD congener, 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). All PCDDs and PCDFs with chlorine atoms at the 2, 3, 7, and 8- positions are assumed to have the same effects as 2,3,7,8-TCDD. However, their potency relative to 2,3,7,8-TCDD varies from 100% as potent as 2,3,7,8-TCDD (i.e., a toxic equivalence of 1 for 1,2,3,7,8-pentachlorodibenzo-p-dioxin) to a potency of only 0.03% that of 2,3,7,8-TCDD (i.e., a toxic equivalence of 0.0003 for octachlorodibenzofuran). Toxic equivalence factors (TEFs) have been developed for each PCDD and PCDF chlorinated at the

2,3,7, and 8 positions on the PCDD and PCDF molecule. The TEFs used by USEPA (USEPA, 2010) for PCDDs/PCDFs are shown in the table below.

When multiple 2,3,7,8-PCDDs/PCDFs are detected in a surface water, sediment, or fish sample, the concentration of each PCDD congener is multiplied by its respective TEF to determine the toxic equivalence (TEQ) for that congener. The TEQs for each PCDD/PCDF congener detected in the sample are added together to calculate a total TEQ for that sample. The total TEQ represents the toxic equivalence of an equal concentration of 2,3,7,8-TCDD for that sample.

Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans	**Abbreviation**	***Toxic Equivalence Factor (TEF)**
Polychlorinated dibenzo-p-dioxins		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	2,3,7,8-TCDD	1
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	1,2,3,4,6,7,8-HpCDD	0.01
Octachlorodibenzodioxin	OCDD	0.0003
Polychlorinated dibenzofurans		
2,3,7,8-Tetrachlorodibenzofuran	2,3,7,8-TCDF	0.1
1,2,3,7,8-Pentachlorodibenzofuran	1,2,3,7,8-PeCDF	0.03
2,3,4,7,8-Pentachchlorodibenzofuran	2,3,4,7,8-PeCDF	0.3
1,2,3,4,7,8-Hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-Hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-Hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-Hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-Heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF	0.01
Octachlorodibenzofuran	OCDF	0.0003

*Obtained from USEPA, 2010a

Often, only a few of the 2,3,7,8-substituted PCDDs and PCDFs were detected in a sample. For the purpose of assessing TEQs in surface water, sediment, and fish, it was assumed that undetected 2,3,7,8-PCDD/PCDF congeners were present at concentrations one-half the detection limit for that sample. Detected congeners were assessed at the reported concentration.

In some cases, SVOCs and PCDDs/PCDFs were reported with data qualifiers. For example, surface water, sediment, or fish concentrations of SVOCs and PCDDs/PCDFs were "flagged" with a "J" qualifier (indicating that the chemical identity is certain but the concentration is uncertain) or with a "B" qualifier (indicating that the chemical was detected in a blank as well as the sample). In these cases, the concentration was used as if there was no data qualifier. The uncertainty associated with using qualified data is discussed in Section 5.4.1 of this report.

For some sediment, surface water, and fish samples, PCDD/PCDF analytical results were qualified with an "EMPC" (estimated maximum possible concentration) qualifier. When this qualifier was used for undetected results, the PCDD/PCDF concentration was set to one-half of the EMPC qualified value. When EMPC was applied to a detected concentration, the reported concentration was used.

In a similar manner, concentrations of carcinogenic PAHs in surface water, sediment, and fish were expressed as "benzo(a)pyrene equivalents." The USEPA assesses the risk to carcinogenic PAHs according to a potency scheme of relative carcinogenic potency to benzo(a)pyrene (USEPA, 1993). The seven PAHs considered to be carcinogenic by the EPA and their potencies relative to benzo(a)pyrene are presented in the table below.

Carcinogenic Polycyclic Aromatic Hydrocarbons (PAHs)	**Relative Potency Factor**
Benz(a)anthracene	0.1
Benzo(a)pyrene	1.0
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(a,h)anthracene	1.0
Indeno(1,2,3-cd)pyrene	0.1

For example, if benz(a)anthracene, benzo(a)pyrene, chrysene, and dibenz(a,h)anthracene are detected in a sediment sample at concentrations of 1000, 2000, 3000, and 4000 ug/kg, the resulting benzo(a)pyrene equivalent concentration for the sediment sample is the sum of the calculated benzo(a)pyrene equivalents for each carcinogenic PAH, 6,103 ug/kg (i.e., (1000 ug/kg x 0.1) + (2000 ug/kg x 1.0) + (3000 ug/kg x 0.001) + (4000 ug/kg x 1.0) = 6,103 ug/kg).

Benzo(a)pyrene equivalents were calculated for each surface water and sediment sample and each fish composite sample. When a carcinogenic PAH was not detected, one-half the detection limit was used to calculate the benzo(a)pyrene equivalent for that PAH. In the case when no carcinogenic PAH was detected in a sample, benzo(a)pyrene equivalents were calculated as if the 7 carcinogenic PAHs were present in the sample at one-half the detection limit. Thus, regardless of whether carcinogenic PAHs were detected or not, all surface water, sediment, and fish samples have a calculated benzo(a)pyrene equivalent concentration consisting of the sum of benzo(a)pyrene equivalents for 7 carcinogenic PAHs.

For the purpose of evaluating surface water, sediment, and sampling results from Turkey Creek, samples were divided into categories of “upstream” and “adjacent to the Site” categories. Samples collected adjacent to the Site may be impacted by historical Site activities whereas samples collected upstream (defined as upstream of the Rippy Road bridge over Turkey Creek) would be expected to be unaffected by Site activities.

“Upstream” and “downstream” fish samples collected in Bayou Bernard were collected upstream and downstream, respectively, of the location where Turkey Creek enters Bayou Bernard.

Surface water, sediment, and fish sampling results for Turkey Creek and fish sampling results for Bayou Bernard are discussed below.

2.1 Chemicals of Potential Concern in Turkey Creek Surface Water

Turkey Creek surface water sampling data are summarized in Appendix A for SVOCs and PCDDs/PCDFs by location (upstream and adjacent to the Site). Statistical summaries of the Turkey Creek surface water results for upstream locations for SVOCs and PCDDs/PCDFs are presented in Tables 2-1 and 2-2, respectively. For surface water locations adjacent to or downstream of the Site, SVOCs and PCDDs/PCDFs results are summarized in Table 2-3 and 2-4, respectively. Locations of surface water and sediment samples in Turkey Creek upstream and adjacent to the Site are presented in Figures 2 and 3, respectively.

To screen the surface water sampling results for chemicals of potential concern (COPCs), SVOC and total dioxin TEQs were compared with federal drinking water standards, EPA tapwater screening levels (SLs) (USEPA, 2011a), and USEPA National Recommended Water Quality Criteria (NRQWC; USEPA, 2006) for drinking water ingestion and consumption of aquatic organisms. The USEPA NRWQC assume that individuals use surface water as their source of drinking water and also catch and consume aquatic organisms from the same source of surface water. This procedure is often used as a method to identify chemicals that may be associated with human health risk. Chemicals which exceed one or more of the comparative risk-based concentrations (i.e., drinking water standards, tapwater SLs, or NRWQCs) are selected as COPCs for evaluation of human health risk. As summarized in Table 2-1, the maximum total dioxin equivalence concentration for surface water upstream of the Site (3.03 pg/L) exceeds both the EPA tapwater screening level (0.52 picograms per liter or pg/L) and the EPA NRWQC (0.005 pg/L). For this reason, PCDDs/PCDFs expressed as total dioxin equivalents were selected as a COPC in upstream surface water for further evaluation in the HHRA.

Table 2-2 summarizes SVOCs detected in surface water upstream of the Site in Turkey Creek. Naphthalene was detected at the highest concentration (0.018 ug/L). The maximum calculated concentration of benzo(a)pyrene equivalents (0.0042 ug/L) exceeds the USEPA tapwater screening level (0.0029 ug/L) and the USEPA NRWQC (0.0038 ug/L). It should be noted that all SVOCs analyzed do not have a risk-based value for comparison. Benzo(g,h,i) perylene was detected in one of six surface water samples at a concentration of 0.0069 ug/L. Although there is no risk-based concentration for benzo(g,h,i)perylene, a polycyclic aromatic hydrocarbon (PAH), it is not considered potentially carcinogenic by the EPA and the detected concentration is well below the lowest risk-based screening value for a non-carcinogenic PAH (i.e., the EPA tapwater screening level for 2-methylnaphthalene of 27 ug/L). As summarized in Table 2-2, benzo(a)pyrene equivalents were selected as a COPC in Turkey Creek surface water upstream of the Site.

Table 2-3 summarizes statistics for PCDDs/PCDFs expressed as total dioxin equivalence in Turkey Creek surface water adjacent to the Site and upstream of the Site. The maximum detected concentration of total dioxin TEQs (1.68 pg/L) is lower for surface water adjacent to the Site than upstream of the Site (3.03 pg/L). However, the maximum detected concentrations at

both locations exceed the tapwater SL and the NRWQC and PCDDs/PCDFs as total dioxin TEQs. For this reason, dioxin TEQs were selected as COPCs for surface water in Turkey Creek at both locations.

Summary statistics for SVOCs analyzed in surface water adjacent to the Site are presented in Table 2-4. As is the case for upstream surface water results, benzo(a)pyrene equivalents exceeded the USEPA tapwater screening level. As a result, benzo(a)pyrene equivalents were selected as a COPC.

As part of their surface water study in 2011, EMS collected and analyzed surface water samples in Bayou Bernard for PCDDs/PCDFs. Because the impact of the Site on surface water is more closely represented by surface water samples collected in Turkey Creek, the surface water data from Bayou Bernard were not evaluated in this HHRA.

In summary, PCDDs/PCDFs (as total dioxin TEQs) and benzo(a)pyrene equivalents were considered COPCs for surface water upstream of the Site and adjacent to the Site.

2.2 Chemicals of Potential Concern in Turkey Creek Sediment

Turkey Creek sediment sampling data are summarized in Appendix A for SVOCs and PCDDs/PCDFs by location (upstream and adjacent to the Site). Sediment samples evaluated for the HHRA include any sediment sample collected at a depth of 0 to 1 foot. Although some samples were collected at depths greater than 1 foot, if the sample was at least 50% composed of the 0 to 1 foot depth interval, it was considered relevant to the evaluation of possible human exposure to sediment and was considered in the HHRA.

Statistical summaries of the Turkey Creek sediment results for upstream locations for SVOCs and PCDDs/PCDFs are presented in Tables 2-5 and 2-6, respectively. For sediment locations adjacent to the Site, SVOCs and PCDDs/PCDFs results are summarized in Table 2-7 and 2-8, respectively. Locations of sediment samples in Turkey Creek are presented in Figures 2 and 3.

Sediment sample results were compared with EPA residential soil screening levels. EPA soil screening levels assume that individuals have daily direct exposure to soil for up to 30 years.

While such frequent direct exposures to Turkey Creek sediments are highly unlikely, EPA has not developed human health based risk screening levels for sediment. As such, it is very health protective to retain COPCs in sediment based on a comparison to residential soil screening levels.

In upstream sediments, no chemicals were identified as COPCs. Although some COPCs in sediment have no EPA residential soil screening level, these SVOCs were detected at very low concentrations or were detected in concentrations lower than the most toxic non-carcinogenic representative of the same chemical class. For example, the non-carcinogenic PAHs benzo(e)pyrene, benzo(g,h,i)perylene, perylene, and phenanthrene were detected at concentrations less than 10 ug/kg. In contrast, the most toxic non-carcinogenic PAH considered (pyrene) has a residential soil screening level of 1,700,000 ug/kg. From this comparison, risks posed by non-carcinogenic PAHs with no residential screening level can be considered negligible and further evaluation is unneeded.

Sediment data used in the ecological risk assessment performed by EMS (EMS, 2010) for Turkey Creek are also used in this HHRA. As part of the ecological risk assessment work, sediment samples were analyzed for alkyl PAHs. These PAHs are alkyl-derivatives (i.e., C1-Chrysene) of a parent compound (Chrysene) and are designated by the terminology C1-, C2-, C3- and C4- plus the parent compound. The chemical identity of the alkyl derivatives of these PAHs is uncertain and therefore, an evaluation of the human health risk cannot be determined. However, the maximum concentrations detected of C1-Chrysene and C1-Fluoranthenes/pyrenes were 5.7 and 6.1 ug/kg, respectively. As discussed above, these concentrations are well below those of the lowest non-carcinogenic PAH and as a result, these alkyl-PAHs would likely pose negligible human health risk.

In sediment adjacent to the Site (Table 2-7), the maximum detected concentration of PCDDs/PCDFs represented by total dioxin TEQs (13.73 nanograms/kg; ng/kg) exceeded the EPA residential soil screening level. As a result, PCDDs/PCDFs were retained as a COPC for sediments adjacent to the Site.

Table 2-8 summarizes the results of sediment samples analyzed for SVOCs at locations adjacent to the Site. Although 91 different chemicals were analyzed in the various samples, the

majority of detected chemicals were PAHs. Of these, benzo(a)pyrene equivalents and naphthalene were retained as COPCs on the basis that concentrations of these compounds exceeded the EPA residential screening level in one or more sediment samples.

In summary, no chemicals were selected as COPCs for upstream sediments in Turkey Creek. In sediments adjacent to the Site, the following chemicals were retained as COPCs:

PCDDs/PCDFs (as total dioxin TEQs)
Benzo(a)pyrene equivalents
Naphthalene

2.3 Chemicals of Potential Concern in Fish

To better evaluate the possible human health risks associated with consumption of recreationally caught fish and other edible aquatic species, EMS conducted fish sampling in October and November 2011. Fish were collected at locations upstream and adjacent to the Site in Turkey Creek, upstream and downstream of the location where Turkey Creek enters Bayou Bernard, and in Old Fort Bayou. Old Fort Bayou was used as a reference location that is not affected by wood treatment chemicals from the CFI Site and is referred to as a “background” location in the HHRA. Fish sampling locations are presented in Figures 4, 5, and 6 for fish collected from Turkey Creek, Bayou Bernard, and background (Old Fort Bayou), respectively. Summaries of laboratory analyses of fish composites collected from these areas are presented in Appendix A.

In addition to fish, crawfish, crabs and frogs were identified as possible edible species from Turkey Creek. Surveys of Turkey Creek/Bayou Bernard fishers indicate that these recreationally caught species are eaten less frequently than fish. However, attempts to obtain sufficient crab and frog tissue from Turkey Creek were unsuccessful. Uncertainties associated with a lack of data for crabs, crawfish, and frogs are discussed in Section 5 of this report.

Because of concerns regarding detection limits for SVOCs in fish, EMS submitted 24 of 26 fish samples to two laboratories for analysis: Columbia Analytical Services (CAS) and SGS

Laboratories (SGS). SGS processed the fish composites and sent aliquots of each sample to CAS. Two samples (one channel catfish composite from upstream in Bayou Bernard and one tabby catfish composite from upstream in Turkey Creek) were analyzed only by SGS. Because there is no information to support the choice of one laboratory over the other, analytical results from both laboratories were retained for evaluation in the HHRA. Concentrations of PCDDs/PCDFs and SVOCs in fish from Turkey Creek, Bayou Bernard, and the background locations are presented in Appendix A of this report.

Several different species of fish were collected in Turkey Creek, Bayou Bernard, and the background location including Atlantic croaker, blue catfish, black drum, blue gill, channel catfish, common carp, ground mullet, largemouth bass, orange spotted sun fish, pumpkinseed bream, redfish, sheep head, striped bass, striped mullet, tabby catfish, and white trout. Only largemouth bass and striped mullet were caught at each location.

Each fish sample is a composite the same species and fish making up each composite were collected in similar locations. Information concerning the fish length, weight, and global positioning system (GPS) coordinates of individual fish making up each composite are presented in Appendix B. The lipid content of each fish composite is also summarized in Appendix B.

Considerable uncertainty is associated with estimating consumer intake of compounds in recreationally caught fish. Estimating exposure and risk from fish consumption depends on the amount of fish consumed, the fish species consumed, the proportion of the diet coming from each species, and the locations where fish are caught. For this reason, risks were calculated for all chemicals analyzed in each individual fish composite and reported for each fish composite. For non-detected chemicals, exposure and risks were calculated on the basis of one-half the detection limit. For this reason, no attempt was made to define COPCs for estimation of human health risks resulting from fish consumption. Instead, all chemicals analyzed in fish were considered in the HHRA. As with surface water and sediment, carcinogenic PAHs in fish were evaluated as benzo(a)pyrene equivalents.

3.0 EXPOSURE ASSESSMENT

An exposure assessment was conducted for COPCs present in Turkey Creek surface water, and sediments and fish caught in Turkey Creek, Bayou Bernard, and a background location. Exposure pathways to the COPCs in surface water, sediment, and fish considered in the HHRA are summarized in Figure 7.

As stated by the USEPA, an exposure pathway "describes the course a chemical or physical agent takes from the source to the exposed individual. An exposure pathway analysis links the sources, locations, and types of environmental releases with population locations and activity patterns to determine the significant pathways of human exposure" (USEPA, 1989).

An exposure pathway is made up of four elements. These are:

- A source and mechanism of chemical release,
- A retention or transport medium,
- A point of potential human contact with the contaminated medium, and;
- An exposure route at the contact point.

In the following discussion, exposure pathways to chemicals in surface water, sediment, and fish are identified. These exposure pathways are based on anticipated recreational activities in Turkey Creek.

Although it is possible that PCDDs/PCDFs and SVOCs (such as the PAHs) in surface water, sediment, and fish may result from past Site activities, the chemicals present in surface water, sediment, and fish may result from many different sources, some of which are unrelated to Site activities. Due to these uncertainties, the HHRA does not attempt to link chemicals present in surface water, sediment, or fish to specific sources or activities at the Site. Instead, the HHRA evaluates exposure to COPCs in surface water, sediment, and fish regardless of the source of these chemicals or the method they are transported to Turkey Creek surface water, sediments, and fish in Turkey Creek and Bayou Bernard.

3.1 Potential Critical Contaminant Exposure Points and Exposure Pathways

Exposure points are points of potential contact for receptors with COPCs through a particular route of exposure (e.g., ingestion of surface water while swimming). As evaluated in this HHRA,

all potential exposure points and routes of exposure are considered to result at locations off-Site in Turkey Creek and Bayou Bernard. Exposure to on-Site soils and groundwater are not considered potential contaminant exposure points in the HHRA. The exposure of off-site residents living near the Site to on-site soils during the remediation of on-site soils was addressed in the HHRA prepared by CTEH in May, 2001 and titled *Human Health Risk Assessment, Cavenham Forest Industries, Inc., Treatment of Soils from SWMU 3-4* (CTEH, 2001). The conclusion of the risk assessment was that the soil treatment process did not create environmental conditions that would result in unacceptable levels of health risk for residents living near the Site. Previous and planned remedial actions at the Site will minimize the potential health risk to on-site workers, trespassers or off-site residents from on-site soils. Currently, groundwater ingestion is not considered an exposure medium for either on-site or off-site receptors. Shallow Site groundwater is not used as a source of potable water and is not expected to be used in the future. In addition, CFI is conducting groundwater corrective action and monitoring in accordance with a RCRA Post Closure Permit.

3.2 Exposure to COPCs in Surface Water

Turkey Creek begins as a small flowing channel in the central portion of Harrison County and flows south under Interstate 10 and east under Highway 49. Turkey Creek is a tidal creek that forms the southern boundary of the eastern portion of the Site and drains into Bernard Bayou. Although the results of the December, 2010 *Turkey Creek Sediment and Pore Water Sampling Report Addendum* prepared by EMS indicated the presence of dioxin and dioxin-like compounds in surface water, it is not known if the presence of these constituents are due to Site activities. No PAHs were detected in surface water during that investigation.

Surface water in Turkey Creek is not used as a source of potable water. However, it is possible that Turkey Creek is used for recreational activities including swimming, wading, and fishing. According to the *Watershed Implementation Plan, Turkey Creek* report prepared by Land Trust for Mississippi Coastal Plain (LTMCP, 2006), the lower end of Turkey Creek is a popular waterway for fishing, swimming, and canoeing. Direct contact with COPCs in surface water in Turkey Creek was evaluated as a complete exposure pathway for a recreational user/swimmer.

Children ages 6 to 16 are assumed to be the main recreational users of Turkey Creek and are more likely to have greater exposure to COPCs in surface water on a body weight basis than

the occasional adult kayaker, canoer, or fisher. Children were assumed to swim in Turkey Creek 20 times per year for one hour each swimming event for 10 years. While swimming, a child was assumed to incidentally ingest surface water from Turkey Creek. It is also possible that a child may take up COPCs in surface water through the skin. Due to limitations in the EPA dermal uptake model, uptake of PCDDs/PCDFs and benzo(a)pyrene equivalents from surface water through the skin was not quantified. Uncertainties associated with dermal exposure to PCDDs/PCDFs and benzo(a)pyrene equivalents in surface water are discussed in Section 5.4.1 of this report. Derivation of exposure parameters used to evaluate a child's recreational exposure to COPCs in surface water is presented in Appendix C.

Equations and exposure assumptions used to calculate a recreational child's exposure to COPCs in surface water are presented in Table 3-1.

3.3 Exposure to COPCs in Sediment

The 2010 *Turkey Creek Sediment and Pore Water Sampling Report* and *Addendum* indicated the presence of PAHs, dioxins and dioxin-like compounds in sediment collected from Turkey Creek. Sediment exposures are expected to occur during swimming/wading in shallow waters of Turkey Creek. Direct contact with potentially impacted sediment from Turkey Creek was evaluated as a complete exposure pathway.

As discussed above, children aged 6 to 16 were assumed to be more likely to have greater exposure to sediment than other recreational users of Turkey Creek. As with surface water in Turkey Creek, children were assumed to contact Turkey Creek sediment 20 times per year for 10 years. Exposure to COPCs in Turkey Creek sediment was assumed to result from incidental ingestion of sediment sticking to the hands and fingers and from skin uptake of COPCs in sediment adhering to the skin. Derivation of exposure parameters used to evaluate a child's recreational exposure to COPCs in sediment is presented in Appendix C.

Equations and exposure assumptions used to calculate a recreational child's exposure to COPCs in sediment are presented in Table 3-2.

3.4 Exposure to COPCs in Fish and Other Edible Species

Recreational fishers may consume aquatic species that have bioaccumulated PCDDs/PCDFs and persistent SVOCs as a result of ingestion of COPCs in water and sediment, uptake of COPCs through the skin, and consumption of other organisms and plants that bioacccumulate COPCs from the water or sediment. Results of fish sampling in Turkey Creek and Bayou Bernard indicate the presence of low concentrations of PCDDs/PCDFs and PAHs in fish tissues that may be consumed by recreational fishers.

Turkey Creek is used by the local community for fishing, however, the Agency for Toxic Substances and Disease Registry (ATSDR) reported in their Public Health Assessment for the Gulfport Naval Construction Battalion Center in Gulfport, Mississippi (ATSDR, 2005) that the availability of edible fish in Turkey Creek was not sufficient for a subsistence population.

Because local residents are known to use Turkey Creek for recreational fishing, ingestion of COPCs via consumption of recreationally caught fish was evaluated as a complete exposure pathway. Although Turkey Creek is not considered an important habitat for the blue crab (*Callinectes sapidus*), crabs have been observed in the creek when salinities are high due to low rainfall. However, as discussed in Section 2.3 of this report, insufficient crab tissue was collected for analysis and no frog or crawfish tissue was collected. Uncertainties associated with lack of availability of crab, frog, and crawfish tissues for analysis are addressed in Section 5.4.1 of this report.

In 2011 and in conjunction with a contact in the Turkey Creek community, EMS conducted a survey of consumption of edible aquatic species. Survey forms were delivered to community members and collected to compile summary statistics. The survey form and an analysis of the responses are presented in Appendix D.

The survey methodology used was targeted to residents within the community and fishermen who frequented Turkey Creek. After consultation with community members and leaders, resident members of the community were recommended and selected to perform the distribution of the surveys and collection of the information. These individual residents were all fishermen who were familiar with the creek and surrounding water bodies that frequently fished these areas, and were well known within the community. The Turkey Creek community is

comprised of predominantly African American residents and the respondents were also predominantly African American. The individuals who performed the survey and received responses were African American and also participated in the fish sampling event. No language barriers between the surveyors and the participants in the survey were encountered.

The surveys were distributed door to door to residents found at home within the Turkey Creek community, given to people fishing, and were made available at the local churches for distribution. The notice of the sampling event and the survey were published in a local newspaper prior to the survey being performed.

The surveyors either allowed the respondents to fill out the surveys, or if desired by the respondent, completed the surveys as answered by the respondent, including obtaining signatures by the respondents; or the survey was left with the individuals for mailing. A total of 55 persons responded to portions or all of the survey; 25 persons refused to accept or respond to the survey when asked.

A total of 50 of 55 possible respondents answered questions on the survey regarding catching fish and eating fish caught in Turkey Creek and Bayou Bernard. In response to the question “Do you fish in Turkey Creek and/or Bayou Bernard/Industrial Seaway”, 74% of the respondents answered “yes”. In response to a question as to whether bass, mullet, catfish, and bream/perch/sunfish were consumed, the percent indicating that they consumed the species ranged from 62% (mullet) to 73% (catfish). The percentage of individuals indicating consumption of crabs, crawfish, and frogs were 13%, 6%, and 2%, respectively.

In response to questions as to how often fish and other species caught in Turkey Creek and Bayou Bernard were consumed, the range of frequency of fish meals ranged from 1 to 25 times per month with an average of 3.0 times per month, a median of 2 times per month, and a 90^{th} percentile of 4.8 times per month. Only 6 and 3 respondents indicated that crabs and crawfish were consumed, respectively. Responses as to the frequency of crab meals eaten per month ranged from 1 to 25 meals per month. For crawfish, the range was 1 to 50 meals per month. No respondent indicated a monthly consumption of frogs. The highest meal frequencies for crab and crawfish were registered by the same individual. This individual reported consuming 10 fish meals per month, 25 crab meals per month, and 50 crawfish meals per month.

As reported by 55 respondents, a total of 65 persons including the respondents and members of their households were reported to eat aquatic species caught in Turkey Creek/Bayou Bernard. A single participant indicated that an improbably high number of persons (140) from their household consumed aquatic species from Turkey Creek/Bayou Bernard. Answers from this individual were excluded from the statistical summary of persons in the household consuming edible species from Turkey Creek/Bayou Bernard. Of the 65 persons reported to consume fish from Turkey Creek/Bayou Bernard, the numbers in each age group were 4, 6, 10, and 45 individuals for the 0 to 2 years, 2 to 6 years, 6 to 16 years, and older than 16 years of age, respectively. This information indicates that older children and adults are the predominant consumers of recreationally caught fish from Turkey Creek and Bayou Bernard.

The results of the survey of the Turkey Creek community indicate that its members fish and occasionally consume fish caught in Turkey Creek/Bayou Bernard. Turkey Creek fish consumers range from young children to adults. The frequency of consumption (average of 3 meals per month) is in keeping with consumption of recreationally caught fish and not subsistence fishing. For the surveyed group, the calculated 90^{th} percentile of consumed fish meals per month is 4.8 meals per month. Although respondents were not asked to indicate the amount of fish consumed at each meal, if it is assumed that the average fish meal is 8 ounces (227 grams) (USEPA, 2000), this consumption would average approximately 36 grams of fish per day over a year. This assumed rate of consumption is similar to the consumption of recreationally caught fish used for adults in this HHRA (32 g/day).

Only a small percentage of the surveyed population consumes crab, crawfish or frogs from Turkey Creek/Bayou Bernard. The percentage of the surveyed population indicating that these species were consumed from Turkey Creek/Bayou Bernard were 13%, 5%, and 2%, respectively.

Exposure assumptions used to derive estimates of intake of COPCs in recreationally caught fish are discussed in Appendix D of this report. The equations and exposure assumptions used to calculate COPC intakes from the consumption of recreationally caught fish are summarized in Table 3-3.

3.5 Exposure Point Concentrations

Exposure points are points of potential contact with the COPCs in various media through a particular route (e.g., ingestion of a chemical in surface water). Exposure point concentrations (EPCs) are calculated for each COPC in surface water, sediment, and fish. The EPC is an upper bound estimate of the arithmetic average concentration of a COPC in a particular environmental medium. This conservative average is a calculated concentration and is termed the 95% upper confidence limit (UCL) of the arithmetic mean.

EPCs for surface water and sediment were determined from the data summarized in Appendix A. The USEPA program ProUCL version 4.1 (USEPA, 2011b) was used to calculate the 95% UCL. The ProUCL program is used to calculate the 95% UCL for normal, lognormal, gamma, and non-parametrically (non-normally) distributed concentrations of chemicals in soil and sediment and recommends the most appropriate 95% UCL for use as an EPC. For the purpose of calculating EPCs, non-detected values were set to a concentration of one-half the detection limit.

EPCs for total dioxin TEQs in surface water upstream and adjacent to the Site are presented in Table 3-4. Note that due to the availability of relatively few surface water samples, the 95% UCL of the arithmetic mean was not calculated. Instead, the maximum calculated total dioxin TEQ was used to assess exposures in surface water.

EPCs for total dioxin TEQs, benzo(a)pyrene equivalents, and naphthalene in Turkey Creek sediments adjacent to the Site were calculated using the ProUCL program and are presented in Table 3-4. Outputs used to determine the EPCs for COPCs in sediment are presented in Appendix E.

EPCs for COPCs in fish were determined for each fish composite at each location. As such, exposure and risks were calculated for 26 different fish composites representing 16 different fish species and 5 different locations (i.e., Turkey Creek upstream of the Site, Turkey Creek adjacent to the Site, Bayou Bernard upstream of the mouth of Turkey Creek, Bayou Bernard downstream of the mouth of Turkey Creek, and background locations in Old Fort Bayou).

To determine EPCs for each fish, total dioxin TEQs were calculated in the manner described previously (Section 2.0). Non-detected chemicals in fish were also considered COPCs and were represented at one-half the detection limit. As described in Section 2.3, SVOC analyses are available from two laboratories for each fish composite. For this reason, each fish composite has two EPCs for each chemical analyzed. The first EPC for each fish composite is based on analyses performed by the Columbia Analytical Services (CAS) and the second, SGS Laboratories. Each fish composite was analyzed once for PCDDs/PCDFs by SGS Laboratories. Therefore, only one EPC was determined for total dioxin TEQs for each fish composite. EPCs for chemicals analyzed in fish composites are presented in Table 3-5.

3.6 Estimation of COPC Intakes

As discussed previously, equations and assumptions used to calculate COPC intakes for the child recreational user of Turkey Creek are summarized in Table 3-1 and 3-2 for surface water and sediment, respectively. COPC concentrations in surface water and sediment are presented in Table 3-4. The equation used to determine intake of COPCs from consumption of recreationally caught fish is presented in Table 3-3 and EPCs for each COPC in each fish composite are presented in Table 3-5.

To assess possible non-carcinogenic risk, estimates of daily COPC ingestion intake and skin absorption are expressed as average daily intakes (ADIs). ADIs are calculated over the assumed period of exposure and are used to assess noncancer risks. ADIs for ingested COPCs are expressed as intakes. Dermal contact with COPCs in sediment is calculated as an absorbed dose. As discussed previously, dermal uptakes of total dioxin TEQs and benzo(a)pyrene equivalents in Turkey Creek surface water upstream and adjacent to the Site were not calculated due to lack of a reliable model for estimating dermal uptake of highly lipophilic chemicals. This uncertainty is addressed in Section 5.2.1 of this report. Calculated ADIs for a recreational child exposed to COPCs in Turkey Creek are presented in Tables 3-6 and 3-7 for surface water and sediment, respectively.

In the case of ingestion of COPCs in recreationally caught fish, ADIs were calculated for a child (0 to 6 years of age) and an adult. Separate ADIs were calculated due to the difference in

assumed fish consumption rates and body weights between children and adults. ADIs for intake of COPCs from fish consumption for each age group are presented in Table 3-8.

For potential carcinogens, estimates of daily intake are expressed as lifetime (a lifetime is assumed to be 70 years) average daily intakes (LADIs). Calculated LADIs for the recreational child exposed to Turkey Creek surface water and sediment are presented in Tables 3-7 and 3-8, respectively. Calculated LADIs for each fish consumer in four age categories (0 to less than 2 years of age, 2 years of age to less than 6 years of age, 6 years of age to less than 16 years of age, and 16 years of age and older) are presented in Table 3-9.

4.0 TOXICITY ASSESSMENT

The noncancer and carcinogenic risks posed by exposure to COPCs in surface water, sediment, and fish were assessed using EPA reference doses (RfDs) and slope factors (SFs). These toxicity values were compiled from the EPA Integrated Risk Information Service (IRIS) (Tier 1), USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs); Tier 2), Agency for Toxic Substances and Disease Registry (ATSDR) minimal risk levels (MRLs; Tier 3), as well as other toxicity values from the California Environmental Protection Agency (Tier 3) and peer-reviewed reference sources or literature. The following databases were searched for toxicity values:

Tier 1 – USEPA's Integrated Risk Information System
(http://www.epa.gov/iris/index.html)
Tier 2 – USEPA's Provisional Peer-Reviewed Toxicity Values database
(http://hhpprtv.ornl.gov/)
Tier 3 – Agency for Toxic Substances and Disease Registry database
(http://www.atsdr.cdc.gov/mrls/mrllist.aps) and California Environmental Protection Agency's toxicity database
(http://www.oehha.ca.gov/risk/ChemicalDB/index.asp)

4.1 Toxicity Assessment for Noncancer Effects

The noncancer effects of COPCs were assessed using the USEPA hazard quotient approach. Briefly, this approach compares the average daily intake of each chemical to a published acceptable intake for chronic exposure (i.e., chronic RfD). The USEPA definition of the RfD is presented below (USEPA, 2011c).

> An estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from a NOAEL, LOAEL, or benchmark dose, with uncertainty factors generally applied to reflect limitations of the data used. Generally used in EPA's noncancer health assessments.

Chronic RfDs are applied to exposures 7 years or longer. Although the shortest exposure duration (6 years for a child fish consumer) is less than 7 years, the chronic RfD is conservatively used to assess noncancer risk from fish intake. Chronic RfDs used to assess noncancer risks are presented in Table 4-1.

The USEPA does not publish dermal RfDs but they may be determined from oral RfDs if the gastrointestinal absorption of a chemical is known. Given this information, the dermal RfD can be calculated as a fraction of the oral RfD. Because all COPCs are assumed to be completely absorbed, the oral RfD was also used as the dermal RfD to assess noncancer risks from exposure to COPCs in sediment.

4.2 Toxicity Assessment for Carcinogenic Effects

The following data were compiled for potential/probable carcinogenic COPCs:

- Current inhalation unit risk values (IURs) and oral slope factors (SF);
- USEPA weight of evidence classification;
- Target organ(s)

The slope factor is a quantitative estimate defined as the potential lifetime cancer risk per unit dose $(mg/kg/day)^{-1}$. The weight-of-evidence classification indicates the extent to which available data indicate the substance is a human carcinogen. This information is available from USEPA in IRIS.

The USEPA does not derive dermal slope factors for constituents. However, since dermal exposure may add to overall intake of a constituent and possibly cause an adverse effect, the oral slope factor (if available) was adjusted in accordance with USEPA guidance (2004) and used to calculate cancer risk from dermal exposure to potential/probable carcinogens.

The oral/dermal slope factors, USEPA weight-of-evidence classifications, and target organs for the carcinogenic effects of the COPCs are presented in Tables 4-2.

Due to the potentially increased susceptibility of infants and children, the USEPA indicates that cancer risks for mutagenic carcinogens (such as benzo(a)pyrene and the other potentially carcinogenic PAHs benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) are to be adjusted upward by multiplying calculated risks by an age-dependent adjustment factor (ADAF). The USEPA derived ADAFs (USEPA, 2005) are presented below.

Age Interval (years)	Age-dependent Adjustment Factor
0-<2	10
2 - <6	3
6 - <16	3
16 and older	1

As discussed in Section 2.0 of this report, lifetime cancer risks from exposure to the 7 carcinogenic PAHs are based on benzo(a)pyrene equivalents. For example, the lifetime cancer risk calculated for a one-year old child ingesting benzo(a)pyrene equivalents in fish is calculated by multiplying the LADI (in mg/kg/day) times the slope factor for benzo(a)pyrene (7.3 mg/kg/day^{-1}) times the ADAF (i.e., 10).

5.0 RISK CHARACTERIZATION

The methods described in Chapter 8 of the Human Health Evaluation Manual (USEPA, 1989) and other appropriate USEPA guidance were used to calculate hazard quotients for noncarcinogens and excess theoretical cancer risks for carcinogens. Risk estimates were obtained by calculating the average daily intake (ADI) for noncancer risk assessment and lifetime average daily intakes (LADI) for cancer risk assessment.

Assessment of Noncancer Hazards

Noncancer effects are expressed as the ratio of average daily intake divided by the RfD or exposure concentration divided by the RfC derived for a similar exposure period. This ratio is called a hazard quotient (HQ) and is calculated as follows:

Hazard Quotient = ADI/RfD

where:

ADI = average daily intake (mg/kg/day) for the exposure period

RfD = reference dose (mg/kg/day)

For any particular chemical, an intake that exceeds the RfD for that chemical indicates that an adverse health effect may be observed. When the HQ is less than 1, it is unlikely that an adverse health effect will occur. The potential for observing an effect increases as the HQ increasingly exceeds unity. The USEPA directs that the HQ for each chemical and each route of exposure be summed to calculate a hazard index (HI). This process conservatively assumes that simultaneous exposure to multiple chemicals at intakes below the RfD may produce an adverse health effect if the HI exceeds one. When calculated according to USEPA methods, the HI assumes that the effects of each chemical are additive. The HI is used as a screening method to determine whether or not the effects of intake of multiple chemicals may be of concern. If the HI is less than one, there is little reason to expect that any adverse effect will result from concurrent exposure to all of the COPCs.

Tables 5-1a and 5-1b present the noncancer risks calculated for a recreational child exposed to COPCs in surface water upstream and adjacent to the Site, respectively. Table 5-2 presents the noncancer risks calculated to result from a recreational child's ingestion and skin contact with COPCs in sediment. Table 5-3 presents the noncancer risks associated with intake of COPCs from recreational fish consumption.

<u>Assessment of Theoretical Carcinogenic Risks</u>

Theoretical cancer risks associated with exposure to COPCs were calculated as follows:

$$Risk = LADI \times SF$$

where:

Risk = a unitless probability (e.g. 2E-5) of an individual developing cancer over a 70 year lifetime

LADI = lifetime average daily intake averaged over 70 years (mg/kg/day)

SF = oral and dermal slope factor, expressed in $(mg/kg/day)^{-1}$

The resulting cancer risks are expressed in scientific notation (e.g., 1E-04 to 1E-06) and refer to additional lifetime cancer risks of one cancer in 10,000 persons to one cancer in 1,000,000 persons. For example, a calculated theoretical lifetime cancer risk of 1E-05 (or 1 in 100,000) indicates that if 100,000 people were exposed to a potentially carcinogenic chemical throughout their 70 year lifetimes, one of the 100,000 individuals would theoretically contract cancer from the lifetime of exposure.

Tables 5-1a and 5-1b present the theoretical lifetime cancer risks calculated for a recreational child exposed to COPCs in surface water upstream and adjacent to the Site, respectively. Table 5-2 presents the theoretical lifetime cancer risks calculated to result from a recreational child's ingestion and skin contact with COPCs in sediment. Table 5-3 presents the theoretical lifetime cancer risks associated with intake of COPCs from recreational fish consumption.

5.1 Risks from Recreational Exposures to Chemicals of Potential Concern in Turkey Creek Surface Water

Noncancer and theoretical lifetime cancer risks calculated for a child swimming in Turkey Creek were calculated for surface water upstream of the Site and adjacent to the Site (Tables 5-1a and 5-1b). Hazard quotients for total dioxin TEQ exposures were 2.7E-04 and 1.5E-04 for these locations, respectively. These values are much less than 1, indicating that ingestion of total dioxin TEQs in surface water in Turkey Creek would not pose a noncancer health concern to a child swimming in the creek 20 times a year for 10 years.

Theoretical lifetime cancer risks for the child swimming in Turkey Creek were also very low, 4.3E-09 and2.7E-09, for surface water upstream and adjacent to the Site, respectively. EPA typically considers risks less than 1E-06 to be below the ideal target for lifetime cancer risk. EPA also uses a theoretical lifetime cancer risk range between 1E-04 to 1E-06 as potentially acceptable for managing lifetime cancer risks from chemical exposure.

5.2 Risks from Recreational Exposures to Chemicals of Potential Concern in Turkey Creek Sediments

Noncancer and theoretical lifetime cancer risks calculated for a child exposed to sediment in Turkey Creek were calculated for sediments adjacent to the Site (Table 5-2). The hazard

quotient for exposure to COPCs in sediment was 2.3E-03. This is much less than 1, indicating that ingestion of ingestion and skin contact with COPCs in sediment in Turkey Creek would not pose a noncancer health concern to a child exposed to creek sediments 20 times a year for 10 years. Concentrations of possible COPCs in upstream sediments were below risk-based screening levels and were not further assessed in the risk assessment.

The theoretical lifetime cancer risk for the child swimming in Turkey Creek was 1.5E-06 and is primarily associated with the carcinogenic PAHs (i.e., benzo(a)pyrene equivalents). The aggregate lifetime cancer risk from all COPCs is well within the range of lifetime cancer risks used by EPA to manage lifetime cancer risks from chemical exposure (i.e., 1E-06 to 1E-04).

5.3 Risks from Consumption of COPCs in Recreationally Caught Fish

Noncancer and theoretical lifetime cancer risks were calculated for child and adult fish consumers for each fish species and location where fish were caught (Table 5-3). To facilitate discussion of fish consumption risk, fish composite risks are summarized in Table 5-4 from the highest calculated risk to the lowest calculated risk for noncancer and theoretical lifetime cancer risk. Noncancer and theoretical lifetime cancer risks based on the CAS laboratory analysis were greater than or equal to risks calculated using the SGS laboratory analysis for every fish composite. This is primarily due to the somewhat lower detection limits achieved by SGS, although detected levels of PAHs were also generally higher in CAS analyses than SGS analyses.

Generally, at the highest risk levels calculated for fish consumption, total dioxin TEQs accounted for nearly all of the noncancer and theoretical lifetime cancer risk. Because analyses are available for all 26 fish composites from SGS, the discussion of risk is based on the results of risks calculated using SGS laboratory analysis.

The highest noncancer risk calculated (4.4) was determined for a child ingesting striped mullet from the background location (Old Fort Bayou). One other fish sample (blue catfish caught in Turkey Creek adjacent to the Site near the confluence with Bayou Bernard) had a hazard index of 1.1.

Similarly, the highest lifetime cancer risk calculated for a fish was also for the striped mullet collected from the background location (9.3E-05 for the SGS laboratory analysis). Of the 26 fish composites analyzed by SGS, the fish species and locations with theoretical lifetime cancer risks greater than 1E-05 were: striped mullet-background, (9.3E-05); blue catfish-Turkey Creek adjacent to the Site (2.4E-05); striped mullet-Turkey Creek adjacent to the Site (1.6E-05); and channel catfish-Bayou Bernard upstream (1.5E-05. Lifetime cancer risks for all fish collected from Turkey Creek and Bayou Bernard were within the 1E-06 to 1E-04 theoretical lifetime cancer risk range used by EPA to make risk management decisions.

Additional information is available concerning PCDDs and dioxin-like compounds in catfish from Mississippi rivers and commercial catfish farms in Mississippi. Ferriby et al. 2006 obtained wild caught catfish (channel, blue, appaloosa, and willow) from the Mississippi River, Pearl River (2 locations), and Leaf River (2 locations) as well as farm-raised channel catfish from Mississippi farms, seafood markets, and grocery stores. Ferriby et al. analyzed 24 wild caught catfish fillets and 25 farm-raised catfish fillets. Catfish were analyzed for PCDDs, PCDFs, and dioxin-like PCBs. Arithmetic mean total dioxin TEQs for wild caught and farm-raised catfish fillets were 1.39 and 0.99 ng/kg, respectively. With the exception of catfish caught from the Mississippi River, PCDDs and PCDFs were the major contributors to the total dioxin TEQs. When compared to catfish collected from Turkey Creek and Bayou Bernard, total dioxin TEQs were higher in both wild caught in the other Mississippi locations and farm-raised catfish. Total dioxin TEQs for a blue catfish caught in Turkey Creek, a channel catfish caught in Bayou Bernard, and a tabby catfish caught in Turkey Creek were 0.75 ng/kg, 0.44 ng/kg, and 0.058 ng/kg, respectively. These concentrations are lower than total dioxin TEQs for wild caught and farm-raised catfish from other locations in Mississippi.

5.4 Cumulative Risks from Surface Water and Sediment Exposure and Fish Consumption

Cumulative lifetime cancer and noncancer risks for individuals exposed to chemicals of potential concern via fish consumption and direct contact with surface water and sediment in Turkey Creek are presented in Table 5-5. Note that for the purpose of calculating cumulative risk, risks posed by fish consumption, surface water contact, and sediment contact were summed. The summarized risk calculations indicate that lifetime cancer risk and noncancer risks are driven mainly by consumption of fish. In the case of noncancer risk, the sum of risk is presented for the

child since the child is assumed to be exposed to chemicals of potential concern in surface water, sediment, and fish.

At lifetime cancer risks above 1.0E-05, risk is driven almost entirely by consumption of fish. At levels of risk greater than 1E-05, lifetime cancer risks from fish are due mainly to dioxin TEQs in fish. At levels of risk of 1.0E-05 and greater, surface water and sediment exposure add little to the overall calculated lifetime cancer risk. Even when the lifetime cancer risks from fish consumption and direct contact with surface water and sediment are added, no calculated lifetime cancer risk exceeds 1.0E-04.

Noncancer risks are driven almost entirely by fish consumption and the presence of dioxins in fish. Direct contact with surface water and sediment add little to the noncancer risk posed by fish consumption. Noncancer risks (hazard indices) above 1 are due almost entirely to consumption of fish (striped mullet from a background location; blue catfish from Turkey Creek adjacent to the Site) (Table 5-5). By virtue of the fact that dioxins accounted for nearly all of the calculated noncancer risk, further chemical-specific evaluation of noncancer toxicity by target organ/effect was not considered necessary.

5.5 Risk Assessment Uncertainty Analysis

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 an uncertainty analysis. The EPA has identified several categories of uncertainties associated with risk assessments (USEPA, 1989). These include uncertainties in identifying and quantifying concentrations of compounds in environmental media, estimating exposure, and characterizing risk. The HHRA qualitatively evaluates the potential influence of uncertainties on the final risk estimates. Broadly, uncertainties in a human health risk assessment relate to either exposure or toxicity of the chemicals of potential concern. Discussion of these uncertainties is presented below.

5.5.1 Uncertainties Related to Estimation of Exposure

Uncertainties associated with the estimation of human exposure to chemicals of potential concern in surface water, sediment, and fish are unavoidable due to analytical variability. As exemplified by analysis of fish tissues for SVOCs by two different laboratories, the results of the

same sample by two different laboratories introduces variability in the results of the risk assessment. For example, CAS analysis of fish samples detected higher, yet qualified, concentrations of PAHs in fish as well as higher detection limits, leading to the calculation of somewhat higher fish consumption risks when the CAS data were used. However, the availability of analysis of fish tissue by two laboratories adds confidence that the range of human health risks from consumption of recreationally caught fish is adequately characterized even though the results may vary somewhat between laboratories.

Use of non-detected analytical results to assess human exposure may also affect estimates of exposure. However, use of one-half of the detection limit is a reasonable, health protective surrogate for chemical concentrations below the detection limit.

Exposure point concentrations calculated for exposure to sediment were performed assuming that undetected PAHs in sediment samples were present at one-half their detection limit. By regularly specifying a fixed concentration to undetected chemicals (i.e., one-half the detection limit), bias is introduced into the calculation of the 95% upper confidence limit of the mean. In reality, chemicals present in a sample below the detection limit may be present at variable concentrations ranging from 0 to the detection limit.

Exposure frequencies used to estimate a child's contact with Turkey Creek surface water and sediment (20 times per year for 10 years) may overestimate the potential for contact with surface water and sediments adjacent to the Site. The banks of Turkey Creek are heavily overgrown with vegetation and in some places the banks are very steep, making access to the creek difficult. Access from bridges (such as the bridge over Turkey Creek on Rippy Road) would be easier than locations near the CFI facility.

Uptake of dioxin TEQs from surface water through the skin of a swimming child was not quantified. For this reason, exposures to PCDDs/PCDFs while swimming can be considered uncertain. The EPA model for evaluating skin uptake of chemicals through the skin is not calibrated to predict skin uptake for highly lipophilic compounds such as PCDDs/PCDFs. It is interesting to note that EPA recently began accounting for the dermal uptake of chemicals from shower/bath water while bathing. In the case of PCDDs/PCDFs, EPA has chosen not to

quantitatively evaluate this pathway, presumably because the dermal uptake pathway of PCDDs/PCDFs is so uncertain (USEPA, 2011a).

Skin uptake of chemicals in sediment is dependent on the amount of sediment adhering to the skin as well as the amount of time the sediment remains on the skin. Given the proximity to surface water, persons contacting sediments of Turkey Creek may also wash sediment off of their skin in the surface water, decreasing the amount of sediment adhering to the skin. It is also possible that once sediment is washed off of the skin, sediment may again adhere to the skin with ongoing contact with sediments. The exposure assessment for the child exposed to sediment assumes that sediments remain on the skin for a 24 hour day. Dermal absorption assumptions used for PCDDs/PCDFs and PAHs are based on studies of contaminated soil applied to the skin of animals for 24 hours. The assumption that sediment will remain on the skin of a child for 24 hours will likely overestimate the potential for skin absorption of COPCs in sediment.

Some of the uncertainties associated with estimating COPC intake from the consumption of recreationally caught aquatic organisms were discussed earlier in this report. No data were available to assess crab, crawfish, or frog consumption risks since these species were not caught in Turkey Creek or Bayou Bernard during the October-November 2011 study. In particular, crawfish traps were set for over two weeks and no crawfish were caught. The creek is tidally affected in the target sampling areas and consequently the salt water environment is not good crawfish habitat. The typical burrows and mounds accompanying the presence of crawfish were not observed. Crawfish may be present in Turkey Creek much farther upstream where there is only fresh water, but remote upstream areas of the creek were not the target area for this evaluation. Furthermore, the percentage of persons eating fish caught in Turkey Creek/Bayou Bernard (85%) is much greater than the percentage of the population consuming crab (13%), crawfish (5%), or frogs (2%) from Turkey Creek/Bayou Bernard.

Additional uncertainties with estimating the magnitude of chemical exposure from fish consumption relate to the fish species consumed, the possible variability in contaminant concentrations for fish caught at different locations, and the proportion of the diet comprised of each fish species caught. In the absence of more detailed information regarding the most popular species consumed, the frequency of fishing at specified locations and the types of fish

caught at these locations, and the possibility that anglers may catch and consume a number of different species based on individual taste preferences and availability, the risk assessment evaluated each fish composite from each location. While the risks calculated for a particular fish composite at a specified location may not represent the average risk calculated for a particular consumer, the calculated risks for each fish composite nonetheless represent the range of risks possible for a recreational consumer of fish in Turkey Creek and Bayou Bernard.

The fish collected in October and November of 2011 represent conditions that existed at that time. If ongoing or future remediation of the CFI Site results in reduction in the concentrations or bioavailability of COPCs in Turkey Creek, this may also result in lowering concentrations of COPCs in fish. Because the fish consumption scenario examines exposure from the present to 30 years in the future, reductions in COPC concentration or mobility could also reduce human health risks associated with long-term consumption of COPCs in locally caught fish.

The extent to which fish collected during the sampling event in the fall of 2011 represent local contamination is also uncertain. Fish are mobile and may have a home range that includes waters some distance from the locations where they were caught. Fish with a greater home range could range farther from the Site and potentially be exposed to lower or higher levels of the chemicals of potential concern. Fish with a smaller home range that remain close to the site may have greater exposures to chemicals of potential concern. The residence time of fish caught at the various locations is not known.

Analysis of fish is also subject to some uncertainty. Replicate analysis of all but two composites was performed by 2 different laboratories for PAHs, somewhat reducing the uncertainty associated with PAH concentrations in fish. The collected fish were shipped to SGS. SGS prepared the composite fish samples and split the composite samples with Columbia Analytical Services (CAS). SGS and CAS analyzed all but two composite samples for PAHs. The two composites not analyzed by both laboratories were initially overlooked and due to time constraints, were analyzed only by SGS. Dioxin analysis was performed only by SGS. Replicate composite fish samples were not collected.

The results of surveys of recreational fishers and recreational fish consumption are inherently uncertain and are affected by the methods used to evaluate fishing activities and fish

consumption. The survey of residents of the Turkey Creek community used surveyors knowledgeable of Turkey Creek residents and fishing patterns in the area. Notice of the fish study and survey was provided in the community newspaper before distributing the survey to the community. The survey form was delivered in a door-to-door campaign in September-October of 2011 and administered by personal interview (where the surveyor filled in the form resulting from an interview with the resident) and well as leaving surveys with residents to fill out at their convenience. In some cases, persons receiving survey forms were fishing at the time they were approached with the survey form.

The survey of the Turkey Creek community residents targeted the population most likely to fish and consume their catch from Turkey Creek and Bayou Bernard. It is possible that the results of the survey may be affected by recall bias. For example, persons fishing mainly in the spring may not readily recall fishing activity and fish consumption when surveyed in the fall. If surveyed in the fall months, spring fishers might tend to underestimate the amount of spring fishing/fish consumption. For persons fishing during the time of the survey, recall of fishing and fish consumption and survey results are more likely to accurately reflect the activities of that season. Generally, the spring and fall are considered to be good times to fish in the Gulf of Mexico region. Thus, Turkey Creek community residents were surveyed during a time when fishing is enjoyable (September-October) and likely to be more easily recalled.

Because surveyors were selected from the local community and may have known their neighbors and fishers who were surveyed, there is potential for interviewer bias. For example, interviewers may have been pre-disposed to surveying friends or relatives and may have been less likely to survey persons that they did not know. In theory, interviewers with a desire to influence the results of the survey could target residents they knew to consume larger amounts of locally caught fish; alternatively, surveyors whose desire to minimize the consumption of fish could deliberately avoid surveying individuals known to have higher fish consumption. However, given the relatively high number of persons reported to consume fish from Turkey Creek/Bayou Bernard (85%) in the surveyed population, there appears to be little evidence that persons likely to consume fish were intentionally avoided in the survey.

Fish meal size remains an important uncertainty in the risk assessment. Persons surveyed were not asked to estimate the size of their fish meals from locally caught fish. It is possible that the

average daily fish intakes assumed in the risk assessment (16 g per day for children, 32 g per day for adults) may under- or over-estimate the amount of fish consumed from Turkey Creek and Bayou Bernard. Fish intake assumptions used in this report would likely underestimate the risks for individuals that rely on local fishing and fish consumption as an important source of food (i.e., subsistence fishers). However, approximately 89% of the surveyed community reported consuming 4 or fewer meals of locally caught fish per month, suggesting that eating of locally caught fish is more likely recreational in nature.

Concentrations of the COPCs in fish may be reduced by different preparation and cooking methods. In Volume II of its Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories (USEPA, 2000), the USEPA presents an appendix (Appendix C) dedicated to the reduction of exposure due to food preparation and cooking entitled, "Dose Modifications Due to Food Preparation and Cooking". The guidance indicates that certain fish preparation and cooking methods may reduce the levels of lipophilic contaminants (such as PCDDs/PCDFs) in fish tissue, therefore reducing the intake of those chemicals in fish ingested by the consumer. The above referenced Appendix C of the USEPA's Guidance Volume II contains a summary of studies measuring the reduction of contaminant levels in fish by various trimming and cooking methods. As reviewed by the USEPA, the amount of reduction of contaminants in fish is a function of the fish species and size, how the fish is trimmed, and the cooking method. Because the USEPA guidance mentions primarily fish caught in other areas of the United States well as contaminants other than PCDDs/PCDFs and PAHs, the results may not be applicable to the Turkey Creek community where different fish species, food preparation methods, and cooking methods are used. Because of these uncertainties, no reduction of COPC concentrations due to fish preparation/cooking was assumed in the risk assessment.

5.5.2 Uncertainties Related to Toxicity Assessment

The primary uncertainty with the toxicity assessment of COPCs is the necessary reliance on animal toxicological data to assess possible risks to human health. As discussed by the EPA,

> In general IRIS values [the toxicity values used in this HHRA] cannot be validly used to accurately predict the incidence of human disease or the type of effects that chemical exposures have on humans. This is due to the numerous uncertainties involved in risk assessment, including those associated with extrapolations from animal data to humans and from high experimental doses to lower environmental exposures. The organs affected and the type of adverse effect resulting from chemical exposure may differ between study animals and humans. In addition, many factors besides exposure to a chemical influence the occurrence and extent of human disease.

http://www.epa.gov/iris/limits.htm accessed 2-23-2012

It should be noted that slope factors for dioxin equivalents and all of the potentially carcinogenic PAHs evaluated in this HHRA for possible estimate of cancer risks depend on animal data and toxicity values obtained from IRIS or similar sources. As such, the risk estimates calculated in this report "cannot be validly used to accurately predict the incidence of human disease or the type of effects that chemical exposures have on humans."

In the case of PAHs, RfDs were not available for several compounds (acenaphthylene, benzo(e)pyrene, perylene, phenanthrene, and the alkyl-PAHs). Only low concentrations of these non-carcinogenic PAHs were detected in sediment and fish. For example, calculated ADIs for noncarcinogenic PAHs were lower than 1.0E-5 mg/kg/day. The most potent non-carcinogenic PAH (2-methylnaphthalene) has an oral reference dose of 4E-3 mg/kg/day. At an intake of 1.0E-05 mg/kg/day and assuming PAHs in fish could have toxicity in the range of 2-methylnaphthalene, the hazard quotient would be 0.0025, a value that is 400 times lower than 1. Thus, the lack of toxicity values for non-carcinogenic PAHs has no significant effect on the overall non-cancer risks calculated for the child exposed to Turkey Creek sediment or the fish consumer.

Dibenzofuran was detected in low concentrations in some fish composite samples. Although it is considered particularly uncertain, the USEPA has developed a chronic "screening value" similar to a chronic reference dose which may be used to evaluate the possible toxicity of dibenzofuran exposure. The chronic screening value for dibenzofuran is 1E-03 mg/kg/day and is based on a 200-day feeding study in rats indicating that feeding 250 ppm of dibenzofuran in feed caused "aggregate critical effects of reduced length and organ weight, and excess abdominal fat" (USEPA, 2007). To derive the chronic screening value, USEPA applied an uncertainty factor of 10,000. As described by the USEPA, "screening values" are considered to rank below Tier 3 toxicity values in terms of the degree of confidence placed in the toxicity value. Although use of this screening value is very uncertain, it was used to provide a hazard quotient for possible consumption of dibenzofuran in fish.

6.0 SUMMARY AND CONCLUSIONS

The objective of the human health risk assessment (HHRA) for the CFI Site was to assess potential human health risks that may result from exposure to chemicals in Turkey Creek surface water and sediment and fish collected from Turkey Creek and Bayou Bernard. Bayou Bernard is an industrial seaway that receives the surface water flow from Turkey Creek. Surface water and sediment results in Turkey Creek were evaluated on the basis of the location of sampling sites upstream or adjacent to the Site. The human health risks from consumption of recreationally caught fish were assessed for 16 species of fish in Turkey Creek and Bayou Bernard as well as background sites in Old Fort Bayou located about 13 and 20 miles from the CFI Site. Risks for surface water and sediment are summarized in Tables 5-1 and 5-2, respectively. Risks evaluated for consumption of recreationally caught fish are summarized by location caught in Table 6-1.

Turkey Creek Surface Water

The HHRA evaluated a child's swimming exposure to COPCs in Turkey Creek surface water identified using health-protective risk-based concentrations from EPA. Although it is possible that adults may contact surface water during fishing or boating activities, children are considered more sensitive to some chemical exposures and therefore, risks resulting from contact with COPCs in surface water were calculated for children. For Turkey Creek surface water, PCDDs/PCDFs (as total dioxin TEQs) and benzo(a)pyrene equivalents were identified as COPCs for the child swimming in Turkey Creek 20 times per year for 10 years.

Hazard quotients from ingestion of total dioxin TEQs from swimming in surface water upstream and adjacent to the Site were 0.00027 and 0.00015, respectively. These noncancer risks are well below one, indicating that swimming contact with Turkey Creek surface water would not result in noncancer health effects.

Theoretical lifetime cancer risks from a swimmer's incidental ingestion of total dioxin TEQs and benzo(a)pyrene equivalents in surface water upstream and adjacent to the Site were 4.3E-09 and 2.7E-09. These risks are well below the 1E-06 to 1E-04 range of lifetime cancer risks used by EPA to manage human health risks.

Turkey Creek Sediments

The HHRA evaluated a child's exposure to COPCs in Turkey Creek sediment for the ingestion and skin uptake routes of exposure. For Turkey Creek sediment, total dioxin TEQs and seven potentially carcinogenic PAHs were identified as COPCs for sediments adjacent to the Site. COPCs in upstream sediments were screened out of further evaluation in the risk assessment.

The hazard index from ingestion and dermal uptake of COPCs in Turkey Creek sediment was 0.0023. This noncancer risk is well below one, indicating that contact with sediments in Turkey Creek adjacent to the Site would not result in noncancer health effects.

Theoretical lifetime cancer risks from incidental ingestion and skin contact with the COPCs in sediment was 1.5E-06 for the sum of all COPCs. The theoretical lifetime cancer risk for individual COPCs did not exceed 1E-06. These calculated theoretical lifetime cancer risk for a child exposed to sediment is well within the 1E-06 to 1E-04 range of lifetime cancer risks used by EPA to manage human health risks.

Consumption of Fish in Turkey Creek and Bayou Bernard

The HHRA evaluated the noncancer and theoretical lifetime cancer risks from consumption of fish collected in Turkey Creek and Bayou Bernard for infants to adults for a total of 30 years of exposure. Adults were assumed to consume 32 grams of fish per day, the equivalent of approximately four 8 ounce fish meals per month. An 8-ounce meal represents an average fish meal size for an adult and is commonly used in establishing fish advisories (USEPA, 2000). The extent to which residents of the Turkey Creek community consume 8 ounce portions of fish is not known and may under- or over-estimate actual fish consumption. Although children were assumed to consume fewer grams of recreationally caught fish per day, children have greater fish intakes than adults when evaluated on a body weight basis.

Exposure and risks from consumption of 16 fish species were evaluated including fish collected upstream and adjacent to the Site in Turkey Creek and in Bayou Bernard, upstream and downstream of the location where Turkey Creek enters Bayou Bernard. In addition, fish were collected at background locations in Old Fort Bayou ranging from 13 to 20 miles east of the Site. Due to concerns regarding the detection limits for SVOCs in fish samples, SVOCs were analyzed by two laboratories (CAS and SGS) to ensure sufficiently low detection limits were

achieved in the analysis. Generally, SGS analyses achieved lower detected limits for PAHs in fish.

Noncancer and theoretical lifetime cancer risks for the COPCs in fish are summarized by location Table 6-1 for both laboratories. As shown in Table 6-1, the highest noncancer (4.4) and theoretical lifetime cancer risk (9.3E-05 from SGS analysis) was calculated for a striped mullet collected at the background location in Old Fort Bayou. The lifetime cancer risks calculated for consumption of all other fish were between 1.5E-06 and 2.4E-05 including those collected at locations upstream and adjacent to the Site in Turkey Creek and upstream and downstream in Bayou Bernard. The highest noncancer risk calculated for any fish in Turkey Creek and Bayou Bernard was for a blue catfish collected adjacent to the Site. The hazard index is 1.1, only slightly higher than the value associated with no noncancer risk.

If the risks averaged over each species caught at a location are considered, the average lifetime cancer risks and noncancer risks from consumption of recreationally caught fish are highest for the background locations in Old Fort Bayou and lowest for Bayou Bernard downstream of the point where Turkey Creek enters Bayou Bernard (Table 6-1). The average lifetime cancer risks for each location range from 1.7E-05 for the background locations to 1.9E-06 for fish caught in Bayou Bernard downstream of where Turkey Creek enters Bayou Bernard.

The primary contributor to noncancer and theoretical lifetime cancer risks for recreational consumers of Turkey Creek and Bayou Bernard fish is total dioxin TEQs. As discussed by EPA, it is not unusual to detect PCDDs/PCDFs in fish in Gulf waters. EPA has indicated that the average background concentration of dioxin TEQs in marine fish from the Gulf of Mexico is 0.5 ng/kg.

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Figures

REFERENCE: U.S.G.S. TOPOGRAPHIC MAP
7.5 MINUTE SERIES
1985 N.W.GULPORT, MS

SCALE 1 INCH = 1000 FEET

250 500 1000

0 250 500 1000 2000

CAD FILE:
PROJECT: HAN008100
SCALE: 1"=1,000'
DATE: 03/26/2012
CHECKED: L.C.
DRAWN BY: T.R.B.

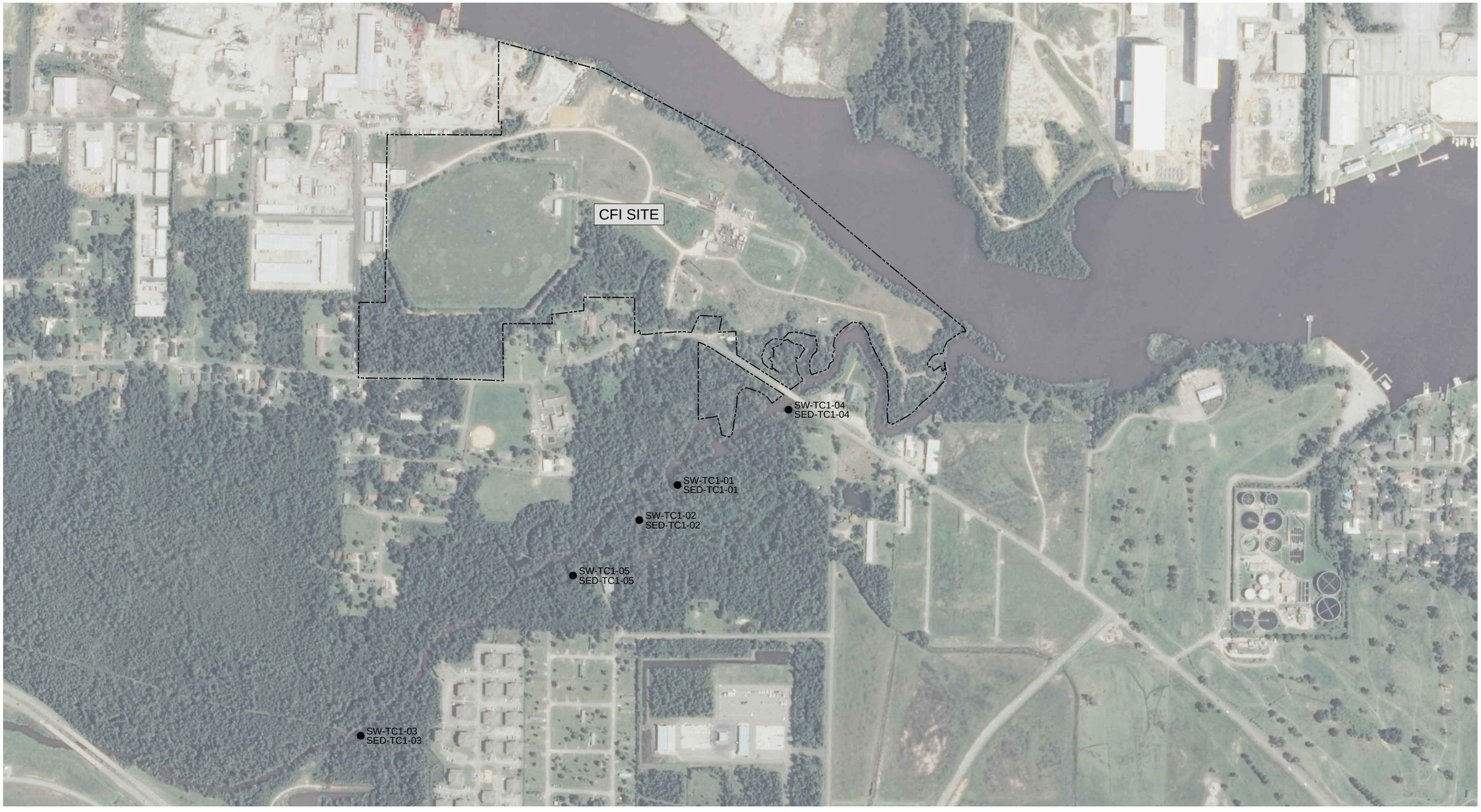
ENVIRONMENTAL MANAGEMENT SERVICES, INC.
P.O. BOX 15369
HATTIESBURG, MS 39404

PREPARED FOR:
CAVENHAM FOREST INDUSTRIES
GULFPORT, MS

SITE LOCATION

HUMAN HEALTH RISK ASSESSMENT

FIGURE
1



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SCALE 1 INCH = 500 FEET

125 250 500

0 125 250 500 1000

TURKEY CREEK UPSTREAM SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MS

DATE: 02/27/2012	APPROVED: BY: _____ DATE: _____	DRAWN BY: P.D.M.
SCALE: 1" = 500'		CAD NO. CFI - HANSON

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 2

LEGEND

- SURFACE WATER SAMPLE LOCATIONS
- SEDIMENT SAMPLE LOCATIONS

N

SCALE 1 INCH = 100 FEET

25 50 100

0 25 50 100 200

TURKEY CREEK ADJACENT TO SITE SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MS

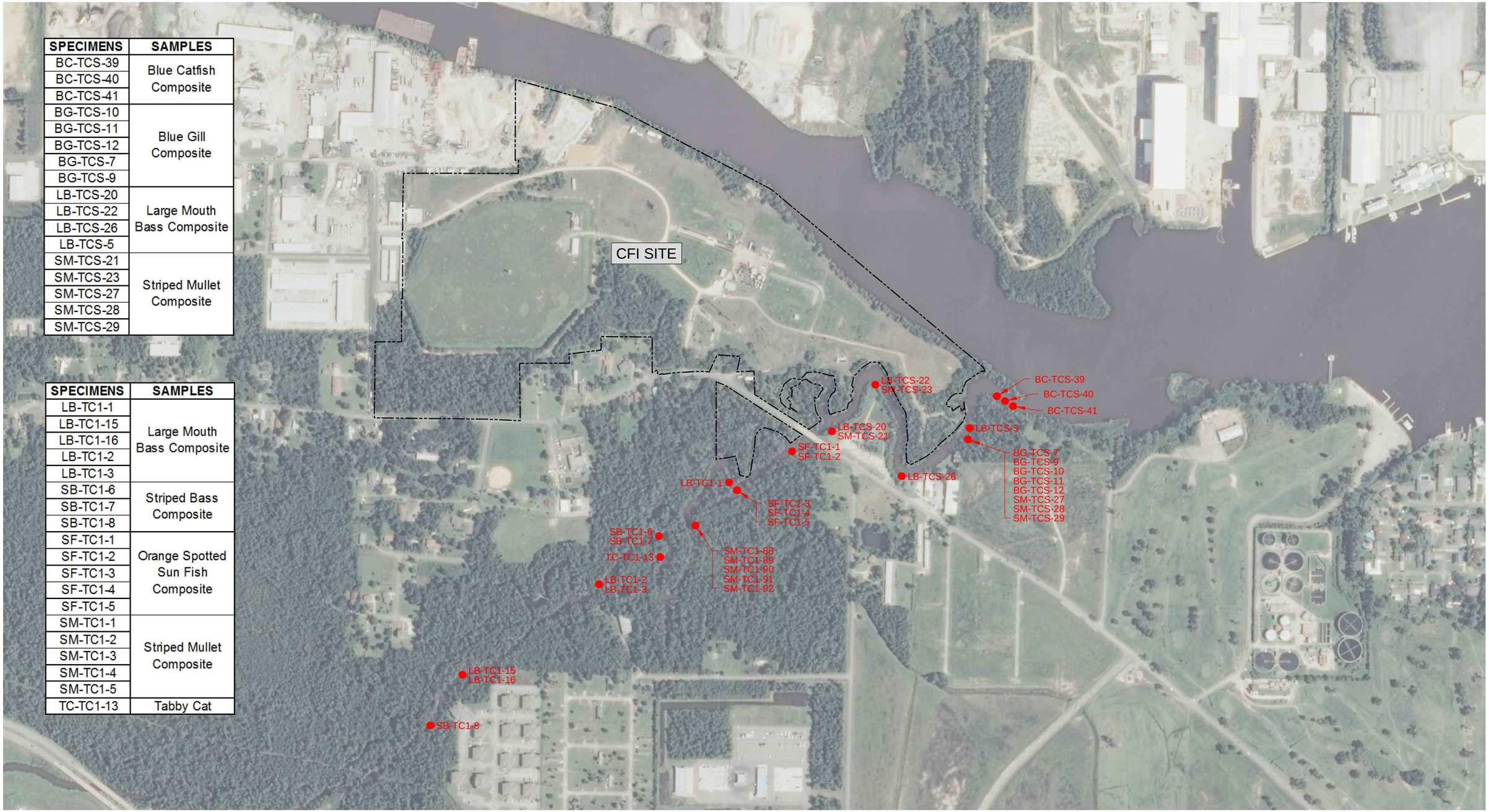
DATE: 02/28/2012	APPROVED: BY: _____ DATE: _____	DRAWN BY: P.D.M.	
SCALE: 1" = 100'		CAD NO. CFI - HANSON	

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 3

SPECIMENS	SAMPLES
BC-TCS-39	Blue Catfish Composite
BC-TCS-40	
BC-TCS-41	
BG-TCS-10	Blue Gill Composite
BG-TCS-11	
BG-TCS-12	
BG-TCS-7	
BG-TCS-9	
LB-TCS-20	Large Mouth Bass Composite
LB-TCS-22	
LB-TCS-26	
LB-TCS-5	
SM-TCS-21	Striped Mullet Composite
SM-TCS-23	
SM-TCS-27	
SM-TCS-28	
SM-TCS-29	

SPECIMENS	SAMPLES
LB-TC1-1	Large Mouth Bass Composite
LB-TC1-15	
LB-TC1-16	
LB-TC1-2	
LB-TC1-3	
SB-TC1-6	Striped Bass Composite
SB-TC1-7	
SB-TC1-8	
SF-TC1-1	Orange Spotted Sun Fish Composite
SF-TC1-2	
SF-TC1-3	
SF-TC1-4	
SF-TC1-5	
SM-TC1-1	Striped Mullet Composite
SM-TC1-2	
SM-TC1-3	
SM-TC1-4	
SM-TC1-5	
TC-TC1-13	Tabby Cat



N

SCALE 1 INCH = 500 FEET

125 250 500

0 125 250 500 1000

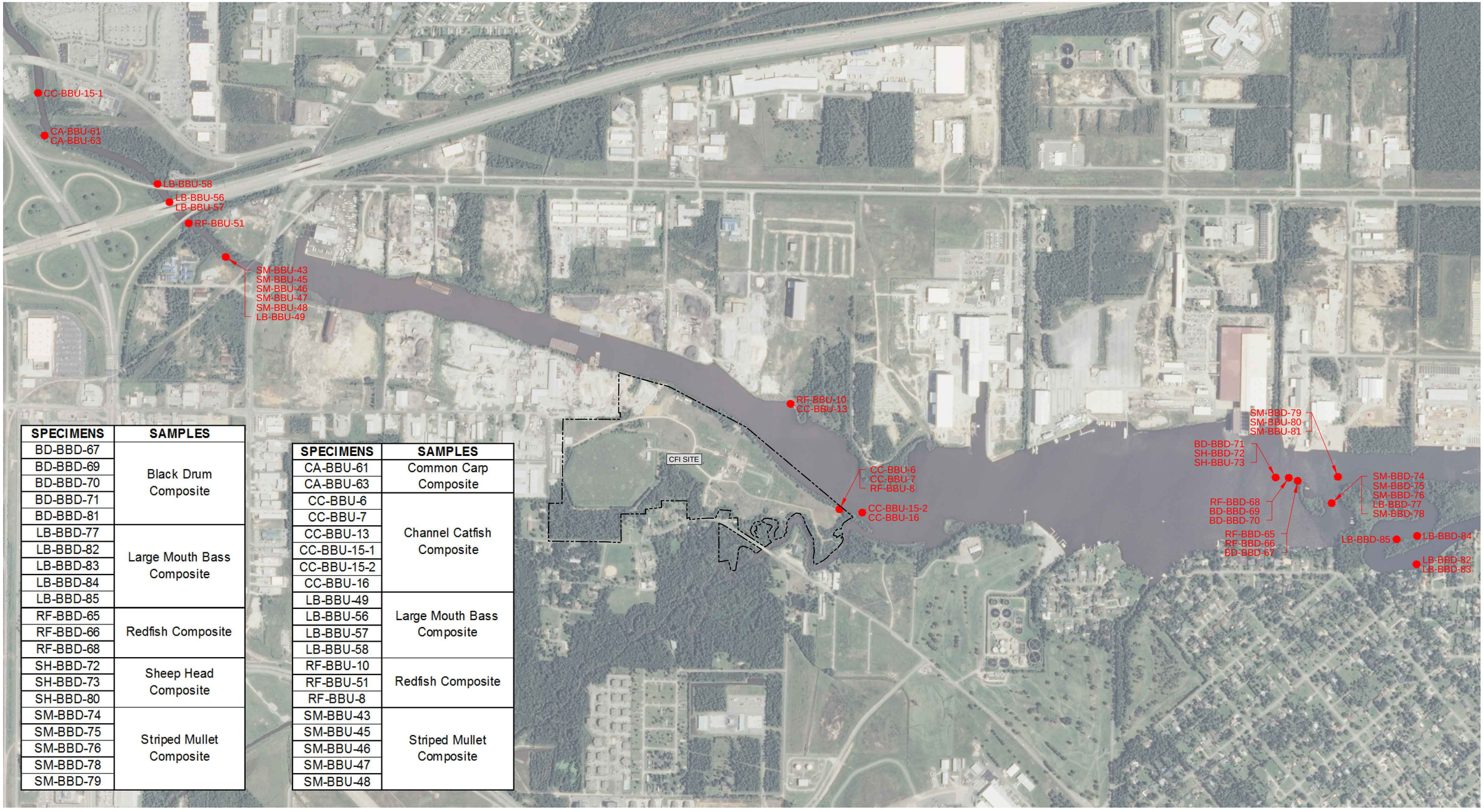
TURKEY CREEK ADJACENT TO SITE
FISH SPECIMEN LOCATIONS

CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MS

DATE: 02/27/2012	APPROVED: BY: _____ DATE: _____	DRAWN BY: P.D.M.
SCALE: 1" = 500'		CAD NO. CFI - HANSON

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 4



SPECIMENS	SAMPLES
BD-BBD-67	Black Drum Composite
BD-BBD-69	
BD-BBD-70	
BD-BBD-71	
BD-BBD-81	
LB-BBD-77	Large Mouth Bass Composite
LB-BBD-82	
LB-BBD-83	
LB-BBD-84	
LB-BBD-85	
RF-BBD-65	Redfish Composite
RF-BBD-66	
RF-BBD-68	
SH-BBD-72	Sheep Head Composite
SH-BBD-73	
SH-BBD-80	
SM-BBD-74	Striped Mullet Composite
SM-BBD-75	
SM-BBD-76	
SM-BBD-78	
SM-BBD-79	

SPECIMENS	SAMPLES
CA-BBU-61	Common Carp Composite
CA-BBU-63	
CC-BBU-6	Channel Catfish Composite
CC-BBU-7	
CC-BBU-13	
CC-BBU-15-1	
CC-BBU-15-2	
CC-BBU-16	
LB-BBU-49	Large Mouth Bass Composite
LB-BBU-56	
LB-BBU-57	
LB-BBU-58	
RF-BBU-10	Redfish Composite
RF-BBU-51	
RF-BBU-8	
SM-BBU-43	Striped Mullet Composite
SM-BBU-45	
SM-BBU-46	
SM-BBU-47	
SM-BBU-48	

N

SCALE 1 INCH = 1000 FEET

250 500 1000

0 250 500 1000 2000

BAYOU BERNARD
FISH SPECIMEN LOCATIONS

CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MS

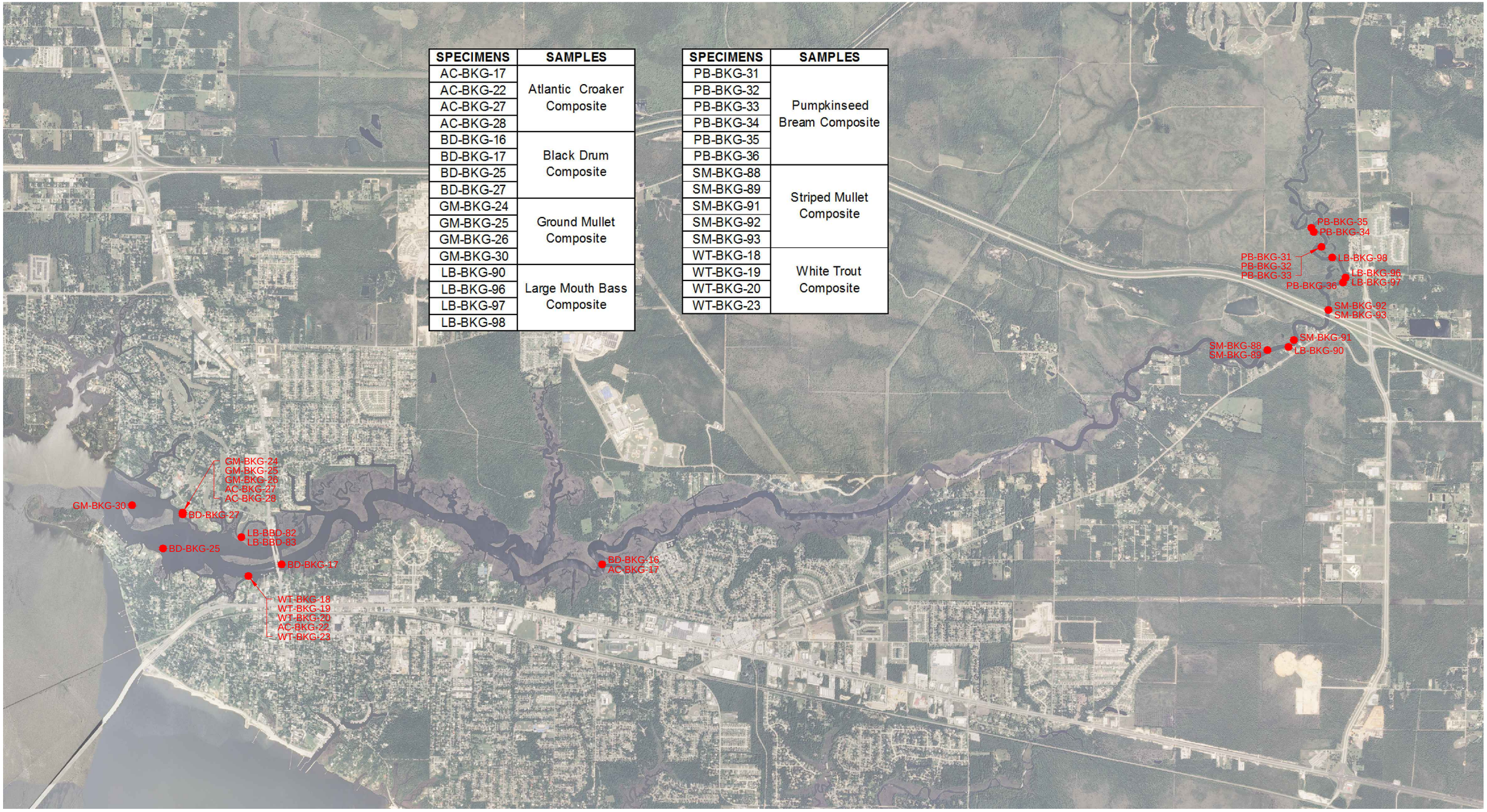
DATE: 02/27/2012	APPROVED: BY: DATE:	DRAWN BY: P.D.M.	
SCALE: 1" = 1,000'		CAD NO. CFI - HANSON	

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 5

SPECIMENS	SAMPLES
AC-BKG-17	Atlantic Croaker Composite
AC-BKG-22	
AC-BKG-27	
AC-BKG-28	
BD-BKG-16	Black Drum Composite
BD-BKG-17	
BD-BKG-25	
BD-BKG-27	
GM-BKG-24	Ground Mullet Composite
GM-BKG-25	
GM-BKG-26	
GM-BKG-30	
LB-BKG-90	Large Mouth Bass Composite
LB-BKG-96	
LB-BKG-97	
LB-BKG-98	

SPECIMENS	SAMPLES
PB-BKG-31	Pumpkinseed Bream Composite
PB-BKG-32	
PB-BKG-33	
PB-BKG-34	
PB-BKG-35	
PB-BKG-36	
SM-BKG-88	Striped Mullet Composite
SM-BKG-89	
SM-BKG-91	
SM-BKG-92	
SM-BKG-93	
WT-BKG-18	White Trout Composite
WT-BKG-19	
WT-BKG-20	
WT-BKG-23	



N

SCALE 1 INCH = 3000 FEET

750 1500 3000

0 750 1500 3000 6000

BACKGROUND (OLD FORT BAYOU) FISH SPECIMEN LOCATIONS

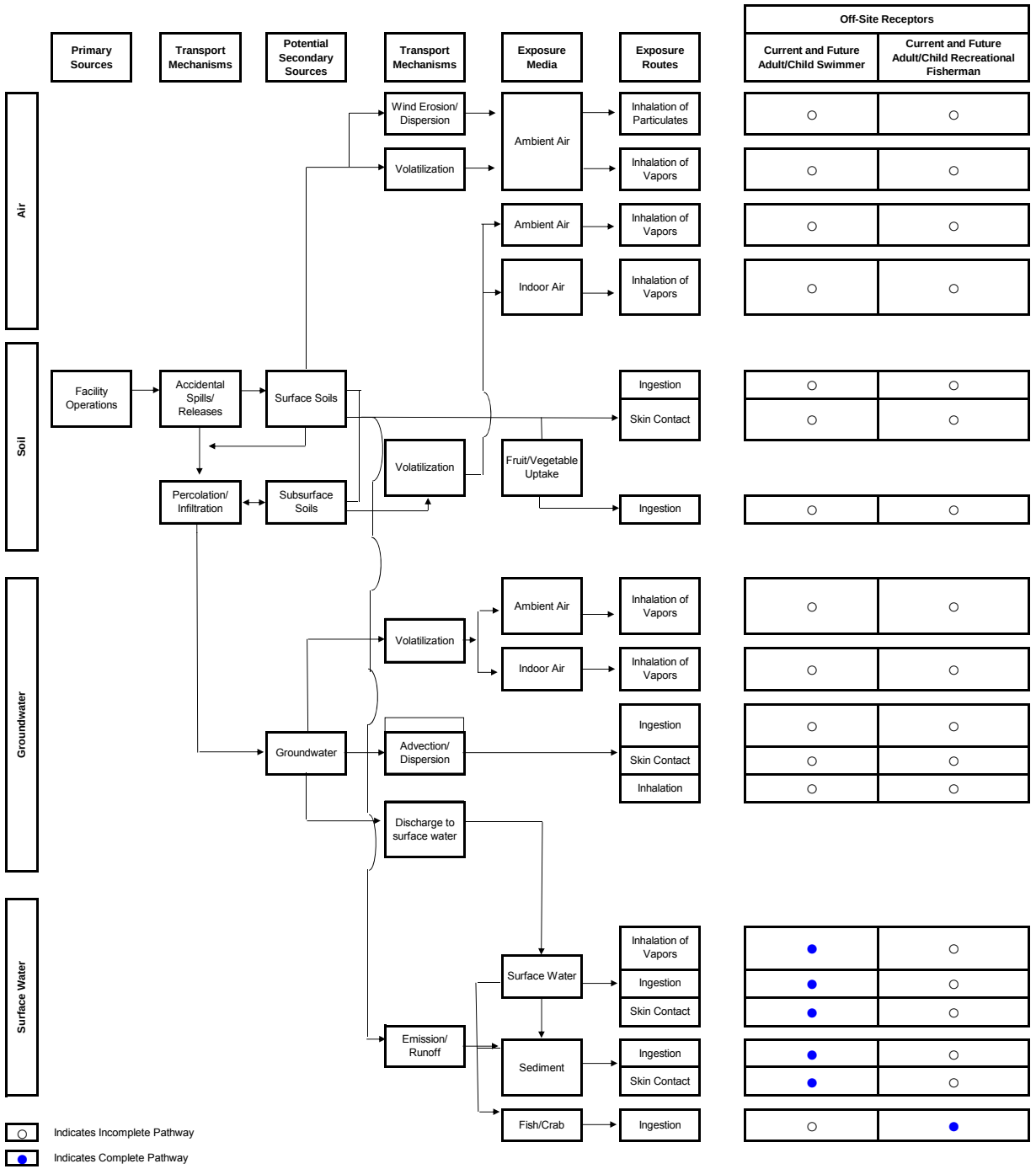
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MS

DATE: 02/27/2012	APPROVED: BY: _____ DATE: _____	DRAWN BY: P.D.M.
SCALE: 1" = 3,000'		CAD NO. CFI - HANSON

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 6

Figure 7 HHRA Conceptual Site Model for Cavenham Forest Industries, Inc. Site



Tables

Table 2-1
Surface Water
Turkey Creek - Upstream of Site
Polychlorinated Dibenzo-p-dioxins and Dibenzofurans
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits pg/L	Average of Detects pg/L	Maximum Detected pg/L	Drinking Water Standard pg/L	USEPA Tapwater Screening Level pg/L	USEPA NRWQC pg/L	Selected as COPC?
Total Dioxin Equivalents	6	6	-	1.81	3.03	30	0.52	0.005	YES, 1

1 - dioxin equivalent concentrations in one or more samples exceeds one or more screening levels

Table 2-2
Surface Water
Turkey Creek - Upstream of Site
Semi-volatile Organic Compound
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/L	Average of Detects ug/L	Maximum Detected ug/L	USEPA Tapwater Screening Level ug/L	USEPA NRWQC ug/L	Selected as COPC?
Acenaphthene	0	6	0.0044 - 1.02	ND	ND	400	670	no, 1
Acenaphthylene	0	6	0.0034 - 1.02	ND	ND	NA	NA	no, 2
Anthracene	0	6	0.0036 - 1.02	ND	ND	1300	8300	no, 1
*Benzo(a)pyrene equivalents	2	6	--	**0.0037	**0.0042	0.0029	0.0038	YES, 4
Benzo(e)pyrene	0	5	0.004	ND	ND	NA	NA	no, 2
Benzo(g,h,i)perylene	1	6	0.0029 - 0.005	0.0069	0.0069	NA	NA	no, 3
Dibenzofuran	0	5	0.0046	ND	ND	NA	NA	no, 2
Fluoranthene	5	6	0.016	0.0101	0.014	630	130	no, 1
Fluorene	0	6	0.0038 - 1.02	ND	ND	220	1100	no, 1
1-Methylnaphthalene	0	5	0.0035	ND	ND	0.97	NA	no, 2
2-Methylnaphthalene	0	5	0.0023	ND	ND	27	NA	no, 2
Naphthalene	5	6	1.02	0.0111	0.018	0.14	NA	no, 1
Perylene	0	5	0.005	ND	ND	NA	NA	no, 2
Phenanthrene	0	6	0.005 - 1.02	ND	ND	NA	NA	no, 2
Pyrene	5	6	0.011	0.0052	0.008	87	830	no, 1

NA - not available
ND - not detected
*See Section 2.0 of report for a discussion of benzo(a)pyrene equivalents
**All seven carcinogenic PAHs were not detected in each sample and calculated average and maximum benzo(a)pyrene equivalent concentrations reflect the benzo(a)pyrene equivalent concentration associated with each carcinogenic PAH as if each compound was present at one-half the detection limit.
1 - detected concentrations do not exceed lowest screening level
2 - chemical not detected
3 - chemical detected at very low concentration; no screening concentration available
4 - chemical exceeds one or more screening levels

Table 2-3
Surface Water
Turkey Creek - Adjacent to or Downstream of Site
Polychlorinated Dibenzo-p-dioxins and Dibenzofurans
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits pg/L	Average of Detects pg/L	Maximum Detected pg/L	Drinking Water Standard pg/L	USEPA Tapwater Screening Level pg/L	USEPA NRWQC pg/L	Selected as COPC?
Total Dioxin Equivalents	4	4	-	1.42	1.68	30	0.52	0.005	YES, 1

1 - dioxin equivalent concentrations in one or more samples exceeds one or more screening levels

Table 2-4
Surface Water
Turkey Creek - Adjacent to or Downstream of Site
Semi-volatile Organic Compounds
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/L	Average of Detects ug/L	Maximum Detected ug/L	USEPA Tapwater Screening Level ug/L	USEPA NRWQC ug/L	Selected as COPC?
Acenaphthene	0	5	0.0044 - 1.02	ND	ND	400	670	no, 2
Acenaphthylene	0	5	0.0034 - 1.02	ND	ND	NA	NA	no, 2
Anthracene	0	5	0.0036 - 1.02	ND	ND	1300	8300	no, 2
*Benzo(a)pyrene equivalents	0	5	--	0.0028**	0.0038**	0.0029	0.0038	YES, 4
Benzo(e)pyrene	0	1	0.004	ND	ND	NA	NA	no, 2
Benzo(g,h,i)perylene	0	5	0.0029 - 0.005	ND	ND	NA	NA	no, 2
Dibenzofuran	0	1	0.0046	ND	ND	NA	NA	no, 2
Fluoranthene	1	5	0.016	0.0099	0.0099	630	130	no, 1
Fluorene	0	5	0.0038 - 1.02	ND	ND	220	1100	no, 2
1-Methylnaphthalene	0	1	0.0035	ND	ND	0.97	NA	no, 2
2-Methylnaphthalene	0	1	0.0023	ND	ND	27	NA	no, 2
Naphthalene	1	5	1.02	0.021	0.021	0.14	NA	no, 1
Perylene	0	1	0.005	ND	ND	NA	NA	no, 2
Phenanthrene	0	5	0.005	ND	ND	NA	NA	no, 2
Pyrene	1	5	0.011	0.005	0.005	87	830	no, 1

NA - not available
ND - not detected
*See Section 2.0 of report for a discussion of benzo(a)pyrene equivalents
**Carcinogenic PAHs were not detected in any sample, calculated average and maximum benzo(a)pyrene equivalent concentrations reflect the benzo(a)pyrene equivalent concentration associated with each carcinogenic PAH as if each compound was present at one-half the detection limit.
1 - detected concentrations do not exceed lowest screening level
2 - chemical not detected
3 - chemical detected at very low concentration; no screening concentration available
4 - chemical exceeds one or more screening levels

Table 2-5
Sediment
Turkey Creek - Upstream of Site
Polychlorinated Dibenzodioxins and Dibenzofurans
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ng/kg	Average of Detects ng/kg	Maximum Detected ng/kg	USEPA Residential Soil Screening Level ng/kg	Selected as COPC?
Total Dioxin Equivalents	6	6	-	1.46	3.34	4.5	no, 2

1-detected concentrations exceed screening concentrations
2-detected concentrations less than screening concentration

Table 2-6
Sediment
Turkey Creek - Upstream of Site
Semi-Volatile Organic Compounds
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/kg	Average of Detects ug/kg	Maximum Detected ug/kg	USEPA Residential Soil Screening Level ug/kg	Selected as COPC? ug/kg
Acenaphthene	1	6	0.76 - 3.6	0.87	0.87	3,400,000	no, 2
Acenaphthylene	0	6	0.59 - 3.6	ND	ND	NA	no, 1
Anthracene	1	6	0.58 - 3.6	1.20	1.2	17,000,000	no, 2
*Benzo(a)pyrene equivalents	5	6	--	5.70	13.8	15	no, 2
Benzo(e)pyrene	6	6	-	3.90	9.6	NA	no, 4
Benzo(g,h,i)perylene	5	6	0.85	4.14	8.2	NA	no, 4
Biphenyl	0	1	3.6	ND	ND	51,000	no, 1
4-Chloro-3-Methylphenol	0	1	30	ND	ND	NA	no, 1
2-Chlorophenol	0	1	30	ND	ND	390,000	no, 1
C1-Chrysenes	1	1	-	5.70	5.7	NA	no, 4
C2-Chrysenes	0	1	5	ND	ND	NA	no, 1
C3-Chrysenes	0	1	5	ND	ND	NA	no, 1
C4-Chrysenes	0	1	5	ND	ND	NA	no, 1
Dibenzofuran	1	6	0.63 - 3.6	0.63	0.63	NA	no, 4
Dibenzothiophene	0	1	3.6	ND	ND	NA	no, 1
C1-Dibenzothiophenes	0	1	5	ND	ND	NA	no, 1
C2-Dibenzothiophenes	0	1	5	ND	ND	NA	no, 1
C3-Dibenzothiophenes	0	1	5	ND	ND	NA	no, 1
2,4-Dimethylphenol	0	1	30	ND	ND	1,200,000	no, 1
2,4-Dinitrophenol	0	1	130	ND	ND	120,000	no, 1
Fluoranthene	5	6	0.98	10.02	21	2,300,000	no, 2
C1-Fluoranthenes/Pyrenes	1	1	-	6.10	6.1	NA	no, 4
Fluorene	1	6	0.61 - 3.6	0.69	0.69	2,300,000	no, 2
C1-Fluorenes	0	1	5	ND	ND	NA	no, 1
C2-Fluorenes	0	1	5	ND	ND	NA	no, 1
C3-Fluorenes	0	1	5	ND	ND	NA	no, 1
1-Methylnaphthalene	0	6	0.51 - 3.6	ND	ND	220,000	no, 1
2-Methylnaphthalene	1	6	0.46 - 3.6	0.55	0.55	3,100,000	no, 2
Naphthalene	4	6	0.6 - 3.6	1.01	1.5	3,600	no, 2
C2-Naphthalenes	0	1	5	ND	ND	NA	no, 1
C3-Naphthalenes	0	1	5	ND	ND	NA	no, 1
C4-Naphthalenes	0	1	5	ND	ND	NA	no, 1
Pentachlorophenol	0	1	70	ND	ND	890	no, 1

Table 2-6
Sediment
Turkey Creek - Upstream of Site
Semi-Volatile Organic Compounds
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/kg	Average of Detects ug/kg	Maximum Detected ug/kg	USEPA Residential Soil Screening Level ug/kg	Selected as COPC? ug/kg
Perylene	4	6	0.72 - 3.6	2.65	5.8	NA	no, 4
Phenanthrene	1	6	1.4 - 3.6	4.10	4.1	NA	no, 4
C1-Phenanthrenes/Anthracenes	0	1	5	ND	ND	NA	no, 1
C2-Phenanthrenes/Anthracenes	0	1	5	ND	ND	NA	no, 1
C3-Phenanthrenes/Anthracenes	0	1	5	ND	ND	NA	no, 1
C4-Phenanthrenes/Anthracenes	0	1	5	ND	ND	NA	no, 1
Phenol	0	1	30	ND	ND	18,000,000	no, 1
Pyrene	5	6	0.76	7.48	15	1,700,000	no, 2
2,3,4,5-Tetrachlorophenol	0	1	30	ND	ND	NA	no, 1
2,3,4,6-Tetrachlorophenol	0	1	30	ND	ND	1,800,000	no, 1
2,3,5,6-Tetrachlorophenol	0	1	30	ND	ND	NA	no, 1
2,4,5-Trichlorophenol	0	1	30	ND	ND	6,100,000	no, 1
2,4,6-Trichlorophenol	0	1	30	ND	ND	44,000	no, 1

*See Section 2.0 of report for a discussion of benzo(a)pyrene equivalents
NA - not available
ND - not detected
1-chemical not detected
2-detected chemical concentrations below screening level
3-detected chemical concentrations exceed screening level
4-chemical detected in concentrations below screening levels for non-carcinogenic PAHs

Table 2-7
Sediment
Turkey Creek - Adjacent to or Downstream of Site
Polychlorinated Dibenzodioxins and Dibenzofurans
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ng/kg	Average of Detects ng/kg	Maximum Detected ng/kg	USEPA Residential Soil Screening Level ng/kg	Selected as COPC?
Total Dioxin Equivalents	10	10	-	3.88	13.73	4.5	YES, 1

1-detected concentrations exceed screening level

Table 2-8
Sediment
Turkey Creek - Adjacent to or Downstream of Site
Semi-Volatile Organic Compounds
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/kg	Average of Detects ug/kg	Maximum Detected ug/kg	USEPA Residential Soil Screening Level ug/kg	Selected as COPC? ug/kg
Acenaphthene	36	56	3.3 - 330	9,729.8	98,200	3,400,000	no, 2
Acenaphthylene	4	56	3.2 - 990	145.1	538	NA	no, 4
Aniline	0	28	30 - 990	ND	ND	85,000	no, 1
Anthracene	28	56	3.3 - 330	6,092.4	50,900	17,000,000	no, 2
*Benzo(a)pyrene equivalents	27	56	--	**495	**6803	15	YES, 3
Benzo(e)pyrene	14	27	3.2 - 321	21.8	84	NA	no, 4
Benzo(g,h,i)perylene	21	56	2.7 - 330	223.4	1,240	NA	no, 4
Biphenyl	0	10	3.3 - 11	ND	ND	51,000	no, 1
Bis(2-chloroethoxy)methane	0	28	30 - 990	ND	ND	180,000	no, 1
Bis(2-chloroethyl)ether	0	28	30 - 990	ND	ND	210	no, 1
Bis(2-chloroisopropyl)ether	0	28	30 - 990	ND	ND	NA	no, 1
Bis(2-ethylhexyl)phthalate	2	28	30 - 990	55.0	60	35,000	no, 2
4-Bromophenyl phenyl ether	0	28	30 - 990	ND	ND	NA	no, 1
Butyl benzyl phthalate	0	28	30 - 990	ND	ND	260,000	no, 1
4-Chloro-3-Methylphenol	0	39	30 - 990	ND	ND	NA	no, 1
4-Chloroaniline	0	28	30 - 990	ND	ND	2,410	no, 1
2-Chloronaphthalene	0	28	30 - 990	ND	ND	6,300,000	no, 1
2-Chlorophenol	0	39	30 - 990	ND	ND	390,000	no, 1
4-Chlorophenyl phenyl ether	0	28	30 - 990	ND	ND	NA	no, 1
C1-Chrysenes	9	10	5	25.3	66	NA	no, 4
C2-Chrysenes	8	10	5	18.9	55	NA	no, 4
C3-Chrysenes	5	10	5 - 11	13.1	28	NA	no, 4
C4-Chrysenes	1	10	5 - 11	7.2	7.2	NA	no, 4
Dibenzofuran	13	38	3.3 - 330	21,962.9	89,000	NA	no, 4
Dibenzothiophene	1	10	3.3 - 11	4.5	4.5	NA	no, 4
C1-Dibenzothiophenes	1	10	5 - 11	5.5	5.5	NA	no, 4
C2-Dibenzothiophenes	1	10	5 - 11	10.0	10	NA	no, 4
C3-Dibenzothiophenes	2	10	5 - 11	10.1	15	NA	no, 4
1,2-Dichlorobenzene	0	28	30 - 990	ND	ND	1,900,000	no, 1
1,3-Dichlorobenzene	0	28	30 - 990	ND	ND	NA	no, 1
1,4-Dichlorobenzene	0	28	30 - 990	ND	ND	2,400	no, 1
3,3'-Dichlorobenzidine	0	28	30 - 990	ND	ND	1,100	no, 1
2,4-Dichlorophenol	0	28	30 - 990	ND	ND	180,000	no, 1
Diethyl phthalate	0	28	30 - 990	ND	ND	49,000,000	no, 1
Dimethyl phthalate	0	28	30 - 990	ND	ND	NA	no, 1
2,4-Dimethylphenol	0	39	30 - 990	ND	ND	1,200,000	no, 1
Di-n-butyl phthalate	0	28	30 - 990	ND	ND	6,100,000	no, 1

Table 2-8
Sediment
Turkey Creek - Adjacent to or Downstream of Site
Semi-Volatile Organic Compounds
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/kg	Average of Detects ug/kg	Maximum Detected ug/kg	USEPA Residential Soil Screening Level ug/kg	Selected as COPC? ug/kg
4,6-Dinitro-2-methylphenol	0	28	130 - 3900	ND	ND	NA	no, 1
2,4-Dinitrophenol	0	39	130 - 3900	ND	ND	120,000	no, 1
2,4-Dinitrotoluene	0	28	30 - 990	ND	ND	1,600	no, 1
2,6-Dinitrotoluene	0	28	30 - 990	ND	ND	61,000	no, 1
Di-n-octyl phthalate	0	28	30 - 990	ND	ND	NA	no, 1
Fluoranthene	41	56	11.6 - 330	8,941.0	112,000	2,300,000	no, 2
C1-Fluoranthenes/Pyrenes	10	10	-	40.5	110	NA	no, 4
Fluorene	24	56	3.3 - 330	16,514.0	111,000	2,300,000	no, 2
C1-Fluorenes	4	10	5 - 9.6	9.3	14	NA	no, 4
C2-Fluorenes	5	10	5	12.2	18	NA	no, 4
C3-Fluorenes	4	10	5	14.6	20	NA	no, 4
Hexachlorobenzene	0	28	30 - 990	ND	ND	300	no, 1
Hexachlorobutadiene	0	28	30 - 990	ND	ND	6,200	no, 1
Hexachlorocyclopentadiene	0	28	30 - 990	ND	ND	370,000	no, 1
Hexachloroethane	0	28	30 - 990	ND	ND	12,000	no, 1
Isophorone	0	28	30 - 990	ND	ND	510,000	no, 1
1-Methylnaphthalene	14	55	3.1 - 330	11,849.3	81,800	220,000	no, 2
2-Methylnaphthalene	8	28	3.1 - 330	5,579.6	22,300	3,100,000	no, 2
2-Methylphenol	0	28	30 - 990	ND	ND	3,100,000	no, 1
4-Methylphenol	0	28	30 - 990	ND	ND	310,000	no, 1
Naphthalene	20	56	3.3 - 330	20,982.6	235,000	3,600	YES, 3
C2-Naphthalenes	5	10	5	9.7	16	NA	no, 4
C3-Naphthalenes	5	10	5	11.4	16	NA	no, 4
C4-Naphthalenes	5	10	5	12.2	20	NA	no, 4
2-Nitroaniline	0	28	30 - 990	ND	ND	610,000	no, 1
3-Nitroaniline	0	28	30 - 990	ND	ND	NA	no, 1
4-Nitroaniline	0	28	30 - 990	ND	ND	24,000	no, 1
Nitrobenzene	0	28	30 - 990	ND	ND	4,800	no, 1
2-Nitrophenol	0	28	30 - 990	ND	ND	NA	no, 1
4-Nitrophenol	0	28	30 - 990	ND	ND	NA	no, 1
N-Nitrosodimethylamine	0	28	30 - 990	ND	ND	2.3	no, 1
N-Nitrosodi-n-propylamine	0	28	30 - 990	ND	ND	69	no, 1
N-Nitrosodiphenylamine	0	28	30 - 990	ND	ND	99,000	no, 1
Pentachlorophenol	0	39	30 - 990	ND	ND	890	no, 1
Perylene	8	10	3.3 - 3.4	13.0	36	NA	no, 4
Phenanthrene	32	56	3.4 - 330	34,176.8	356,000	NA	no, 4
C1-Phenanthrenes/Anthracenes	6	10	5	27.2	46	NA	no, 4

Table 2-8
Sediment
Turkey Creek - Adjacent to or Downstream of Site
Semi-Volatile Organic Compounds
Statistical Summary and Selection of Chemicals of Potential Concern

Chemical	Number of Detects	Number of Analyses	Range of Detection Limits ug/kg	Average of Detects ug/kg	Maximum Detected ug/kg	USEPA Residential Soil Screening Level ug/kg	Selected as COPC? ug/kg
C2-Phenanthrenes/Anthracenes	7	10	5	26.9	60	NA	no, 4
C3-Phenanthrenes/Anthracenes	9	10	5	17.3	42	NA	no, 4
C4-Phenanthrenes/Anthracenes	4	10	5	11.9	17	NA	no, 4
Phenol	0	39	30 - 990	ND	ND	18,000,000	no, 1
Pyrene	39	56	4.2 - 330	6,015.6	71,900	1,700,000	no, 2
2,3,4,5-Tetrachlorophenol	0	38	30 - 990	ND	ND	NA	no, 1
2,3,4,6-Tetrachlorophenol	0	39	30 - 990	ND	ND	1,800,000	no, 1
2,3,5,6-Tetrachlorophenol	0	39	30 - 990	ND	ND	NA	no, 1
1,2,4-Trichlorobenzene	0	28	30 - 990	ND	ND	22,000	no, 1
2,4,5-Trichlorophenol	0	39	30 - 990	ND	ND	6,100,000	no, 1
2,4,6-Trichlorophenol	0	39	30 - 990	ND	ND	44,000	no, 1

NA - not available
ND - not detected
*See Section 2.0 of report for a discussion of benzo(a)pyrene equivalents
**Although all seven carcinogenic PAHs were not detected in each sample, calculated average and maximum benzo(a)pyrene equivalent concentrations reflect the benzo(a)pyrene equivalent concentration associated with each carcinogenic PAH as if each compound was present at one-half the detection limit.
1-chemical not detected
2-detected chemical concentrations below screening level
3-detected chemical concentrations exceed screening level
4-chemical detected in concentrations below screening levels for non-carcinogenic PAHs

Table 3-1
Values Used for Daily Intake Calculations
Cavenham Forest Industries - Gulfport, Mississippi

Scenario Timeframe: Current and Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Surface Water
Receptor Population: Swimmer
Receptor Age: Older Child (6 - <16 years of age)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Surface Water	mg/L	see Table 3-4		
	IR-S	Ingestion Rate of Surface Water	L/hr	0.05	USEPA, 2000	Chronic Daily Intake (CDI) (mg/kg/day) =
	EF	Exposure Frequency	days/yr	20	Judgment	CW x IR-W x EF x ED x ET x 1/BW x 1/AT
	ED	Exposure Duration	years	10	USEPA, 2000	
	ET	Exposure Time	hr/day	1	USEPA, 2009b	
	BW	Body Weight	kg	44	USEPA, 2000	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	
Dermal	DAevent	Absorbed Dose	$mg/cm^2/event$	(1)	USEPA, 2004	
	EV	Event Frequency	events/day	1	USEPA, 2004	Chronic Daily Intake (CDI) (mg/kg/day) =
	EF	Exposure Frequency	days/yr	20	Judgment	DAevent x EV x ED x EF x SA x 1/BW x 1/AT
	ED	Exposure Duration	years	10	USEPA, 2000	
	SA	Skin Surface Area Available for Contact	cm^2	13,100	USEPA, 2008	
	BW	Body Weight	kg	44	USEPA, 2000	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	

(1) calculated according to methods and assumptions outlined in USEPA, 2004; chemical-specific permeability coefficients from Exhibit 3-1

Table 3-1
Values Used for Daily Intake Calculations
Cavenham Forest Industries - Gulfport, Mississippi

Scenario Timeframe: Current and Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Surface Water
Receptor Population: Swimmer
Receptor Age: Older Child (6 - <16 years of age)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Surface Water	mg/L	see Table 3-4		
	IR-S	Ingestion Rate of Surface Water	L/hr	0.05	USEPA, 2000	Chronic Daily Intake (CDI) (mg/kg/day) =
	EF	Exposure Frequency	days/yr	20	Judgment	CW x IR-W x EF x ED x ET x 1/BW x 1/AT
	ED	Exposure Duration	years	10	USEPA, 2000	
	ET	Exposure Time	hr/day	1	USEPA, 2009b	
	BW	Body Weight	kg	44	USEPA, 2000	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	
Dermal	DAevent	Absorbed Dose	$mg/cm^2/event$	(1)	USEPA, 2004	
	EV	Event Frequency	events/day	1	USEPA, 2004	Chronic Daily Intake (CDI) (mg/kg/day) =
	EF	Exposure Frequency	days/yr	20	Judgment	DAevent x EV x ED x EF x SA x 1/BW x 1/AT
	ED	Exposure Duration	years	10	USEPA, 2000	
	SA	Skin Surface Area Available for Contact	cm^2	13,100	USEPA, 2008	
	BW	Body Weight	kg	44	USEPA, 2000	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	

(1) calculated according to methods and assumptions outlined in USEPA, 2004; chemical-specific permeability coefficients from Exhibit 3-1

Table 3-2
Values Used for Daily Intake Calculations
Cavenham Forest Industries - Gulfport, Mississippi

Scenario Timeframe: Current and Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Sediment
Receptor Population: Swimmer
Receptor Age: Older Child (6 - <16 years of age)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Model Name/ Intake Equation
Ingestion	CS	Chemical Concentration in Sediment	mg/kg	see Table 3-4		
	IR-S	Ingestion Rate of Sediment	mg/day	100	USEPA, 2009a	Chronic Daily Intake (CDI) (mg/kg/day) =
	EF	Exposure Frequency	days/year	20	Judgement	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	ED	Exposure Duration	years	10	USEPA, 2000	
	CF	Conversion Factor	kg/mg	1.00E-06	--	
	BW	Body Weight	kg	44	USEPA, 2000	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	
Dermal	CS	Chemical Concentration in Sediment	mg/kg			
	CF	Conversion Factor	kg/mg	1.00E-06	--	
	SA	Skin Surface Area Available for Contact	cm^2	6600	USEPA, 2004	CDI (mg/kg/day) =
	SSAF	Soil to Skin Adherence Factor	mg/cm^2/event	0.2	USEPA, 2002	CS x CF x SA x SSAF x DABS x EF x ED x 1/BW x
	DABS	Dermal Absorption Factor (Sediment)	--	0.03 for PCDDs/PCDFs; 0.13 for PAHs	USEPA, 2004	1/AT
	EF	Exposure Frequency	days/year	20	Judgment	
	ED	Exposure Duration	years	10	USEPA, 2000	
	BW	Body Weight	kg	44	USEPA, 2000	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	

TABLE 3-3
Values Used for Daily Intake Calculations
Cavenham Forest Industries - Gulfport, Mississippi

Scenario Timeframe: Current and Future
Medium: Surface Water and Sediment
Exposure Medium: Fish
Exposure Point: Aquatic Species Consumption
Receptor Population: Recreationally caught fish consumers
Receptor Age: Various age ranges from infant to adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	C_{Fish}	Chemical Concentration in Fish	mg/kg	see Table 3-5	chemical-specific	Average Daily Intake (ADI) (mg/kg/day) = C_{Fish} x IR x EF x ED x CF1 x 1/BW x 1/AT
	IR	Ingestion Rate	g/day	0 to <2 years, 16 g/day; 2 to <6 years, 16 g/day; 6 to <16 years, 32 g/day; >16 years, 32 g/day	CTEH consulation with USEPA, 8/22/2012	
	EF	Exposure Frequency	days/yr	365	judgment	
	ED	Exposure Duration	years	*30	USEPA, 1991	
	CF1	Conversion factor	kg/g	0.001		
	BW	Body Weight	kg	0 to <2 years, 15 kg; 2 to <6 years, 15 kg; 6 to <16 years, 70 kg; >16 years, 70 kg	CTEH consulation with USEPA, 8/22/2012	
	AT-C	Averaging Time (Cancer)	days	365*70	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365*ED	USEPA, 1989	

*Exposure periods are divided into four age groups, 0 to 2 years of age (2 years); 2 to 6 years of age (4 years), 6 to 16 years of age (10 years), and 16 to 30 years of age (14 years)

Table 3-4
Exposure Point Concentration Summary for Chemicals of Potential Concern in Surface Water

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (data distribution)	Maximum Concentration	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Turkey Creek upstream from Site	Total Dioxin Toxic Equivalence	mg/L	1.81E-09	Not Calculated(1)	3.03E-09	3.03E-09	mg/L	Max	Maximum used due to few samples
	Benzo(a)pyrene equivalents	mg/L	3.70E-06	Not Calculated (1)	4.20E-06	4.20E-06	mg/L	Max	
Turkey Creek adjacent to Site	Total Dioxin Toxic Equivalence	mg/L	1.42E-09	Not Calculated (2)	1.68E-09	1.68E-09	mg/L	Max	Maximum used due to few samples
	Benzo(a)pyrene equivalents	mg/L	2.80E-06	Not Calculated (3)	3.80E-06	3.80E-06	mg/L	Max	

(1) 6 samples analyzed; too few samples to determine distribution or calculated a valid 95% UCL
(2) 4 samples analyzed; too few samples to determine data distribution or calculate valid 95% UCL
(3) 5 samples analyzed; too few samples to determine data distribution or calculate valid 95% UCL

Table 3-5
Exposure Point Concentration Summary for Chemicals of Potential Concern in Sediment

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (data distribution)	Maximum Concentration	Exposure Point Concentration		
						Value	Units	Statistic
Turkey Creek adjacent to Site	Total Dioxin Toxic Equivalence	mg/kg	3.88E-06	6.86E-06 (gamma)	1.37E-05	6.86E-06	mg/kg	95% approximate gamma
	Benzo(a)pyrene equivalents	mg/kg	4.95E-01	1.40E+00 (none discernible)	6.80E+00	1.40E+00	mg/kg	95% Chebyshev
	Naphthalene	mg/kg	7.51E+00	3.57E+01 (none discernible)	2.35E+02	3.57E+01	mg/kg	97.5% Chebyshev

(1) 6 samples analyzed; too few samples to determine distribution or calculated a valid 95% UCL
(2) 4 samples analyzed; too few samples to determine data distribution or calculate valid 95% UCL
(3) 5 samples analyzed; too few samples to determine data distribution or calculate valid 95% UCL

Table 3-6a
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Atlantic Croaker fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.000000234	4	9, 8.5, 8, 7.25	132, 100, 97, 64 (total weight of composite = 393)
	Acenaphthene	mg/kg	0.000056 J	0.000056	0.000202J	0.000202			
	Acenaphthylene	mg/kg	0.00011 J	0.000110	<0.0000878	0.000044			
	Anthracene	mg/kg	0.000042 J	0.000042	0.000277J	0.000277			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000101			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000878	0.000044			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000878	0.000044			
	Dibenzofuran	mg/kg	0.00014 J	0.000140	0.0008360	0.000836			
	Fluoranthene	mg/kg	0.00014 J	0.000140	0.0010900	0.001090			
	Fluorene	mg/kg	0.00026 J	0.000260	0.000611J	0.000611			
	1-Methylnaphthalene	mg/kg	0.00018 J	0.000180	0.000135J	0.000135			
	2-Methylnaphthalene	mg/kg	0.00016 J	0.000160	0.000242J	0.000242			
	Naphthalene	mg/kg	0.00037 J	0.000370	0.000362J	0.000362			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000878	0.000044			
	Phenanthrene	mg/kg	0.00036 J	0.000360	0.00353B	0.003530			
	Pyrene	mg/kg	0.000085 J	0.000085	0.000552J	0.000552			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value

Table 3-6b
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Blue Catfish fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Turkey Creek adjacent to Site	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.000000745	3	31, 31, 31.5	6340, 7900, 7680 (total weight of composite 21,920)
	Acenaphthene	mg/kg	0.004	0.004000	0.0013100	0.001310			
	Acenaphthylene	mg/kg	0.0046	0.004600	<0.0000489	0.000024			
	Anthracene	mg/kg	0.0099	0.009900	0.000287J	0.000287			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000225	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.0001	0.000050	<0.0000489	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.00019	0.000095	<0.0000489	0.000024			
	Dibenzofuran	mg/kg	0.0018	0.001800	0.0007450	0.000745			
	Fluoranthene	mg/kg	0.0068	0.006800	0.0021000	0.002100			
	Fluorene	mg/kg	0.0025	0.002500	0.0008250	0.000825			
	1-Methylnaphthalene	mg/kg	0.00098 J	0.000980	0.000318J	0.000318			
	2-Methylnaphthalene	mg/kg	0.0013	0.001300	0.0004810	0.000481			
	Naphthalene	mg/kg	0.0016	0.001600	0.0008190	0.000819			
	Perylene	mg/kg	<0.00024	0.000120	<0.0000489	0.000024			
	Phenanthrene	mg/kg	0.0023	0.002300	0.0010600	0.001060			
	Pyrene	mg/kg	0.0027	0.002700	0.0006170	0.000617			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value

Table 3-6c
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Black Drum fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.000000104	4	10, 8.5, 12, 13	254, 160, 368, 464 (total weight of composite = 1246)
	Acenaphthene	mg/kg	0.00021 J	0.000210	0.000169J	0.000169			
	Acenaphthylene	mg/kg	<0.000046	0.000023	<0.0000485	0.000024			
	Anthracene	mg/kg	0.000054 J	0.000054	0.000117J	0.000117			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000099	na	0.000056			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000485	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000485	0.000024			
	Dibenzofuran	mg/kg	0.0002 J	0.000200	0.0004880	0.000488			
	Fluoranthene	mg/kg	0.00016 J	0.000160	0.0004290	0.000429			
	Fluorene	mg/kg	0.00025 J	0.000250	0.000343J	0.000343			
	1-Methylnaphthalene	mg/kg	0.00018 J	0.000180	0.0000905J	0.000091			
	2-Methylnaphthalene	mg/kg	0.00019 J	0.000190	0.000168J	0.000168			
	Naphthalene	mg/kg	0.00026 J	0.000260	0.000232J	0.000232			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000485	0.000024			
	Phenanthrene	mg/kg	0.00033 J	0.000330	0.00169B	0.001690			
	Pyrene	mg/kg	0.0001 J	0.000100	0.000235J	0.000235			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value

Table 3-6d
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Black Drum fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Bayou Bernard downstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000383	5	25, 18.5, 17.5, 17, 17	3460, 1340, 960, 1300, 1140 (total weight of composite = 8200)
	Acenaphthene	mg/kg	<0.000047	0.000024	0.0000656J	0.000066			
	Acenaphthylene	mg/kg	<0.000046	0.000023	<0.0000497	0.000025			
	Anthracene	mg/kg	<0.000038	0.000019	<0.0000497	0.000025			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000497	0.000025			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000497	0.000025			
	Dibenzofuran	mg/kg	0.000094 J	0.000094	0.000234J	0.000234			
	Fluoranthene	mg/kg	0.00015 J	0.000150	<0.000102	0.000050			
	Fluorene	mg/kg	0.00018 J	0.000180	0.000152J	0.000152			
	1-Methylnaphthalene	mg/kg	0.00018 J	0.000180	0.0000569J	0.000057			
	2-Methylnaphthalene	mg/kg	0.00019 J	0.000190	0.000119J	0.000119			
	Naphthalene	mg/kg	0.00029 J	0.000290	0.0002J	0.000200			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000497	0.000025			
	Phenanthrene	mg/kg	0.00025 J	0.000250	0.0005850	0.000585			
	Pyrene	mg/kg	0.000074 J	0.000074	0.0000353	0.000035			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value

Table 3-6e
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Blue Gill fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Turkey Creek adjacent to Site	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000001600	5	7.75, 6.25, 7.25, 6, 7.5	127, 67, 121, 58, 101 (total weight of composite = 474)
	Acenaphthene	mg/kg	0.00072	0.000720	0.000153J	0.000153			
	Acenaphthylene	mg/kg	<0.000046	0.000023	<0.0000804	0.000040			
	Anthracene	mg/kg	0.00018 J	0.000180	<0.0000804	0.000040			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000102	na	0.000093			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000804	0.000040			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000804	0.000040			
	Dibenzofuran	mg/kg	0.00041 J	0.000410	0.000374J	0.000374			
	Fluoranthene	mg/kg	0.00066	0.000660	<0.000166	0.000083			
	Fluorene	mg/kg	0.00046 J	0.000460	0.00027J	0.000270			
	1-Methylnaphthalene	mg/kg	0.00022 J	0.000220	0.0000938J	0.000094			
	2-Methylnaphthalene	mg/kg	0.00023 J	0.000230	0.000181J	0.000181			
	Naphthalene	mg/kg	0.00041 J	0.000410	0.000351J	0.000351			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000804	0.000040			
	Phenanthrene	mg/kg	0.00059	0.000590	0.000636J	0.000636			
	Pyrene	mg/kg	0.00026 J	0.000260	0.0000557	0.000056			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value

Table 3-6f
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Channel Catfish fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Bayou Bernard upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000004370	6	9.5, NR, 11.5, 13.5, 12, 10.5	88, NR, 260, 384, 427, 310 (total weight of composite = 1469)
	Acenaphthene	mg/kg	not analyzed	not analyzed	0.000227J	0.000227			
	Acenaphthylene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Anthracene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Benzo(a)pyrene equivalents	mg/kg	not analyzed	not analyzed	na	0.000114			
	Benzo(e)pyrene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Benzo(g,h,i)perylene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Dibenzofuran	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Fluoranthene	mg/kg	not analyzed	not analyzed	0.00011J	0.000110			
	Fluorene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	1-Methylnaphthalene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	2-Methylnaphthalene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Naphthalene	mg/kg	not analyzed	not analyzed	0.000113J	0.000113			
	Perylene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Phenanthrene	mg/kg	not analyzed	not analyzed	<0.0000492	0.000025			
	Pyrene	mg/kg	not analyzed	not analyzed	<0.0000698	0.000035			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6g
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Common Carp fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Bayou Bernard upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000002810	2	29, 30.5	5820, 6300 (total weight of composite = 12,120)
	Acenaphthene	mg/kg	0.0015 D	0.015000	0.0034400	0.003440			
	Acenaphthylene	mg/kg	0.0014 JD	0.001400	<0.0000463	0.000023			
	Anthracene	mg/kg	0.0067 JD	0.006700	0.00014J	0.000140			
	Benzo(a)pyrene equivalents	mg/kg	na	0.003585	na	0.000053			
	Benzo(e)pyrene	mg/kg	<0.001	0.000500	<0.0000463	0.000023			
	Benzo(g,h,i)perylene	mg/kg	<0.0019	0.000950	<0.0000463	0.000023			
	Dibenzofuran	mg/kg	0.0053 JD	0.005300	0.0009990	0.000999			
	Fluoranthene	mg/kg	0.0092 JD	0.009200	0.0013700	0.001370			
	Fluorene	mg/kg	0.011 D	0.011000	0.0017300	0.001730			
	1-Methylnaphthalene	mg/kg	0.0036 JD	0.003600	0.0003940	0.000394			
	2-Methylnaphthalene	mg/kg	0.0027 JD	0.002700	0.0003970	0.000397			
	Naphthalene	mg/kg	0.0035 JD	0.003500	0.0008680	0.000868			
	Perylene	mg/kg	<0.0024	0.001200	<0.0000463	0.000023			
	Phenanthrene	mg/kg	0.012 D	0.012000	0.0023200	0.002320			
	Pyrene	mg/kg	0.015 D	0.015000	0.0005840	0.000584			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6h
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Ground Mullet fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000854	4	10, 10, 10.5, 11	171, 192, 190, 291 (total weight of composite = 844)
	Acenaphthene	mg/kg	0.00036 JD	0.000360	0.000266J	0.000266			
	Acenaphthylene	mg/kg	0.00012 JD	0.000120	<0.0000492	0.000025			
	Anthracene	mg/kg	0.0002 JD	0.000200	0.000149J	0.000149			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000207	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.0001	0.000050	0.0000502J	0.000050			
	Benzo(g,h,i)perylene	mg/kg	<0.00019	0.000095	<0.0000492	0.000025			
	Dibenzofuran	mg/kg	0.00037 JD	0.000370	0.0006110	0.000611			
	Fluoranthene	mg/kg	0.00047 JD	0.000470	0.0005750	0.000575			
	Fluorene	mg/kg	0.00048 JD	0.000480	0.0004670	0.000467			
	1-Methylnaphthalene	mg/kg	0.00028 JD	0.000280	0.000138J	0.000138			
	2-Methylnaphthalene	mg/kg	0.0003 JD	0.000300	0.000234J	0.000234			
	Naphthalene	mg/kg	0.00038 JD	0.000380	0.000301J	0.000301			
	Perylene	mg/kg	<0.00024	0.000120	<0.0000492	0.000025			
	Phenanthrene	mg/kg	0.00086 JD	0.000860	0.00185B	0.001850			
	Pyrene	mg/kg	<0.00077	0.000385	0.00027J	0.000270			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6i
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Large Mouth Bass fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000409	3	13.5, 13.5, 12.5	640, 460, 400 (total weight of composite = 1500)
	Acenaphthene	mg/kg	0.000094 J	0.000094	0.0000735J	0.000074			
	Acenaphthylene	mg/kg	0.000059 J	0.000059	<0.0000481	0.000024			
	Anthracene	mg/kg	0.000059 J	0.000059	<0.0000481	0.000024			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000291	na	0.000056			
	Benzo(e)pyrene	mg/kg	0.00018 J	0.000180	<0.0000481	0.000024			
	Benzo(g,h,i)perylene	mg/kg	0.00019 J	0.000190	<0.0000481	0.000024			
	Dibenzofuran	mg/kg	0.00011 J	0.000110	0.000222J	0.000222			
	Fluoranthene	mg/kg	0.00032 J	0.000320	0.000103J	0.000103			
	Fluorene	mg/kg	0.00014 J	0.000140	0.000152J	0.000152			
	1-Methylnaphthalene	mg/kg	0.00014 J	0.000140	0.0000589J	0.000059			
	2-Methylnaphthalene	mg/kg	0.00017 J	0.000170	0.000119J	0.000119			
	Naphthalene	mg/kg	0.00028 J	0.000280	0.00025J	0.000250			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000481	0.000024			
	Phenanthrene	mg/kg	0.0004 J	0.000400	0.0005120	0.000512			
	Pyrene	mg/kg	0.00015 J	0.000150	0.0000341	0.000034			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6j
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Large Mouth Bass fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Bayou Bernard downstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000432	5	12.5, 11.5, 13, 11.5, 12.5	520, 320, 420, 320, 460 (total weight of composite = 2040)
	Acenaphthene	mg/kg	0.00024 J	0.000240	0.000154J	0.000154			
	Acenaphthylene	mg/kg	0.000049 J	0.000049	<0.0000488	0.000024			
	Anthracene	mg/kg	0.000079 J	0.000079	<0.0000488	0.000024			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000056			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000488	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000488	0.000024			
	Dibenzofuran	mg/kg	0.00017 J	0.000170	0.000265J	0.000265			
	Fluoranthene	mg/kg	0.00021 J	0.000210	0.000107J	0.000107			
	Fluorene	mg/kg	0.00025 J	0.000250	0.000185J	0.000185			
	1-Methylnaphthalene	mg/kg	0.00016 J	0.000160	<0.0000488	0.000024			
	2-Methylnaphthalene	mg/kg	0.00017 J	0.000170	0.000127J	0.000127			
	Naphthalene	mg/kg	0.00027 J	0.000270	0.000253J	0.000253			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000488	0.000024			
	Phenanthrene	mg/kg	0.00033 J	0.000330	0.0005370	0.000537			
	Pyrene	mg/kg	0.000093 J	0.000093	0.0000342	0.000034			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6k
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Large Mouth Bass fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Bayou Bernard upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000400	4	10.5, 14.5, 15, 16	240, 580, 960, 1180 (total weight of composite = 2960)
	Acenaphthene	mg/kg	0.00068	0.000680	0.0003J	0.000300			
	Acenaphthylene	mg/kg	0.000053 J	0.000053	<0.00005	0.000025			
	Anthracene	mg/kg	0.00015 J	0.000150	0.000065J	0.000065			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000061			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.00005	0.000025			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.00005	0.000025			
	Dibenzofuran	mg/kg	0.00038 J	0.000380	0.000345J	0.000345			
	Fluoranthene	mg/kg	0.00051	0.000510	0.000242J	0.000242			
	Fluorene	mg/kg	0.00066	0.000660	0.000336J	0.000336			
	1-Methylnaphthalene	mg/kg	0.00018 J	0.000180	0.0000891J	0.000089			
	2-Methylnaphthalene	mg/kg	0.0002 J	0.000200	0.000155J	0.000155			
	Naphthalene	mg/kg	0.00031 J	0.000310	0.00033J	0.000330			
	Perylene	mg/kg	<0.00012	0.000060	<0.00005	0.000025			
	Phenanthrene	mg/kg	0.00089	0.000890	0.0006730	0.000673			
	Pyrene	mg/kg	0.00018 J	0.000180	0.00013J	0.000130			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6l
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Large Mouth Bass fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Turkey Creek adjacent to Site	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000897	4	11.5, 11.5, 9.5, 13.75	380, 400, 600, 1800 (total weight of composite = 3180)
	Acenaphthene	mg/kg	0.00057	0.000570	0.000301J	0.000301			
	Acenaphthylene	mg/kg	0.000076 J	0.000076	<0.0000481	0.000024			
	Anthracene	mg/kg	0.00018 J	0.000180	0.0000936J	0.000094			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000056			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000481	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000481	0.000024			
	Dibenzofuran	mg/kg	0.00034 J	0.000340	<0.0000481	0.000024			
	Fluoranthene	mg/kg	0.00049 J	0.000490	0.000254J	0.000254			
	Fluorene	mg/kg	0.00049 J	0.000490	0.000302J	0.000302			
	1-Methylnaphthalene	mg/kg	0.00027 J	0.000270	0.000151J	0.000151			
	2-Methylnaphthalene	mg/kg	0.00037 J	0.000370	0.000256J	0.000256			
	Naphthalene	mg/kg	0.00047 J	0.000470	0.0004780	0.000478			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000481	0.000024			
	Phenanthrene	mg/kg	0.00061	0.000610	0.0007480	0.000748			
	Pyrene	mg/kg	0.00023 J	0.000230	0.000135J	0.000135			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6m
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Large Mouth Bass fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Turkey Creek upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000423	6	NR, NR, NR, 12, 16, 11	NR, NR, NR, 340, 820, 580
	Acenaphthene	mg/kg	0.00041 J	0.000410	0.000185J	0.000185			
	Acenaphthylene	mg/kg	0.000052 J	0.000052	<0.0000495	0.000025			
	Anthracene	mg/kg	0.00013 J	0.000130	<0.0000495	0.000025			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000495	0.000025			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000495	0.000025			
	Dibenzofuran	mg/kg	0.00026 J	0.000260	0.000287J	0.000287			
	Fluoranthene	mg/kg	0.00059	0.000590	0.000196J	0.000196			
	Fluorene	mg/kg	0.0004 J	0.000400	0.000244J	0.000244			
	1-Methylnaphthalene	mg/kg	0.00021 J	0.000210	0.0000912J	0.000091			
	2-Methylnaphthalene	mg/kg	0.00029 J	0.000290	0.000177J	0.000177			
	Naphthalene	mg/kg	0.0004 J	0.000400	0.000307J	0.000307			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000495	0.000025			
	Phenanthrene	mg/kg	0.00042 J	0.000420	0.0005890	0.000589			
	Pyrene	mg/kg	0.00024 J	0.000240	0.0000958J	0.000096			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6n
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Orange Spotted Sunfish fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Turkey Creek upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000791	5	5, 7.5, 6, 7, 8	41, 114, 54, 97, 136 (total weight of composite = 442)
	Acenaphthene	mg/kg	0.00063	0.000630	0.000179J	0.000179			
	Acenaphthylene	mg/kg	0.000052 J	0.000052	<0.0000863	0.000043			
	Anthracene	mg/kg	0.00013 J	0.000130	<0.0000863	0.000043			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000100			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000863	0.000043			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000863	0.000043			
	Dibenzofuran	mg/kg	0.0002 J	0.000200	0.000381J	0.000381			
	Fluoranthene	mg/kg	0.00046 J	0.000460	<0.000178	0.000089			
	Fluorene	mg/kg	0.00025 J	0.000250	0.000263J	0.000263			
	1-Methylnaphthalene	mg/kg	0.00022 J	0.000220	0.000104J	0.000104			
	2-Methylnaphthalene	mg/kg	0.00028 J	0.000280	0.000218J	0.000218			
	Naphthalene	mg/kg	0.00071 J	0.000710	0.00046J	0.000460			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000863	0.000043			
	Phenanthrene	mg/kg	0.00035 J	0.000350	0.0007230	0.000723			
	Pyrene	mg/kg	0.00016 J	0.000160	<0.000123	0.000063			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6o
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Pumpkinseed Bream fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000001180	6	9.5, 9.5, 7.5, 7.5, 7, 6	290, 290, 205, 175, 87, 89 (total weight of composite = 1136)
	Acenaphthene	mg/kg	0.00017 J	0.000170	0.000181J	0.000181			
	Acenaphthylene	mg/kg	0.000055 J	0.000055	<0.000049	0.000025			
	Anthracene	mg/kg	0.0001 J	0.000100	0.000128J	0.000128			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.000049	0.000025			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.000049	0.000025			
	Dibenzofuran	mg/kg	0.00021 J	0.000210	0.0005300	0.000530			
	Fluoranthene	mg/kg	0.00021 J	0.000210	0.000311J	0.000311			
	Fluorene	mg/kg	0.0003 J	0.000300	0.0004140	0.000414			
	1-Methylnaphthalene	mg/kg	0.00017 J	0.000170	0.0000983J	0.000098			
	2-Methylnaphthalene	mg/kg	0.0002 J	0.000200	0.000167J	0.000167			
	Naphthalene	mg/kg	0.00027 J	0.000270	0.000225J	0.000225			
	Perylene	mg/kg	<0.00012	0.000060	<0.000049	0.000025			
	Phenanthrene	mg/kg	0.00041 J	0.000410	0.00158B	0.001580			
	Pyrene	mg/kg	0.000085 J	0.000085	0.000155J	0.000155			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6p
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Redfish fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Bayou Bernard downstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000378	3	17, 16, 15.5	820, 760, 700 (total weight of composite = 2280)
	Acenaphthene	mg/kg	0.00022 J	0.000220	0.000135J	0.000135			
	Acenaphthylene	mg/kg	0.00014 J	0.000140	<0.0000463	0.000023			
	Anthracene	mg/kg	0.00024 J	0.000240	<0.0000463	0.000023			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000053			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000463	0.000023			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000463	0.000023			
	Dibenzofuran	mg/kg	0.00029 J	0.000290	0.000244J	0.000244			
	Fluoranthene	mg/kg	0.00037 J	0.000370	0.00015J	0.000150			
	Fluorene	mg/kg	0.00054	0.000540	0.000149J	0.000149			
	1-Methylnaphthalene	mg/kg	0.0003 J	0.000300	0.000113J	0.000113			
	2-Methylnaphthalene	mg/kg	0.00038 J	0.000380	0.000229J	0.000229			
	Naphthalene	mg/kg	0.00064 J	0.000640	0.0003760	0.000376			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000463	0.000023			
	Phenanthrene	mg/kg	0.00038 J	0.000380	0.000357J	0.000357			
	Pyrene	mg/kg	<0.00046	0.000230	<0.0000658	0.000033			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6q
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Redfish fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Bayou Bernard upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000001025	3	13.5, 18, 34	420, 698, 2722 (total weight of composite = 3840)
	Acenaphthene	mg/kg	0.00037 J	0.000370	0.000297J	0.000297			
	Acenaphthylene	mg/kg	0.000074 J	0.000074	<0.0000497	0.000025			
	Anthracene	mg/kg	0.000076 J	0.000076	0.000151J	0.000151			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	0.0000527J	0.000053			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000497	0.000025			
	Dibenzofuran	mg/kg	0.00025 J	0.000250	0.0005990	0.000599			
	Fluoranthene	mg/kg	0.00024 J	0.000240	0.0006120	0.000612			
	Fluorene	mg/kg	0.0004 J	0.000400	0.0005390	0.000539			
	1-Methylnaphthalene	mg/kg	0.00019 J	0.000190	0.000128J	0.000128			
	2-Methylnaphthalene	mg/kg	0.0002 J	0.000200	0.000201J	0.000201			
	Naphthalene	mg/kg	0.00041 J	0.000410	0.000316J	0.000316			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000497	0.000025			
	Phenanthrene	mg/kg	0.00037 J	0.000370	0.00188B	0.001880			
	Pyrene	mg/kg	0.000083 J	0.000083	0.000304J	0.000304			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6r
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Sheep Head fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Bayou Bernard downstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000547	3	14, 13, 17	760, 440, 1380 (total weight of composite = 2580)
	Acenaphthene	mg/kg	0.00013 JX	0.000130	0.0000795J	0.000080			
	Acenaphthylene	mg/kg	0.000062 J	0.000062	<0.0000489	0.000024			
	Anthracene	mg/kg	0.000052 J	0.000052	<0.0000489	0.000024			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.0000489	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.0000489	0.000024			
	Dibenzofuran	mg/kg	0.0002 J	0.000200	0.000236J	0.000236			
	Fluoranthene	mg/kg	0.00022 J	0.000220	0.000106J	0.000106			
	Fluorene	mg/kg	<0.00048	0.000240	0.000154J	0.000154			
	1-Methylnaphthalene	mg/kg	0.00023 J	0.000230	0.0000669J	0.000067			
	2-Methylnaphthalene	mg/kg	0.00026 J	0.000260	0.000127J	0.000127			
	Naphthalene	mg/kg	0.00048 J	0.000480	0.000205J	0.000205			
	Perylene	mg/kg	<0.00012	0.000060	<0.0000489	0.000024			
	Phenanthrene	mg/kg	0.00031 J	0.000310	0.0004830	0.000483			
	Pyrene	mg/kg	0.00012 J	0.000120	<0.0000694	0.000035			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6s
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Striped Bass fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Turkey Creek upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000935	3	20.5, 20, 20.5	1560, 1440, 1500 (total weight of composite = 4500)
	Acenaphthene	mg/kg	0.0032 D	0.003200	0.0008300	0.000830			
	Acenaphthylene	mg/kg	0.0012 JD	0.001200	<0.0000478	0.000029			
	Anthracene	mg/kg	0.0026 D	0.002600	0.0000721J	0.000072			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000270	na	0.000067			
	Benzo(e)pyrene	mg/kg	<0.00025	0.000013	<0.0000478	0.000029			
	Benzo(g,h,i)perylene	mg/kg	<0.00048	0.000240	<0.0000478	0.000029			
	Dibenzofuran	mg/kg	0.0016 JD	0.001600	0.0005170	0.000517			
	Fluoranthene	mg/kg	0.0031 D	0.003100	0.0005800	0.000580			
	Fluorene	mg/kg	0.0029 D	0.002900	0.0005110	0.000511			
	1-Methylnaphthalene	mg/kg	0.0012 JD	0.001200	0.000212J	0.000212			
	2-Methylnaphthalene	mg/kg	0.0016 JD	0.001600	0.000301J	0.000301			
	Naphthalene	mg/kg	0.0018 JD	0.001800	0.0004600	0.000460			
	Perylene	mg/kg	<0.0006	0.000300	<0.0000478	0.000029			
	Phenanthrene	mg/kg	0.0028 D	0.002800	0.0006830	0.000683			
	Pyrene	mg/kg	<0.00025	0.000013	0.000175J	0.000175			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6t
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Striped Mullet fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000028632	5	16, 14.5, 14.5, 13.5, 14	800, 480, 500, 440, 440 (total weight of composite = 2660)
	Acenaphthene	mg/kg	0.00077 JD	0.000770	0.000269J	0.000269			
	Acenaphthylene	mg/kg	<0.00046	0.000230	0.0000905J	0.000091			
	Anthracene	mg/kg	<0.001.8	0.000900	0.000146J	0.000146			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000901	na	0.000053			
	Benzo(e)pyrene	mg/kg	<0.0005	0.000250	<0.0000462	0.000023			
	Benzo(g,h,i)perylene	mg/kg	<0.00095	0.000475	<0.0000462	0.000023			
	Dibenzofuran	mg/kg	0.00052 JD	0.000520	0.000366J	0.000366			
	Fluoranthene	mg/kg	<0.00049	0.000245	0.0004580	0.000458			
	Fluorene	mg/kg	0.0021 JD	0.002100	0.0003950	0.000395			
	1-Methylnaphthalene	mg/kg	0.0017 JD	0.001700	0.000258J	0.000258			
	2-Methylnaphthalene	mg/kg	0.0024 JD	0.002400	0.0004840	0.000484			
	Naphthalene	mg/kg	0.0021 JD	0.002100	0.0005880	0.000588			
	Perylene	mg/kg	<0.0012	0.000600	<0.0000462	0.000023			
	Phenanthrene	mg/kg	0.0043 JD	0.004300	0.0008030	0.000803			
	Pyrene	mg/kg	<0.0005	0.000250	0.000212J	0.000212			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6u
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Striped Mullet fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Bayou Bernard downstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000744	5	13.5, 13.5, 13, 12, 11.5	400, 460, 360, 360, 240 (total weight of composite = 1820)
	Acenaphthene	mg/kg	0.00097 JD	0.000970	0.000274J	0.000274			
	Acenaphthylene	mg/kg	<0.00046	0.000230	<0.0000489	0.000024			
	Anthracene	mg/kg	<0.0029	0.001450	0.0000858J	0.000086			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000901	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.0005	0.000250	<0.0000489	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.00095	0.000475	<0.0000489	0.000024			
	Dibenzofuran	mg/kg	0.00067 JD	0.000670	0.000363J	0.000363			
	Fluoranthene	mg/kg	<0.00049	0.000245	0.0006840	0.000684			
	Fluorene	mg/kg	0.002 JD	0.002000	0.000331J	0.000331			
	1-Methylnaphthalene	mg/kg	0.0018 JD	0.001800	0.000167J	0.000167			
	2-Methylnaphthalene	mg/kg	0.002 JD	0.002000	0.000339J	0.000339			
	Naphthalene	mg/kg	0.0016 JD	0.001600	0.0004800	0.000480			
	Perylene	mg/kg	<0.0012	0.000600	<0.0000489	0.000024			
	Phenanthrene	mg/kg	0.0025 JD	0.002500	0.0008220	0.000822			
	Pyrene	mg/kg	<0.0005	0.000250	0.00026J	0.000260			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6v
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Striped Mullet fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Bayou Bernard upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000001120	5	13, 13.5, 11, 13, 11	400, 400, 240, 400, 240 (total weight of composite = 1680)
	Acenaphthene	mg/kg	0.0047 JD	0.004700	0.0016000	0.001600			
	Acenaphthylene	mg/kg	<0.00046	0.000230	<0.0000483	0.000024			
	Anthracene	mg/kg	<0.0022	0.001100	0.000237J	0.000237			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000901	na	0.000056			
	Benzo(e)pyrene	mg/kg	<0.0005	0.000250	<0.0000483	0.000024			
	Benzo(g,h,i)perylene	mg/kg	<0.00095	0.000475	<0.0000483	0.000024			
	Dibenzofuran	mg/kg	0.0023 JD	0.002300	0.0010900	0.001090			
	Fluoranthene	mg/kg	<0.005.3	0.002650	0.0015000	0.001500			
	Fluorene	mg/kg	0.0045 JD	0.004500	0.0013500	0.001350			
	1-Methylnaphthalene	mg/kg	0.0016 JD	0.001600	0.000295J	0.000295			
	2-Methylnaphthalene	mg/kg	0.0026 JD	0.002600	0.0004760	0.000476			
	Naphthalene	mg/kg	0.0018 JD	0.001800	0.0005930	0.000593			
	Perylene	mg/kg	<0.0012	0.000600	<0.0000483	0.000024			
	Phenanthrene	mg/kg	0.0058 D	0.005800	0.0018900	0.001890			
	Pyrene	mg/kg	<0.0055	0.002750	0.0004210	0.000421			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6w
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Striped Mullet fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Turkey Creek adjacent to Site	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000003751	6	11.5, 11, 13.5, 14, 19, 12.5	260, 200, 480, 480, 380, 340
	Acenaphthene	mg/kg	0.008 JD	0.008000	0.0025700	0.002570			
	Acenaphthylene	mg/kg	0.0012 JD	0.001200	<0.0000467	0.000023			
	Anthracene	mg/kg	0.006 JD	0.006000	0.000368J	0.000368			
	Benzo(a)pyrene equivalents	mg/kg	na	0.003677	na	0.000063			
	Benzo(e)pyrene	mg/kg	<0.001	0.000500	<0.0000467	0.000023			
	Benzo(g,h,i)perylene	mg/kg	<0.0019	0.000950	<0.0000467	0.000023			
	Dibenzofuran	mg/kg	0.0052 JD	0.005200	0.0011400	0.001140			
	Fluoranthene	mg/kg	0.0077 JD	0.007700	0.0012900	0.001290			
	Fluorene	mg/kg	0.0084 JD	0.008400	0.0010600	0.001060			
	1-Methylnaphthalene	mg/kg	0.005 JD	0.005000	0.0009690	0.000969			
	2-Methylnaphthalene	mg/kg	0.0055 JD	0.005500	0.0014100	0.001410			
	Naphthalene	mg/kg	0.0038 JD	0.003800	0.0014900	0.001490			
	Perylene	mg/kg	<0.0024	0.001200	<0.0000467	0.000023			
	Phenanthrene	mg/kg	0.0084 JD	0.008400	0.0017400	0.001740			
	Pyrene	mg/kg	<0.0065	0.003250	0.000346J	0.000346			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6x
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Striped Mullet fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Turkey Creek upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000003149	5	13.25, 12, 13.5, 14.5, 11.5	460, 300, 420, 540, 240 (total weight of composite = 1960)
	Acenaphthene	mg/kg	0.0058 JD	0.005800	0.0013700	0.001370			
	Acenaphthylene	mg/kg	<0.00092	0.000460	<0.0000452	0.000023			
	Anthracene	mg/kg	0.0049 JD	0.004900	0.0000964J	0.000096			
	Benzo(a)pyrene equivalents	mg/kg	na	0.003478	na	0.000052			
	Benzo(e)pyrene	mg/kg	<0.001	0.000500	<0.0000452	0.000023			
	Benzo(g,h,i)perylene	mg/kg	<0.0019	0.000950	<0.0000452	0.000023			
	Dibenzofuran	mg/kg	0.0031 JD	0.003100	<0.0000452	0.000023			
	Fluoranthene	mg/kg	0.0055 JD	0.005500	0.0009250	0.000925			
	Fluorene	mg/kg	0.0069 JD	0.006900	0.0007980	0.000798			
	1-Methylnaphthalene	mg/kg	0.0034 JD	0.003400	0.000307J	0.000307			
	2-Methylnaphthalene	mg/kg	<0.0024	0.001400	0.0005150	0.000515			
	Naphthalene	mg/kg	<0.003	0.001500	0.0007400	0.000740			
	Perylene	mg/kg	<0.0024	0.001400	<0.0000452	0.000023			
	Phenanthrene	mg/kg	0.0063 JD	0.006300	0.0009790	0.000979			
	Pyrene	mg/kg	<0.0054	0.002700	0.000284J	0.000284			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6y
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: Tabby Catfish fish composite
Exposure Medium: Edible tissue

			Laboratory: CAS		Laboratory: SGS				
Exposure Point	Chemical of Potential Concern	Units	Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration	Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
Turkey Creek upstream	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000579	1	14.5	565
	Acenaphthene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Acenaphthylene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Anthracene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Benzo(a)pyrene equivalents	mg/kg	not analyzed	not analyzed	na	0.000115			
	Benzo(e)pyrene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Benzo(g,h,i)perylene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Dibenzofuran	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Fluoranthene	mg/kg	not analyzed	not analyzed	<0.000102	0.000051			
	Fluorene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	1-Methylnaphthalene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	2-Methylnaphthalene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Naphthalene	mg/kg	not analyzed	not analyzed	0.0000527J	0.000053			
	Perylene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Phenanthrene	mg/kg	not analyzed	not analyzed	<0.0000496	0.000025			
	Pyrene	mg/kg	not analyzed	not analyzed	<0.0000704	0.000035			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-6z
Exposure Point Concentration Summary for Chemicals of Potential Concern in Fish

Scenario Timeframe: Current/Future
Medium: White Trout fish composite
Exposure Medium: Edible tissue

Exposure Point	Chemical of Potential Concern	Units	Laboratory: CAS		Laboratory: SGS		Number of Fish in Composite	Length of Fish in Composite (inches)	Weights of Fish in Composite (grams)
			Analytical Result	Exposure Point Concentration	Analytical Result	Exposure Point Concentration			
Background/ Old Fort Bayou	Total Dioxin Toxic equivalence	mg/kg	not analyzed	not analyzed	na	0.0000000755	4	11.25, 9.5, 9.25, 10	212, 148, 115, 173 (total weight of composite = 648)
	Acenaphthene	mg/kg	0.00013 J	0.000130	0.00017J	0.000170			
	Acenaphthylene	mg/kg	0.000092 J	0.000092	<0.000049	0.000025			
	Anthracene	mg/kg	0.000046 J	0.000046	0.000149J	0.000149			
	Benzo(a)pyrene equivalents	mg/kg	na	0.000090	na	0.000057			
	Benzo(e)pyrene	mg/kg	<0.00005	0.000025	<0.000049	0.000025			
	Benzo(g,h,i)perylene	mg/kg	<0.000095	0.000048	<0.000049	0.000025			
	Dibenzofuran	mg/kg	0.00019 J	0.000190	0.0006310	0.000631			
	Fluoranthene	mg/kg	0.00013 J	0.000130	0.0004510	0.000451			
	Fluorene	mg/kg	0.00034 J	0.000340	0.0004650	0.000465			
	1-Methylnaphthalene	mg/kg	0.00025 J	0.000250	0.00013J	0.000130			
	2-Methylnaphthalene	mg/kg	0.00036 J	0.000360	0.000251J	0.000251			
	Naphthalene	mg/kg	0.00046 J	0.000460	0.000318J	0.000318			
	Perylene	mg/kg	<0.00012	0.000060	<0.000049	0.000025			
	Phenanthrene	mg/kg	0.00035 J	0.000350	0.00202B	0.002020			
	Pyrene	mg/kg	0.000082 J	0.000082	0.000212J	0.000212			

na - not applicable; calculated as per discussion in Section 2.0 of report
B - detected in blank
D - sample diluted for analysis
J - estimated value
NR - not reported

Table 3-7
Child Recreational User of Turkey Creek-Current and Future Direct Exposure to Surface Water Upstream of Site

Chemical	Surface Water Exposure Point Concentration mg/L	Average Daily Intake Ingestion mg/kg/day	Lifetime Average Daily Intake Ingestion mg/kg/day
Total Dioxin toxic equivalence	3.03E-09	1.89E-13	2.70E-14
Benzo(a)pyrene equivalents	4.20E-06	2.62E-10	3.74E-11

Table 3-8
Child Recreational User of Turkey Creek-Current and Future Direct Exposure to Surface Water Adjacent to or Downstream of Site

Chemical	Surface Water Exposure Point Concentration mg/L	Average Daily Intake Ingestion mg/kg/day	Lifetime Average Daily Intake Ingestion mg/kg/day
Total Dioxin toxic equivalence	1.68E-09	1.05E-13	1.49E-14
Benzo(a)pyrene equivalents	3.80E-06	2.37E-10	3.38E-11

Table 3-9
Child Recreational User of Turkey Creek-Current and Future Exposure to Sediment Adjacent to or Downstream of Site

Chemical	Sediment Exposure Point Concentration mg/kg	Average Daily Intake (mg/kg/day)		Lifetime Average Daily Intake (mg/kg/day)	
		Ingestion	Dermal	Ingestion	Dermal
Total Dioxin toxic equivalence	6.86E-06	8.54E-13	3.38E-13	1.22E-13	4.83E-14
Benzo(a)pyrene equivalents	1.40E+00	1.74E-07	2.99E-07	2.49E-08	4.27E-08
Naphthalene	3.57E+01	4.45E-06	7.63E-06	6.35E-07	1.09E-06

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Atlantic Croaker
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	2.34E-07	2.50E-10	1.07E-10	7.13E-12	1.43E-11	1.53E-11	2.14E-11
Acenaphthene	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Acenaphthylene	1.10E-04	1.17E-07	5.03E-08	3.35E-09	6.70E-09	7.18E-09	1.01E-08
Anthracene	4.20E-05	4.48E-08	1.92E-08	1.28E-09	2.56E-09	2.74E-09	3.84E-09
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.80E-05	5.12E-08	2.19E-08	1.46E-09	2.93E-09	3.13E-09	4.39E-09
Dibenzofuran	1.40E-04	1.49E-07	6.40E-08	4.27E-09	8.53E-09	9.14E-09	1.28E-08
Fluoranthene	1.40E-04	1.49E-07	6.40E-08	4.27E-09	8.53E-09	9.14E-09	1.28E-08
Fluorene	2.60E-04	2.77E-07	1.19E-07	7.92E-09	1.58E-08	1.70E-08	2.38E-08
1-Methylnaphthalene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
2-Methylnaphthalene	1.60E-04	1.71E-07	7.31E-08	4.88E-09	9.75E-09	1.04E-08	1.46E-08
Naphthalene	3.70E-04	3.95E-07	1.69E-07	1.13E-08	2.26E-08	2.42E-08	3.38E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.60E-04	3.84E-07	1.65E-07	1.10E-08	2.19E-08	2.35E-08	3.29E-08
Pyrene	8.50E-05	9.07E-08	3.89E-08	2.59E-09	5.18E-09	5.55E-09	7.77E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Atlantic Croaker
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	2.34E-07	2.50E-10	1.07E-10	7.13E-12	1.43E-11	1.53E-11	2.14E-11
Acenaphthene	2.02E-04	2.15E-07	9.23E-08	6.16E-09	1.23E-08	1.32E-08	1.85E-08
Acenaphthylene	4.39E-05	4.68E-08	2.01E-08	1.34E-09	2.68E-09	2.87E-09	4.01E-09
Anthracene	2.77E-04	2.95E-07	1.27E-07	8.44E-09	1.69E-08	1.81E-08	2.53E-08
Benzo(a)pyrene equivalents	1.01E-04	1.08E-07	4.62E-08	3.08E-09	6.16E-09	6.60E-09	9.23E-09
Benzo(e)pyrene	4.39E-05	4.68E-08	2.01E-08	1.34E-09	2.68E-09	2.87E-09	4.01E-09
Benzo(g,h,i)perylene	4.39E-05	4.68E-08	2.01E-08	1.34E-09	2.68E-09	2.87E-09	4.01E-09
Dibenzofuran	8.36E-04	8.92E-07	3.82E-07	2.55E-08	5.10E-08	5.46E-08	7.64E-08
Fluoranthene	1.09E-03	1.16E-06	4.98E-07	3.32E-08	6.64E-08	7.12E-08	9.97E-08
Fluorene	6.11E-04	6.52E-07	2.79E-07	1.86E-08	3.72E-08	3.99E-08	5.59E-08
1-Methylnaphthalene	1.35E-04	1.44E-07	6.17E-08	4.11E-09	8.23E-09	8.82E-09	1.23E-08
2-Methylnaphthalene	2.42E-04	2.58E-07	1.11E-07	7.38E-09	1.48E-08	1.58E-08	2.21E-08
Naphthalene	3.62E-04	3.86E-07	1.65E-07	1.10E-08	2.21E-08	2.36E-08	3.31E-08
Perylene	4.39E-05	4.68E-08	2.01E-08	1.34E-09	2.68E-09	2.87E-09	4.01E-09
Phenanthrene	3.53E-03	3.77E-06	1.61E-06	1.08E-07	2.15E-07	2.31E-07	3.23E-07
Pyrene	5.52E-04	5.89E-07	2.52E-07	1.68E-08	3.36E-08	3.60E-08	5.05E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Blue Catfish
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.45E-07	7.95E-10	3.41E-10	2.27E-11	4.54E-11	4.87E-11	6.81E-11
Acenaphthene	4.00E-03	4.27E-06	1.83E-06	1.22E-07	2.44E-07	2.61E-07	3.66E-07
Acenaphthylene	4.60E-03	4.91E-06	2.10E-06	1.40E-07	2.80E-07	3.00E-07	4.21E-07
Anthracene	9.90E-03	1.06E-05	4.53E-06	3.02E-07	6.03E-07	6.47E-07	9.05E-07
Benzo(a)pyrene equivalents	2.25E-04	2.40E-07	1.03E-07	6.86E-09	1.37E-08	1.47E-08	2.06E-08
Benzo(e)pyrene	5.00E-05	5.33E-08	2.29E-08	1.52E-09	3.05E-09	3.27E-09	4.57E-09
Benzo(g,h,i)perylene	9.50E-05	1.01E-07	4.34E-08	2.90E-09	5.79E-09	6.20E-09	8.69E-09
Dibenzofuran	1.80E-03	1.92E-06	8.23E-07	5.49E-08	1.10E-07	1.18E-07	1.65E-07
Fluoranthene	6.80E-03	7.25E-06	3.11E-06	2.07E-07	4.14E-07	4.44E-07	6.22E-07
Fluorene	2.50E-03	2.67E-06	1.14E-06	7.62E-08	1.52E-07	1.63E-07	2.29E-07
1-Methylnaphthalene	9.80E-04	1.05E-06	4.48E-07	2.99E-08	5.97E-08	6.40E-08	8.96E-08
2-Methylnaphthalene	1.30E-03	1.39E-06	5.94E-07	3.96E-08	7.92E-08	8.49E-08	1.19E-07
Naphthalene	1.60E-03	1.71E-06	7.31E-07	4.88E-08	9.75E-08	1.04E-07	1.46E-07
Perylene	1.20E-04	1.28E-07	5.49E-08	3.66E-09	7.31E-09	7.84E-09	1.10E-08
Phenanthrene	2.30E-03	2.45E-06	1.05E-06	7.01E-08	1.40E-07	1.50E-07	2.10E-07
Pyrene	2.70E-03	2.88E-06	1.23E-06	8.23E-08	1.65E-07	1.76E-07	2.47E-07

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Blue Catfish
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.45E-07	7.95E-10	3.41E-10	2.27E-11	4.54E-11	4.87E-11	6.81E-11
Acenaphthene	1.31E-03	1.40E-06	5.99E-07	3.99E-08	7.98E-08	8.56E-08	1.20E-07
Acenaphthylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Anthracene	2.87E-04	3.06E-07	1.31E-07	8.75E-09	1.75E-08	1.87E-08	2.62E-08
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Benzo(g,h,i)perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Dibenzofuran	7.45E-04	7.95E-07	3.41E-07	2.27E-08	4.54E-08	4.87E-08	6.81E-08
Fluoranthene	2.10E-03	2.24E-06	9.60E-07	6.40E-08	1.28E-07	1.37E-07	1.92E-07
Fluorene	8.25E-04	8.80E-07	3.77E-07	2.51E-08	5.03E-08	5.39E-08	7.54E-08
1-Methylnaphthalene	3.18E-04	3.39E-07	1.45E-07	9.69E-09	1.94E-08	2.08E-08	2.91E-08
2-Methylnaphthalene	4.81E-04	5.13E-07	2.20E-07	1.47E-08	2.93E-08	3.14E-08	4.40E-08
Naphthalene	8.19E-04	8.74E-07	3.74E-07	2.50E-08	4.99E-08	5.35E-08	7.49E-08
Perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Phenanthrene	1.06E-03	1.13E-06	4.85E-07	3.23E-08	6.46E-08	6.92E-08	9.69E-08
Pyrene	6.17E-04	6.58E-07	2.82E-07	1.88E-08	3.76E-08	4.03E-08	5.64E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Black Drum
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.04E-07	1.11E-10	4.75E-11	3.17E-12	6.34E-12	6.79E-12	9.51E-12
Acenaphthene	2.10E-04	2.24E-07	9.60E-08	6.40E-09	1.28E-08	1.37E-08	1.92E-08
Acenaphthylene	2.30E-05	2.45E-08	1.05E-08	7.01E-10	1.40E-09	1.50E-09	2.10E-09
Anthracene	5.40E-05	5.76E-08	2.47E-08	1.65E-09	3.29E-09	3.53E-09	4.94E-09
Benzo(a)pyrene equivalents	9.90E-05	1.06E-07	4.53E-08	3.02E-09	6.03E-09	6.47E-09	9.05E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.80E-05	5.12E-08	2.19E-08	1.46E-09	2.93E-09	3.13E-09	4.39E-09
Dibenzofuran	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Fluoranthene	1.60E-04	1.71E-07	7.31E-08	4.88E-09	9.75E-09	1.04E-08	1.46E-08
Fluorene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
1-Methylnaphthalene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
2-Methylnaphthalene	1.90E-04	2.03E-07	8.69E-08	5.79E-09	1.16E-08	1.24E-08	1.74E-08
Naphthalene	2.60E-04	2.77E-07	1.19E-07	7.92E-09	1.58E-08	1.70E-08	2.38E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.30E-04	3.52E-07	1.51E-07	1.01E-08	2.01E-08	2.16E-08	3.02E-08
Pyrene	1.00E-04	1.07E-07	4.57E-08	3.05E-09	6.10E-09	6.53E-09	9.14E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Black Drum
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.04E-07	1.11E-10	4.75E-11	3.17E-12	6.34E-12	6.79E-12	9.51E-12
Acenaphthene	1.69E-04	1.80E-07	7.73E-08	5.15E-09	1.03E-08	1.10E-08	1.55E-08
Acenaphthylene	2.43E-05	2.59E-08	1.11E-08	7.41E-10	1.48E-09	1.59E-09	2.22E-09
Anthracene	1.17E-04	1.25E-07	5.35E-08	3.57E-09	7.13E-09	7.64E-09	1.07E-08
Benzo(a)pyrene equivalents	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Benzo(e)pyrene	2.43E-05	2.59E-08	1.11E-08	7.41E-10	1.48E-09	1.59E-09	2.22E-09
Benzo(g,h,i)perylene	2.43E-05	2.59E-08	1.11E-08	7.41E-10	1.48E-09	1.59E-09	2.22E-09
Dibenzofuran	4.88E-04	5.21E-07	2.23E-07	1.49E-08	2.97E-08	3.19E-08	4.46E-08
Fluoranthene	4.29E-04	4.58E-07	1.96E-07	1.31E-08	2.61E-08	2.80E-08	3.92E-08
Fluorene	3.43E-04	3.66E-07	1.57E-07	1.05E-08	2.09E-08	2.24E-08	3.14E-08
1-Methylnaphthalene	9.05E-05	9.65E-08	4.14E-08	2.76E-09	5.52E-09	5.91E-09	8.27E-09
2-Methylnaphthalene	1.68E-04	1.79E-07	7.68E-08	5.12E-09	1.02E-08	1.10E-08	1.54E-08
Naphthalene	2.32E-04	2.47E-07	1.06E-07	7.07E-09	1.41E-08	1.52E-08	2.12E-08
Perylene	2.43E-05	2.59E-08	1.11E-08	7.41E-10	1.48E-09	1.59E-09	2.22E-09
Phenanthrene	1.69E-03	1.80E-06	7.73E-07	5.15E-08	1.03E-07	1.10E-07	1.55E-07
Pyrene	2.35E-04	2.51E-07	1.07E-07	7.16E-09	1.43E-08	1.53E-08	2.15E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Black Drum
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.83E-08	4.09E-11	1.75E-11	1.17E-12	2.33E-12	2.50E-12	3.50E-12
Acenaphthene	2.40E-05	2.56E-08	1.10E-08	7.31E-10	1.46E-09	1.57E-09	2.19E-09
Acenaphthylene	2.30E-05	2.45E-08	1.05E-08	7.01E-10	1.40E-09	1.50E-09	2.10E-09
Anthracene	1.90E-05	2.03E-08	8.69E-09	5.79E-10	1.16E-09	1.24E-09	1.74E-09
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.80E-05	5.12E-08	2.19E-08	1.46E-09	2.93E-09	3.13E-09	4.39E-09
Dibenzofuran	9.40E-05	1.00E-07	4.30E-08	2.86E-09	5.73E-09	6.14E-09	8.59E-09
Fluoranthene	1.50E-04	1.60E-07	6.86E-08	4.57E-09	9.14E-09	9.80E-09	1.37E-08
Fluorene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
1-Methylnaphthalene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
2-Methylnaphthalene	1.90E-04	2.03E-07	8.69E-08	5.79E-09	1.16E-08	1.24E-08	1.74E-08
Naphthalene	2.90E-04	3.09E-07	1.33E-07	8.84E-09	1.77E-08	1.89E-08	2.65E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
Pyrene	7.40E-05	7.89E-08	3.38E-08	2.26E-09	4.51E-09	4.83E-09	6.77E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Black Drum
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.83E-08	4.09E-11	1.75E-11	1.17E-12	2.33E-12	2.50E-12	3.50E-12
Acenaphthene	6.56E-05	7.00E-08	3.00E-08	2.00E-09	4.00E-09	4.28E-09	6.00E-09
Acenaphthylene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Anthracene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Benzo(g,h,i)perylene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Dibenzofuran	2.34E-04	2.50E-07	1.07E-07	7.13E-09	1.43E-08	1.53E-08	2.14E-08
Fluoranthene	5.01E-05	5.34E-08	2.29E-08	1.53E-09	3.05E-09	3.27E-09	4.58E-09
Fluorene	1.52E-04	1.62E-07	6.95E-08	4.63E-09	9.26E-09	9.93E-09	1.39E-08
1-Methylnaphthalene	5.69E-05	6.07E-08	2.60E-08	1.73E-09	3.47E-09	3.72E-09	5.20E-09
2-Methylnaphthalene	1.19E-04	1.27E-07	5.44E-08	3.63E-09	7.25E-09	7.77E-09	1.09E-08
Naphthalene	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Perylene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Phenanthrene	5.85E-04	6.24E-07	2.67E-07	1.78E-08	3.57E-08	3.82E-08	5.35E-08
Pyrene	3.53E-05	3.77E-08	1.61E-08	1.08E-09	2.15E-09	2.31E-09	3.23E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Blue Gill
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.60E-07	1.71E-10	7.31E-11	4.88E-12	9.75E-12	1.04E-11	1.46E-11
Acenaphthene	7.20E-04	7.68E-07	3.29E-07	2.19E-08	4.39E-08	4.70E-08	6.58E-08
Acenaphthylene	2.30E-05	2.45E-08	1.05E-08	7.01E-10	1.40E-09	1.50E-09	2.10E-09
Anthracene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
Benzo(a)pyrene equivalents	1.02E-04	1.09E-07	4.66E-08	3.11E-09	6.22E-09	6.66E-09	9.33E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.80E-05	5.12E-08	2.19E-08	1.46E-09	2.93E-09	3.13E-09	4.39E-09
Dibenzofuran	4.10E-04	4.37E-07	1.87E-07	1.25E-08	2.50E-08	2.68E-08	3.75E-08
Fluoranthene	6.60E-04	7.04E-07	3.02E-07	2.01E-08	4.02E-08	4.31E-08	6.03E-08
Fluorene	4.60E-04	4.91E-07	2.10E-07	1.40E-08	2.80E-08	3.00E-08	4.21E-08
1-Methylnaphthalene	2.20E-04	2.35E-07	1.01E-07	6.70E-09	1.34E-08	1.44E-08	2.01E-08
2-Methylnaphthalene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08
Naphthalene	4.10E-04	4.37E-07	1.87E-07	1.25E-08	2.50E-08	2.68E-08	3.75E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	5.90E-04	6.29E-07	2.70E-07	1.80E-08	3.60E-08	3.85E-08	5.39E-08
Pyrene	2.60E-04	2.77E-07	1.19E-07	7.92E-09	1.58E-08	1.70E-08	2.38E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Blue Gill
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.60E-07	1.71E-10	7.31E-11	4.88E-12	9.75E-12	1.04E-11	1.46E-11
Acenaphthene	1.53E-04	1.63E-07	6.99E-08	4.66E-09	9.33E-09	9.99E-09	1.40E-08
Acenaphthylene	4.02E-05	4.29E-08	1.84E-08	1.23E-09	2.45E-09	2.63E-09	3.68E-09
Anthracene	4.02E-05	4.29E-08	1.84E-08	1.23E-09	2.45E-09	2.63E-09	3.68E-09
Benzo(a)pyrene equivalents	9.30E-05	9.92E-08	4.25E-08	2.83E-09	5.67E-09	6.07E-09	8.50E-09
Benzo(e)pyrene	4.02E-05	4.29E-08	1.84E-08	1.23E-09	2.45E-09	2.63E-09	3.68E-09
Benzo(g,h,i)perylene	4.02E-05	4.29E-08	1.84E-08	1.23E-09	2.45E-09	2.63E-09	3.68E-09
Dibenzofuran	3.74E-04	3.99E-07	1.71E-07	1.14E-08	2.28E-08	2.44E-08	3.42E-08
Fluoranthene	8.30E-05	8.85E-08	3.79E-08	2.53E-09	5.06E-09	5.42E-09	7.59E-09
Fluorene	2.70E-04	2.88E-07	1.23E-07	8.23E-09	1.65E-08	1.76E-08	2.47E-08
1-Methylnaphthalene	9.38E-05	1.00E-07	4.29E-08	2.86E-09	5.72E-09	6.13E-09	8.58E-09
2-Methylnaphthalene	1.81E-04	1.93E-07	8.27E-08	5.52E-09	1.10E-08	1.18E-08	1.65E-08
Naphthalene	3.51E-04	3.74E-07	1.60E-07	1.07E-08	2.14E-08	2.29E-08	3.21E-08
Perylene	4.02E-05	4.29E-08	1.84E-08	1.23E-09	2.45E-09	2.63E-09	3.68E-09
Phenanthrene	6.36E-04	6.78E-07	2.91E-07	1.94E-08	3.88E-08	4.15E-08	5.81E-08
Pyrene	5.57E-05	5.94E-08	2.55E-08	1.70E-09	3.40E-09	3.64E-09	5.09E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Channel Catfish
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	not analyzed	na	na	na	na	na	na
Acenaphthene	not analyzed	na	na	na	na	na	na
Acenaphthylene	not analyzed	na	na	na	na	na	na
Anthracene	not analyzed	na	na	na	na	na	na
Benzo(a)pyrene equivalents	not analyzed	na	na	na	na	na	na
Benzo(e)pyrene	not analyzed	na	na	na	na	na	na
Benzo(g,h,i)perylene	not analyzed	na	na	na	na	na	na
Dibenzofuran	not analyzed	na	na	na	na	na	na
Fluoranthene	not analyzed	na	na	na	na	na	na
Fluorene	not analyzed	na	na	na	na	na	na
1-Methylnaphthalene	not analyzed	na	na	na	na	na	na
2-Methylnaphthalene	not analyzed	na	na	na	na	na	na
Naphthalene	not analyzed	na	na	na	na	na	na
Perylene	not analyzed	na	na	na	na	na	na
Phenanthrene	not analyzed	na	na	na	na	na	na
Pyrene	not analyzed	na	na	na	na	na	na

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Channel Catfish
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.37E-07	4.66E-10	2.00E-10	1.33E-11	2.66E-11	2.85E-11	4.00E-11
Acenaphthene	2.27E-07	2.42E-10	1.04E-10	6.92E-12	1.38E-11	1.48E-11	2.08E-11
Acenaphthylene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Anthracene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Benzo(a)pyrene equivalents	1.11E-04	1.18E-07	5.07E-08	3.38E-09	6.77E-09	7.25E-09	1.01E-08
Benzo(e)pyrene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Benzo(g,h,i)perylene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Dibenzofuran	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Fluoranthene	1.10E-07	1.17E-10	5.03E-11	3.35E-12	6.70E-12	7.18E-12	1.01E-11
Fluorene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
1-Methylnaphthalene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
2-Methylnaphthalene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Naphthalene	1.13E-07	1.21E-10	5.17E-11	3.44E-12	6.89E-12	7.38E-12	1.03E-11
Perylene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Phenanthrene	2.46E-08	2.62E-11	1.12E-11	7.50E-13	1.50E-12	1.61E-12	2.25E-12
Pyrene	3.49E-08	3.72E-11	1.60E-11	1.06E-12	2.13E-12	2.28E-12	3.19E-12

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Common Carp
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	2.81E-07	3.00E-10	1.28E-10	8.56E-12	1.71E-11	1.84E-11	2.57E-11
Acenaphthene	1.50E-02	1.60E-05	6.86E-06	4.57E-07	9.14E-07	9.80E-07	1.37E-06
Acenaphthylene	1.40E-03	1.49E-06	6.40E-07	4.27E-08	8.53E-08	9.14E-08	1.28E-07
Anthracene	6.70E-03	7.15E-06	3.06E-06	2.04E-07	4.08E-07	4.38E-07	6.13E-07
Benzo(a)pyrene equivalents	3.59E-03	3.83E-06	1.64E-06	1.09E-07	2.19E-07	2.34E-07	3.28E-07
Benzo(e)pyrene	5.00E-04	5.33E-07	2.29E-07	1.52E-08	3.05E-08	3.27E-08	4.57E-08
Benzo(g,h,i)perylene	9.50E-04	1.01E-06	4.34E-07	2.90E-08	5.79E-08	6.20E-08	8.69E-08
Dibenzofuran	5.30E-03	5.65E-06	2.42E-06	1.62E-07	3.23E-07	3.46E-07	4.85E-07
Fluoranthene	9.20E-03	9.81E-06	4.21E-06	2.80E-07	5.61E-07	6.01E-07	8.41E-07
Fluorene	1.10E-02	1.17E-05	5.03E-06	3.35E-07	6.70E-07	7.18E-07	1.01E-06
1-Methylnaphthalene	3.60E-03	3.84E-06	1.65E-06	1.10E-07	2.19E-07	2.35E-07	3.29E-07
2-Methylnaphthalene	2.70E-03	2.88E-06	1.23E-06	8.23E-08	1.65E-07	1.76E-07	2.47E-07
Naphthalene	3.50E-03	3.73E-06	1.60E-06	1.07E-07	2.13E-07	2.29E-07	3.20E-07
Perylene	1.20E-03	1.28E-06	5.49E-07	3.66E-08	7.31E-08	7.84E-08	1.10E-07
Phenanthrene	1.20E-02	1.28E-05	5.49E-06	3.66E-07	7.31E-07	7.84E-07	1.10E-06
Pyrene	1.50E-02	1.60E-05	6.86E-06	4.57E-07	9.14E-07	9.80E-07	1.37E-06

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Common Carp
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	2.81E-07	3.00E-10	1.28E-10	8.56E-12	1.71E-11	1.84E-11	2.57E-11
Acenaphthene	3.44E-03	3.67E-06	1.57E-06	1.05E-07	2.10E-07	2.25E-07	3.15E-07
Acenaphthylene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Anthracene	1.40E-04	1.49E-07	6.40E-08	4.27E-09	8.53E-09	9.14E-09	1.28E-08
Benzo(a)pyrene equivalents	5.35E-05	5.71E-08	2.45E-08	1.63E-09	3.26E-09	3.49E-09	4.89E-09
Benzo(e)pyrene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Benzo(g,h,i)perylene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Dibenzofuran	9.99E-04	1.07E-06	4.57E-07	3.04E-08	6.09E-08	6.52E-08	9.13E-08
Fluoranthene	1.37E-03	1.46E-06	6.26E-07	4.18E-08	8.35E-08	8.95E-08	1.25E-07
Fluorene	1.73E-03	1.85E-06	7.91E-07	5.27E-08	1.05E-07	1.13E-07	1.58E-07
1-Methylnaphthalene	3.94E-04	4.20E-07	1.80E-07	1.20E-08	2.40E-08	2.57E-08	3.60E-08
2-Methylnaphthalene	3.97E-04	4.23E-07	1.81E-07	1.21E-08	2.42E-08	2.59E-08	3.63E-08
Naphthalene	8.68E-04	9.26E-07	3.97E-07	2.65E-08	5.29E-08	5.67E-08	7.94E-08
Perylene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Phenanthrene	2.32E-03	2.47E-06	1.06E-06	7.07E-08	1.41E-07	1.52E-07	2.12E-07
Pyrene	5.84E-04	6.23E-07	2.67E-07	1.78E-08	3.56E-08	3.81E-08	5.34E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Ground Mullet
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	8.54E-08	9.11E-11	3.90E-11	2.60E-12	5.21E-12	5.58E-12	7.81E-12
Acenaphthene	3.60E-04	3.84E-07	1.65E-07	1.10E-08	2.19E-08	2.35E-08	3.29E-08
Acenaphthylene	1.20E-04	1.28E-07	5.49E-08	3.66E-09	7.31E-09	7.84E-09	1.10E-08
Anthracene	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Benzo(a)pyrene equivalents	2.07E-04	2.21E-07	9.46E-08	6.31E-09	1.26E-08	1.35E-08	1.89E-08
Benzo(e)pyrene	5.00E-05	5.33E-08	2.29E-08	1.52E-09	3.05E-09	3.27E-09	4.57E-09
Benzo(g,h,i)perylene	9.50E-05	1.01E-07	4.34E-08	2.90E-09	5.79E-09	6.20E-09	8.69E-09
Dibenzofuran	3.70E-04	3.95E-07	1.69E-07	1.13E-08	2.26E-08	2.42E-08	3.38E-08
Fluoranthene	4.70E-04	5.01E-07	2.15E-07	1.43E-08	2.86E-08	3.07E-08	4.30E-08
Fluorene	4.80E-04	5.12E-07	2.19E-07	1.46E-08	2.93E-08	3.13E-08	4.39E-08
1-Methylnaphthalene	2.80E-04	2.99E-07	1.28E-07	8.53E-09	1.71E-08	1.83E-08	2.56E-08
2-Methylnaphthalene	3.00E-04	3.20E-07	1.37E-07	9.14E-09	1.83E-08	1.96E-08	2.74E-08
Naphthalene	3.80E-04	4.05E-07	1.74E-07	1.16E-08	2.32E-08	2.48E-08	3.47E-08
Perylene	1.20E-04	1.28E-07	5.49E-08	3.66E-09	7.31E-09	7.84E-09	1.10E-08
Phenanthrene	8.60E-04	9.17E-07	3.93E-07	2.62E-08	5.24E-08	5.62E-08	7.86E-08
Pyrene	3.85E-04	4.11E-07	1.76E-07	1.17E-08	2.35E-08	2.51E-08	3.52E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Ground Mullet
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	8.54E-08	9.11E-11	3.90E-11	2.60E-12	5.21E-12	5.58E-12	7.81E-12
Acenaphthene	2.66E-04	2.84E-07	1.22E-07	8.11E-09	1.62E-08	1.74E-08	2.43E-08
Acenaphthylene	2.46E-05	2.62E-08	1.12E-08	7.50E-10	1.50E-09	1.61E-09	2.25E-09
Anthracene	1.49E-04	1.59E-07	6.81E-08	4.54E-09	9.08E-09	9.73E-09	1.36E-08
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	5.02E-05	5.35E-08	2.29E-08	1.53E-09	3.06E-09	3.28E-09	4.59E-09
Benzo(g,h,i)perylene	2.46E-05	2.62E-08	1.12E-08	7.50E-10	1.50E-09	1.61E-09	2.25E-09
Dibenzofuran	6.11E-04	6.52E-07	2.79E-07	1.86E-08	3.72E-08	3.99E-08	5.59E-08
Fluoranthene	5.75E-04	6.13E-07	2.63E-07	1.75E-08	3.50E-08	3.76E-08	5.26E-08
Fluorene	4.67E-04	4.98E-07	2.13E-07	1.42E-08	2.85E-08	3.05E-08	4.27E-08
1-Methylnaphthalene	1.38E-04	1.47E-07	6.31E-08	4.21E-09	8.41E-09	9.01E-09	1.26E-08
2-Methylnaphthalene	2.34E-04	2.50E-07	1.07E-07	7.13E-09	1.43E-08	1.53E-08	2.14E-08
Naphthalene	3.01E-04	3.21E-07	1.38E-07	9.17E-09	1.83E-08	1.97E-08	2.75E-08
Perylene	2.46E-05	2.62E-08	1.12E-08	7.50E-10	1.50E-09	1.61E-09	2.25E-09
Phenanthrene	1.85E-03	1.97E-06	8.46E-07	5.64E-08	1.13E-07	1.21E-07	1.69E-07
Pyrene	2.70E-04	2.88E-07	1.23E-07	8.23E-09	1.65E-08	1.76E-08	2.47E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.09E-08	4.36E-11	1.87E-11	1.25E-12	2.49E-12	2.67E-12	3.74E-12
Acenaphthene	9.40E-05	1.00E-07	4.30E-08	2.86E-09	5.73E-09	6.14E-09	8.59E-09
Acenaphthylene	5.90E-05	6.29E-08	2.70E-08	1.80E-09	3.60E-09	3.85E-09	5.39E-09
Anthracene	5.90E-05	6.29E-08	2.70E-08	1.80E-09	3.60E-09	3.85E-09	5.39E-09
Benzo(a)pyrene equivalents	2.91E-04	3.10E-07	1.33E-07	8.87E-09	1.77E-08	1.90E-08	2.66E-08
Benzo(e)pyrene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
Benzo(g,h,i)perylene	1.90E-04	2.03E-07	8.69E-08	5.79E-09	1.16E-08	1.24E-08	1.74E-08
Dibenzofuran	1.10E-04	1.17E-07	5.03E-08	3.35E-09	6.70E-09	7.18E-09	1.01E-08
Fluoranthene	3.20E-04	3.41E-07	1.46E-07	9.75E-09	1.95E-08	2.09E-08	2.93E-08
Fluorene	1.40E-04	1.49E-07	6.40E-08	4.27E-09	8.53E-09	9.14E-09	1.28E-08
1-Methylnaphthalene	1.40E-04	1.49E-07	6.40E-08	4.27E-09	8.53E-09	9.14E-09	1.28E-08
2-Methylnaphthalene	1.70E-04	1.81E-07	7.77E-08	5.18E-09	1.04E-08	1.11E-08	1.55E-08
Naphthalene	2.80E-04	2.99E-07	1.28E-07	8.53E-09	1.71E-08	1.83E-08	2.56E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	4.00E-04	4.27E-07	1.83E-07	1.22E-08	2.44E-08	2.61E-08	3.66E-08
Pyrene	1.50E-04	1.60E-07	6.86E-08	4.57E-09	9.14E-09	9.80E-09	1.37E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.09E-08	4.36E-11	1.87E-11	1.25E-12	2.49E-12	2.67E-12	3.74E-12
Acenaphthene	7.35E-05	7.84E-08	3.36E-08	2.24E-09	4.48E-09	4.80E-09	6.72E-09
Acenaphthylene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Anthracene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Benzo(a)pyrene equivalents	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Benzo(e)pyrene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Benzo(g,h,i)perylene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Dibenzofuran	2.22E-04	2.37E-07	1.01E-07	6.77E-09	1.35E-08	1.45E-08	2.03E-08
Fluoranthene	1.03E-04	1.10E-07	4.71E-08	3.14E-09	6.28E-09	6.73E-09	9.42E-09
Fluorene	1.52E-04	1.62E-07	6.95E-08	4.63E-09	9.26E-09	9.93E-09	1.39E-08
1-Methylnaphthalene	5.89E-05	6.28E-08	2.69E-08	1.80E-09	3.59E-09	3.85E-09	5.39E-09
2-Methylnaphthalene	1.19E-04	1.27E-07	5.44E-08	3.63E-09	7.25E-09	7.77E-09	1.09E-08
Naphthalene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
Perylene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Phenanthrene	5.12E-04	5.46E-07	2.34E-07	1.56E-08	3.12E-08	3.34E-08	4.68E-08
Pyrene	3.41E-05	3.64E-08	1.56E-08	1.04E-09	2.08E-09	2.23E-09	3.12E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.32E-08	4.61E-11	1.97E-11	1.32E-12	2.63E-12	2.82E-12	3.95E-12
Acenaphthene	2.40E-04	2.56E-07	1.10E-07	7.31E-09	1.46E-08	1.57E-08	2.19E-08
Acenaphthylene	4.90E-05	5.23E-08	2.24E-08	1.49E-09	2.99E-09	3.20E-09	4.48E-09
Anthracene	7.90E-05	8.43E-08	3.61E-08	2.41E-09	4.82E-09	5.16E-09	7.22E-09
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	1.70E-04	1.81E-07	7.77E-08	5.18E-09	1.04E-08	1.11E-08	1.55E-08
Fluoranthene	2.10E-04	2.24E-07	9.60E-08	6.40E-09	1.28E-08	1.37E-08	1.92E-08
Fluorene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
1-Methylnaphthalene	1.60E-04	1.71E-07	7.31E-08	4.88E-09	9.75E-09	1.04E-08	1.46E-08
2-Methylnaphthalene	1.70E-04	1.81E-07	7.77E-08	5.18E-09	1.04E-08	1.11E-08	1.55E-08
Naphthalene	2.70E-04	2.88E-07	1.23E-07	8.23E-09	1.65E-08	1.76E-08	2.47E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.30E-04	3.52E-07	1.51E-07	1.01E-08	2.01E-08	2.16E-08	3.02E-08
Pyrene	9.30E-05	9.92E-08	4.25E-08	2.83E-09	5.67E-09	6.07E-09	8.50E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.32E-08	4.61E-11	1.97E-11	1.32E-12	2.63E-12	2.82E-12	3.95E-12
Acenaphthene	1.54E-04	1.64E-07	7.04E-08	4.69E-09	9.39E-09	1.01E-08	1.41E-08
Acenaphthylene	2.44E-05	2.60E-08	1.12E-08	7.44E-10	1.49E-09	1.59E-09	2.23E-09
Anthracene	2.44E-05	2.60E-08	1.12E-08	7.44E-10	1.49E-09	1.59E-09	2.23E-09
Benzo(a)pyrene equivalents	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Benzo(e)pyrene	2.44E-05	2.60E-08	1.12E-08	7.44E-10	1.49E-09	1.59E-09	2.23E-09
Benzo(g,h,i)perylene	2.44E-05	2.60E-08	1.12E-08	7.44E-10	1.49E-09	1.59E-09	2.23E-09
Dibenzofuran	2.65E-04	2.83E-07	1.21E-07	8.08E-09	1.62E-08	1.73E-08	2.42E-08
Fluoranthene	1.07E-04	1.14E-07	4.89E-08	3.26E-09	6.52E-09	6.99E-09	9.78E-09
Fluorene	1.85E-04	1.97E-07	8.46E-08	5.64E-09	1.13E-08	1.21E-08	1.69E-08
1-Methylnaphthalene	2.44E-05	2.60E-08	1.12E-08	7.44E-10	1.49E-09	1.59E-09	2.23E-09
2-Methylnaphthalene	1.27E-04	1.35E-07	5.81E-08	3.87E-09	7.74E-09	8.29E-09	1.16E-08
Naphthalene	2.53E-04	2.70E-07	1.16E-07	7.71E-09	1.54E-08	1.65E-08	2.31E-08
Perylene	2.44E-05	2.60E-08	1.12E-08	7.44E-10	1.49E-09	1.59E-09	2.23E-09
Phenanthrene	5.37E-04	5.73E-07	2.45E-07	1.64E-08	3.27E-08	3.51E-08	4.91E-08
Pyrene	3.42E-05	3.65E-08	1.56E-08	1.04E-09	2.08E-09	2.23E-09	3.13E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.00E-08	4.27E-11	1.83E-11	1.22E-12	2.44E-12	2.61E-12	3.66E-12
Acenaphthene	6.80E-04	7.25E-07	3.11E-07	2.07E-08	4.14E-08	4.44E-08	6.22E-08
Acenaphthylene	5.30E-05	5.65E-08	2.42E-08	1.62E-09	3.23E-09	3.46E-09	4.85E-09
Anthracene	1.50E-04	1.60E-07	6.86E-08	4.57E-09	9.14E-09	9.80E-09	1.37E-08
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	3.80E-04	4.05E-07	1.74E-07	1.16E-08	2.32E-08	2.48E-08	3.47E-08
Fluoranthene	5.10E-04	5.44E-07	2.33E-07	1.55E-08	3.11E-08	3.33E-08	4.66E-08
Fluorene	6.60E-04	7.04E-07	3.02E-07	2.01E-08	4.02E-08	4.31E-08	6.03E-08
1-Methylnaphthalene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
2-Methylnaphthalene	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Naphthalene	3.10E-04	3.31E-07	1.42E-07	9.45E-09	1.89E-08	2.02E-08	2.83E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	8.90E-04	9.49E-07	4.07E-07	2.71E-08	5.42E-08	5.81E-08	8.14E-08
Pyrene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.00E-08	4.27E-11	1.83E-11	1.22E-12	2.44E-12	2.61E-12	3.66E-12
Acenaphthene	3.00E-04	3.20E-07	1.37E-07	9.14E-09	1.83E-08	1.96E-08	2.74E-08
Acenaphthylene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Anthracene	6.50E-05	6.93E-08	2.97E-08	1.98E-09	3.96E-09	4.24E-09	5.94E-09
Benzo(a)pyrene equivalents	6.10E-05	6.51E-08	2.79E-08	1.86E-09	3.72E-09	3.98E-09	5.58E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Dibenzofuran	3.45E-04	3.68E-07	1.58E-07	1.05E-08	2.10E-08	2.25E-08	3.15E-08
Fluoranthene	2.42E-04	2.58E-07	1.11E-07	7.38E-09	1.48E-08	1.58E-08	2.21E-08
Fluorene	3.36E-04	3.58E-07	1.54E-07	1.02E-08	2.05E-08	2.19E-08	3.07E-08
1-Methylnaphthalene	8.91E-05	9.50E-08	4.07E-08	2.72E-09	5.43E-09	5.82E-09	8.15E-09
2-Methylnaphthalene	1.55E-04	1.65E-07	7.09E-08	4.72E-09	9.45E-09	1.01E-08	1.42E-08
Naphthalene	3.30E-04	3.52E-07	1.51E-07	1.01E-08	2.01E-08	2.16E-08	3.02E-08
Perylene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Phenanthrene	6.73E-04	7.18E-07	3.08E-07	2.05E-08	4.10E-08	4.40E-08	6.15E-08
Pyrene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	8.97E-08	9.57E-11	4.10E-11	2.73E-12	5.47E-12	5.86E-12	8.20E-12
Acenaphthene	5.70E-04	6.08E-07	2.61E-07	1.74E-08	3.47E-08	3.72E-08	5.21E-08
Acenaphthylene	7.60E-05	8.11E-08	3.47E-08	2.32E-09	4.63E-09	4.96E-09	6.95E-09
Anthracene	1.80E-04	1.92E-07	8.23E-08	5.49E-09	1.10E-08	1.18E-08	1.65E-08
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	3.40E-04	3.63E-07	1.55E-07	1.04E-08	2.07E-08	2.22E-08	3.11E-08
Fluoranthene	4.90E-04	5.23E-07	2.24E-07	1.49E-08	2.99E-08	3.20E-08	4.48E-08
Fluorene	4.90E-04	5.23E-07	2.24E-07	1.49E-08	2.99E-08	3.20E-08	4.48E-08
1-Methylnaphthalene	2.70E-04	2.88E-07	1.23E-07	8.23E-09	1.65E-08	1.76E-08	2.47E-08
2-Methylnaphthalene	3.70E-04	3.95E-07	1.69E-07	1.13E-08	2.26E-08	2.42E-08	3.38E-08
Naphthalene	4.70E-04	5.01E-07	2.15E-07	1.43E-08	2.86E-08	3.07E-08	4.30E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	6.10E-04	6.51E-07	2.79E-07	1.86E-08	3.72E-08	3.98E-08	5.58E-08
Pyrene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	8.97E-08	9.57E-11	4.10E-11	2.73E-12	5.47E-12	5.86E-12	8.20E-12
Acenaphthene	3.01E-04	3.21E-07	1.38E-07	9.17E-09	1.83E-08	1.97E-08	2.75E-08
Acenaphthylene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Anthracene	9.36E-05	9.98E-08	4.28E-08	2.85E-09	5.71E-09	6.11E-09	8.56E-09
Benzo(a)pyrene equivalents	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Benzo(e)pyrene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Benzo(g,h,i)perylene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Dibenzofuran	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Fluoranthene	2.54E-04	2.71E-07	1.16E-07	7.74E-09	1.55E-08	1.66E-08	2.32E-08
Fluorene	3.02E-04	3.22E-07	1.38E-07	9.20E-09	1.84E-08	1.97E-08	2.76E-08
1-Methylnaphthalene	1.51E-04	1.61E-07	6.90E-08	4.60E-09	9.20E-09	9.86E-09	1.38E-08
2-Methylnaphthalene	2.56E-04	2.73E-07	1.17E-07	7.80E-09	1.56E-08	1.67E-08	2.34E-08
Naphthalene	4.78E-04	5.10E-07	2.19E-07	1.46E-08	2.91E-08	3.12E-08	4.37E-08
Perylene	2.41E-05	2.57E-08	1.10E-08	7.34E-10	1.47E-09	1.57E-09	2.20E-09
Phenanthrene	7.48E-04	7.98E-07	3.42E-07	2.28E-08	4.56E-08	4.88E-08	6.84E-08
Pyrene	1.35E-04	1.44E-07	6.17E-08	4.11E-09	8.23E-09	8.82E-09	1.23E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.23E-08	4.51E-11	1.93E-11	1.29E-12	2.58E-12	2.76E-12	3.87E-12
Acenaphthene	4.10E-04	4.37E-07	1.87E-07	1.25E-08	2.50E-08	2.68E-08	3.75E-08
Acenaphthylene	5.20E-05	5.55E-08	2.38E-08	1.58E-09	3.17E-09	3.40E-09	4.75E-09
Anthracene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	2.60E-04	2.77E-07	1.19E-07	7.92E-09	1.58E-08	1.70E-08	2.38E-08
Fluoranthene	5.90E-04	6.29E-07	2.70E-07	1.80E-08	3.60E-08	3.85E-08	5.39E-08
Fluorene	4.00E-04	4.27E-07	1.83E-07	1.22E-08	2.44E-08	2.61E-08	3.66E-08
1-Methylnaphthalene	2.10E-04	2.24E-07	9.60E-08	6.40E-09	1.28E-08	1.37E-08	1.92E-08
2-Methylnaphthalene	2.90E-04	3.09E-07	1.33E-07	8.84E-09	1.77E-08	1.89E-08	2.65E-08
Naphthalene	4.00E-04	4.27E-07	1.83E-07	1.22E-08	2.44E-08	2.61E-08	3.66E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	4.20E-04	4.48E-07	1.92E-07	1.28E-08	2.56E-08	2.74E-08	3.84E-08
Pyrene	2.40E-04	2.56E-07	1.10E-07	7.31E-09	1.46E-08	1.57E-08	2.19E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	4.23E-08	4.51E-11	1.93E-11	1.29E-12	2.58E-12	2.76E-12	3.87E-12
Acenaphthene	1.85E-04	1.97E-07	8.46E-08	5.64E-09	1.13E-08	1.21E-08	1.69E-08
Acenaphthylene	2.48E-05	2.65E-08	1.13E-08	7.56E-10	1.51E-09	1.62E-09	2.27E-09
Anthracene	2.48E-05	2.65E-08	1.13E-08	7.56E-10	1.51E-09	1.62E-09	2.27E-09
Benzo(a)pyrene equivalents	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Benzo(e)pyrene	2.48E-05	2.65E-08	1.13E-08	7.56E-10	1.51E-09	1.62E-09	2.27E-09
Benzo(g,h,i)perylene	2.48E-05	2.65E-08	1.13E-08	7.56E-10	1.51E-09	1.62E-09	2.27E-09
Dibenzofuran	2.87E-04	3.06E-07	1.31E-07	8.75E-09	1.75E-08	1.87E-08	2.62E-08
Fluoranthene	1.96E-04	2.09E-07	8.96E-08	5.97E-09	1.19E-08	1.28E-08	1.79E-08
Fluorene	2.44E-04	2.60E-07	1.12E-07	7.44E-09	1.49E-08	1.59E-08	2.23E-08
1-Methylnaphthalene	9.12E-05	9.73E-08	4.17E-08	2.78E-09	5.56E-09	5.96E-09	8.34E-09
2-Methylnaphthalene	1.77E-04	1.89E-07	8.09E-08	5.39E-09	1.08E-08	1.16E-08	1.62E-08
Naphthalene	3.07E-04	3.27E-07	1.40E-07	9.36E-09	1.87E-08	2.00E-08	2.81E-08
Perylene	2.48E-05	2.65E-08	1.13E-08	7.56E-10	1.51E-09	1.62E-09	2.27E-09
Phenanthrene	5.89E-04	6.28E-07	2.69E-07	1.80E-08	3.59E-08	3.85E-08	5.39E-08
Pyrene	9.58E-05	1.02E-07	4.38E-08	2.92E-09	5.84E-09	6.26E-09	8.76E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Orange Spotted Sun Fish
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.91E-08	8.44E-11	3.62E-11	2.41E-12	4.82E-12	5.17E-12	7.23E-12
Acenaphthene	6.30E-04	6.72E-07	2.88E-07	1.92E-08	3.84E-08	4.11E-08	5.76E-08
Acenaphthylene	5.20E-05	5.55E-08	2.38E-08	1.58E-09	3.17E-09	3.40E-09	4.75E-09
Anthracene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Fluoranthene	4.60E-04	4.91E-07	2.10E-07	1.40E-08	2.80E-08	3.00E-08	4.21E-08
Fluorene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
1-Methylnaphthalene	2.20E-04	2.35E-07	1.01E-07	6.70E-09	1.34E-08	1.44E-08	2.01E-08
2-Methylnaphthalene	2.80E-04	2.99E-07	1.28E-07	8.53E-09	1.71E-08	1.83E-08	2.56E-08
Naphthalene	7.10E-04	7.57E-07	3.25E-07	2.16E-08	4.33E-08	4.64E-08	6.49E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.50E-04	3.73E-07	1.60E-07	1.07E-08	2.13E-08	2.29E-08	3.20E-08
Pyrene	1.60E-04	1.71E-07	7.31E-08	4.88E-09	9.75E-09	1.04E-08	1.46E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Orange Spotted Sun Fish
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.91E-08	8.44E-11	3.62E-11	2.41E-12	4.82E-12	5.17E-12	7.23E-12
Acenaphthene	1.79E-04	1.91E-07	8.18E-08	1.92E-08	3.84E-08	4.11E-08	5.76E-08
Acenaphthylene	4.33E-05	4.62E-08	1.98E-08	1.58E-09	3.17E-09	3.40E-09	4.75E-09
Anthracene	4.33E-05	4.62E-08	1.98E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
Benzo(a)pyrene equivalents	1.00E-04	1.07E-07	4.57E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	4.33E-05	4.62E-08	1.98E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.33E-05	4.62E-08	1.98E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	3.81E-04	4.06E-07	1.74E-07	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Fluoranthene	8.90E-05	9.49E-08	4.07E-08	1.40E-08	2.80E-08	3.00E-08	4.21E-08
Fluorene	2.63E-04	2.81E-07	1.20E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
1-Methylnaphthalene	1.04E-04	1.11E-07	4.75E-08	6.70E-09	1.34E-08	1.44E-08	2.01E-08
2-Methylnaphthalene	2.18E-04	2.33E-07	9.97E-08	8.53E-09	1.71E-08	1.83E-08	2.56E-08
Naphthalene	4.60E-04	4.91E-07	2.10E-07	2.16E-08	4.33E-08	4.64E-08	6.49E-08
Perylene	4.33E-05	4.62E-08	1.98E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	7.23E-04	7.71E-07	3.31E-07	1.07E-08	2.13E-08	2.29E-08	3.20E-08
Pyrene	6.30E-05	6.72E-08	2.88E-08	4.88E-09	9.75E-09	1.04E-08	1.46E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Pumpkinseed Bream
Location: Background
Laboratory: CAS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.18E-07	1.26E-10	5.39E-11	3.60E-12	7.19E-12	7.71E-12	1.08E-11
Acenaphthene	1.70E-04	1.81E-07	7.77E-08	5.18E-09	1.04E-08	1.11E-08	1.55E-08
Acenaphthylene	5.50E-05	5.87E-08	2.51E-08	1.68E-09	3.35E-09	3.59E-09	5.03E-09
Anthracene	1.00E-04	1.07E-07	4.57E-08	3.05E-09	6.10E-09	6.53E-09	9.14E-09
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	2.10E-04	2.24E-07	9.60E-08	6.40E-09	1.28E-08	1.37E-08	1.92E-08
Fluoranthene	2.10E-04	2.24E-07	9.60E-08	6.40E-09	1.28E-08	1.37E-08	1.92E-08
Fluorene	3.00E-04	3.20E-07	1.37E-07	9.14E-09	1.83E-08	1.96E-08	2.74E-08
1-Methylnaphthalene	1.70E-04	1.81E-07	7.77E-08	5.18E-09	1.04E-08	1.11E-08	1.55E-08
2-Methylnaphthalene	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Naphthalene	2.70E-04	2.88E-07	1.23E-07	8.23E-09	1.65E-08	1.76E-08	2.47E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	4.10E-04	4.37E-07	1.87E-07	1.25E-08	2.50E-08	2.68E-08	3.75E-08
Pyrene	8.50E-05	9.07E-08	3.89E-08	2.59E-09	5.18E-09	5.55E-09	7.77E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Pumpkinseed Bream
Location: Background
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.18E-07	1.26E-10	5.39E-11	3.60E-12	7.19E-12	7.71E-12	1.08E-11
Acenaphthene	1.81E-04	1.93E-07	8.27E-08	5.52E-09	1.10E-08	1.18E-08	1.65E-08
Acenaphthylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Anthracene	1.28E-04	1.37E-07	5.85E-08	3.90E-09	7.80E-09	8.36E-09	1.17E-08
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Benzo(g,h,i)perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Dibenzofuran	5.30E-04	5.65E-07	2.42E-07	1.62E-08	3.23E-08	3.46E-08	4.85E-08
Fluoranthene	3.11E-04	3.32E-07	1.42E-07	9.48E-09	1.90E-08	2.03E-08	2.84E-08
Fluorene	4.14E-04	4.42E-07	1.89E-07	1.26E-08	2.52E-08	2.70E-08	3.79E-08
1-Methylnaphthalene	9.83E-05	1.05E-07	4.49E-08	3.00E-09	5.99E-09	6.42E-09	8.99E-09
2-Methylnaphthalene	1.67E-04	1.78E-07	7.63E-08	5.09E-09	1.02E-08	1.09E-08	1.53E-08
Naphthalene	2.25E-04	2.40E-07	1.03E-07	6.86E-09	1.37E-08	1.47E-08	2.06E-08
Perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Phenanthrene	1.58E-03	1.69E-06	7.22E-07	4.82E-08	9.63E-08	1.03E-07	1.44E-07
Pyrene	1.55E-04	1.65E-07	7.09E-08	4.72E-09	9.45E-09	1.01E-08	1.42E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.78E-08	4.03E-11	1.73E-11	1.15E-12	2.30E-12	2.47E-12	3.46E-12
Acenaphthene	2.20E-04	2.35E-07	1.01E-07	6.70E-09	1.34E-08	1.44E-08	2.01E-08
Acenaphthylene	1.40E-04	1.49E-07	6.40E-08	4.27E-09	8.53E-09	9.14E-09	1.28E-08
Anthracene	2.40E-04	2.56E-07	1.10E-07	7.31E-09	1.46E-08	1.57E-08	2.19E-08
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	2.90E-04	3.09E-07	1.33E-07	8.84E-09	1.77E-08	1.89E-08	2.65E-08
Fluoranthene	3.70E-04	3.95E-07	1.69E-07	1.13E-08	2.26E-08	2.42E-08	3.38E-08
Fluorene	5.40E-04	5.76E-07	2.47E-07	1.65E-08	3.29E-08	3.53E-08	4.94E-08
1-Methylnaphthalene	3.00E-04	3.20E-07	1.37E-07	9.14E-09	1.83E-08	1.96E-08	2.74E-08
2-Methylnaphthalene	3.80E-04	4.05E-07	1.74E-07	1.16E-08	2.32E-08	2.48E-08	3.47E-08
Naphthalene	6.40E-04	6.83E-07	2.93E-07	1.95E-08	3.90E-08	4.18E-08	5.85E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.80E-04	4.05E-07	1.74E-07	1.16E-08	2.32E-08	2.48E-08	3.47E-08
Pyrene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.78E-08	4.03E-11	1.73E-11	1.15E-12	2.30E-12	2.47E-12	3.46E-12
Acenaphthene	1.35E-04	1.44E-07	6.17E-08	4.11E-09	8.23E-09	8.82E-09	1.23E-08
Acenaphthylene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Anthracene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Benzo(a)pyrene equivalents	5.30E-05	5.65E-08	2.42E-08	1.62E-09	3.23E-09	3.46E-09	4.85E-09
Benzo(e)pyrene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Benzo(g,h,i)perylene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Dibenzofuran	2.44E-04	2.60E-07	1.12E-07	7.44E-09	1.49E-08	1.59E-08	2.23E-08
Fluoranthene	1.50E-04	1.60E-07	6.86E-08	4.57E-09	9.14E-09	9.80E-09	1.37E-08
Fluorene	1.49E-04	1.59E-07	6.81E-08	4.54E-09	9.08E-09	9.73E-09	1.36E-08
1-Methylnaphthalene	1.13E-04	1.21E-07	5.17E-08	3.44E-09	6.89E-09	7.38E-09	1.03E-08
2-Methylnaphthalene	2.29E-04	2.44E-07	1.05E-07	6.98E-09	1.40E-08	1.50E-08	2.09E-08
Naphthalene	3.76E-04	4.01E-07	1.72E-07	1.15E-08	2.29E-08	2.46E-08	3.44E-08
Perylene	2.32E-05	2.47E-08	1.06E-08	7.07E-10	1.41E-09	1.52E-09	2.12E-09
Phenanthrene	3.57E-04	3.81E-07	1.63E-07	1.09E-08	2.18E-08	2.33E-08	3.26E-08
Pyrene	3.29E-05	3.51E-08	1.50E-08	1.00E-09	2.01E-09	2.15E-09	3.01E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.02E-07	1.09E-10	4.66E-11	3.11E-12	6.22E-12	6.66E-12	9.33E-12
Acenaphthene	3.70E-04	3.95E-07	1.69E-07	1.13E-08	2.26E-08	2.42E-08	3.38E-08
Acenaphthylene	7.40E-05	7.89E-08	3.38E-08	2.26E-09	4.51E-09	4.83E-09	6.77E-09
Anthracene	7.60E-05	8.11E-08	3.47E-08	2.32E-09	4.63E-09	4.96E-09	6.95E-09
Benzo(a)pyrene equivalents	7.60E-05	8.11E-08	3.47E-08	2.32E-09	4.63E-09	4.96E-09	6.95E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
Fluoranthene	2.40E-04	2.56E-07	1.10E-07	7.31E-09	1.46E-08	1.57E-08	2.19E-08
Fluorene	4.00E-04	4.27E-07	1.83E-07	1.22E-08	2.44E-08	2.61E-08	3.66E-08
1-Methylnaphthalene	1.90E-04	2.03E-07	8.69E-08	5.79E-09	1.16E-08	1.24E-08	1.74E-08
2-Methylnaphthalene	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Naphthalene	4.10E-04	4.37E-07	1.87E-07	1.25E-08	2.50E-08	2.68E-08	3.75E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.70E-04	3.95E-07	1.69E-07	1.13E-08	2.26E-08	2.42E-08	3.38E-08
Pyrene	8.30E-05	8.85E-08	3.79E-08	2.53E-09	5.06E-09	5.42E-09	7.59E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.02E-07	1.09E-10	4.66E-11	3.11E-12	6.22E-12	6.66E-12	9.33E-12
Acenaphthene	2.97E-04	3.17E-07	1.36E-07	9.05E-09	1.81E-08	1.94E-08	2.72E-08
Acenaphthylene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Anthracene	1.51E-04	1.61E-07	6.90E-08	4.60E-09	9.20E-09	9.86E-09	1.38E-08
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	5.27E-05	5.62E-08	2.41E-08	1.61E-09	3.21E-09	3.44E-09	4.82E-09
Benzo(g,h,i)perylene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Dibenzofuran	5.99E-04	6.39E-07	2.74E-07	1.83E-08	3.65E-08	3.91E-08	5.48E-08
Fluoranthene	6.12E-04	6.53E-07	2.80E-07	1.87E-08	3.73E-08	4.00E-08	5.60E-08
Fluorene	5.39E-04	5.75E-07	2.46E-07	1.64E-08	3.29E-08	3.52E-08	4.93E-08
1-Methylnaphthalene	1.28E-04	1.37E-07	5.85E-08	3.90E-09	7.80E-09	8.36E-09	1.17E-08
2-Methylnaphthalene	2.01E-04	2.14E-07	9.19E-08	6.13E-09	1.23E-08	1.31E-08	1.84E-08
Naphthalene	3.16E-04	3.37E-07	1.44E-07	9.63E-09	1.93E-08	2.06E-08	2.89E-08
Perylene	2.49E-05	2.66E-08	1.14E-08	7.59E-10	1.52E-09	1.63E-09	2.28E-09
Phenanthrene	1.88E-03	2.01E-06	8.59E-07	5.73E-08	1.15E-07	1.23E-07	1.72E-07
Pyrene	3.04E-04	3.24E-07	1.39E-07	9.26E-09	1.85E-08	1.99E-08	2.78E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Sheep Head
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	5.47E-08	5.83E-11	2.50E-11	1.67E-12	3.33E-12	3.57E-12	5.00E-12
Acenaphthene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
Acenaphthylene	6.20E-05	6.61E-08	2.83E-08	1.89E-09	3.78E-09	4.05E-09	5.67E-09
Anthracene	5.20E-05	5.55E-08	2.38E-08	1.58E-09	3.17E-09	3.40E-09	4.75E-09
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	2.00E-04	2.13E-07	9.14E-08	6.10E-09	1.22E-08	1.31E-08	1.83E-08
Fluoranthene	2.20E-04	2.35E-07	1.01E-07	6.70E-09	1.34E-08	1.44E-08	2.01E-08
Fluorene	2.40E-04	2.56E-07	1.10E-07	7.31E-09	1.46E-08	1.57E-08	2.19E-08
1-Methylnaphthalene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08
2-Methylnaphthalene	2.60E-04	2.77E-07	1.19E-07	7.92E-09	1.58E-08	1.70E-08	2.38E-08
Naphthalene	4.80E-04	5.12E-07	2.19E-07	1.46E-08	2.93E-08	3.13E-08	4.39E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.10E-04	3.31E-07	1.42E-07	9.45E-09	1.89E-08	2.02E-08	2.83E-08
Pyrene	1.20E-04	1.28E-07	5.49E-08	3.66E-09	7.31E-09	7.84E-09	1.10E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Sheep Head
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	5.47E-08	5.83E-11	2.50E-11	1.67E-12	3.33E-12	3.57E-12	5.00E-12
Acenaphthene	7.95E-05	8.48E-08	3.63E-08	2.42E-09	4.85E-09	5.19E-09	7.27E-09
Acenaphthylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Anthracene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Benzo(g,h,i)perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Dibenzofuran	2.36E-04	2.52E-07	1.08E-07	7.19E-09	1.44E-08	1.54E-08	2.16E-08
Fluoranthene	1.06E-04	1.13E-07	4.85E-08	3.23E-09	6.46E-09	6.92E-09	9.69E-09
Fluorene	1.54E-04	1.64E-07	7.04E-08	4.69E-09	9.39E-09	1.01E-08	1.41E-08
1-Methylnaphthalene	6.69E-05	7.14E-08	3.06E-08	2.04E-09	4.08E-09	4.37E-09	6.12E-09
2-Methylnaphthalene	1.27E-04	1.35E-07	5.81E-08	3.87E-09	7.74E-09	8.29E-09	1.16E-08
Naphthalene	2.05E-04	2.19E-07	9.37E-08	6.25E-09	1.25E-08	1.34E-08	1.87E-08
Perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Phenanthrene	4.83E-04	5.15E-07	2.21E-07	1.47E-08	2.94E-08	3.15E-08	4.42E-08
Pyrene	3.47E-05	3.70E-08	1.59E-08	1.06E-09	2.12E-09	2.27E-09	3.17E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Bass
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	9.35E-08	9.97E-11	4.27E-11	2.85E-12	5.70E-12	6.11E-12	8.55E-12
Acenaphthene	3.20E-03	3.41E-06	1.46E-06	9.75E-08	1.95E-07	2.09E-07	2.93E-07
Acenaphthylene	1.20E-03	1.28E-06	5.49E-07	3.66E-08	7.31E-08	7.84E-08	1.10E-07
Anthracene	2.60E-03	2.77E-06	1.19E-06	7.92E-08	1.58E-07	1.70E-07	2.38E-07
Benzo(a)pyrene equivalents	2.70E-04	2.88E-07	1.23E-07	8.23E-09	1.65E-08	1.76E-08	2.47E-08
Benzo(e)pyrene	1.25E-05	1.33E-08	5.71E-09	3.81E-10	7.62E-10	8.16E-10	1.14E-09
Benzo(g,h,i)perylene	2.40E-04	2.56E-07	1.10E-07	7.31E-09	1.46E-08	1.57E-08	2.19E-08
Dibenzofuran	1.60E-03	1.71E-06	7.31E-07	4.88E-08	9.75E-08	1.04E-07	1.46E-07
Fluoranthene	3.10E-03	3.31E-06	1.42E-06	9.45E-08	1.89E-07	2.02E-07	2.83E-07
Fluorene	2.90E-03	3.09E-06	1.33E-06	8.84E-08	1.77E-07	1.89E-07	2.65E-07
1-Methylnaphthalene	1.20E-03	1.28E-06	5.49E-07	3.66E-08	7.31E-08	7.84E-08	1.10E-07
2-Methylnaphthalene	1.60E-03	1.71E-06	7.31E-07	4.88E-08	9.75E-08	1.04E-07	1.46E-07
Naphthalene	1.80E-03	1.92E-06	8.23E-07	5.49E-08	1.10E-07	1.18E-07	1.65E-07
Perylene	3.00E-04	3.20E-07	1.37E-07	9.14E-09	1.83E-08	1.96E-08	2.74E-08
Phenanthrene	2.80E-03	2.99E-06	1.28E-06	8.53E-08	1.71E-07	1.83E-07	2.56E-07
Pyrene	1.25E-05	1.33E-08	5.71E-09	3.81E-10	7.62E-10	8.16E-10	1.14E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Bass
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	9.35E-08	9.97E-11	4.27E-11	2.85E-12	5.70E-12	6.11E-12	8.55E-12
Acenaphthene	8.30E-04	8.85E-07	3.79E-07	2.53E-08	5.06E-08	5.42E-08	7.59E-08
Acenaphthylene	2.89E-05	3.08E-08	1.32E-08	8.81E-10	1.76E-09	1.89E-09	2.64E-09
Anthracene	7.21E-05	7.69E-08	3.30E-08	2.20E-09	4.39E-09	4.71E-09	6.59E-09
Benzo(a)pyrene equivalents	6.70E-05	7.15E-08	3.06E-08	2.04E-09	4.08E-09	4.38E-09	6.13E-09
Benzo(e)pyrene	2.89E-05	3.08E-08	1.32E-08	8.81E-10	1.76E-09	1.89E-09	2.64E-09
Benzo(g,h,i)perylene	2.89E-05	3.08E-08	1.32E-08	8.81E-10	1.76E-09	1.89E-09	2.64E-09
Dibenzofuran	5.17E-04	5.51E-07	2.36E-07	1.58E-08	3.15E-08	3.38E-08	4.73E-08
Fluoranthene	5.80E-04	6.19E-07	2.65E-07	1.77E-08	3.54E-08	3.79E-08	5.30E-08
Fluorene	5.11E-04	5.45E-07	2.34E-07	1.56E-08	3.11E-08	3.34E-08	4.67E-08
1-Methylnaphthalene	2.12E-04	2.26E-07	9.69E-08	6.46E-09	1.29E-08	1.38E-08	1.94E-08
2-Methylnaphthalene	3.01E-04	3.21E-07	1.38E-07	9.17E-09	1.83E-08	1.97E-08	2.75E-08
Naphthalene	4.60E-04	4.91E-07	2.10E-07	1.40E-08	2.80E-08	3.00E-08	4.21E-08
Perylene	2.89E-05	3.08E-08	1.32E-08	8.81E-10	1.76E-09	1.89E-09	2.64E-09
Phenanthrene	6.83E-04	7.29E-07	3.12E-07	2.08E-08	4.16E-08	4.46E-08	6.24E-08
Pyrene	1.75E-04	1.87E-07	8.00E-08	5.33E-09	1.07E-08	1.14E-08	1.60E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	2.86E-06	3.05E-09	1.31E-09	8.72E-11	1.74E-10	1.87E-10	2.61E-10
Acenaphthene	7.70E-04	8.21E-07	3.52E-07	2.35E-08	4.69E-08	5.03E-08	7.04E-08
Acenaphthylene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08
Anthracene	9.00E-04	9.60E-07	4.11E-07	2.74E-08	5.49E-08	5.88E-08	8.23E-08
Benzo(a)pyrene equivalents	9.01E-04	9.61E-07	4.12E-07	2.75E-08	5.49E-08	5.88E-08	8.24E-08
Benzo(e)pyrene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
Benzo(g,h,i)perylene	4.75E-04	5.07E-07	2.17E-07	1.45E-08	2.90E-08	3.10E-08	4.34E-08
Dibenzofuran	5.20E-04	5.55E-07	2.38E-07	1.58E-08	3.17E-08	3.40E-08	4.75E-08
Fluoranthene	2.45E-04	2.61E-07	1.12E-07	7.47E-09	1.49E-08	1.60E-08	2.24E-08
Fluorene	2.10E-03	2.24E-06	9.60E-07	6.40E-08	1.28E-07	1.37E-07	1.92E-07
1-Methylnaphthalene	1.70E-03	1.81E-06	7.77E-07	5.18E-08	1.04E-07	1.11E-07	1.55E-07
2-Methylnaphthalene	2.40E-03	2.56E-06	1.10E-06	7.31E-08	1.46E-07	1.57E-07	2.19E-07
Naphthalene	2.10E-03	2.24E-06	9.60E-07	6.40E-08	1.28E-07	1.37E-07	1.92E-07
Perylene	6.00E-04	6.40E-07	2.74E-07	1.83E-08	3.66E-08	3.92E-08	5.49E-08
Phenanthrene	4.30E-03	4.59E-06	1.97E-06	1.31E-07	2.62E-07	2.81E-07	3.93E-07
Pyrene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	2.86E-06	3.05E-09	1.31E-09	8.72E-11	1.74E-10	1.87E-10	2.61E-10
Acenaphthene	2.69E-04	2.87E-07	1.23E-07	8.20E-09	1.64E-08	1.76E-08	2.46E-08
Acenaphthylene	9.05E-05	9.65E-08	4.14E-08	2.76E-09	5.52E-09	5.91E-09	8.27E-09
Anthracene	1.46E-04	1.56E-07	6.67E-08	4.45E-09	8.90E-09	9.53E-09	1.33E-08
Benzo(a)pyrene equivalents	5.30E-05	5.65E-08	2.42E-08	1.62E-09	3.23E-09	3.46E-09	4.85E-09
Benzo(e)pyrene	2.31E-05	2.46E-08	1.06E-08	7.04E-10	1.41E-09	1.51E-09	2.11E-09
Benzo(g,h,i)perylene	2.31E-05	2.46E-08	1.06E-08	7.04E-10	1.41E-09	1.51E-09	2.11E-09
Dibenzofuran	3.66E-04	3.90E-07	1.67E-07	1.12E-08	2.23E-08	2.39E-08	3.35E-08
Fluoranthene	4.58E-04	4.89E-07	2.09E-07	1.40E-08	2.79E-08	2.99E-08	4.19E-08
Fluorene	3.95E-04	4.21E-07	1.81E-07	1.20E-08	2.41E-08	2.58E-08	3.61E-08
1-Methylnaphthalene	2.58E-04	2.75E-07	1.18E-07	7.86E-09	1.57E-08	1.68E-08	2.36E-08
2-Methylnaphthalene	4.84E-04	5.16E-07	2.21E-07	1.48E-08	2.95E-08	3.16E-08	4.43E-08
Naphthalene	5.88E-04	6.27E-07	2.69E-07	1.79E-08	3.58E-08	3.84E-08	5.38E-08
Perylene	2.31E-05	2.46E-08	1.06E-08	7.04E-10	1.41E-09	1.51E-09	2.11E-09
Phenanthrene	8.03E-04	8.57E-07	3.67E-07	2.45E-08	4.89E-08	5.24E-08	7.34E-08
Pyrene	2.12E-04	2.26E-07	9.69E-08	6.46E-09	1.29E-08	1.38E-08	1.94E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.44E-08	7.94E-11	3.40E-11	2.27E-12	4.53E-12	4.86E-12	6.80E-12
Acenaphthene	9.70E-04	1.03E-06	4.43E-07	2.96E-08	5.91E-08	6.33E-08	8.87E-08
Acenaphthylene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08
Anthracene	1.45E-03	1.55E-06	6.63E-07	4.42E-08	8.84E-08	9.47E-08	1.33E-07
Benzo(a)pyrene equivalents	9.01E-04	9.61E-07	4.12E-07	2.75E-08	5.49E-08	5.88E-08	8.24E-08
Benzo(e)pyrene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
Benzo(g,h,i)perylene	4.75E-04	5.07E-07	2.17E-07	1.45E-08	2.90E-08	3.10E-08	4.34E-08
Dibenzofuran	6.70E-04	7.15E-07	3.06E-07	2.04E-08	4.08E-08	4.38E-08	6.13E-08
Fluoranthene	2.45E-04	2.61E-07	1.12E-07	7.47E-09	1.49E-08	1.60E-08	2.24E-08
Fluorene	2.00E-03	2.13E-06	9.14E-07	6.10E-08	1.22E-07	1.31E-07	1.83E-07
1-Methylnaphthalene	1.80E-03	1.92E-06	8.23E-07	5.49E-08	1.10E-07	1.18E-07	1.65E-07
2-Methylnaphthalene	2.00E-03	2.13E-06	9.14E-07	6.10E-08	1.22E-07	1.31E-07	1.83E-07
Naphthalene	1.60E-03	1.71E-06	7.31E-07	4.88E-08	9.75E-08	1.04E-07	1.46E-07
Perylene	6.00E-04	6.40E-07	2.74E-07	1.83E-08	3.66E-08	3.92E-08	5.49E-08
Phenanthrene	2.50E-03	2.67E-06	1.14E-06	7.62E-08	1.52E-07	1.63E-07	2.29E-07
Pyrene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.44E-08	7.94E-11	3.40E-11	2.27E-12	4.53E-12	4.86E-12	6.80E-12
Acenaphthene	2.74E-04	2.92E-07	1.25E-07	8.35E-09	1.67E-08	1.79E-08	2.51E-08
Acenaphthylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Anthracene	8.58E-05	9.15E-08	3.92E-08	2.61E-09	5.23E-09	5.60E-09	7.84E-09
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Benzo(g,h,i)perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Dibenzofuran	3.63E-04	3.87E-07	1.66E-07	1.11E-08	2.21E-08	2.37E-08	3.32E-08
Fluoranthene	6.84E-04	7.30E-07	3.13E-07	2.08E-08	4.17E-08	4.47E-08	6.25E-08
Fluorene	3.31E-04	3.53E-07	1.51E-07	1.01E-08	2.02E-08	2.16E-08	3.03E-08
1-Methylnaphthalene	1.67E-04	1.78E-07	7.63E-08	5.09E-09	1.02E-08	1.09E-08	1.53E-08
2-Methylnaphthalene	3.39E-04	3.62E-07	1.55E-07	1.03E-08	2.07E-08	2.21E-08	3.10E-08
Naphthalene	4.80E-04	5.12E-07	2.19E-07	1.46E-08	2.93E-08	3.13E-08	4.39E-08
Perylene	2.45E-05	2.61E-08	1.12E-08	7.47E-10	1.49E-09	1.60E-09	2.24E-09
Phenanthrene	8.22E-04	8.77E-07	3.76E-07	2.51E-08	5.01E-08	5.37E-08	7.52E-08
Pyrene	2.60E-04	2.77E-07	1.19E-07	7.92E-09	1.58E-08	1.70E-08	2.38E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.12E-07	1.19E-10	5.12E-11	3.41E-12	6.83E-12	7.31E-12	1.02E-11
Acenaphthene	4.70E-03	5.01E-06	2.15E-06	1.43E-07	2.86E-07	3.07E-07	4.30E-07
Acenaphthylene	2.30E-04	2.45E-07	1.05E-07	7.01E-09	1.40E-08	1.50E-08	2.10E-08
Anthracene	1.10E-03	1.17E-06	5.03E-07	3.35E-08	6.70E-08	7.18E-08	1.01E-07
Benzo(a)pyrene equivalents	9.01E-04	9.61E-07	4.12E-07	2.75E-08	5.49E-08	5.88E-08	8.24E-08
Benzo(e)pyrene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
Benzo(g,h,i)perylene	4.75E-04	5.07E-07	2.17E-07	1.45E-08	2.90E-08	3.10E-08	4.34E-08
Dibenzofuran	2.30E-03	2.45E-06	1.05E-06	7.01E-08	1.40E-07	1.50E-07	2.10E-07
Fluoranthene	2.65E-03	2.83E-06	1.21E-06	8.08E-08	1.62E-07	1.73E-07	2.42E-07
Fluorene	4.50E-03	4.80E-06	2.06E-06	1.37E-07	2.74E-07	2.94E-07	4.11E-07
1-Methylnaphthalene	1.60E-03	1.71E-06	7.31E-07	4.88E-08	9.75E-08	1.04E-07	1.46E-07
2-Methylnaphthalene	2.60E-03	2.77E-06	1.19E-06	7.92E-08	1.58E-07	1.70E-07	2.38E-07
Naphthalene	1.80E-03	1.92E-06	8.23E-07	5.49E-08	1.10E-07	1.18E-07	1.65E-07
Perylene	6.00E-04	6.40E-07	2.74E-07	1.83E-08	3.66E-08	3.92E-08	5.49E-08
Phenanthrene	5.80E-03	6.19E-06	2.65E-06	1.77E-07	3.54E-07	3.79E-07	5.30E-07
Pyrene	2.75E-03	2.93E-06	1.26E-06	8.38E-08	1.68E-07	1.80E-07	2.51E-07

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	1.12E-07	1.19E-10	5.12E-11	3.41E-12	6.83E-12	7.31E-12	1.02E-11
Acenaphthene	1.60E-03	1.71E-06	7.31E-07	4.88E-08	9.75E-08	1.04E-07	1.46E-07
Acenaphthylene	2.42E-05	2.58E-08	1.11E-08	7.38E-10	1.48E-09	1.58E-09	2.21E-09
Anthracene	2.37E-04	2.53E-07	1.08E-07	7.22E-09	1.44E-08	1.55E-08	2.17E-08
Benzo(a)pyrene equivalents	5.60E-05	5.97E-08	2.56E-08	1.71E-09	3.41E-09	3.66E-09	5.12E-09
Benzo(e)pyrene	2.42E-05	2.58E-08	1.11E-08	7.38E-10	1.48E-09	1.58E-09	2.21E-09
Benzo(g,h,i)perylene	2.42E-05	2.58E-08	1.11E-08	7.38E-10	1.48E-09	1.58E-09	2.21E-09
Dibenzofuran	1.09E-03	1.16E-06	4.98E-07	3.32E-08	6.64E-08	7.12E-08	9.97E-08
Fluoranthene	1.50E-03	1.60E-06	6.86E-07	4.57E-08	9.14E-08	9.80E-08	1.37E-07
Fluorene	1.35E-03	1.44E-06	6.17E-07	4.11E-08	8.23E-08	8.82E-08	1.23E-07
1-Methylnaphthalene	2.95E-04	3.15E-07	1.35E-07	8.99E-09	1.80E-08	1.93E-08	2.70E-08
2-Methylnaphthalene	4.76E-04	5.08E-07	2.18E-07	1.45E-08	2.90E-08	3.11E-08	4.35E-08
Naphthalene	5.93E-04	6.33E-07	2.71E-07	1.81E-08	3.61E-08	3.87E-08	5.42E-08
Perylene	2.42E-05	2.58E-08	1.11E-08	7.38E-10	1.48E-09	1.58E-09	2.21E-09
Phenanthrene	1.89E-03	2.02E-06	8.64E-07	5.76E-08	1.15E-07	1.23E-07	1.73E-07
Pyrene	4.21E-04	4.49E-07	1.92E-07	1.28E-08	2.57E-08	2.75E-08	3.85E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.75E-07	4.00E-10	1.71E-10	1.14E-11	2.29E-11	2.45E-11	3.43E-11
Acenaphthene	8.00E-03	8.53E-06	3.66E-06	2.44E-07	4.88E-07	5.22E-07	7.31E-07
Acenaphthylene	1.20E-03	1.28E-06	5.49E-07	3.66E-08	7.31E-08	7.84E-08	1.10E-07
Anthracene	6.00E-03	6.40E-06	2.74E-06	1.83E-07	3.66E-07	3.92E-07	5.49E-07
Benzo(a)pyrene equivalents	3.68E-03	3.93E-06	1.68E-06	1.12E-07	2.24E-07	2.40E-07	3.36E-07
Benzo(e)pyrene	5.00E-04	5.33E-07	2.29E-07	1.52E-08	3.05E-08	3.27E-08	4.57E-08
Benzo(g,h,i)perylene	9.50E-04	1.01E-06	4.34E-07	2.90E-08	5.79E-08	6.20E-08	8.69E-08
Dibenzofuran	5.20E-03	5.55E-06	2.38E-06	1.58E-07	3.17E-07	3.40E-07	4.75E-07
Fluoranthene	7.70E-03	8.21E-06	3.52E-06	2.35E-07	4.69E-07	5.03E-07	7.04E-07
Fluorene	8.40E-03	8.96E-06	3.84E-06	2.56E-07	5.12E-07	5.49E-07	7.68E-07
1-Methylnaphthalene	5.00E-03	5.33E-06	2.29E-06	1.52E-07	3.05E-07	3.27E-07	4.57E-07
2-Methylnaphthalene	5.50E-03	5.87E-06	2.51E-06	1.68E-07	3.35E-07	3.59E-07	5.03E-07
Naphthalene	3.80E-03	4.05E-06	1.74E-06	1.16E-07	2.32E-07	2.48E-07	3.47E-07
Perylene	1.40E-03	1.49E-06	6.40E-07	4.27E-08	8.53E-08	9.14E-08	1.28E-07
Phenanthrene	8.40E-03	8.96E-06	3.84E-06	2.56E-07	5.12E-07	5.49E-07	7.68E-07
Pyrene	3.25E-03	3.47E-06	1.49E-06	9.90E-08	1.98E-07	2.12E-07	2.97E-07

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.75E-07	4.00E-10	1.71E-10	1.14E-11	2.29E-11	2.45E-11	3.43E-11
Acenaphthene	2.57E-03	2.74E-06	1.17E-06	7.83E-08	1.57E-07	1.68E-07	2.35E-07
Acenaphthylene	2.34E-05	2.50E-08	1.07E-08	7.13E-10	1.43E-09	1.53E-09	2.14E-09
Anthracene	3.68E-04	3.93E-07	1.68E-07	1.12E-08	2.24E-08	2.40E-08	3.36E-08
Benzo(a)pyrene equivalents	6.27E-04	6.69E-07	2.87E-07	1.91E-08	3.82E-08	4.09E-08	5.73E-08
Benzo(e)pyrene	2.34E-05	2.50E-08	1.07E-08	7.13E-10	1.43E-09	1.53E-09	2.14E-09
Benzo(g,h,i)perylene	2.34E-05	2.50E-08	1.07E-08	7.13E-10	1.43E-09	1.53E-09	2.14E-09
Dibenzofuran	1.14E-03	1.22E-06	5.21E-07	3.47E-08	6.95E-08	7.44E-08	1.04E-07
Fluoranthene	1.29E-03	1.38E-06	5.90E-07	3.93E-08	7.86E-08	8.42E-08	1.18E-07
Fluorene	1.06E-03	1.13E-06	4.85E-07	3.23E-08	6.46E-08	6.92E-08	9.69E-08
1-Methylnaphthalene	9.69E-04	1.03E-06	4.43E-07	2.95E-08	5.91E-08	6.33E-08	8.86E-08
2-Methylnaphthalene	1.41E-03	1.50E-06	6.45E-07	4.30E-08	8.59E-08	9.21E-08	1.29E-07
Naphthalene	1.49E-03	1.59E-06	6.81E-07	4.54E-08	9.08E-08	9.73E-08	1.36E-07
Perylene	2.34E-05	2.50E-08	1.07E-08	7.13E-10	1.43E-09	1.53E-09	2.14E-09
Phenanthrene	1.74E-03	1.86E-06	7.95E-07	5.30E-08	1.06E-07	1.14E-07	1.59E-07
Pyrene	3.46E-04	3.69E-07	1.58E-07	1.05E-08	2.11E-08	2.26E-08	3.16E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.15E-07	3.36E-10	1.44E-10	9.60E-12	1.92E-11	2.06E-11	2.88E-11
Acenaphthene	5.80E-03	6.19E-06	2.65E-06	1.77E-07	3.54E-07	3.79E-07	5.30E-07
Acenaphthylene	4.60E-04	4.91E-07	2.10E-07	1.40E-08	2.80E-08	3.00E-08	4.21E-08
Anthracene	4.90E-03	5.23E-06	2.24E-06	1.49E-07	2.99E-07	3.20E-07	4.48E-07
Benzo(a)pyrene equivalents	3.48E-03	3.71E-06	1.59E-06	1.06E-07	2.12E-07	2.27E-07	3.18E-07
Benzo(e)pyrene	5.00E-04	5.33E-07	2.29E-07	1.52E-08	3.05E-08	3.27E-08	4.57E-08
Benzo(g,h,i)perylene	9.50E-04	1.01E-06	4.34E-07	2.90E-08	5.79E-08	6.20E-08	8.69E-08
Dibenzofuran	3.10E-03	3.31E-06	1.42E-06	9.45E-08	1.89E-07	2.02E-07	2.83E-07
Fluoranthene	5.50E-03	5.87E-06	2.51E-06	1.68E-07	3.35E-07	3.59E-07	5.03E-07
Fluorene	6.90E-03	7.36E-06	3.15E-06	2.10E-07	4.21E-07	4.51E-07	6.31E-07
1-Methylnaphthalene	3.40E-03	3.63E-06	1.55E-06	1.04E-07	2.07E-07	2.22E-07	3.11E-07
2-Methylnaphthalene	1.40E-03	1.49E-06	6.40E-07	4.27E-08	8.53E-08	9.14E-08	1.28E-07
Naphthalene	1.50E-03	1.60E-06	6.86E-07	4.57E-08	9.14E-08	9.80E-08	1.37E-07
Perylene	1.40E-03	1.49E-06	6.40E-07	4.27E-08	8.53E-08	9.14E-08	1.28E-07
Phenanthrene	6.30E-03	6.72E-06	2.88E-06	1.92E-07	3.84E-07	4.11E-07	5.76E-07
Pyrene	2.70E-03	2.88E-06	1.23E-06	8.23E-08	1.65E-07	1.76E-07	2.47E-07

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	3.15E-07	3.36E-10	1.44E-10	9.60E-12	1.92E-11	2.06E-11	2.88E-11
Acenaphthene	1.37E-03	1.46E-06	6.26E-07	4.18E-08	8.35E-08	8.95E-08	1.25E-07
Acenaphthylene	2.26E-05	2.41E-08	1.03E-08	6.89E-10	1.38E-09	1.48E-09	2.07E-09
Anthracene	9.64E-05	1.03E-07	4.41E-08	2.94E-09	5.88E-09	6.30E-09	8.81E-09
Benzo(a)pyrene equivalents	5.20E-05	5.55E-08	2.38E-08	1.58E-09	3.17E-09	3.40E-09	4.75E-09
Benzo(e)pyrene	2.26E-05	2.41E-08	1.03E-08	6.89E-10	1.38E-09	1.48E-09	2.07E-09
Benzo(g,h,i)perylene	2.26E-05	2.41E-08	1.03E-08	6.89E-10	1.38E-09	1.48E-09	2.07E-09
Dibenzofuran	2.26E-05	2.41E-08	1.03E-08	6.89E-10	1.38E-09	1.48E-09	2.07E-09
Fluoranthene	9.25E-04	9.87E-07	4.23E-07	2.82E-08	5.64E-08	6.04E-08	8.46E-08
Fluorene	7.98E-04	8.51E-07	3.65E-07	2.43E-08	4.86E-08	5.21E-08	7.30E-08
1-Methylnaphthalene	3.07E-04	3.27E-07	1.40E-07	9.36E-09	1.87E-08	2.00E-08	2.81E-08
2-Methylnaphthalene	5.15E-04	5.49E-07	2.35E-07	1.57E-08	3.14E-08	3.36E-08	4.71E-08
Naphthalene	7.40E-04	7.89E-07	3.38E-07	2.26E-08	4.51E-08	4.83E-08	6.77E-08
Perylene	2.26E-05	2.41E-08	1.03E-08	6.89E-10	1.38E-09	1.48E-09	2.07E-09
Phenanthrene	9.79E-04	1.04E-06	4.48E-07	2.98E-08	5.97E-08	6.39E-08	8.95E-08
Pyrene	2.84E-04	3.03E-07	1.30E-07	8.66E-09	1.73E-08	1.85E-08	2.60E-08

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Tabby Catfish
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	not analyzed	na	na	na	na	na	na
Acenaphthene	not analyzed	na	na	na	na	na	na
Acenaphthylene	not analyzed	na	na	na	na	na	na
Anthracene	not analyzed	na	na	na	na	na	na
Benzo(a)pyrene equivalents	not analyzed	na	na	na	na	na	na
Benzo(e)pyrene	not analyzed	na	na	na	na	na	na
Benzo(g,h,i)perylene	not analyzed	na	na	na	na	na	na
Dibenzofuran	not analyzed	na	na	na	na	na	na
Fluoranthene	not analyzed	na	na	na	na	na	na
Fluorene	not analyzed	na	na	na	na	na	na
1-Methylnaphthalene	not analyzed	na	na	na	na	na	na
2-Methylnaphthalene	not analyzed	na	na	na	na	na	na
Naphthalene	not analyzed	na	na	na	na	na	na
Perylene	not analyzed	na	na	na	na	na	na
Phenanthrene	not analyzed	na	na	na	na	na	na
Pyrene	not analyzed	na	na	na	na	na	na

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: Tabby Catfish
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc.	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
	mg/kg	Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	5.79E-08	6.18E-11	2.65E-11	1.76E-12	3.53E-12	3.78E-12	5.29E-12
Acenaphthene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Acenaphthylene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Anthracene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Benzo(a)pyrene equivalents	1.15E-04	1.23E-07	5.26E-08	3.50E-09	7.01E-09	7.51E-09	1.05E-08
Benzo(e)pyrene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Benzo(g,h,i)perylene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Dibenzofuran	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Fluoranthene	5.10E-08	5.44E-11	2.33E-11	1.55E-12	3.11E-12	3.33E-12	4.66E-12
Fluorene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
1-Methylnaphthalene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
2-Methylnaphthalene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Naphthalene	5.27E-08	5.62E-11	2.41E-11	1.61E-12	3.21E-12	3.44E-12	4.82E-12
Perylene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Phenanthrene	2.48E-08	2.65E-11	1.13E-11	7.56E-13	1.51E-12	1.62E-12	2.27E-12
Pyrene	3.52E-08	3.75E-11	1.61E-11	1.07E-12	2.15E-12	2.30E-12	3.22E-12

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: White Trout
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.55E-08	8.05E-11	3.45E-11	2.30E-12	4.60E-12	4.93E-12	6.90E-12
Acenaphthene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
Acenaphthylene	9.20E-05	9.81E-08	4.21E-08	2.80E-09	5.61E-09	6.01E-09	8.41E-09
Anthracene	4.60E-05	4.91E-08	2.10E-08	1.40E-09	2.80E-09	3.00E-09	4.21E-09
Benzo(a)pyrene equivalents	9.00E-05	9.60E-08	4.11E-08	2.74E-09	5.49E-09	5.88E-09	8.23E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	4.75E-05	5.07E-08	2.17E-08	1.45E-09	2.90E-09	3.10E-09	4.34E-09
Dibenzofuran	1.90E-04	2.03E-07	8.69E-08	5.79E-09	1.16E-08	1.24E-08	1.74E-08
Fluoranthene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
Fluorene	3.40E-04	3.63E-07	1.55E-07	1.04E-08	2.07E-08	2.22E-08	3.11E-08
1-Methylnaphthalene	2.50E-04	2.67E-07	1.14E-07	7.62E-09	1.52E-08	1.63E-08	2.29E-08
2-Methylnaphthalene	3.60E-04	3.84E-07	1.65E-07	1.10E-08	2.19E-08	2.35E-08	3.29E-08
Naphthalene	4.60E-04	4.91E-07	2.10E-07	1.40E-08	2.80E-08	3.00E-08	4.21E-08
Perylene	6.00E-05	6.40E-08	2.74E-08	1.83E-09	3.66E-09	3.92E-09	5.49E-09
Phenanthrene	3.50E-04	3.73E-07	1.60E-07	1.07E-08	2.13E-08	2.29E-08	3.20E-08
Pyrene	8.20E-05	8.75E-08	3.75E-08	2.50E-09	5.00E-09	5.36E-09	7.50E-09

na - not applicable

Table 3-10
Recreational Fish Consumption by Age Group, Fish Species, Location of Catch, and Laboratory

Fish Species: White Trout
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Average Daily Intake (mg/kg/day) Receptor		Lifetime Average Daily Intake (mg/kg/day) Receptor Age Range (years)			
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16
Total Dioxin toxic equivalence	7.55E-08	8.05E-11	3.45E-11	2.30E-12	4.60E-12	4.93E-12	6.90E-12
Acenaphthene	1.70E-04	1.81E-07	7.77E-08	5.18E-09	1.04E-08	1.11E-08	1.55E-08
Acenaphthylene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Anthracene	1.49E-04	1.59E-07	6.81E-08	4.54E-09	9.08E-09	9.73E-09	1.36E-08
Benzo(a)pyrene equivalents	5.70E-05	6.08E-08	2.61E-08	1.74E-09	3.47E-09	3.72E-09	5.21E-09
Benzo(e)pyrene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Benzo(g,h,i)perylene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Dibenzofuran	6.31E-04	6.73E-07	2.88E-07	1.92E-08	3.85E-08	4.12E-08	5.77E-08
Fluoranthene	4.51E-04	4.81E-07	2.06E-07	1.37E-08	2.75E-08	2.95E-08	4.12E-08
Fluorene	4.65E-04	4.96E-07	2.13E-07	1.42E-08	2.83E-08	3.04E-08	4.25E-08
1-Methylnaphthalene	1.30E-04	1.39E-07	5.94E-08	3.96E-09	7.92E-09	8.49E-09	1.19E-08
2-Methylnaphthalene	2.51E-04	2.68E-07	1.15E-07	7.65E-09	1.53E-08	1.64E-08	2.29E-08
Naphthalene	3.18E-04	3.39E-07	1.45E-07	9.69E-09	1.94E-08	2.08E-08	2.91E-08
Perylene	2.50E-05	2.67E-08	1.14E-08	7.62E-10	1.52E-09	1.63E-09	2.29E-09
Phenanthrene	2.02E-03	2.15E-06	9.23E-07	6.16E-08	1.23E-07	1.32E-07	1.85E-07
Pyrene	2.12E-04	2.26E-07	9.69E-08	6.46E-09	1.29E-08	1.38E-08	1.94E-08

na - not applicable

Table 4-1
Non-cancer Toxicity Data - Oral and Dermal

Chemical	Oral RfD	Units	GI ABS	Dermal RfD (1)	Units	Primary Target Organ	Source of RfD	Date (2)
Total Dioxin Equivalents*	7E-10	mg/kg/day	1	7E-10	mg/kg/day	Decreased sperm count/motility; Thyroid	IRIS	February 2012
Acenaphthene	6E-02	mg/kg/day	1	6E-02	mg/kg/day	Liver	IRIS	February 2012
Acenaphthylene	NA	NA	1	NA	NA	NA	NA	September 2012
Anthracene	3E-01	mg/kg/day	1	3E-01	mg/kg/day	None observed	IRIS	February 2012
Benzo(a)anthracene	NA	NA	1	NA	NA	NA	NA	September 2012
Benzo(a)pyrene	NA	NA	1	NA	NA	NA	NA	September 2012
Benzo(b)fluoranthene	NA	NA	1	NA	NA	NA	NA	September 2012
Benzo(e)pyrene	NA	NA	1	NA	NA	NA	NA	September 2012
Benzo(g,h,i)perylene	NA	NA	1	NA	NA	NA	NA	September 2012
Benzo(k)fluoranthene	NA	NA	1	NA	NA	NA	NA	September 2012
Chrysene	NA	NA	1	NA	NA	NA	NA	September 2012
Dibenzo(a,h)anthracene	NA	NA	1	NA	NA	NA	NA	September 2012
Dibenzofuran	[1E-03]**	NA	1	NA	NA	Reduced growth and organ weight	PPRTV	September 2012
Fluoranthene	4E-02	mg/kg/day	1	4E-02	mg/kg/day	Kidney, Liver, Blood	IRIS	February 2012
Fluorene	4E-02	mg/kg/day	1	4E-02	mg/kg/day	Blood	IRIS	February 2012
Indeno(1,2,3-cd)pyrene	NA	NA	1	NA	NA	NA	NA	September 2012
1-Methylnaphthalene	7E-02	mg/kg/day	1	7E-02	mg/kg/day	Respiratory	ATSDR	February 2012
2-Methylnaphthalene	4E-03	mg/kg/day	1	4E-03	mg/kg/day	Lung	IRIS	February 2012
Naphthalene	2E-02	mg/kg/day	1	2E-02	mg/kg/day	Decreased body weight	IRIS	February 2012
Perylene	NA	NA	1	NA	NA	NA	NA	November 2011
Phenanthrene	NA	NA	1	NA	NA	NA	NA	November 2011
Pyrene	3E-02	mg/kg/day	1	3E-02	mg/kg/day	Kidney	IRIS	February 2012

*Sum of all 2,3,7,8-substituted 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents calculated according to USEPA guidelines

**"Screening value" according to USEPA PPRTV database; see Section 5.4.2 of report

NA = Not Available

USEPA = USEPA Regional Screening Levels (RSLs) Table, November 2011

IRIS = USEPA Integrated Risk Information System

PPRTV = Provisional Peer Reviewed Toxicity Value

(1) Dermal RfD calculated by multiplying the oral RfD by the gastrointestinal absorption (GI ABS)

(2) Date source was searched or last updated

Table 4-2
Cancer Toxicity Data - Oral and Dermal

Chemical	Oral Cancer Slope Factor (kg-day/mg)	GI ABS	Dermal Cancer Slope Factor (kg-day/mg) (1)	Weight of Evidence/ Cancer Guideline Description	Primary Target Organ	Source of Toxicity Data	Dates of SF (2)
Total Dioxin Equivalents*	1.3E+05	1	1.3E+05	NA	NA	California	September 2012
Acenaphthene	NA	1	NA	NA	NA	NA	NA
Acenaphthylene	NA	1	NA	D	NA	IRIS	February 2012
Anthracene	NA	1	NA	D	NA	IRIS	February 2012
Benzo(a)pyrene equivalents**	7.3E+00	1	7.3E+00	B2	Skin/Lung	IRIS	February 2012
Benzo(e)pyrene	NA	1	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	1	NA	D	NA	IRIS	February 2012
Dibenzofuran	NA	1	NA	D	NA	IRIS	February 2012
Fluoranthene	NA	1	NA	D	NA	IRIS	February 2012
Fluorene	NA	1	NA	D	NA	IRIS	February 2012
1-Methylnaphthalene	2.9E-02	1	2.9E-02	NA	NA	PPRTV	September 2012
2-Methylnaphthalene	NA	1	NA	NA	NA	NA	NA
Naphthalene	NA	1	NA	C	NA	IRIS	February 2012
Perylene	NA	1	NA	NA	NA	NA	NA
Phenanthrene	NA	1	NA	D	NA	IRIS	February 2012
Pyrene	NA	1	NA	D	NA	IRIS	February 2012

*Sum of all 2,3,7,8-substituted 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents calculated according to USEPA guidelines; see Section 2.0 of report for discussion

**Sum of 7 potentially carcinogenic polycyclic aromatic hydrocarbons expressed in terms of relative potency to benzo(a)pyrene; see Section 2.0 of report for discussion

NA - Not available

USEPA = USEPA RSL Table, November 2011

IRIS = USEPA Integrated Risk Information System

(1) Dermal RfD calculated by dividing the oral RfD by the gastrointestinal absorption (GI ABS)

(2) Date IRIS was searched or source was published.

USEPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

Table 5-1a
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Child Recreational User of Turkey Creek-Current and Future Direct Exposure to Surface Water
Upstream of Site

Chemical	Surface Water Exposure Point Concentration mg/L	Hazard Quotient Ingestion	Lifetime Cancer Risk Ingestion
Total Dioxin toxic equivalence	3.03E-09	2.7E-04	3.5E-09
Benzo(a)pyrene equivalents	4.20E-06	NA	8.2E-10
Sum of Risk for Exposure Pathway		2.7E-04	4.3E-09

Table 5-1b
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Child Recreational User of Turkey Creek-Current and Future Direct Exposure to Surface Water
Adjacent to or Downstream of Site

Chemical	Surface Water Exposure Point Concentration mg/L	Hazard Quotient Ingestion	Lifetime Cancer Risk Ingestion
Total Dioxin toxic equivalence	1.68E-09	1.5E-04	1.9E-09
Benzo(a)pyrene equivalents	4.20E-06	NA	8.2E-10
Sum of Risk for Exposure Pathway		1.5E-04	2.7E-09

Table 5-2
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Child Recreational User of Turkey Creek-Current and Future Exposure to Sediment
Adjacent to or Downstream of Site

Chemical	Sediment Exposure Point Concentration mg/kg	Hazard Quotient		Lifetime Cancer Risks	
		Ingestion	Dermal	Ingestion	Dermal
Total Dioxin toxic equivalence	6.86E-06	1.2E-03	4.8E-04	1.6E-08	6.3E-09
Benzo(a)pyrene equivalents	1.40E+00	NA	NA	5.5E-07	9.4E-07
Naphthalene	3.57E+01	2.2E-04	3.8E-04	NC	NC
Sum of Risk for Exposure Pathway		1.4E-03	8.6E-04	5.7E-07	9.5E-07
Sum of Risks for Ingestion and Dermal Exposure Pathways		2.3E-03		1.5E-06	

NA - not available; toxicity values unavailable to calculate hazard quotient

NC - not carcinogenic

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Atlantic Croaker
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	2.34E-07	3.6E-01	1.5E-01	9.3E-07	1.9E-06	2.0E-06	2.8E-06	7.5E-06
Acenaphthene	5.60E-05	1.0E-06	4.3E-07	NC	NC	NC	NC	NC
Acenaphthylene	1.10E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	4.20E-05	1.5E-07	6.4E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.80E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.40E-04	1.5E-04	6.4E-05	NC	NC	NC	NC	NC
Fluoranthene	1.40E-04	3.7E-06	1.6E-06	NC	NC	NC	NC	NC
Fluorene	2.60E-04	6.9E-06	3.0E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.80E-04	2.7E-06	1.2E-06	1.6E-10	3.2E-10	3.4E-10	4.8E-10	1.3E-09
2-Methylnaphthalene	1.60E-04	4.3E-05	1.8E-05	NC	NC	NC	NC	NC
Naphthalene	3.70E-04	2.0E-05	8.5E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.60E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	8.50E-05	3.0E-06	1.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		3.6E-01	1.5E-01	1.1E-06	2.0E-06	2.1E-06	2.8E-06	
Sum of Lifetime Cancer Risk for All Age Groups						8.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Atlantic Croaker
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	2.34E-07	3.6E-01	1.5E-01	9.3E-07	1.9E-06	2.0E-06	2.8E-06	7.5E-06
Acenaphthene	2.02E-04	3.6E-06	1.5E-06	NC	NC	NC	NC	NC
Acenaphthylene	4.39E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.77E-04	9.9E-07	4.2E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	1.01E-04	NA	NA	2.3E-07	1.4E-07	1.4E-07	6.7E-08	5.7E-07
Benzo(e)pyrene	4.39E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.39E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	8.36E-04	8.9E-04	3.8E-04	NC	NC	NC	NC	NC
Fluoranthene	1.09E-03	2.9E-05	1.3E-05	NC	NC	NC	NC	NC
Fluorene	6.11E-04	1.6E-05	7.0E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.35E-04	2.1E-06	8.8E-07	1.2E-10	2.4E-10	2.6E-10	3.6E-10	9.7E-10
2-Methylnaphthalene	2.42E-04	6.5E-05	2.8E-05	NC	NC	NC	NC	NC
Naphthalene	3.62E-04	1.9E-05	8.3E-06	NC	NC	NC	NC	NC
Perylene	4.39E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.53E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	5.52E-04	2.0E-05	8.4E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		3.6E-01	1.5E-01	1.2E-06	2.0E-06	2.1E-06	2.8E-06	
Sum of Lifetime Cancer Risk for All Age Groups						8.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Blue Catfish
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.45E-07	1.1E+00	4.9E-01	3.0E-06	5.9E-06	6.3E-06	8.9E-06	2.4E-05
Acenaphthene	4.00E-03	7.1E-05	3.1E-05	NC	NC	NC	NC	NC
Acenaphthylene	4.60E-03	NA	NA	NC	NC	NC	NC	NC
Anthracene	9.90E-03	3.5E-05	1.5E-05	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	2.25E-04	NA	NA	5.0E-07	3.0E-07	3.2E-07	1.5E-07	1.3E-06
Benzo(e)pyrene	5.00E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	9.50E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.80E-03	1.9E-03	8.2E-04	NC	NC	NC	NC	NC
Fluoranthene	6.80E-03	1.8E-04	7.8E-05	NC	NC	NC	NC	NC
Fluorene	2.50E-03	6.7E-05	2.9E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	9.80E-04	1.5E-05	6.4E-06	8.7E-10	1.7E-09	1.9E-09	2.6E-09	7.1E-09
2-Methylnaphthalene	1.30E-03	3.5E-04	1.5E-04	NC	NC	NC	NC	NC
Naphthalene	1.60E-03	8.5E-05	3.7E-05	NC	NC	NC	NC	NC
Perylene	1.20E-04	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.30E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.70E-03	9.6E-05	4.1E-05	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.1E+00	4.9E-01	3.5E-06	6.2E-06	6.6E-06	9.0E-06	
Sum of Lifetime Cancer Risk for All Age Groups						2.5E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Blue Catfish
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.45E-07	1.1E+00	4.9E-01	3.0E-06	5.9E-06	6.3E-06	8.9E-06	2.4E-05
Acenaphthene	1.31E-03	2.3E-05	1.0E-05	NC	NC	NC	NC	NC
Acenaphthylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.87E-04	1.0E-06	4.4E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	7.45E-04	8.0E-04	3.4E-04	NC	NC	NC	NC	NC
Fluoranthene	2.10E-03	5.6E-05	2.4E-05	NC	NC	NC	NC	NC
Fluorene	8.25E-04	2.2E-05	9.4E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	3.18E-04	4.9E-06	2.1E-06	2.8E-10	5.6E-10	6.0E-10	8.4E-10	2.3E-09
2-Methylnaphthalene	4.81E-04	1.3E-04	5.5E-05	NC	NC	NC	NC	NC
Naphthalene	8.19E-04	4.4E-05	1.9E-05	NC	NC	NC	NC	NC
Perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.06E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	6.17E-04	2.2E-05	9.4E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.1E+00	4.9E-01	3.1E-06	6.0E-06	6.4E-06	8.9E-06	
Sum of Lifetime Cancer Risk for All Age Groups						2.4E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Black Drum
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.04E-07	1.6E-01	6.8E-02	4.1E-07	8.2E-07	8.8E-07	1.2E-06	3.4E-06
Acenaphthene	2.10E-04	3.7E-06	1.6E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.30E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	5.40E-05	1.9E-07	8.2E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.90E-05	NA	NA	2.2E-07	1.3E-07	1.4E-07	6.6E-08	5.6E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.80E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.00E-04	2.1E-04	9.1E-05	NC	NC	NC	NC	NC
Fluoranthene	1.60E-04	4.3E-06	1.8E-06	NC	NC	NC	NC	NC
Fluorene	2.50E-04	6.7E-06	2.9E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.80E-04	2.7E-06	1.2E-06	1.6E-10	3.2E-10	3.4E-10	4.8E-10	1.3E-09
2-Methylnaphthalene	1.90E-04	5.1E-05	2.2E-05	NC	NC	NC	NC	NC
Naphthalene	2.60E-04	1.4E-05	5.9E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.30E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.00E-04	3.6E-06	1.5E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.6E-01	6.8E-02	6.3E-07	9.6E-07	1.0E-06	1.3E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.9E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Black Drum
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.04E-07	1.6E-01	6.8E-02	4.1E-07	8.2E-07	8.8E-07	1.2E-06	3.4E-06
Acenaphthene	1.69E-04	3.0E-06	1.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.43E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.17E-04	4.2E-07	1.8E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.60E-05	NA	NA	1.3E-07	7.5E-08	8.0E-08	3.7E-08	3.2E-07
Benzo(e)pyrene	2.43E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.43E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	4.88E-04	5.2E-04	2.2E-04	NC	NC	NC	NC	NC
Fluoranthene	4.29E-04	1.1E-05	4.9E-06	NC	NC	NC	NC	NC
Fluorene	3.43E-04	9.2E-06	3.9E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	9.05E-05	1.4E-06	5.9E-07	8.0E-11	1.6E-10	1.7E-10	2.4E-10	6.5E-10
2-Methylnaphthalene	1.68E-04	4.5E-05	1.9E-05	NC	NC	NC	NC	NC
Naphthalene	2.32E-04	1.2E-05	5.3E-06	NC	NC	NC	NC	NC
Perylene	2.43E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.69E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.35E-04	8.4E-06	3.6E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.6E-01	6.8E-02	5.4E-07	9.0E-07	9.6E-07	1.3E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Black Drum
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.83E-08	5.8E-02	2.5E-02	1.5E-07	3.0E-07	3.3E-07	4.6E-07	1.2E-06
Acenaphthene	2.40E-05	4.3E-07	1.8E-07	NC	NC	NC	NC	NC
Acenaphthylene	2.30E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.90E-05	6.8E-08	2.9E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.80E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	9.40E-05	1.0E-04	4.3E-05	NC	NC	NC	NC	NC
Fluoranthene	1.50E-04	4.0E-06	1.7E-06	NC	NC	NC	NC	NC
Fluorene	1.80E-04	4.8E-06	2.1E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.80E-04	2.7E-06	1.2E-06	1.6E-10	3.2E-10	3.4E-10	4.8E-10	1.3E-09
2-Methylnaphthalene	1.90E-04	5.1E-05	2.2E-05	NC	NC	NC	NC	NC
Naphthalene	2.90E-04	1.6E-05	6.6E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.50E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	7.40E-05	2.6E-06	1.1E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		5.9E-02	2.5E-02	3.5E-07	4.2E-07	4.5E-07	5.2E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Black Drum
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.83E-08	5.8E-02	2.5E-02	1.5E-07	3.0E-07	3.3E-07	4.6E-07	1.2E-06
Acenaphthene	6.56E-05	1.2E-06	5.0E-07	NC	NC	NC	NC	NC
Acenaphthylene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.49E-05	8.9E-08	3.8E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.34E-04	2.5E-04	1.1E-04	NC	NC	NC	NC	NC
Fluoranthene	5.01E-05	1.3E-06	5.7E-07	NC	NC	NC	NC	NC
Fluorene	1.52E-04	4.1E-06	1.7E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	5.69E-05	8.7E-07	3.7E-07	5.0E-11	1.0E-10	1.1E-10	1.5E-10	4.1E-10
2-Methylnaphthalene	1.19E-04	3.2E-05	1.4E-05	NC	NC	NC	NC	NC
Naphthalene	2.00E-04	1.1E-05	4.6E-06	NC	NC	NC	NC	NC
Perylene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	5.85E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.53E-05	1.3E-06	5.4E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		5.9E-02	2.5E-02	2.8E-07	3.8E-07	4.1E-07	4.9E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.6E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Blue Gill
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.60E-07	2.4E-01	1.0E-01	6.3E-07	1.3E-06	1.4E-06	1.9E-06	5.2E-06
Acenaphthene	7.20E-04	1.3E-05	5.5E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.30E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.80E-04	6.4E-07	2.7E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	1.02E-04	NA	NA	2.3E-07	1.4E-07	1.5E-07	6.8E-08	5.8E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.80E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	4.10E-04	4.4E-04	1.9E-04	NC	NC	NC	NC	NC
Fluoranthene	6.60E-04	1.8E-05	7.5E-06	NC	NC	NC	NC	NC
Fluorene	4.60E-04	1.2E-05	5.3E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.20E-04	3.4E-06	1.4E-06	1.9E-10	3.9E-10	4.2E-10	5.8E-10	1.6E-09
2-Methylnaphthalene	2.30E-04	6.1E-05	2.6E-05	NC	NC	NC	NC	NC
Naphthalene	4.10E-04	2.2E-05	9.4E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	5.90E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.60E-04	9.2E-06	4.0E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		2.4E-01	1.0E-01	8.6E-07	1.4E-06	1.5E-06	2.0E-06	
Sum of Lifetime Cancer Risk for All Age Groups						5.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Blue Gill
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.60E-07	2.4E-01	1.0E-01	6.3E-07	1.3E-06	1.4E-06	1.9E-06	5.2E-06
Acenaphthene	1.53E-04	2.7E-06	1.2E-06	NC	NC	NC	NC	NC
Acenaphthylene	4.02E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	4.02E-05	1.4E-07	6.1E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.30E-05	NA	NA	2.1E-07	1.2E-07	1.3E-07	6.2E-08	5.3E-07
Benzo(e)pyrene	4.02E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.02E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.74E-04	4.0E-04	1.7E-04	NC	NC	NC	NC	NC
Fluoranthene	8.30E-05	2.2E-06	9.5E-07	NC	NC	NC	NC	NC
Fluorene	2.70E-04	7.2E-06	3.1E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	9.38E-05	1.4E-06	6.1E-07	8.3E-11	1.7E-10	1.8E-10	2.5E-10	6.8E-10
2-Methylnaphthalene	1.81E-04	4.8E-05	2.1E-05	NC	NC	NC	NC	NC
Naphthalene	3.51E-04	1.9E-05	8.0E-06	NC	NC	NC	NC	NC
Perylene	4.02E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	6.36E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	5.57E-05	2.0E-06	8.5E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		2.4E-01	1.0E-01	8.4E-07	1.4E-06	1.5E-06	2.0E-06	
Sum of Lifetime Cancer Risk for All Age Groups						5.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Channel Catfish
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	not analyzed	na	na	na	na	na	na	na
Acenaphthene	not analyzed	na	na	na	na	na	na	na
Acenaphthylene	not analyzed	na	na	na	na	na	na	na
Anthracene	not analyzed	na	na	na	na	na	na	na
Benzo(a)pyrene equivalents	not analyzed	na	na	na	na	na	na	na
Benzo(e)pyrene	not analyzed	na	na	na	na	na	na	na
Benzo(g,h,i)perylene	not analyzed	na	na	na	na	na	na	na
Dibenzofuran	not analyzed	na	na	na	na	na	na	na
Fluoranthene	not analyzed	na	na	na	na	na	na	na
Fluorene	not analyzed	na	na	na	na	na	na	na
1-Methylnaphthalene	not analyzed	na	na	na	na	na	na	na
2-Methylnaphthalene	not analyzed	na	na	na	na	na	na	na
Naphthalene	not analyzed	na	na	na	na	na	na	na
Perylene	not analyzed	na	na	na	na	na	na	na
Phenanthrene	not analyzed	na	na	na	na	na	na	na
Pyrene	not analyzed	na	na	na	na	na	na	na
Sum of Risks for Age Group		na	na	nz	na	na	na	
Sum of Lifetime Cancer Risk for All Age Groups						na		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Channel Catfish
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.37E-07	6.7E-01	2.9E-01	1.7E-06	3.5E-06	3.7E-06	5.2E-06	1.4E-05
Acenaphthene	2.27E-07	4.0E-09	1.7E-09	NC	NC	NC	NC	NC
Acenaphthylene	2.46E-08	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.46E-08	8.8E-11	3.8E-11	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	1.11E-04	NA	NA	2.5E-07	1.5E-07	1.6E-07	7.4E-08	6.3E-07
Benzo(e)pyrene	2.46E-08	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.46E-08	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.46E-08	2.6E-08	1.1E-08	NC	NC	NC	NC	NC
Fluoranthene	1.10E-07	2.9E-09	1.3E-09	NC	NC	NC	NC	NC
Fluorene	2.46E-08	6.6E-10	2.8E-10	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.46E-08	3.8E-10	1.6E-10	2.2E-14	4.4E-14	4.7E-14	6.5E-14	1.8E-13
2-Methylnaphthalene	2.46E-08	6.6E-09	2.8E-09	NC	NC	NC	NC	NC
Naphthalene	1.13E-07	6.0E-09	2.6E-09	NC	NC	NC	NC	NC
Perylene	2.46E-08	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.46E-08	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.49E-08	1.2E-09	5.3E-10	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.7E-01	2.9E-01	2.0E-06	3.6E-06	3.9E-06	5.3E-06	
Sum of Lifetime Cancer Risk for All Age Groups						1.5E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Common Carp
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	2.81E-07	4.3E-01	1.8E-01	1.1E-06	2.2E-06	2.4E-06	3.3E-06	9.1E-06
Acenaphthene	1.50E-02	2.7E-04	1.1E-04	NC	NC	NC	NC	NC
Acenaphthylene	1.40E-03	NA	NA	NC	NC	NC	NC	NC
Anthracene	6.70E-03	2.4E-05	1.0E-05	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	3.59E-03	NA	NA	8.0E-06	4.8E-06	5.1E-06	2.4E-06	2.0E-05
Benzo(e)pyrene	5.00E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	9.50E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	5.30E-03	5.7E-03	2.4E-03	NC	NC	NC	NC	NC
Fluoranthene	9.20E-03	2.5E-04	1.1E-04	NC	NC	NC	NC	NC
Fluorene	1.10E-02	2.9E-04	1.3E-04	NC	NC	NC	NC	NC
1-Methylnaphthalene	3.60E-03	5.5E-05	2.4E-05	3.2E-09	6.4E-09	6.8E-09	9.6E-09	2.6E-08
2-Methylnaphthalene	2.70E-03	7.2E-04	3.1E-04	NC	NC	NC	NC	NC
Naphthalene	3.50E-03	1.9E-04	8.0E-05	NC	NC	NC	NC	NC
Perylene	1.20E-03	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.20E-02	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.50E-02	5.3E-04	2.3E-04	NC	NC	NC	NC	NC
Sum of Risks for Age Group		4.4E-01	1.9E-01	9.1E-06	7.0E-06	7.5E-06	5.7E-06	
Sum of Lifetime Cancer Risk for All Age Groups						2.9E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Common Carp
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	2.81E-07	4.3E-01	1.8E-01	1.1E-06	2.2E-06	2.4E-06	3.3E-06	9.1E-06
Acenaphthene	3.44E-03	6.1E-05	2.6E-05	NC	NC	NC	NC	NC
Acenaphthylene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.40E-04	5.0E-07	2.1E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.35E-05	NA	NA	1.2E-07	7.1E-08	7.7E-08	3.6E-08	3.0E-07
Benzo(e)pyrene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	9.99E-04	1.1E-03	4.6E-04	NC	NC	NC	NC	NC
Fluoranthene	1.37E-03	3.7E-05	1.6E-05	NC	NC	NC	NC	NC
Fluorene	1.73E-03	4.6E-05	2.0E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	3.94E-04	6.0E-06	2.6E-06	3.5E-10	7.0E-10	7.5E-10	1.0E-09	2.8E-09
2-Methylnaphthalene	3.97E-04	1.1E-04	4.5E-05	NC	NC	NC	NC	NC
Naphthalene	8.68E-04	4.6E-05	2.0E-05	NC	NC	NC	NC	NC
Perylene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.32E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	5.84E-04	2.1E-05	8.9E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		4.3E-01	1.8E-01	1.2E-06	2.3E-06	2.5E-06	3.4E-06	
Sum of Lifetime Cancer Risk for All Age Groups						9.4E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Ground Mullet
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	8.54E-08	1.3E-01	5.6E-02	3.4E-07	6.8E-07	7.3E-07	1.0E-06	2.8E-06
Acenaphthene	3.60E-04	6.4E-06	2.7E-06	NC	NC	NC	NC	NC
Acenaphthylene	1.20E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.00E-04	7.1E-07	3.1E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	2.07E-04	NA	NA	4.6E-07	2.8E-07	3.0E-07	1.4E-07	1.2E-06
Benzo(e)pyrene	5.00E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	9.50E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.70E-04	4.0E-04	1.7E-04	NC	NC	NC	NC	NC
Fluoranthene	4.70E-04	1.3E-05	5.4E-06	NC	NC	NC	NC	NC
Fluorene	4.80E-04	1.3E-05	5.5E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.80E-04	4.3E-06	1.8E-06	2.5E-10	5.0E-10	5.3E-10	7.4E-10	2.0E-09
2-Methylnaphthalene	3.00E-04	8.0E-05	3.4E-05	NC	NC	NC	NC	NC
Naphthalene	3.80E-04	2.0E-05	8.7E-06	NC	NC	NC	NC	NC
Perylene	1.20E-04	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	8.60E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.85E-04	1.4E-05	5.9E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.3E-01	5.6E-02	8.0E-07	9.5E-07	1.0E-06	1.2E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.9E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Ground Mullet
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	8.54E-08	1.3E-01	5.6E-02	3.4E-07	6.8E-07	7.3E-07	1.0E-06	2.8E-06
Acenaphthene	2.66E-04	4.7E-06	2.0E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.46E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.49E-04	5.3E-07	2.3E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	5.02E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.46E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	6.11E-04	6.5E-04	2.8E-04	NC	NC	NC	NC	NC
Fluoranthene	5.75E-04	1.5E-05	6.6E-06	NC	NC	NC	NC	NC
Fluorene	4.67E-04	1.3E-05	5.3E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.38E-04	2.1E-06	9.0E-07	1.2E-10	2.4E-10	2.6E-10	3.7E-10	9.9E-10
2-Methylnaphthalene	2.34E-04	6.2E-05	2.7E-05	NC	NC	NC	NC	NC
Naphthalene	3.01E-04	1.6E-05	6.9E-06	NC	NC	NC	NC	NC
Perylene	2.46E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.85E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.70E-04	9.6E-06	4.1E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.3E-01	5.6E-02	4.7E-07	7.5E-07	8.1E-07	1.1E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.09E-08	6.2E-02	2.7E-02	1.6E-07	3.2E-07	3.5E-07	4.9E-07	1.3E-06
Acenaphthene	9.40E-05	1.7E-06	7.2E-07	NC	NC	NC	NC	NC
Acenaphthylene	5.90E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	5.90E-05	2.1E-07	9.0E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	2.91E-04	NA	NA	6.5E-07	3.9E-07	4.2E-07	1.9E-07	1.6E-06
Benzo(e)pyrene	1.80E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	1.90E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.10E-04	1.2E-04	5.0E-05	NC	NC	NC	NC	NC
Fluoranthene	3.20E-04	8.5E-06	3.7E-06	NC	NC	NC	NC	NC
Fluorene	1.40E-04	3.7E-06	1.6E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.40E-04	2.1E-06	9.1E-07	1.2E-10	2.5E-10	2.7E-10	3.7E-10	1.0E-09
2-Methylnaphthalene	1.70E-04	4.5E-05	1.9E-05	NC	NC	NC	NC	NC
Naphthalene	2.80E-04	1.5E-05	6.4E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	4.00E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.50E-04	5.3E-06	2.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.2E-02	2.7E-02	8.1E-07	7.1E-07	7.6E-07	6.8E-07	
Sum of Lifetime Cancer Risk for All Age Groups						3.0E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.09E-08	6.2E-02	2.7E-02	1.6E-07	3.2E-07	3.5E-07	4.9E-07	1.3E-06
Acenaphthene	7.35E-05	1.3E-06	5.6E-07	NC	NC	NC	NC	NC
Acenaphthylene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.41E-05	8.6E-08	3.7E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.60E-05	NA	NA	1.3E-07	7.5E-08	8.0E-08	3.7E-08	3.2E-07
Benzo(e)pyrene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.22E-04	2.4E-04	1.0E-04	NC	NC	NC	NC	NC
Fluoranthene	1.03E-04	2.8E-06	1.2E-06	NC	NC	NC	NC	NC
Fluorene	1.52E-04	4.1E-06	1.7E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	5.89E-05	9.0E-07	3.9E-07	5.2E-11	1.0E-10	1.1E-10	1.6E-10	4.2E-10
2-Methylnaphthalene	1.19E-04	3.2E-05	1.4E-05	NC	NC	NC	NC	NC
Naphthalene	2.50E-04	1.3E-05	5.7E-06	NC	NC	NC	NC	NC
Perylene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	5.12E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.41E-05	1.2E-06	5.2E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.3E-02	2.7E-02	2.9E-07	4.0E-07	4.3E-07	5.2E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.6E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.32E-08	6.6E-02	2.8E-02	1.7E-07	3.4E-07	3.7E-07	5.1E-07	1.4E-06
Acenaphthene	2.40E-04	4.3E-06	1.8E-06	NC	NC	NC	NC	NC
Acenaphthylene	4.90E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	7.90E-05	2.8E-07	1.2E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.70E-04	1.8E-04	7.8E-05	NC	NC	NC	NC	NC
Fluoranthene	2.10E-04	5.6E-06	2.4E-06	NC	NC	NC	NC	NC
Fluorene	2.50E-04	6.7E-06	2.9E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.60E-04	2.4E-06	1.0E-06	1.4E-10	2.8E-10	3.0E-10	4.2E-10	1.2E-09
2-Methylnaphthalene	1.70E-04	4.5E-05	1.9E-05	NC	NC	NC	NC	NC
Naphthalene	2.70E-04	1.4E-05	6.2E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.30E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	9.30E-05	3.3E-06	1.4E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.6E-02	2.8E-02	3.7E-07	4.6E-07	5.0E-07	5.7E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.9E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.32E-08	6.6E-02	2.8E-02	1.7E-07	3.4E-07	3.7E-07	5.1E-07	1.4E-06
Acenaphthene	1.54E-04	2.7E-06	1.2E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.44E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.44E-05	8.7E-08	3.7E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.60E-05	NA	NA	1.3E-07	7.5E-08	8.0E-08	3.7E-08	3.2E-07
Benzo(e)pyrene	2.44E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.44E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.65E-04	2.8E-04	1.2E-04	NC	NC	NC	NC	NC
Fluoranthene	1.07E-04	2.9E-06	1.2E-06	NC	NC	NC	NC	NC
Fluorene	1.85E-04	4.9E-06	2.1E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.44E-05	3.7E-07	1.6E-07	2.2E-11	4.3E-11	4.6E-11	6.5E-11	1.8E-10
2-Methylnaphthalene	1.27E-04	3.4E-05	1.5E-05	NC	NC	NC	NC	NC
Naphthalene	2.53E-04	1.4E-05	5.8E-06	NC	NC	NC	NC	NC
Perylene	2.44E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	5.37E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.42E-05	1.2E-06	5.2E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.6E-02	2.8E-02	3.0E-07	4.2E-07	4.5E-07	5.5E-07	
Sum of Lifetime Cancer Risk for All Age Groups					1.7E-06			

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.00E-08	6.1E-02	2.6E-02	1.6E-07	3.2E-07	3.4E-07	4.8E-07	1.3E-06
Acenaphthene	6.80E-04	1.2E-05	5.2E-06	NC	NC	NC	NC	NC
Acenaphthylene	5.30E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.50E-04	5.3E-07	2.3E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.80E-04	4.1E-04	1.7E-04	NC	NC	NC	NC	NC
Fluoranthene	5.10E-04	1.4E-05	5.8E-06	NC	NC	NC	NC	NC
Fluorene	6.60E-04	1.8E-05	7.5E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.80E-04	2.7E-06	1.2E-06	1.6E-10	3.2E-10	3.4E-10	4.8E-10	1.3E-09
2-Methylnaphthalene	2.00E-04	5.3E-05	2.3E-05	NC	NC	NC	NC	NC
Naphthalene	3.10E-04	1.7E-05	7.1E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	8.90E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.80E-04	6.4E-06	2.7E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.2E-02	2.6E-02	3.6E-07	4.4E-07	4.7E-07	5.4E-07	
Sum of Lifetime Cancer Risk for All Age Groups					1.8E-06			

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.00E-08	6.1E-02	2.6E-02	1.6E-07	3.2E-07	3.4E-07	4.8E-07	1.3E-06
Acenaphthene	3.00E-04	5.3E-06	2.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	6.50E-05	2.3E-07	9.9E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	6.10E-05	NA	NA	1.4E-07	8.1E-08	8.7E-08	4.1E-08	3.5E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.45E-04	3.7E-04	1.6E-04	NC	NC	NC	NC	NC
Fluoranthene	2.42E-04	6.5E-06	2.8E-06	NC	NC	NC	NC	NC
Fluorene	3.36E-04	9.0E-06	3.8E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	8.91E-05	1.4E-06	5.8E-07	7.9E-11	1.6E-10	1.7E-10	2.4E-10	6.4E-10
2-Methylnaphthalene	1.55E-04	4.1E-05	1.8E-05	NC	NC	NC	NC	NC
Naphthalene	3.30E-04	1.8E-05	7.5E-06	NC	NC	NC	NC	NC
Perylene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	6.73E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.30E-04	4.6E-06	2.0E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.1E-02	2.6E-02	2.9E-07	4.0E-07	4.3E-07	5.2E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.6E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	8.97E-08	1.4E-01	5.9E-02	3.6E-07	7.1E-07	7.6E-07	1.1E-06	2.9E-06
Acenaphthene	5.70E-04	1.0E-05	4.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	7.60E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.80E-04	6.4E-07	2.7E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.40E-04	3.6E-04	1.6E-04	NC	NC	NC	NC	NC
Fluoranthene	4.90E-04	1.3E-05	5.6E-06	NC	NC	NC	NC	NC
Fluorene	4.90E-04	1.3E-05	5.6E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.70E-04	4.1E-06	1.8E-06	2.4E-10	4.8E-10	5.1E-10	7.2E-10	1.9E-09
2-Methylnaphthalene	3.70E-04	9.9E-05	4.2E-05	NC	NC	NC	NC	NC
Naphthalene	4.70E-04	2.5E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	6.10E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.30E-04	8.2E-06	3.5E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.4E-01	5.9E-02	5.6E-07	8.3E-07	8.9E-07	1.1E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.4E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	8.97E-08	1.4E-01	5.9E-02	3.6E-07	7.1E-07	7.6E-07	1.1E-06	2.9E-06
Acenaphthene	3.01E-04	5.4E-06	2.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	9.36E-05	3.3E-07	1.4E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.60E-05	NA	NA	1.3E-07	7.5E-08	8.0E-08	3.7E-08	3.2E-07
Benzo(e)pyrene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.41E-05	2.6E-05	1.1E-05	NC	NC	NC	NC	NC
Fluoranthene	2.54E-04	6.8E-06	2.9E-06	NC	NC	NC	NC	NC
Fluorene	3.02E-04	8.1E-06	3.5E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.51E-04	2.3E-06	9.9E-07	1.3E-10	2.7E-10	2.9E-10	4.0E-10	1.1E-09
2-Methylnaphthalene	2.56E-04	6.8E-05	2.9E-05	NC	NC	NC	NC	NC
Naphthalene	4.78E-04	2.6E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	2.41E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	7.48E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.35E-04	4.8E-06	2.1E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.4E-01	5.9E-02	4.8E-07	7.9E-07	8.4E-07	1.1E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.2E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.23E-08	6.5E-02	2.8E-02	1.7E-07	3.4E-07	3.6E-07	5.0E-07	1.4E-06
Acenaphthene	4.10E-04	7.3E-06	3.1E-06	NC	NC	NC	NC	NC
Acenaphthylene	5.20E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.30E-04	4.6E-07	2.0E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.60E-04	2.8E-04	1.2E-04	NC	NC	NC	NC	NC
Fluoranthene	5.90E-04	1.6E-05	6.7E-06	NC	NC	NC	NC	NC
Fluorene	4.00E-04	1.1E-05	4.6E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.10E-04	3.2E-06	1.4E-06	1.9E-10	3.7E-10	4.0E-10	5.6E-10	1.5E-09
2-Methylnaphthalene	2.90E-04	7.7E-05	3.3E-05	NC	NC	NC	NC	NC
Naphthalene	4.00E-04	2.1E-05	9.1E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	4.20E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.40E-04	8.5E-06	3.7E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.5E-02	2.8E-02	3.7E-07	4.6E-07	4.9E-07	5.6E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.9E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Large Mouth Bass
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	4.23E-08	6.5E-02	2.8E-02	1.7E-07	3.4E-07	3.6E-07	5.0E-07	1.4E-06
Acenaphthene	1.85E-04	3.3E-06	1.4E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.48E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.48E-05	8.8E-08	3.8E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.60E-05	NA	NA	1.3E-07	7.5E-08	8.0E-08	3.7E-08	3.2E-07
Benzo(e)pyrene	2.48E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.48E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.87E-04	3.1E-04	1.3E-04	NC	NC	NC	NC	NC
Fluoranthene	1.96E-04	5.2E-06	2.2E-06	NC	NC	NC	NC	NC
Fluorene	2.44E-04	6.5E-06	2.8E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	9.12E-05	1.4E-06	6.0E-07	8.1E-11	1.6E-10	1.7E-10	2.4E-10	6.6E-10
2-Methylnaphthalene	1.77E-04	4.7E-05	2.0E-05	NC	NC	NC	NC	NC
Naphthalene	3.07E-04	1.6E-05	7.0E-06	NC	NC	NC	NC	NC
Perylene	2.48E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	5.89E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	9.58E-05	3.4E-06	1.5E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		6.5E-02	2.8E-02	2.9E-07	4.1E-07	4.4E-07	5.4E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Orange Spotted Sun Fish
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.91E-08	1.2E-01	5.2E-02	3.1E-07	6.3E-07	6.7E-07	9.4E-07	2.6E-06
Acenaphthene	6.30E-04	1.1E-05	4.8E-06	NC	NC	NC	NC	NC
Acenaphthylene	5.20E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.30E-04	4.6E-07	2.0E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.00E-04	2.1E-04	9.1E-05	NC	NC	NC	NC	NC
Fluoranthene	4.60E-04	1.2E-05	5.3E-06	NC	NC	NC	NC	NC
Fluorene	2.50E-04	6.7E-06	2.9E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.20E-04	3.4E-06	1.4E-06	1.9E-10	3.9E-10	4.2E-10	5.8E-10	1.6E-09
2-Methylnaphthalene	2.80E-04	7.5E-05	3.2E-05	NC	NC	NC	NC	NC
Naphthalene	7.10E-04	3.8E-05	1.6E-05	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.50E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.60E-04	5.7E-06	2.4E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.2E-01	5.2E-02	5.1E-07	7.5E-07	8.0E-07	1.0E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Orange Spotted Sun Fish
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.91E-08	1.2E-01	5.2E-02	3.1E-07	6.3E-07	6.7E-07	9.4E-07	2.6E-06
Acenaphthene	1.79E-04	3.2E-06	1.4E-06	NC	NC	NC	NC	NC
Acenaphthylene	4.33E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	4.33E-05	1.5E-07	6.6E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	1.00E-04	NA	NA	2.2E-07	1.3E-07	1.4E-07	6.7E-08	5.6E-07
Benzo(e)pyrene	4.33E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.33E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.81E-04	4.1E-04	1.7E-04	NC	NC	NC	NC	NC
Fluoranthene	8.90E-05	2.4E-06	1.0E-06	NC	NC	NC	NC	NC
Fluorene	2.63E-04	7.0E-06	3.0E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.04E-04	1.6E-06	6.8E-07	9.2E-11	1.8E-10	2.0E-10	2.8E-10	7.5E-10
2-Methylnaphthalene	2.18E-04	5.8E-05	2.5E-05	NC	NC	NC	NC	NC
Naphthalene	4.60E-04	2.5E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	4.33E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	7.23E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	6.30E-05	2.2E-06	9.6E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.2E-01	5.2E-02	5.4E-07	7.6E-07	8.2E-07	1.0E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Pumpkinseed Bream
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.18E-07	1.8E-01	7.7E-02	4.7E-07	9.4E-07	1.0E-06	1.4E-06	3.8E-06
Acenaphthene	1.70E-04	3.0E-06	1.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	5.50E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.00E-04	3.6E-07	1.5E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.10E-04	2.2E-04	9.6E-05	NC	NC	NC	NC	NC
Fluoranthene	2.10E-04	5.6E-06	2.4E-06	NC	NC	NC	NC	NC
Fluorene	3.00E-04	8.0E-06	3.4E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.70E-04	2.6E-06	1.1E-06	1.5E-10	3.0E-10	3.2E-10	4.5E-10	1.2E-09
2-Methylnaphthalene	2.00E-04	5.3E-05	2.3E-05	NC	NC	NC	NC	NC
Naphthalene	2.70E-04	1.4E-05	6.2E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	4.10E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	8.50E-05	3.0E-06	1.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.8E-01	7.7E-02	6.7E-07	1.1E-06	1.1E-06	1.5E-06	
Sum of Lifetime Cancer Risk for All Age Groups					4.3E-06			

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Pumpkinseed Bream
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.18E-07	1.8E-01	7.7E-02	4.7E-07	9.4E-07	1.0E-06	1.4E-06	3.8E-06
Acenaphthene	1.81E-04	3.2E-06	1.4E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.28E-04	4.6E-07	2.0E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	5.30E-04	5.7E-04	2.4E-04	NC	NC	NC	NC	NC
Fluoranthene	3.11E-04	8.3E-06	3.6E-06	NC	NC	NC	NC	NC
Fluorene	4.14E-04	1.1E-05	4.7E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	9.83E-05	1.5E-06	6.4E-07	8.7E-11	1.7E-10	1.9E-10	2.6E-10	7.1E-10
2-Methylnaphthalene	1.67E-04	4.5E-05	1.9E-05	NC	NC	NC	NC	NC
Naphthalene	2.25E-04	1.2E-05	5.1E-06	NC	NC	NC	NC	NC
Perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.58E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.55E-04	5.5E-06	2.4E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.8E-01	7.7E-02	6.0E-07	1.0E-06	1.1E-06	1.4E-06	
Sum of Lifetime Cancer Risk for All Age Groups						4.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.78E-08	5.8E-02	2.5E-02	1.5E-07	3.0E-07	3.2E-07	4.5E-07	1.2E-06
Acenaphthene	2.20E-04	3.9E-06	1.7E-06	NC	NC	NC	NC	NC
Acenaphthylene	1.40E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.40E-04	8.5E-07	3.7E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.90E-04	3.1E-04	1.3E-04	NC	NC	NC	NC	NC
Fluoranthene	3.70E-04	9.9E-06	4.2E-06	NC	NC	NC	NC	NC
Fluorene	5.40E-04	1.4E-05	6.2E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	3.00E-04	4.6E-06	2.0E-06	2.7E-10	5.3E-10	5.7E-10	8.0E-10	2.2E-09
2-Methylnaphthalene	3.80E-04	1.0E-04	4.3E-05	NC	NC	NC	NC	NC
Naphthalene	6.40E-04	3.4E-05	1.5E-05	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.80E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.30E-04	8.2E-06	3.5E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		5.8E-02	2.5E-02	3.5E-07	4.2E-07	4.5E-07	5.1E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.78E-08	5.8E-02	2.5E-02	1.5E-07	3.0E-07	3.2E-07	4.5E-07	1.2E-06
Acenaphthene	1.35E-04	2.4E-06	1.0E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.32E-05	8.3E-08	3.5E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.30E-05	NA	NA	1.2E-07	7.1E-08	7.6E-08	3.5E-08	3.0E-07
Benzo(e)pyrene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.44E-04	2.6E-04	1.1E-04	NC	NC	NC	NC	NC
Fluoranthene	1.50E-04	4.0E-06	1.7E-06	NC	NC	NC	NC	NC
Fluorene	1.49E-04	4.0E-06	1.7E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.13E-04	1.7E-06	7.4E-07	1.0E-10	2.0E-10	2.1E-10	3.0E-10	8.1E-10
2-Methylnaphthalene	2.29E-04	6.1E-05	2.6E-05	NC	NC	NC	NC	NC
Naphthalene	3.76E-04	2.0E-05	8.6E-06	NC	NC	NC	NC	NC
Perylene	2.32E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.57E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.29E-05	1.2E-06	5.0E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		5.8E-02	2.5E-02	2.7E-07	3.7E-07	4.0E-07	4.8E-07	
Sum of Lifetime Cancer Risk for All Age Groups						1.5E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.02E-07	1.6E-01	6.7E-02	4.0E-07	8.1E-07	8.7E-07	1.2E-06	3.3E-06
Acenaphthene	3.70E-04	6.6E-06	2.8E-06	NC	NC	NC	NC	NC
Acenaphthylene	7.40E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	7.60E-05	2.7E-07	1.2E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	7.60E-05	NA	NA	1.7E-07	1.0E-07	1.1E-07	5.1E-08	4.3E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.50E-04	2.7E-04	1.1E-04	NC	NC	NC	NC	NC
Fluoranthene	2.40E-04	6.4E-06	2.7E-06	NC	NC	NC	NC	NC
Fluorene	4.00E-04	1.1E-05	4.6E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.90E-04	2.9E-06	1.2E-06	1.7E-10	3.4E-10	3.6E-10	5.0E-10	1.4E-09
2-Methylnaphthalene	2.00E-04	5.3E-05	2.3E-05	NC	NC	NC	NC	NC
Naphthalene	4.10E-04	2.2E-05	9.4E-06	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.70E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	8.30E-05	3.0E-06	1.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.6E-01	6.7E-02	5.7E-07	9.1E-07	9.8E-07	1.3E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Redfish
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.02E-07	1.6E-01	6.7E-02	4.0E-07	8.1E-07	8.7E-07	1.2E-06	3.3E-06
Acenaphthene	2.97E-04	5.3E-06	2.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.51E-04	5.4E-07	2.3E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	5.27E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	5.99E-04	6.4E-04	2.7E-04	NC	NC	NC	NC	NC
Fluoranthene	6.12E-04	1.6E-05	7.0E-06	NC	NC	NC	NC	NC
Fluorene	5.39E-04	1.4E-05	6.2E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.28E-04	2.0E-06	8.4E-07	1.1E-10	2.3E-10	2.4E-10	3.4E-10	9.2E-10
2-Methylnaphthalene	2.01E-04	5.4E-05	2.3E-05	NC	NC	NC	NC	NC
Naphthalene	3.16E-04	1.7E-05	7.2E-06	NC	NC	NC	NC	NC
Perylene	2.49E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.88E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.04E-04	1.1E-05	4.6E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.6E-01	6.7E-02	5.3E-07	8.8E-07	9.5E-07	1.2E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.6E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Sheep Head
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	5.47E-08	8.3E-02	3.6E-02	2.2E-07	4.3E-07	4.6E-07	6.5E-07	1.8E-06
Acenaphthene	1.30E-04	2.3E-06	9.9E-07	NC	NC	NC	NC	NC
Acenaphthylene	6.20E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	5.20E-05	1.9E-07	7.9E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.00E-04	2.1E-04	9.1E-05	NC	NC	NC	NC	NC
Fluoranthene	2.20E-04	5.9E-06	2.5E-06	NC	NC	NC	NC	NC
Fluorene	2.40E-04	6.4E-06	2.7E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.30E-04	3.5E-06	1.5E-06	2.0E-10	4.1E-10	4.4E-10	6.1E-10	1.7E-09
2-Methylnaphthalene	2.60E-04	6.9E-05	3.0E-05	NC	NC	NC	NC	NC
Naphthalene	4.80E-04	2.6E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.10E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.20E-04	4.3E-06	1.8E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		8.4E-02	3.6E-02	4.2E-07	5.5E-07	5.9E-07	7.1E-07	
Sum of Lifetime Cancer Risk for All Age Groups						2.3E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Sheep Head
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	5.47E-08	8.3E-02	3.6E-02	2.2E-07	4.3E-07	4.6E-07	6.5E-07	1.8E-06
Acenaphthene	7.95E-05	1.4E-06	6.1E-07	NC	NC	NC	NC	NC
Acenaphthylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.45E-05	8.7E-08	3.7E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.36E-04	2.5E-04	1.1E-04	NC	NC	NC	NC	NC
Fluoranthene	1.06E-04	2.8E-06	1.2E-06	NC	NC	NC	NC	NC
Fluorene	1.54E-04	4.1E-06	1.8E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	6.69E-05	1.0E-06	4.4E-07	5.9E-11	1.2E-10	1.3E-10	1.8E-10	4.8E-10
2-Methylnaphthalene	1.27E-04	3.4E-05	1.5E-05	NC	NC	NC	NC	NC
Naphthalene	2.05E-04	1.1E-05	4.7E-06	NC	NC	NC	NC	NC
Perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	4.83E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.47E-05	1.2E-06	5.3E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		8.4E-02	3.6E-02	3.4E-07	5.1E-07	5.5E-07	6.9E-07	
Sum of Lifetime Cancer Risk for All Age Groups						2.1E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Bass
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	9.35E-08	1.4E-01	6.1E-02	3.7E-07	7.4E-07	7.9E-07	1.1E-06	3.0E-06
Acenaphthene	3.20E-03	5.7E-05	2.4E-05	NC	NC	NC	NC	NC
Acenaphthylene	1.20E-03	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.60E-03	9.2E-06	4.0E-06	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	2.70E-04	NA	NA	6.0E-07	3.6E-07	3.9E-07	1.8E-07	1.5E-06
Benzo(e)pyrene	1.25E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.40E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.60E-03	1.7E-03	7.3E-04	NC	NC	NC	NC	NC
Fluoranthene	3.10E-03	8.3E-05	3.5E-05	NC	NC	NC	NC	NC
Fluorene	2.90E-03	7.7E-05	3.3E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.20E-03	1.8E-05	7.8E-06	1.1E-09	2.1E-09	2.3E-09	3.2E-09	8.6E-09
2-Methylnaphthalene	1.60E-03	4.3E-04	1.8E-04	NC	NC	NC	NC	NC
Naphthalene	1.80E-03	9.6E-05	4.1E-05	NC	NC	NC	NC	NC
Perylene	3.00E-04	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.80E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.25E-05	4.4E-07	1.9E-07	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.4E-01	6.2E-02	9.7E-07	1.1E-06	1.2E-06	1.3E-06	
Sum of Lifetime Cancer Risk for All Age Groups						4.6E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Bass
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	9.35E-08	1.4E-01	6.1E-02	3.7E-07	7.4E-07	7.9E-07	1.1E-06	3.0E-06
Acenaphthene	8.30E-04	1.5E-05	6.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.89E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	7.21E-05	2.6E-07	1.1E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	6.70E-05	NA	NA	1.5E-07	8.9E-08	9.6E-08	4.5E-08	3.8E-07
Benzo(e)pyrene	2.89E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.89E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	5.17E-04	5.5E-04	2.4E-04	NC	NC	NC	NC	NC
Fluoranthene	5.80E-04	1.6E-05	6.6E-06	NC	NC	NC	NC	NC
Fluorene	5.11E-04	1.4E-05	5.8E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.12E-04	3.2E-06	1.4E-06	1.9E-10	3.8E-10	4.0E-10	5.6E-10	1.5E-09
2-Methylnaphthalene	3.01E-04	8.0E-05	3.4E-05	NC	NC	NC	NC	NC
Naphthalene	4.60E-04	2.5E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	2.89E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	6.83E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	1.75E-04	6.2E-06	2.7E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.4E-01	6.1E-02	5.2E-07	8.3E-07	8.9E-07	1.2E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.4E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	2.86E-06	4.4E+00	1.9E+00	1.1E-05	2.3E-05	2.4E-05	3.4E-05	9.2E-05
Acenaphthene	7.70E-04	1.4E-05	5.9E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.30E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	9.00E-04	3.2E-06	1.4E-06	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.01E-04	NA	NA	2.0E-06	1.2E-06	1.3E-06	6.0E-07	5.1E-06
Benzo(e)pyrene	2.50E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	5.20E-04	5.6E-04	2.4E-04	NC	NC	NC	NC	NC
Fluoranthene	2.45E-04	6.5E-06	2.8E-06	NC	NC	NC	NC	NC
Fluorene	2.10E-03	5.6E-05	2.4E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.70E-03	2.6E-05	1.1E-05	1.5E-09	3.0E-09	3.2E-09	4.5E-09	1.2E-08
2-Methylnaphthalene	2.40E-03	6.4E-04	2.7E-04	NC	NC	NC	NC	NC
Naphthalene	2.10E-03	1.1E-04	4.8E-05	NC	NC	NC	NC	NC
Perylene	6.00E-04	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	4.30E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.50E-04	8.9E-06	3.8E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		4.4E+00	1.9E+00	1.3E-05	2.4E-05	2.6E-05	3.5E-05	
Sum of Lifetime Cancer Risk for All Age Groups						9.7E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	2.86E-06	4.4E+00	1.9E+00	1.1E-05	2.3E-05	2.4E-05	3.4E-05	9.2E-05
Acenaphthene	2.69E-04	4.8E-06	2.1E-06	NC	NC	NC	NC	NC
Acenaphthylene	9.05E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.46E-04	5.2E-07	2.2E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.30E-05	NA	NA	1.2E-07	7.1E-08	7.6E-08	3.5E-08	3.0E-07
Benzo(e)pyrene	2.31E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.31E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.66E-04	3.9E-04	1.7E-04	NC	NC	NC	NC	NC
Fluoranthene	4.58E-04	1.2E-05	5.2E-06	NC	NC	NC	NC	NC
Fluorene	3.95E-04	1.1E-05	4.5E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.58E-04	3.9E-06	1.7E-06	2.3E-10	4.6E-10	4.9E-10	6.8E-10	1.9E-09
2-Methylnaphthalene	4.84E-04	1.3E-04	5.5E-05	NC	NC	NC	NC	NC
Naphthalene	5.88E-04	3.1E-05	1.3E-05	NC	NC	NC	NC	NC
Perylene	2.31E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	8.03E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.12E-04	7.5E-06	3.2E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		4.4E+00	1.9E+00	1.1E-05	2.3E-05	2.4E-05	3.4E-05	
Sum of Lifetime Cancer Risk for All Age Groups						9.3E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Downstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.44E-08	1.1E-01	4.9E-02	3.0E-07	5.9E-07	6.3E-07	8.8E-07	2.4E-06
Acenaphthene	9.70E-04	1.7E-05	7.4E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.30E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.45E-03	5.2E-06	2.2E-06	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.01E-04	NA	NA	2.0E-06	1.2E-06	1.3E-06	6.0E-07	5.1E-06
Benzo(e)pyrene	2.50E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	6.70E-04	7.2E-04	3.1E-04	NC	NC	NC	NC	NC
Fluoranthene	2.45E-04	6.5E-06	2.8E-06	NC	NC	NC	NC	NC
Fluorene	2.00E-03	5.3E-05	2.3E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.80E-03	2.7E-05	1.2E-05	1.6E-09	3.2E-09	3.4E-09	4.8E-09	1.3E-08
2-Methylnaphthalene	2.00E-03	5.3E-04	2.3E-04	NC	NC	NC	NC	NC
Naphthalene	1.60E-03	8.5E-05	3.7E-05	NC	NC	NC	NC	NC
Perylene	6.00E-04	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.50E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.50E-04	8.9E-06	3.8E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.1E-01	4.9E-02	2.3E-06	1.8E-06	1.9E-06	1.5E-06	
Sum of Lifetime Cancer Risk for All Age Groups						7.5E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Downstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.44E-08	1.1E-01	4.9E-02	3.0E-07	5.9E-07	6.3E-07	8.8E-07	2.4E-06
Acenaphthene	2.74E-04	4.9E-06	2.1E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	8.58E-05	3.1E-07	1.3E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.63E-04	3.9E-04	1.7E-04	NC	NC	NC	NC	NC
Fluoranthene	6.84E-04	1.8E-05	7.8E-06	NC	NC	NC	NC	NC
Fluorene	3.31E-04	8.8E-06	3.8E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.67E-04	2.5E-06	1.1E-06	1.5E-10	3.0E-10	3.2E-10	4.4E-10	1.2E-09
2-Methylnaphthalene	3.39E-04	9.0E-05	3.9E-05	NC	NC	NC	NC	NC
Naphthalene	4.80E-04	2.6E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	2.45E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	8.22E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.60E-04	9.2E-06	4.0E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.1E-01	4.9E-02	4.2E-07	6.7E-07	7.1E-07	9.2E-07	
Sum of Lifetime Cancer Risk for All Age Groups						2.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.12E-07	1.7E-01	7.3E-02	4.4E-07	8.9E-07	9.5E-07	1.3E-06	3.6E-06
Acenaphthene	4.70E-03	8.4E-05	3.6E-05	NC	NC	NC	NC	NC
Acenaphthylene	2.30E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.10E-03	3.9E-06	1.7E-06	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.01E-04	NA	NA	2.0E-06	1.2E-06	1.3E-06	6.0E-07	5.1E-06
Benzo(e)pyrene	2.50E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.30E-03	2.5E-03	1.1E-03	NC	NC	NC	NC	NC
Fluoranthene	2.65E-03	7.1E-05	3.0E-05	NC	NC	NC	NC	NC
Fluorene	4.50E-03	1.2E-04	5.1E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.60E-03	2.4E-05	1.0E-05	1.4E-09	2.8E-09	3.0E-09	4.2E-09	1.2E-08
2-Methylnaphthalene	2.60E-03	6.9E-04	3.0E-04	NC	NC	NC	NC	NC
Naphthalene	1.80E-03	9.6E-05	4.1E-05	NC	NC	NC	NC	NC
Perylene	6.00E-04	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	5.80E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.75E-03	9.8E-05	4.2E-05	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.7E-01	7.5E-02	2.4E-06	2.1E-06	2.2E-06	1.9E-06	
Sum of Lifetime Cancer Risk for All Age Groups						8.7E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Bayou Bernard Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	1.12E-07	1.7E-01	7.3E-02	4.4E-07	8.9E-07	9.5E-07	1.3E-06	3.6E-06
Acenaphthene	1.60E-03	2.8E-05	1.2E-05	NC	NC	NC	NC	NC
Acenaphthylene	2.42E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.37E-04	8.4E-07	3.6E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.60E-05	NA	NA	1.3E-07	7.5E-08	8.0E-08	3.7E-08	3.2E-07
Benzo(e)pyrene	2.42E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.42E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.09E-03	1.2E-03	5.0E-04	NC	NC	NC	NC	NC
Fluoranthene	1.50E-03	4.0E-05	1.7E-05	NC	NC	NC	NC	NC
Fluorene	1.35E-03	3.6E-05	1.5E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.95E-04	4.5E-06	1.9E-06	2.6E-10	5.2E-10	5.6E-10	7.8E-10	2.1E-09
2-Methylnaphthalene	4.76E-04	1.3E-04	5.4E-05	NC	NC	NC	NC	NC
Naphthalene	5.93E-04	3.2E-05	1.4E-05	NC	NC	NC	NC	NC
Perylene	2.42E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.89E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	4.21E-04	1.5E-05	6.4E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.7E-01	7.4E-02	5.7E-07	9.6E-07	1.0E-06	1.4E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.9E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Adjacent to Site
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.75E-07	5.7E-01	2.5E-01	1.5E-06	3.0E-06	3.2E-06	4.5E-06	1.2E-05
Acenaphthene	8.00E-03	1.4E-04	6.1E-05	NC	NC	NC	NC	NC
Acenaphthylene	1.20E-03	NA	NA	NC	NC	NC	NC	NC
Anthracene	6.00E-03	2.1E-05	9.1E-06	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	3.68E-03	NA	NA	8.2E-06	4.9E-06	5.3E-06	2.5E-06	2.1E-05
Benzo(e)pyrene	5.00E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	9.50E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	5.20E-03	5.6E-03	2.4E-03	NC	NC	NC	NC	NC
Fluoranthene	7.70E-03	2.1E-04	8.8E-05	NC	NC	NC	NC	NC
Fluorene	8.40E-03	2.2E-04	9.6E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	5.00E-03	7.6E-05	3.3E-05	4.4E-09	8.8E-09	9.5E-09	1.3E-08	3.6E-08
2-Methylnaphthalene	5.50E-03	1.5E-03	6.3E-04	NC	NC	NC	NC	NC
Naphthalene	3.80E-03	2.0E-04	8.7E-05	NC	NC	NC	NC	NC
Perylene	1.40E-03	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	8.40E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.25E-03	1.2E-04	5.0E-05	NC	NC	NC	NC	NC
Sum of Risks for Age Group		5.8E-01	2.5E-01	9.7E-06	7.9E-06	8.4E-06	6.9E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.3E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Adjacent to Site
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.75E-07	5.7E-01	2.5E-01	1.5E-06	3.0E-06	3.2E-06	4.5E-06	1.2E-05
Acenaphthene	2.57E-03	4.6E-05	2.0E-05	NC	NC	NC	NC	NC
Acenaphthylene	2.34E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	3.68E-04	1.3E-06	5.6E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	6.27E-04	NA	NA	1.4E-06	8.4E-07	9.0E-07	4.2E-07	3.5E-06
Benzo(e)pyrene	2.34E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.34E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.14E-03	1.2E-03	5.2E-04	NC	NC	NC	NC	NC
Fluoranthene	1.29E-03	3.4E-05	1.5E-05	NC	NC	NC	NC	NC
Fluorene	1.06E-03	2.8E-05	1.2E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	9.69E-04	1.5E-05	6.3E-06	8.6E-10	1.7E-09	1.8E-09	2.6E-09	7.0E-09
2-Methylnaphthalene	1.41E-03	3.8E-04	1.6E-04	NC	NC	NC	NC	NC
Naphthalene	1.49E-03	8.0E-05	3.4E-05	NC	NC	NC	NC	NC
Perylene	2.34E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	1.74E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.46E-04	1.2E-05	5.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		5.7E-01	2.5E-01	2.9E-06	3.8E-06	4.1E-06	4.9E-06	
Sum of Lifetime Cancer Risk for All Age Groups						1.6E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.15E-07	4.8E-01	2.1E-01	1.3E-06	2.5E-06	2.7E-06	3.7E-06	1.0E-05
Acenaphthene	5.80E-03	1.0E-04	4.4E-05	NC	NC	NC	NC	NC
Acenaphthylene	4.60E-04	NA	NA	NC	NC	NC	NC	NC
Anthracene	4.90E-03	1.7E-05	7.5E-06	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	3.48E-03	NA	NA	7.7E-06	4.7E-06	5.0E-06	2.3E-06	2.0E-05
Benzo(e)pyrene	5.00E-04	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	9.50E-04	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	3.10E-03	3.3E-03	1.4E-03	NC	NC	NC	NC	NC
Fluoranthene	5.50E-03	1.5E-04	6.3E-05	NC	NC	NC	NC	NC
Fluorene	6.90E-03	1.8E-04	7.9E-05	NC	NC	NC	NC	NC
1-Methylnaphthalene	3.40E-03	5.2E-05	2.2E-05	3.0E-09	6.0E-09	6.4E-09	9.0E-09	2.4E-08
2-Methylnaphthalene	1.40E-03	3.7E-04	1.6E-04	NC	NC	NC	NC	NC
Naphthalene	1.50E-03	8.0E-05	3.4E-05	NC	NC	NC	NC	NC
Perylene	1.40E-03	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	6.30E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.70E-03	9.6E-05	4.1E-05	NC	NC	NC	NC	NC
Sum of Risks for Age Group		4.8E-01	2.1E-01	9.0E-06	7.2E-06	7.7E-06	6.1E-06	
Sum of Lifetime Cancer Risk for All Age Groups						3.0E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Striped Mullet
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	3.15E-07	4.8E-01	2.1E-01	1.3E-06	2.5E-06	2.7E-06	3.7E-06	1.0E-05
Acenaphthene	1.37E-03	2.4E-05	1.0E-05	NC	NC	NC	NC	NC
Acenaphthylene	2.26E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	9.64E-05	3.4E-07	1.5E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.20E-05	NA	NA	1.2E-07	6.9E-08	7.4E-08	3.5E-08	2.9E-07
Benzo(e)pyrene	2.26E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.26E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.26E-05	2.4E-05	1.0E-05	NC	NC	NC	NC	NC
Fluoranthene	9.25E-04	2.5E-05	1.1E-05	NC	NC	NC	NC	NC
Fluorene	7.98E-04	2.1E-05	9.1E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	3.07E-04	4.7E-06	2.0E-06	2.7E-10	5.4E-10	5.8E-10	8.1E-10	2.2E-09
2-Methylnaphthalene	5.15E-04	1.4E-04	5.9E-05	NC	NC	NC	NC	NC
Naphthalene	7.40E-04	4.0E-05	1.7E-05	NC	NC	NC	NC	NC
Perylene	2.26E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	9.79E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.84E-04	1.0E-05	4.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		4.8E-01	2.1E-01	1.4E-06	2.6E-06	2.7E-06	3.8E-06	
Sum of Lifetime Cancer Risk for All Age Groups						1.0E-05		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Tabby Catfish
Location: Turkey Creek Upstream
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	not analyzed	na	na	na	na	na	na	na
Acenaphthene	not analyzed	na	na	na	na	na	na	na
Acenaphthylene	not analyzed	na	na	na	na	na	na	na
Anthracene	not analyzed	na	na	na	na	na	na	na
Benzo(a)pyrene equivalents	not analyzed	na	na	na	na	na	na	na
Benzo(e)pyrene	not analyzed	na	na	na	na	na	na	na
Benzo(g,h,i)perylene	not analyzed	na	na	na	na	na	na	na
Dibenzofuran	not analyzed	na	na	na	na	na	na	na
Fluoranthene	not analyzed	na	na	na	na	na	na	na
Fluorene	not analyzed	na	na	na	na	na	na	na
1-Methylnaphthalene	not analyzed	na	na	na	na	na	na	na
2-Methylnaphthalene	not analyzed	na	na	na	na	na	na	na
Naphthalene	not analyzed	na	na	na	na	na	na	na
Perylene	not analyzed	na	na	na	na	na	na	na
Phenanthrene	not analyzed	na	na	na	na	na	na	na
Pyrene	not analyzed	na	na	na	na	na	na	na
Sum of Risks for Age Group		na	na	na	na	na	na	
Sum of Lifetime Cancer Risk for All Age Groups						na		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: Tabby Catfish
Location: Turkey Creek Upstream
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	5.79E-08	8.8E-02	3.8E-02	2.3E-07	4.6E-07	4.9E-07	6.9E-07	1.9E-06
Acenaphthene	2.48E-08	4.4E-10	1.9E-10	NC	NC	NC	NC	NC
Acenaphthylene	2.48E-08	NA	NA	NC	NC	NC	NC	NC
Anthracene	2.48E-08	8.8E-11	3.8E-11	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	1.15E-04	NA	NA	2.6E-07	1.5E-07	1.6E-07	7.7E-08	6.5E-07
Benzo(e)pyrene	2.48E-08	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.48E-08	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	2.48E-08	2.7E-08	1.1E-08	NC	NC	NC	NC	NC
Fluoranthene	5.10E-08	1.4E-09	5.8E-10	NC	NC	NC	NC	NC
Fluorene	2.48E-08	6.6E-10	2.8E-10	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.48E-08	3.8E-10	1.6E-10	2.2E-14	4.4E-14	4.7E-14	6.6E-14	1.8E-13
2-Methylnaphthalene	2.48E-08	6.6E-09	2.8E-09	NC	NC	NC	NC	NC
Naphthalene	5.27E-08	2.8E-09	1.2E-09	NC	NC	NC	NC	NC
Perylene	2.48E-08	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.48E-08	NA	NA	NC	NC	NC	NC	NC
Pyrene	3.52E-08	1.3E-09	5.4E-10	NC	NC	NC	NC	NC
Sum of Risks for Age Group		8.8E-02	3.8E-02	4.9E-07	6.1E-07	6.6E-07	7.6E-07	
Sum of Lifetime Cancer Risk for All Age Groups						2.5E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: White Trout
Location: Background
Laboratory: CAS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.55E-08	1.2E-01	4.9E-02	3.0E-07	6.0E-07	6.4E-07	9.0E-07	2.4E-06
Acenaphthene	1.30E-04	2.3E-06	9.9E-07	NC	NC	NC	NC	NC
Acenaphthylene	9.20E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	4.60E-05	1.6E-07	7.0E-08	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	9.00E-05	NA	NA	2.0E-07	1.2E-07	1.3E-07	6.0E-08	5.1E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	4.75E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	1.90E-04	2.0E-04	8.7E-05	NC	NC	NC	NC	NC
Fluoranthene	1.30E-04	3.5E-06	1.5E-06	NC	NC	NC	NC	NC
Fluorene	3.40E-04	9.1E-06	3.9E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	2.50E-04	3.8E-06	1.6E-06	2.2E-10	4.4E-10	4.7E-10	6.6E-10	1.8E-09
2-Methylnaphthalene	3.60E-04	9.6E-05	4.1E-05	NC	NC	NC	NC	NC
Naphthalene	4.60E-04	2.5E-05	1.1E-05	NC	NC	NC	NC	NC
Perylene	6.00E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	3.50E-04	NA	NA	NC	NC	NC	NC	NC
Pyrene	8.20E-05	2.9E-06	1.3E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.2E-01	4.9E-02	5.0E-07	7.2E-07	7.7E-07	9.6E-07	
Sum of Lifetime Cancer Risk for All Age Groups						2.9E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-3
Noncancer Risks (Hazard Quotient) and Lifetime Cancer Risks
Recreational Fish Consumption by Age Group, Fish Species, and Laboratory

Fish Species: White Trout
Location: Background
Laboratory: SGS

Chemical	Fish Conc. mg/kg	Hazard Quotient Receptor		Lifetime Cancer Risk Receptor Age Range (years)				Summed Cancer Risk by Chemical
		Child	Adult	0 to 2	2 to 6	6 to 16	> 16	
Total Dioxin toxic equivalence	7.55E-08	1.2E-01	4.9E-02	3.0E-07	6.0E-07	6.4E-07	9.0E-07	2.4E-06
Acenaphthene	1.70E-04	3.0E-06	1.3E-06	NC	NC	NC	NC	NC
Acenaphthylene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Anthracene	1.49E-04	5.3E-07	2.3E-07	NC	NC	NC	NC	NC
Benzo(a)pyrene equivalents	5.70E-05	NA	NA	1.3E-07	7.6E-08	8.2E-08	3.8E-08	3.2E-07
Benzo(e)pyrene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Benzo(g,h,i)perylene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Dibenzofuran	6.31E-04	6.7E-04	2.9E-04	NC	NC	NC	NC	NC
Fluoranthene	4.51E-04	1.2E-05	5.2E-06	NC	NC	NC	NC	NC
Fluorene	4.65E-04	1.2E-05	5.3E-06	NC	NC	NC	NC	NC
1-Methylnaphthalene	1.30E-04	2.0E-06	8.5E-07	1.2E-10	2.3E-10	2.5E-10	3.5E-10	9.4E-10
2-Methylnaphthalene	2.51E-04	6.7E-05	2.9E-05	NC	NC	NC	NC	NC
Naphthalene	3.18E-04	1.7E-05	7.3E-06	NC	NC	NC	NC	NC
Perylene	2.50E-05	NA	NA	NC	NC	NC	NC	NC
Phenanthrene	2.02E-03	NA	NA	NC	NC	NC	NC	NC
Pyrene	2.12E-04	7.5E-06	3.2E-06	NC	NC	NC	NC	NC
Sum of Risks for Age Group		1.2E-01	5.0E-02	4.3E-07	6.7E-07	7.2E-07	9.4E-07	
Sum of Lifetime Cancer Risk for All Age Groups						2.8E-06		

NA - Not Available; hazard quotient not calculated due to lack of toxicity factor
NC - Not carcinogenic
na - no analyses available; no risk calculated

Table 5-4

Summary of Noncancer and Lifetime Cancer Risks for Consumption of Recreationally Caught Fish
(sorted from highest cancer risk to lowest cancer risk from SGS Laboratory analysis)

Fish type	Location where fish caught	*Summed Lifetime Cancer Risk		**Summed Noncancer Risk	
		Laboratory - SGS	Laboratory - CAS	Laboratory - SGS	Laboratory - CAS
Striped Mullet	Background	9.3E-05	9.7E-05	4.4E+00	4.4E+00
Blue Catfish	Turkey Creek adjacent to site	2.4E-05	2.5E-05	1.1E+00	1.1E+00
Striped Mullet	Turkey Creek adjacent to site	1.6E-05	3.3E-05	5.7E-01	5.8E-01
Channel Catfish	Bayou Bernard upstream	1.5E-05	na	6.7E-01	na
Striped Mullet	Turkey Creek upstream	1.0E-05	3.0E-05	4.8E-01	4.8E-01
Common Carp	Bayou Bernard upstream	9.4E-06	2.9E-05	4.3E-01	4.4E-01
Atlantic Croaker	Background	8.1E-06	8.1E-06	3.6E-01	3.6E-01
Blue Gill	Turkey Creek adjacent to site	5.7E-06	5.7E-06	2.4E-01	2.4E-01
Pumpkinseed Bream	Background	4.1E-06	4.3E-06	1.8E-01	1.8E-01
Striped Mullet	Bayou Bernard upstream	3.9E-06	8.7E-06	1.7E-01	1.7E-01
Black Drum	Background	3.7E-06	3.9E-06	1.6E-01	1.6E-01
Redfish	Bayou Bernard upstream	3.6E-06	3.7E-06	1.6E-01	1.6E-01
Striped Bass	Turkey Creek upstream	3.4E-06	4.6E-06	1.4E-01	1.4E-01
Large Mouth Bass	Turkey Creek adjacent to site	3.2E-06	3.4E-06	1.4E-01	1.4E-01
Orange Spotted Sun Fish	Turkey Creek upstream	3.1E-06	3.1E-06	1.2E-01	1.2E-01
Ground Mullet	Background	3.1E-06	3.9E-06	1.3E-01	1.3E-01
White Trout	Background	2.8E-06	2.9E-06	1.2E-01	1.2E-01
Striped Mullet	Bayou Bernard downstream	2.7E-06	7.5E-06	1.1E-01	1.1E-01
Tabby Catfish	Turkey Creek upstream	2.5E-06	na	8.8E-02	na
Sheep Head	Bayou Bernard downstream	2.1E-06	2.3E-06	8.4E-02	8.4E-02
Large Mouth Bass	Bayou Bernard downstream	1.7E-06	1.9E-06	6.6E-02	6.6E-02
Large Mouth Bass	Turkey Creek upstream	1.7E-06	1.9E-06	6.5E-02	6.5E-02
Large Mouth Bass	Background	1.6E-06	3.0E-06	6.3E-02	6.2E-02
Large Mouth Bass	Bayou Bernard upstream	1.6E-06	1.8E-06	6.1E-02	6.2E-02
Back Drum	Bayou Bernard downstream	1.6E-06	1.7E-06	5.9E-02	5.9E-02
Redfish	Bayou Bernard downstream	1.5E-06	1.7E-06	5.8E-02	5.8E-02

*Presents the summed lifetime cancer risks for all age groups

**Presents the hazard index for the child. Hazard indices for the child were higher than those calculated for the adult

na - no analyses; risks not calculated

Table 5-5

Summmed Noncancer and Cancer Risk from Fish Consumption, Surface Water Exposure, and Sediment Exposure

Fish type	Location where fish caught	*Summed Lifetime Cancer Risk				**Summed Noncancer Risk			
		Fish consumption	(1)Surface Water Exposure	Sediment Exposure	(2)Total Cancer Risk	Fish consumption	(1)Surface Water Exposure	Sediment Exposure	(3)Total Noncancer Risk
Striped Mullet	Background	9.3E-05			9.4E-05	4.4E+00			4.4E+00
Blue Catfish	Turkey Creek adjacent to site	2.4E-05			2.6E-05	1.1E+00			1.1E+00
Striped Mullet	Turkey Creek adjacent to site	1.6E-05			1.7E-05	5.7E-01			5.8E-01
Channel Catfish	Bayou Bernard upstream	1.5E-05			1.6E-05	6.7E-01			6.7E-01
Striped Mullet	Turkey Creek upstream	1.0E-05			1.2E-05	4.8E-01			4.8E-01
Common Carp	Bayou Bernard upstream	9.4E-06			1.1E-05	4.3E-01			4.3E-01
Atlantic Croaker	Background	8.1E-06			9.6E-06	3.6E-01			3.6E-01
Bue Gill	Turkey Creek adjacent to site	5.7E-06			7.2E-06	2.4E-01			2.5E-01
Pumpkinseed Bream	Background	4.1E-06			5.6E-06	1.8E-01			1.8E-01
Striped Mullet	Bayou Bernard upstream	3.9E-06			5.4E-06	1.7E-01			1.7E-01
Black Drum	Background	3.7E-06			5.2E-06	1.6E-01			1.6E-01
Redfish	Bayou Bernard upstream	3.6E-06			5.1E-06	1.6E-01			1.6E-01
Striped Bass	Turkey Creek upstream	3.4E-06	4.3E-09	1.5E-06	4.9E-06	1.4E-01	2.7E-04	2.3E-03	1.5E-01
Large Mouth Bass	Turkey Creek adjacent to site	3.2E-06			4.7E-06	1.4E-01			1.4E-01
Orange Spotted Sun Fish	Turkey Creek upstream	3.1E-06			4.6E-06	1.2E-01			1.2E-01
Ground Mullet	Background	3.1E-06			4.6E-06	1.3E-01			1.3E-01
White Trout	Background	2.8E-06			4.3E-06	1.2E-01			1.2E-01
Striped Mullet	Bayou Bernard downstream	2.7E-06			4.2E-06	1.1E-01			1.2E-01
Tabby Catfish	Turkey Creek upstream	2.5E-06			4.0E-06	8.8E-02			9.1E-02
Sheep Head	Bayou Bernard downstream	2.1E-06			3.6E-06	8.4E-02			8.6E-02
Large Mouth Bass	Bayou Bernard downstream	1.7E-06			3.2E-06	6.6E-02			6.9E-02
Large Mouth Bass	Turkey Creek upstream	1.7E-06			3.2E-06	6.5E-02			6.7E-02
Large Mouth Bass	Background	1.6E-06			3.1E-06	6.3E-02			6.5E-02
Large Mouth Bass	Bayou Bernard upstream	1.6E-06			3.1E-06	6.1E-02			6.4E-02
Back Drum	Bayou Bernard downstream	1.6E-06			3.1E-06	5.9E-02			6.1E-02
Redfish	Bayou Bernard downstream	1.5E-06			3.0E-06	5.8E-02			6.1E-02

*Presents the summed lifetime cancer risks for all age groups

**Presents the hazard index for the child. Hazard indices for the child were higher than those calculated for the adult

(1)Highest risk from direct surface water contact (Turkey Creek upstream) used for calculation

(2)Fish consumption + surface water exposure + sediment exposure = total cancer risk

(3)Fish consumption + surface water exposure + sediment exposure = total noncancer risk

Table 6-1
Summary of Noncancer and Lifetime Cancer Risks for Consumption of Recreationally Caught Fish by Location

Background Location

Fish type	*Summed Lifetime Cancer Risk		**Summed Noncancer Risk	
	Laboratory - SGS	Laboratory - CAS	Laboratory - SGS	Laboratory - CAS
Striped Mullet	9.3E-05	9.7E-05	4.4E+00	4.4E+00
Atlantic Croaker	8.1E-06	8.1E-06	3.6E-01	3.6E-01
Pumpkinseed Bream	4.1E-06	4.3E-06	1.8E-01	1.8E-01
Black Drum	3.7E-06	3.9E-06	1.6E-01	1.6E-01
Ground Mullet	3.1E-06	3.9E-06	1.3E-01	1.3E-01
White Trout	2.8E-06	3.0E-06	1.2E-01	1.2E-01
Large Mouth Bass	1.6E-06	3.0E-06	6.3E-02	6.3E-02
Average of All Fish	*1.7E-05*	*1.8E-05*	*7.7E-01*	*7.7E-01*

Turkey Creek Upstream of Site

Fish type	*Summed Lifetime Cancer Risk		**Summed Noncancer Risk	
	Laboratory - SGS	Laboratory - CAS	Laboratory - SGS	Laboratory - CAS
Striped Mullet	1.1E-05	3.0E-05	4.8E-01	4.8E-01
Striped Bass	3.4E-06	4.6E-06	1.4E-01	1.5E-01
Orange Spotted Sun Fish	3.1E-06	3.1E-06	1.2E-01	1.2E-01
Tabby Catfish	2.5E-06	na	8.8E-02	na
Large Mouth Bass	1.7E-06	1.9E-06	6.5E-02	6.5E-02
Average of All Fish	*4.2E-06*	*9.8E-06*	*1.8E-01*	*2.0E-01*

Turkey Creek Adjacent to/Downstream of Site

Fish type	*Summed Lifetime Cancer Risk		**Summed Noncancer Risk	
	Laboratory - SGS	Laboratory - CAS	Laboratory - SGS	Laboratory - CAS
Blue Cat	2.4E-05	2.5E-05	1.1E+00	1.1E+00
Striped Mullet	1.6E-05	3.3E-05	5.7E-01	5.8E-01
Bue Gill	5.7E-06	5.7E-06	2.4E-01	2.4E-01
Large Mouth Bass	3.2E-06	3.4E-06	1.4E-01	1.4E-01
Average of All Fish	*1.2E-05*	*1.7E-05*	*5.2E-01*	*5.3E-01*

Bayou Bernard Upstream

Fish type	*Summed Lifetime Cancer Risk		**Summed Noncancer Risk	
	Laboratory - SGS	Laboratory - CAS	Laboratory - SGS	Laboratory - CAS
Channel Catfish	1.5E-05	na	6.7E-01	na
Common Carp	9.4E-06	2.9E-05	4.3E-01	4.4E-01
Striped Mullet	3.9E-06	8.7E-06	1.7E-01	1.7E-01
Redfish	3.6E-06	3.7E-06	1.6E-01	1.6E-01
Large Mouth Bass	1.6E-06	1.8E-06	6.1E-02	6.2E-02
Average of All Fish	*6.7E-06*	*1.1E-05*	*3.0E-01*	*2.1E-01*

Bayou Bernard Downstream

Fish type	*Summed Lifetime Cancer Risk		**Summed Noncancer Risk	
	Laboratory - SGS	Laboratory - CAS	Laboratory - SGS	Laboratory - CAS
Striped Mullet	2.7E-06	7.5E-06	1.1E-01	1.2E-01
Sheep Head	2.1E-06	2.3E-06	8.4E-02	8.4E-02
Large Mouth Bass	1.7E-06	1.9E-06	6.6E-02	6.6E-02
Back Drum	1.6E-06	1.8E-06	5.9E-02	5.9E-02
Redfish	1.5E-06	1.7E-06	5.8E-02	5.8E-02
Average of All Fish	*1.9E-06*	*3.0E-06*	*7.6E-02*	*7.6E-02*

*Presents the summed lifetime cancer risks for all age groups
**Presents the hazard index for the child. Hazard indices for the child were higher than for the adult
na - no analyses; risks not calculated

APPENDICES

Appendix A

Surface Water, Sediment, and Fish Chemical Concentration Data

Semi-Volatile Organic Compounds

Polychlorinated Dibenzo-p-Dioxins

Polychlorinated Dibenzofurans

Appendix A
Surface Water Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/L)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SW-11	TC-SW-12	TC-SW-13	TC-SW-15	SW TCS01
Acenaphthene	<1.02	<1.02	<1.02	<1.02	<0.0044
Acenaphthylene	<1.02	<1.02	<1.02	<1.02	<0.0034
Anthracene	<1.02	<1.02	<1.02	<1.02	<0.0036
Benzo(a)anthracene	<0.003	<0.003	<0.003	<0.003	<0.0026
Benzo(a)pyrene	<0.001	<0.001	<0.001	<0.001	<0.0043
Benzo(b)fluoranthene	<0.003	<0.003	<0.003	<0.003	<0.0023
Benzo(e)pyrene					<0.004
Benzo(g,h,i)perylene	<0.005	<0.005	<0.005	<0.005	<0.0029
Benzo(k)fluoranthene	<0.003	<0.003	<0.003	<0.003	<0.0025
Chrysene	<0.015	<0.015	<0.015	<0.015	<0.0034
Dibenz(a,h)anthracene	<0.003	<0.003	<0.003	<0.003	<0.0025
Dibenzofuran					<0.0046
Fluoranthene	<0.016	<0.016	<0.016	<0.016	0.0099J
Fluorene	<1.02	<1.02	<1.02	<1.02	<0.0038
Indeno(1,2,3-cd)pyrene	<0.004	<0.004	<0.004	<0.004	<0.0026
1-Methylnaphthalene					<0.0035
2-Methylnaphthalene					<0.0023
Naphthalene	<1.02	<1.02	<1.02	<1.02	0.021J
Perylene					<0.005
Phenanthrene	<1.02	<1.02	<1.02	<1.02	<0.005
Pyrene	<0.011	<0.011	<0.011	<0.011	0.005J
*Benzo(a)pyrene equivalents	0.0025225	0.0025225	0.0025225	0.0025225	0.0037892
*See Section 2.0 of report for discussion of benzo(a)pyrene equivalents					

B = present in blank; D = ; J = estimated concentration

Appendix A
Surface Water Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/L)
Turkey Creek - Upstream of Site

	SWTC101B	SWTC102B	SWTC103B	SW TC104	SW TC105	TC-SW-14
Acenaphthene	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<1.02
Acenaphthylene	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<1.02
Anthracene	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<1.02
Benz(a)anthracene	<0.0036	<0.0026	<0.0026	0.003J	0.0036J	<0.003
Benzo(a)pyrene	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.001
Benzo(b)fluoranthene	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.003
Benzo(e)pyrene	<0.004	<0.004	<0.004	<0.004	<0.004	
Benzo(g,h,i)perylene	<0.0029	<0.0029	<0.0029	0.0069J	<0.0029	<0.005
Benzo(k)fluoranthene	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.003
Chrysene	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.015
Dibenz(a,h)anthracene	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.003
Dibenzofuran	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	
Fluoranthene	0.014J	0.0093J	0.0085J	0.0085J	0.01J	<0.016
Fluorene	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<1.02
Indeno(1,2,3-cd)pyrene	<0.0026	<0.0026	<0.0026	0.0038J	<0.0026	<0.004
1-Methylnaphthalene	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	
2-Methylnaphthalene	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	
Naphthalene	0.0067J	0.018J	0.0089J	0.0097J	0.012J	<1.02
Perylene	<0.005	<0.005	<0.005	<0.005	<0.005	
Phenanthrene	<0.005	<0.005	<0.005	<0.005	<0.005	<1.02
Pyrene	0.008J	0.004J	0.004J	0.0051J	0.0051J	<0.011
*Benzo(a)pyrene equivalents	0.0038	0.0038	0.0038	0.0042	0.0040	0.0025
*See Section 2.0 of report for discussion of benzo(a)pyrene equivalents						

J = estimated concentration

Appendix A
Surface Water Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in picograms/L)
Turkey Creek - Adjacent to or Downstream of Site

	TC-SW-11	TC-SW-12	TC-SW-13	TC-SW-15
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	26.7	25.6	27.6	27.3
1,2,3,4,6,7,8-Heptachlorodibenzofuran	5.57J	4.84J	4.31J	4.89J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	<0.752	<0.598	<0.993	<0.781
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	<0.46	<0.379	<0.499	<0.463
1,2,3,4,7,8-Hexachlorodibenzofuran	<0.542	<0.44	<0.867	<0.569
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.889J	0.631J	<0.342	<0.318
1,2,3,6,7,8-Hexachlorodibenzofuran	<0.427	<0.348	<0.684	<0.449
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	<0.361	<0.298	<0.392	<0.364
1,2,3,7,8,9-Hexachlorodibenzofuran	<0.636	<0.516	<1.02	<0.668
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	<0.852	<0.65	<1.04	<0.829
1,2,3,7,8-Pentachlorodibenzofuran	<0.485	<0.364	<0.463	<0.547
2,3,4,6,7,8-Hexachlorodibenzofuran	<0.501	<0.406	<0.802	<0.527
2,3,4,7,8-Pentachlorodibenzofuran	<0.474	<0.356	<0.453	<0.535
2,3,7,8-Tetrachlorodibenzo-p-dioxin	<0.504	<0.513	<0.822	<0.462
2,3,7,8-Tetrachlorodibenzofuran	<0.441	<0.372	<0.542	<0.505
Octachlorodibenzofuran	20.5J	19.6J	18.8J	21J
Octachlorodibenzo-p-dioxin	283B	273B	296B	300B
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	1.43	1.24	1.68	1.35

B = present in blank
J = estimated concentration

Appendix A
Surface Water Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in picograms/L)
Turkey Creek - Upstream of Site

Sample Number	SW-TC101	SW-TC102	SW-TC103	SW-TC104	SW-TC105	TC-SW-14
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	11.6J	9.77J	1.5	5.11J	<2.53	24.8J
1,2,3,4,6,7,8-Heptachlorodibenzofuran	3.13JEMPC	2.62JEMPC	0.59	<0.698	<0.922	7.95J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	<0.506	<0.48	0.89	<1.05	<1.28	4.96J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	<0.425	<0.505	0.93	<1.01	<1.17	1.66JK
1,2,3,4,7,8-Hexachlorodibenzofuran	<0.294	<0.221	0.725	<0.466	<0.829	1.67JK
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	<0.456	<0.534	0.96	<1.05	<1.22	3.43J
1,2,3,6,7,8-Hexachlorodibenzofuran	<0.3	<0.216	0.755	<0.448	<0.87	1.6JK
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	<0.456	<0.536	0.975	<1.06	<1.23	3.03J
1,2,3,7,8,9-Hexachlorodibenzofuran	<0.385	<0.278	0.955	<0.543	<1.13	2.83J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	<0.871	<0.573	0.82	<1.32	<0.767	<0.722
1,2,3,7,8-Pentachlorodibenzofuran	<0.929	<0.423	0.785	<1.17	<0.568	<0.572
2,3,4,6,7,8-Hexachlorodibenzofuran	<0.304	<0.229	0.755	<0.444	<0.893	3.27J
2,3,4,7,8-Pentachlorodibenzofuran	<0.635	<0.425	0.69	<1.15	<0.578	<0.56
2,3,7,8-Tetrachlorodibenzo-p-dioxin	<0.706	<0.491	0.735	<0.869	<1.2	<0.65
2,3,7,8-Tetrachlorodibenzofuran	<0.452	<0.476	0.675	<0.68	<0.842	<0.725
Octachlorodibenzofuran	7.69JEMPC	6.6J	1.655	<1.14	<1.98	32J
Octachlorodibenzo-p-dioxin	103J	85.5J	53.8	52.2J	35.9JEMPC	236B
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	1.23	0.91	2.50	1.65	1.52	3.03

B = detected in blank; EMPC = estimated maximum possible concentration; J = estimated concentration

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6GV2	TC-SED-6LV	TC-SED-6PV2	TC-SED-6QV	TC-SED-6RV	TC-SED-6SV	TC-SED-6TV	TC-SED-6VV
Depth interval (feet)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Acenaphthene	<3.3	7.5J	3.4J	33.7	258	829	3	4.5
Acenaphthylene	<3.7	<3.2	6.7J	<4	14.2	15.7	<3.3	12.3
Aniline								
Anthracene	<5.4	<4.7	16.2J	6.4	49.1	160	<4.8	30.2
Benzo(a)anthracene	<3.3	<2.9	19.1J	3.8	68.9	28	3.9	23.8
Benzo(a)pyrene	<3.8	<3.3	17.0J	<4.1	38.2	21.2	4.3	27.2
Benzo(b)fluoranthene	<4	<3.5	21.4J	<4.3	40.2	22.8	5.5	44.9
Benzo(e)pyrene	<3.7	<3.2	13.1J	<4	24.2	12.1	4.1	28.9
Benzo(g,h,i)perylene	<3.1	<2.7	10.1J	<3.3	14.3	10	3	16.3
Benzo(k)fluoranthene	<4.3	<3.8	17.2J	5.9	49.7	21.1	6	40.5
Biphenyl								
Bis(2-chloroethoxy)methane								
Bis(2-chloroethyl)ether								
Bis(2-chloroisopropyl)ether								
Bis(2-ethylhexyl)phthalate								
4-Bromophenyl phenyl ether								
Butyl benzyl phthalate								
4-Chloro-3-Methylphenol								
4-Chloroaniline								
2-Chloronaphthalene								
2-Chlorophenol								
4-Chlorophenyl phenyl ether								
Chrysene	<4.2	<3.7	23.0J	5.2	72.5	27.3	6	36.5
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<6.3	<5.5	<6.4	<6.8	<6.7	<5.8	<5.6	6.4
Dibenzofuran								
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3'-Dichlorobenzidine								
2,4-Dichlorophenol								
Diethyl phthalate								
Dimethyl phthalate								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6GV2	TC-SED-6LV	TC-SED-6PV2	TC-SED-6QV	TC-SED-6RV	TC-SED-6SV	TC-SED-6TV	TC-SED-6VV
Depth interval (feet)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
2,4-Dimethylphenol								
Di-n-butyl phthalate								
4,6-Dinitro-2-methylphenol								
2,4-Dinitrophenol								
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
Di-n-octyl phthalate								
Fluoranthene	<11.6	15.5J	70.3	23.8	285	190	40.1	43.7
C1-Fluoranthenes/Pyrenes								
Fluorene	<5.8	<5.0	<5.9	7.8	86.4	327	<5.1	<5.3
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclopentadiene								
Hexachloroethane								
Indeno(1,2,3-cd)pyrene	<3.3	<2.9	9.4J	<3.6	12.9	10.3	<2.9	16.3
Isophorone								
1-Methylnaphthalene	<3.5	<3.1	<3.6	<3.8	<3.8	177	<3.1	<3.2
2-Methylnaphthalene	<3.5	<3.1	<3.6	<3.8	8.8	5.4	<3.1	4.1
2-Methylphenol								
4-Methylphenol								
Naphthalene	<4.1	5.6J	11.3J	<4.4	27.9	10.9	<3.6	8.6
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline								
3-Nitroaniline								
4-Nitroaniline								
Nitrobenzene								
2-Nitrophenol								
4-Nitrophenol								
N-Nitrosodimethylamine								
N-Nitrosodi-n-propylamine								
N-Nitrosodiphenylamine								
Pentachlorophenol								
Perylene								
Phenanthrene	<5.1	<4.5	10.1J	9.7	51.9	546	<4.5	11.1
C1-Phenanthrenes/Anthracenes								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6GV2	TC-SED-6LV	TC-SED-6PV2	TC-SED-6QV	TC-SED-6RV	TC-SED-6SV	TC-SED-6TV	TC-SED-6VV
Depth interval (feet)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol								
Pyrene	<4.2	11.8J	50.4	16.2	172	105	27.5	52.5
2,3,4,5-Tetrachlorophenol								
2,3,4,6-Tetrachlorophenol								
2,3,5,6-Tetrachlorophenol								
1,2,4-Trichlorobenzene								
2,4,5-Trichlorophenol								
2,4,6-Trichlorophenol								
*Benzo(a)pyrene equivalents	5.6036	4.88585	25.385	6.2892	54.3195	30.4483	8.251	42.5415
*See Section 2.0 of report for discussion of benzo(a)pyrene equivalents								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6WV	TC-SED-6WV2	TC-SED-6WV6	TC-SED-6WV6	TC-SED-6WV7	TC-SED-6XV	TC-SED-6YV	TC-SED-6YV
Depth interval (feet)	0-0.75	0-1	0.5-1	0-0.5	0-1	0-1.25	0-1	0-0.5
Acenaphthene	2810	6280	17.7J	32.1	1770	26300	9.6	1750
Acenaphthylene	<35	79.6J	<3.7	<3.9	15.8J	538	<3.5	16.9J
Aniline								
Anthracene	223	837	6.8J	23.6J	73.1	7100	<5.1	208
Benzo(a)anthracene	82.5	134J	6.4J	13.5J	20.9J	1710	<3.1	<12.2
Benzo(a)pyrene	<36	<48.9	6.2J	7.7J	<9.9	415	<3.6	<14.0
Benzo(b)fluoranthene	<38	52.9J	6.7J	11.1J	<10.5	425	<3.8	<14.8
Benzo(e)pyrene	<35.1	<47.7	3.8J	5.8J	<9.7	<321	<3.5	<13.7
Benzo(g,h,i)perylene	<29.1	<39.4	4.0J	5.2J	<8.0	<266	<2.9	<11.3
Benzo(k)fluoranthene	56.5	80.2J	6.3J	10.2J	<11.3	532	<4	<15.9
Biphenyl								
Bis(2-chloroethoxy)methane								
Bis(2-chloroethyl)ether								
Bis(2-chloroisopropyl)ether								
Bis(2-ethylhexyl)phthalate								
4-Bromophenyl phenyl ether								
Butyl benzyl phthalate								
4-Chloro-3-Methylphenol								
4-Chloroaniline								
2-Chloronaphthalene								
2-Chlorophenol								
4-Chlorophenyl phenyl ether								
Chrysene	97.9	189J	7.5J	13.1J	25.3J	1630	<3.9	<15.5
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<59.9	<81.3	<6.3	<6.7	<16.5	<548	<5.9	<23.3
Dibenzofuran								
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3'-Dichlorobenzidine								
2,4-Dichlorophenol								
Diethyl phthalate								
Dimethyl phthalate								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6WV	TC-SED-6WV2	TC-SED-6WV6	TC-SED-6WV6	TC-SED-6WV7	TC-SED-6XV	TC-SED-6YV	TC-SED-6YV
Depth interval (feet)	0-0.75	0-1	0.5-1	0-0.5	0-1	0-1.25	0-1	0-0.5
2,4-Dimethylphenol								
Di-n-butyl phthalate								
4,6-Dinitro-2-methylphenol								
2,4-Dinitrophenol								
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
Di-n-octyl phthalate								
Fluoranthene	165	1170	35.1	79.2	214	13000	12.8	87.7
C1-Fluoranthenes/Pyrenes								
Fluorene	2080	3680	12.4J	24.4J	859	24100	<5.4	473
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclopentadiene								
Hexachloroethane								
Indeno(1,2,3-cd)pyrene	<31.3	<42.4	3.5J	4.0J	<8.6	<286	<3.1	<12.2
Isophorone								
1-Methylnaphthalene	1680	78.8J	<3.6	<3.8	88.6	14900	<3.3	434
2-Methylnaphthalene	<33.6	53.1J	<3.6	4.8J	<9.3	22300	<3.3	61.1J
2-Methylphenol								
4-Methylphenol								
Naphthalene	261	206J	<4.1	10J	24.3J	51800	3.9	204
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline								
3-Nitroaniline								
4-Nitroaniline								
Nitrobenzene								
2-Nitrophenol								
4-Nitrophenol								
N-Nitrosodimethylamine								
N-Nitrosodi-n-propylamine								
N-Nitrosodiphenylamine								
Pentachlorophenol								
Perylene								
Phenanthrene	1730	2390	19.7J	63.7	157	48800	<4.8	915
C1-Phenanthrenes/Anthracenes								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6WV	TC-SED-6WV2	TC-SED-6WV6	TC-SED-6WV6	TC-SED-6WV7	TC-SED-6XV	TC-SED-6YV	TC-SED-6YV
Depth interval (feet)	0-0.75	0-1	0.5-1	0-0.5	0-1	0-1.25	0-1	0-0.5
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol								
Pyrene	114	731	20.6J	51.4	141	7630	8.3	49.3J
2,3,4,5-Tetrachlorophenol								
2,3,4,6-Tetrachlorophenol								
2,3,5,6-Tetrachlorophenol								
1,2,4-Trichlorobenzene								
2,4,5-Trichlorophenol								
2,4,6-Trichlorophenol								
*Benzo(a)pyrene equivalents	60.3279	86.901	11.0805	14.0251	16.3268	923.75	5.27195	20.69725
*See Section 2.0 of report for discussior								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6ZY	TC-SED-5A	TC-SED-5B	TC-SED-5C	TC-SED-6A	TC-SED-6A	TC-SED-6B	TC-SED-6B
Depth interval (feet)	0-1	0-1	0-1	0.5-1	0-0.5	0.5-1	0-0.5	0.5-1
Acenaphthene	13.0J	160	<30	110	<100	<30	1340	2090
Acenaphthylene	<3.6	<30	<30	<30	<100	<30	<330	<30
Aniline		<30	<30	<30	<100	<30	<330	<30
Anthracene	6.0J	<30	<30	<30	<100	<30	<330	260
Benzo(a)anthracene	5.1J	60	<30	<30	<100	<30	<330	60
Benzo(a)pyrene	3.8J	150	<30	<30	<100	<30	<330	<30
Benzo(b)fluoranthene	4.7J	30	<30	<30	<100	<30	<330	30
Benzo(e)pyrene	<3.6							
Benzo(g,h,i)perylene	<3.0	<30	<30	<30	<100	<30	<330	<30
Benzo(k)fluoranthene	5.0J	<30	<30	<30	<100	<30	<330	<30
Biphenyl								
Bis(2-chloroethoxy)methane		<30	<30	<30	<100	<30	<330	<30
Bis(2-chloroethyl)ether		<30	<30	<30	<100	<30	<330	<30
Bis(2-chloroisopropyl)ether		<30	<30	<30	<100	<30	<330	<30
Bis(2-ethylhexyl)phthalate		<30	<30	<30	<100	<30	<330	<30
4-Bromophenyl phenyl ether		<30	<30	<30	<100	<30	<330	<30
Butyl benzyl phthalate		<30	<30	<30	<100	<30	<330	<30
4-Chloro-3-Methylphenol		<30	<30	<30	<100	<30	<330	<30
4-Chloroaniline		<30	<30	<30	<100	<30	<330	<30
2-Chloronaphthalene		<30	<30	<30	<100	<30	<330	<30
2-Chlorophenol		<30	<30	<30	<100	<30	<330	<30
4-Chlorophenyl phenyl ether		<30	<30	<30	<100	<30	<330	<30
Chrysene	6.3J	50	<30	<30	<100	<30	<330	50
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<6.2	<30	<30	<30	<100	<30	<330	<30
Dibenzofuran		<30	<30	<30	<100	<30	<330	1120
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene		<30	<30	<30	<100	<30	<330	<30
1,3-Dichlorobenzene		<30	<30	<30	<100	<30	<330	<30
1,4-Dichlorobenzene		<30	<30	<30	<100	<30	<330	<30
3,3'-Dichlorobenzidine		<30	<30	<30	<100	<30	<330	<30
2,4-Dichlorophenol		<30	<30	<30	<100	<30	<330	<30
Diethyl phthalate		<30	<30	<30	<100	<30	<330	<30
Dimethyl phthalate		<30	<30	<30	<100	<30	<330	<30

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6ZY	TC-SED-5A	TC-SED-5B	TC-SED-5C	TC-SED-6A	TC-SED-6A	TC-SED-6B	TC-SED-6B
Depth interval (feet)	0-1	0-1	0-1	0.5-1	0-0.5	0.5-1	0-0.5	0.5-1
2,4-Dimethylphenol		<30	<30	<30	<100	<30	<330	<30
Di-n-butyl phthalate		<30	<30	<30	<100	<30	<330	<30
4,6-Dinitro-2-methylphenol		<130	<130	<130	<390	<130	<1300	<130
2,4-Dinitrophenol		<130	<130	<130	<390	<130	<1300	<130
2,4-Dinitrotoluene		<30	<30	<30	<100	<30	<330	<30
2,6-Dinitrotoluene		<30	<30	<30	<100	<30	<330	<30
Di-n-octyl phthalate		<30	<30	<30	<100	<30	<330	<30
Fluoranthene	13.6J	380	<30	70	<100	<30	1270	480
C1-Fluoranthenes/Pyrenes								
Fluorene	12.1J	160	<30	<30	<100	<30	700	1750
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene		<30	<30	<30	<100	<30	<330	<30
Hexachlorobutadiene		<30	<30	<30	<100	<30	<330	<30
Hexachlorocyclopentadiene		<30	<30	<30	<100	<30	<330	<30
Hexachloroethane		<30	<30	<30	<100	<30	<330	<30
Indeno(1,2,3-cd)pyrene	<3.2	<30	<30	<30	<100	<30	<330	<30
Isophorone		<30	<30	<30	<100	<30	<330	<30
1-Methylnaphthalene	8.3J	<30	<30	<30	<100	<30	<330	950
2-Methylnaphthalene	16.2J							
2-Methylphenol		<30	<30	<30	<100	<30	<330	<30
4-Methylphenol		<30	<30	<30	<100	<30	<330	<30
Naphthalene	23	<30	<30	<30	<100	<30	<330	560
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline		<30	<30	<30	<100	<30	<330	<30
3-Nitroaniline		<30	<30	<30	<100	<30	<330	<30
4-Nitroaniline		<30	<30	<30	<100	<30	<330	<30
Nitrobenzene		<30	<30	<30	<100	<30	<330	<30
2-Nitrophenol		<30	<30	<30	<100	<30	<330	<30
4-Nitrophenol		<30	<30	<30	<100	<30	<330	<30
N-Nitrosodimethylamine		<30	<30	<30	<100	<30	<330	<30
N-Nitrosodi-n-propylamine		<30	<30	<30	<100	<30	<330	<30
N-Nitrosodiphenylamine		<30	<30	<30	<100	<30	<330	<30
Pentachlorophenol		<30	<30	<30	<100	<30	<330	<30
Perylene								
Phenanthrene	23	<30	<30	<30	<100	<30	1290	1910
C1-Phenanthrenes/Anthracenes								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6ZY	TC-SED-5A	TC-SED-5B	TC-SED-5C	TC-SED-6A	TC-SED-6A	TC-SED-6B	TC-SED-6B
Depth interval (feet)	0-1	0-1	0-1	0.5-1	0-0.5	0.5-1	0-0.5	0.5-1
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol		<30	<30	<30	<100	<30	<330	<30
Pyrene	10.6J	260	<30	50	<100	<30	870	370
2,3,4,5-Tetrachlorophenol		<30	<30	<30	<100	<30	<330	<30
2,3,4,6-Tetrachlorophenol		<30	<30	<30	<100	<30	<330	<30
2,3,5,6-Tetrachlorophenol		<30	<30	<30	<100	<30	<330	<30
1,2,4-Trichlorobenzene		<30	<30	<30	<100	<30	<330	<30
2,4,5-Trichlorophenol		<30	<30	<30	<100	<30	<330	<30
2,4,6-Trichlorophenol		<30	<30	<30	<100	<30	<330	<30
*Benzo(a)pyrene equivalents	8.0963	175.7	34.665	34.665	115.55	34.665	381.315	40.7
*See Section 2.0 of report for discussior								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6BV	TC-SED-6C	TC-SED-6C	TC-SED-6CV	TC-SED-6D	TC-SED-6DV	TC-SED-6F	TC-SED-6H
Depth interval (feet)	0-1	0-0.5	0.5-0.8	0-0.7	0-0.8	0-1	0-1	0.5-1
Acenaphthene	560	86800	520	<30	<30	<30	98200	30
Acenaphthylene	<30	<990	<30	<30	<30	<30	<990	<170
Aniline	<30	<990	<30	<30	<30	<30	<990	<170
Anthracene	40	37000	390	<30	<30	<30	50000	1860
Benzo(a)anthracene	<30	16500	190	<30	<30	<30	16900	<170
Benzo(a)pyrene	<30	3810	40	<30	<30	<30	3810	<170
Benzo(b)fluoranthene	<30	6900	80	<30	<30	<30	6550	<170
Benzo(e)pyrene								
Benzo(g,h,i)perylene	<30	1130	<30	<30	<30	<30	1150	<170
Benzo(k)fluoranthene	<30	2020	30	<30	<30	<30	2070	<170
Biphenyl								
Bis(2-chloroethoxy)methane	<30	<990	<30	<30	<30	<30	<990	<170
Bis(2-chloroethyl)ether	<30	<990	<30	<30	<30	<30	<990	<170
Bis(2-chloroisopropyl)ether	<30	<990	<30	<30	<30	<30	<990	<170
Bis(2-ethylhexyl)phthalate	<30	<990	<30	<30	<30	<30	<990	<170
4-Bromophenyl phenyl ether	<30	<990	<30	<30	<30	<30	<990	<170
Butyl benzyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
4-Chloro-3-Methylphenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Chloroaniline	<30	<990	<30	<30	<30	<30	<990	<170
2-Chloronaphthalene	<30	<990	<30	<30	<30	<30	<990	<170
2-Chlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Chlorophenyl phenyl ether	<30	<990	<30	<30	<30	<30	<990	<170
Chrysene	<30	12800	150	<30	<30	<30	12800	<170
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<30	<990	<30	<30	<30	<30	<990	<170
Dibenzofuran	<30	71800	840	<30	<30	<30	82500	13200
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
1,3-Dichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
1,4-Dichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
3,3'-Dichlorobenzidine	<30	<990	<30	<30	<30	<30	<990	<170
2,4-Dichlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
Diethyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
Dimethyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6BV	TC-SED-6C	TC-SED-6C	TC-SED-6CV	TC-SED-6D	TC-SED-6DV	TC-SED-6F	TC-SED-6H
Depth interval (feet)	0-1	0-0.5	0.5-0.8	0-0.7	0-0.8	0-1	0-1	0.5-1
2,4-Dimethylphenol	<30	<990	<30	<30	<30	<30	<990	<170
Di-n-butyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
4,6-Dinitro-2-methylphenol	<130	<3900	<130	<130	<130	<130	<3900	<650
2,4-Dinitrophenol	<130	<3900	<130	<130	<130	<130	<3900	<650
2,4-Dinitrotoluene	<30	<990	<30	<30	<30	<30	<990	<170
2,6-Dinitrotoluene	<30	<990	<30	<30	<30	<30	<990	<170
Di-n-octyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
Fluoranthene	270	98500	1090	<30	<30	<30	112000	1080
C1-Fluoranthenes/Pyrenes								
Fluorene	210	91700	1110	<30	<30	<30	111000	13000
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
Hexachlorobutadiene	<30	<990	<30	<30	<30	<30	<990	<170
Hexachlorocyclopentadiene	<30	<990	<30	<30	<30	<30	<990	<170
Hexachloroethane	<30	<990	<30	<30	<30	<30	<990	<170
Indeno(1,2,3-cd)pyrene	<30	1250	<30	<30	<30	<30	1180	<170
Isophorone	<30	<990	<30	<30	<30	<30	<990	<170
1-Methylnaphthalene	<30	30200	120	<30	<30	<30	13500	14200
2-Methylnaphthalene								
2-Methylphenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Methylphenol	<30	<990	<30	<30	<30	<30	<990	<170
Naphthalene	<30	55100	160	<30	<30	<30	6140	58000
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline	<30	<990	<30	<30	<30	<30	<990	<170
3-Nitroaniline	<30	<990	<30	<30	<30	<30	<990	<170
4-Nitroaniline	<30	<990	<30	<30	<30	<30	<990	<170
Nitrobenzene	<30	<990	<30	<30	<30	<30	<990	<170
2-Nitrophenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Nitrophenol	<30	<990	<30	<30	<30	<30	<990	<170
N-Nitrosodimethylamine	<30	<990	<30	<30	<30	<30	<990	<170
N-Nitrosodi-n-propylamine	<30	<990	<30	<30	<30	<30	<990	<170
N-Nitrosodiphenylamine	<30	<990	<30	<30	<30	<30	<990	<170
Pentachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
Perylene								
Phenanthrene	230	315000	3880	<30	<30	<30	356000	18800
C1-Phenanthrenes/Anthracenes								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6BV	TC-SED-6C	TC-SED-6C	TC-SED-6CV	TC-SED-6D	TC-SED-6DV	TC-SED-6F	TC-SED-6H
Depth interval (feet)	0-1	0-0.5	0.5-0.8	0-0.7	0-0.8	0-1	0-1	0.5-1
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol	<30	<990	<30	<30	<30	<30	<990	<170
Pyrene	240	63200	820	<30	<30	<30	71900	550
2,3,4,5-Tetrachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
2,3,4,6-Tetrachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
2,3,5,6-Tetrachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
1,2,4-Trichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
2,4,5-Trichlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
2,4,6-Trichlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
*Benzo(a)pyrene equivalents	34.665	6803	83.95	34.665	34.665	34.665	6801.5	196.435
*See Section 2.0 of report for discussior								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6H	TC-SED-6I	TC-SED-6I	TC-SED-6J	TC-SED-6J	TC-SED-6K	TC-SED-6K	TC-SED-6L
Depth interval (feet)	0-0.5	0-0.5	0.5-1	0.5-1	0-0.5	0-0.5	0.5-1.2	0-0.7
Acenaphthene	10400	2070	18500	<30	70	<30	710	<30
Acenaphthylene	<330	<30	<330	<30	<30	<30	<30	<30
Aniline	<330	<30	<330	<30	<30	<30	<30	<30
Anthracene	5290	1350	14600	<30	30	<30	60	<30
Benzo(a)anthracene	3240	420	3050	<30	30	<30	<30	<30
Benzo(a)pyrene	1310	110	910	<30	<30	<30	<30	<30
Benzo(b)fluoranthene	1950	180	1380	<30	50	<30	<30	<30
Benzo(e)pyrene								
Benzo(g,h,i)perylene	480	30	330	<30	<30	<30	<30	<30
Benzo(k)fluoranthene	670	70	520	<30	<30	<30	<30	<30
Biphenyl								
Bis(2-chloroethoxy)methane	<330	<30	<330	<30	<30	<30	<30	<30
Bis(2-chloroethyl)ether	<330	<30	<330	<30	<30	<30	<30	<30
Bis(2-chloroisopropyl)ether	<330	<30	<330	<30	<30	<30	<30	<30
Bis(2-ethylhexyl)phthalate	<330	50	<330	<30	60	<30	<30	<30
4-Bromophenyl phenyl ether	<330	<30	<330	<30	<30	<30	<30	<30
Butyl benzyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
4-Chloro-3-Methylphenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Chloroaniline	<330	<30	<330	<30	<30	<30	<30	<30
2-Chloronaphthalene	<330	<30	<330	<30	<30	<30	<30	<30
2-Chlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Chlorophenyl phenyl ether	<330	<30	<330	<30	<30	<30	<30	<30
Chrysene	2800	320	2300	<30	40	<30	<30	<30
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<330	<30	<330	<30	<30	<30	<30	<30
Dibenzofuran	8230	2090	16700	<30	<30	<30	<30	<30
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
1,3-Dichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
1,4-Dichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
3,3'-Dichlorobenzidine	<330	<30	<330	<30	<30	<30	<30	<30
2,4-Dichlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
Diethyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
Dimethyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6H	TC-SED-6I	TC-SED-6I	TC-SED-6J	TC-SED-6J	TC-SED-6K	TC-SED-6K	TC-SED-6L
Depth interval (feet)	0-0.5	0-0.5	0.5-1	0.5-1	0-0.5	0-0.5	0.5-1.2	0-0.7
2,4-Dimethylphenol	<330	<30	<330	<30	<30	<30	<30	<30
Di-n-butyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
4,6-Dinitro-2-methylphenol	<1300	<130	<1300	<130	<130	<130	<130	<130
2,4-Dinitrophenol	<1300	<130	<1300	<130	<130	<130	<130	<130
2,4-Dinitrotoluene	<330	<30	<330	<30	<30	<30	<30	<30
2,6-Dinitrotoluene	<330	<30	<330	<30	<30	<30	<30	<30
Di-n-octyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
Fluoranthene	15000	2700	21500	130	310	<30	170	<30
C1-Fluoranthenes/Pyrenes								
Fluorene	11500	2730	20300	<30	<30	<30	520	<30
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
Hexachlorobutadiene	<330	<30	<330	<30	<30	<30	<30	<30
Hexachlorocyclopentadiene	<330	<30	<330	<30	<30	<30	<30	<30
Hexachloroethane	<330	<30	<330	<30	<30	<30	<30	<30
Indeno(1,2,3-cd)pyrene	510	30	340	<30	<30	<30	<30	<30
Isophorone	<330	<30	<330	<30	<30	<30	<30	<30
1-Methylnaphthalene	6150	300	1390	<30	<30	<30	<30	<30
2-Methylnaphthalene								
2-Methylphenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Methylphenol	<330	<30	<330	<30	<30	<30	<30	<30
Naphthalene	9220	400	2670	50	<30	<30	<30	<30
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline	<330	<30	<330	<30	<30	<30	<30	<30
3-Nitroaniline	<330	<30	<330	<30	<30	<30	<30	<30
4-Nitroaniline	<330	<30	<330	<30	<30	<30	<30	<30
Nitrobenzene	<330	<30	<330	<30	<30	<30	<30	<30
2-Nitrophenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Nitrophenol	<330	<30	<330	<30	<30	<30	<30	<30
N-Nitrosodimethylamine	<330	<30	<330	<30	<30	<30	<30	<30
N-Nitrosodi-n-propylamine	<330	<30	<330	<30	<30	<30	<30	<30
N-Nitrosodiphenylamine	<330	<30	<330	<30	<30	<30	<30	<30
Pentachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
Perylene								
Phenanthrene	27400	7210	48700	<30	<30	<30	380	<30
C1-Phenanthrenes/Anthracenes								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6H	TC-SED-6I	TC-SED-6I	TC-SED-6J	TC-SED-6J	TC-SED-6K	TC-SED-6K	TC-SED-6L
Depth interval (feet)	0-0.5	0-0.5	0.5-1	0.5-1	0-0.5	0-0.5	0.5-1.2	0-0.7
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol	<330	<30	<330	<30	<30	<30	<30	<30
Pyrene	10700	1780	13300	80	170	<30	130	<30
2,3,4,5-Tetrachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
2,3,4,6-Tetrachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
2,3,5,6-Tetrachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
1,2,4-Trichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
2,4,5-Trichlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
2,4,6-Trichlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
*Benzo(a)pyrene equivalents	2054.5	189.02	1559.5	34.665	39.69	34.665	34.665	34.665
*See Section 2.0 of report for discussior								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6L	TC-SED-5DV	TC-SED-6C	TC-SED-6W	TC-SED-6W	BD-1	TC-SED-10	TC-SED-2
Depth interval (feet)	0.8-0.2	0.5-1	0-1	0-0.5	0.5-1.5	0.5-1	0.5-1	0.5-1
Acenaphthene	<30	<30	88500	<30	<30	18	31	<3.4
Acenaphthylene	<30	<30	<100	<30	<30	<9.6	<3.8	<3.4
Aniline	<30	<30	<100	<30	<30			
Anthracene	<30	<30	50900	<30	<30	24	12	<3.4
Benzo(a)anthracene	<30	<30	17000	<30	<30	64	14	10
Benzo(a)pyrene	<30	30	4050	<30	<30	68	10	8.2
Benzo(b)fluoranthene	<30	40	5800	<30	<30	130	22	17
Benzo(e)pyrene						65	11	8.3
Benzo(g,h,i)perylene	<30	60	1240	<30	<30	65	9.9	7
Benzo(k)fluoranthene	<30	<30	2630	<30	<30	39	8	5.3
Biphenyl						<9.6	<3.8	<3.4
Bis(2-chloroethoxy)methane	<30	<30	<100	<30	<30			
Bis(2-chloroethyl)ether	<30	<30	<100	<30	<30			
Bis(2-chloroisopropyl)ether	<30	<30	<100	<30	<30			
Bis(2-ethylhexyl)phthalate	<30	<30	<100	<30	<30			
4-Bromophenyl phenyl ether	<30	<30	<100	<30	<30			
Butyl benzyl phthalate	<30	<30	<100	<30	<30			
4-Chloro-3-Methylphenol	<30	<30	<100	<30	<30	<30	<30	<30
4-Chloroaniline	<30	<30	<100	<30	<30			
2-Chloronaphthalene	<30	<30	<100	<30	<30			
2-Chlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
4-Chlorophenyl phenyl ether	<30	<30	<100	<30	<30			
Chrysene	<30	<30	12000	<30	<30	54	16	8.4
C1-Chrysenes						55	13	12
C2-Chrysenes						29	8.7	13
C3-Chrysenes						28	5.1	17
C4-Chrysenes						<9.6	<5	7.2
Dibenz(a,h)anthracene	<30	<30	180	<30	<30	14	<3.8	<3.4
Dibenzofuran	<30	<30	89000	<30	<30	<9.6	11	<3.4
Dibenzothiophene						<9.6	4.5	<3.4
C1-Dibenzothiophenes						<9.6	<5	<5
C2-Dibenzothiophenes						10	<5	<5
C3-Dibenzothiophenes						15	<5	5.2
1,2-Dichlorobenzene	<30	<30	<100	<30	<30			
1,3-Dichlorobenzene	<30	<30	<100	<30	<30			
1,4-Dichlorobenzene	<30	<30	<100	<30	<30			
3,3'-Dichlorobenzidine	<30	<30	<100	<30	<30			
2,4-Dichlorophenol	<30	<30	<100	<30	<30			
Diethyl phthalate	<30	<30	<100	<30	<30			
Dimethyl phthalate	<30	<30	<100	<30	<30			

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6L	TC-SED-5DV	TC-SED-6C	TC-SED-6W	TC-SED-6W	BD-1	TC-SED-10	TC-SED-2
Depth interval (feet)	0.8-0.2	0.5-1	0-1	0-0.5	0.5-1.5	0.5-1	0.5-1	0.5-1
2,4-Dimethylphenol	<30	<30	<100	<30	<30	<30	<30	<30
Di-n-butyl phthalate	<30	<30	<100	<30	<30			
4,6-Dinitro-2-methylphenol	<130	<130	<390	<130	<130			
2,4-Dinitrophenol	<130	<130	<390	<130	<130	<130	<130	<130
2,4-Dinitrotoluene	<30	<30	<100	<30	<30			
2,6-Dinitrotoluene	<30	<30	<100	<30	<30			
Di-n-octyl phthalate	<30	<30	<100	<30	<30			
Fluoranthene	<30	70	95300	<30	<30	200	75	29
C1-Fluoranthenes/Pyrenes						85	25	16
Fluorene	<30	<30	110000	<30	<30	9.8	18	<3.4
C1-Fluorenes						<9.6	6.7	<5
C2-Fluorenes						14	5.6	<5
C3-Fluorenes						18	7.3	<5
Hexachlorobenzene	<30	<30	<100	<30	<30			
Hexachlorobutadiene	<30	<30	<100	<30	<30			
Hexachlorocyclopentadiene	<30	<30	<100	<30	<30			
Hexachloroethane	<30	<30	<100	<30	<30			
Indeno(1,2,3-cd)pyrene	<30	60	1280	<30	<30	65	10	6.8
Isophorone	<30	<30	<100	<30	<30			
1-Methylnaphthalene	<30	<30	81800	<30	<30	<9.6	<3.8	<3.4
2-Methylnaphthalene						<9.6	<3.8	<3.4
2-Methylphenol	<30	<30	<100	<30	<30			
4-Methylphenol	<30	<30	<100	<30	<30			
Naphthalene	<30	<30	235000	<30	<30	9.7	<3.8	<3.4
C2-Naphthalenes						15	5.2	<5
C3-Naphthalenes						13	6.3	<5
C4-Naphthalenes						16	5.5	<5
2-Nitroaniline	<30	<30	<100	<30	<30			
3-Nitroaniline	<30	<30	<100	<30	<30			
4-Nitroaniline	<30	<30	<100	<30	<30			
Nitrobenzene	<30	<30	<100	<30	<30			
2-Nitrophenol	<30	<30	<100	<30	<30			
4-Nitrophenol	<30	<30	<100	<30	<30			
N-Nitrosodimethylamine	<30	<30	<100	<30	<30			
N-Nitrosodi-n-propylamine	<30	<30	<100	<30	<30			
N-Nitrosodiphenylamine	<30	<30	<100	<30	<30			
Pentachlorophenol	<30	<30	<100	<30	<30	<70	<70	<70
Perylene						28	7.6	4.8
Phenanthrene	<30	<30	258000	<30	<30	36	39	<3.4
C1-Phenanthrenes/Anthracenes						37	16	<5

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6L	TC-SED-5DV	TC-SED-6C	TC-SED-6W	TC-SED-6W	BD-1	TC-SED-10	TC-SED-2
Depth interval (feet)	0.8-0.2	0.5-1	0-1	0-0.5	0.5-1.5	0.5-1	0.5-1	0.5-1
C2-Phenanthrenes/Anthracenes						41	11	<5
C3-Phenanthrenes/Anthracenes						42	9.3	14
C4-Phenanthrenes/Anthracenes						16	<5	7.6
Phenol	<30	<30	<100	<30	<30	<30	<30	<30
Pyrene	<30	60	60400	<30	<30	150	52	26
2,3,4,5-Tetrachlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
2,3,4,6-Tetrachlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
2,3,5,6-Tetrachlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
1,2,4-Trichlorobenzene	<30	<30	<100	<30	<30			
2,4,5-Trichlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
2,4,6-Trichlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
*Benzo(a)pyrene equivalents	34.665	56.665	6676.3	34.665	34.665	108.344	16.596	13.3414
*See Section 2.0 of report for discussior								

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-6	TC-SED-7	TC-SED-8	TC-SED-9	TC Sed Seep
Depth interval (feet)	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0-0.5
Acenaphthene	15	4.3	21	20	5.2	7.1	9.6	<330
Acenaphthylene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	<330
Aniline								
Anthracene	9.7	9.2	29	32	<3.3	4.1	<3.4	<330
Benzo(a)anthracene	19	23	72	48	5.7	9.3	5.1	<330
Benzo(a)pyrene	15	17	69	24	5.8	8.9	4.7	<330
Benzo(b)fluoranthene	32	27	150	40	11	18	7.9	<330
Benzo(e)pyrene	17	13	84	18	5.9	9.8	4.2	
Benzo(g,h,i)perylene	19	11	86	13	5.4	7.9	4	<330
Benzo(k)fluoranthene	11	13	49	14	3.8	5.9	<3.4	<330
Biphenyl	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	
Bis(2-chloroethoxy)methane								
Bis(2-chloroethyl)ether								
Bis(2-chloroisopropyl)ether								
Bis(2-ethylhexyl)phthalate								
4-Bromophenyl phenyl ether								
Butyl benzyl phthalate								
4-Chloro-3-Methylphenol	<30	<30	<30	<30	<30	<30	<30	<330
4-Chloroaniline								
2-Chloronaphthalene								
2-Chlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
4-Chlorophenyl phenyl ether								
Chrysene	24	38	100	44	7.5	7.8	5.8	<330
C1-Chrysenes	15	21	66	30	5.8	9.7	<5	
C2-Chrysenes	11	15	55	13	<5	6.1	<5	
C3-Chrysenes	<5	<5	<11	9.7	<5	5.7	<5	
C4-Chrysenes	<5	<5	<11	<5	<5	<5	<5	
Dibenz(a,h)anthracene	4.2	<3.3	20	3.5	<3.3	<3.4	<3.4	<330
Dibenzofuran	4.4	<3.3	11	11	<3.3	<3.4	<3.4	
Dibenzothiophene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	
C1-Dibenzothiophenes	<5	<5	<11	5.5	<5	<5	<5	
C2-Dibenzothiophenes	<5	<5	<11	<5	<5	<5	<5	
C3-Dibenzothiophenes	<5	<5	<11	<5	<5	<5	<5	
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3'-Dichlorobenzidine								
2,4-Dichlorophenol								
Diethyl phthalate								
Dimethyl phthalate								

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-6	TC-SED-7	TC-SED-8	TC-SED-9	TC Sed Seep
Depth interval (feet)	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0-0.5
2,4-Dimethylphenol	<30	<30	<30	<30	<30	<30	<30	<330
Di-n-butyl phthalate								
4,6-Dinitro-2-methylphenol								
2,4-Dinitrophenol	<130	<130	<130	<130	<130	<130	<130	<330
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
Di-n-octyl phthalate								
Fluoranthene	83	31	220	130	17	33	27	<330
C1-Fluoranthenes/Pyrenes	34	30	110	68	9.2	17	11	
Fluorene	<4	<3.3	<11	15	<3.3	<3.4	<3.4	<330
C1-Fluorenes	5.6	<5	11	14	<5	<5	<5	
C2-Fluorenes	8.5	<5	18	15	<5	<5	<5	
C3-Fluorenes	<5	<5	20	13	<5	<5	<5	
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclopentadiene								
Hexachloroethane								
Indeno(1,2,3-cd)pyrene	19	13	86	14	5.4	7.9	3.8	<330
Isophorone								
1-Methylnaphthalene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	
2-Methylnaphthalene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	<330
2-Methylphenol								
4-Methylphenol								
Naphthalene	<4	<3.3	<11	3.5	<3.3	<3.4	<3.4	<330
C2-Naphthalenes	5.2	<5	16	7.1	<5	<5	<5	
C3-Naphthalenes	6.6	<5	16	15	<5	<5	<5	
C4-Naphthalenes	7.3	<5	20	12	<5	<5	<5	
2-Nitroaniline								
3-Nitroaniline								
4-Nitroaniline								
Nitrobenzene								
2-Nitrophenol								
4-Nitrophenol								
N-Nitrosodimethylamine								
N-Nitrosodi-n-propylamine								
N-Nitrosodiphenylamine								
Pentachlorophenol	<70	<70	<70	<70	<70	<70	<70	<330
Perylene	9.3	5.4	36	7.1	<3.3	6	<3.4	
Phenanthrene	10	7.7	42	14	3.3	3.6	3.7	<330
C1-Phenanthrenes/Anthracenes	10	14	40	46	<5	<5	<5	

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-6	TC-SED-7	TC-SED-8	TC-SED-9	TC Sed Seep
Depth interval (feet)	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0-0.5
C2-Phenanthrenes/Anthracenes	13	9.1	60	45	<5	9.2	<5	
C3-Phenanthrenes/Anthracenes	8.5	10	38	22	<5	6.5	5.7	
C4-Phenanthrenes/Anthracenes	<5	<5	17	7	<5	<5	<5	
Phenol	<30	<30	<30	<30	<30	<30	<30	<330
Pyrene	63	21	180	79	13	27	19	<330
2,3,4,5-Tetrachlorophenol	<30	<30	<30	<30	<30	<30	<30	
2,3,4,6-Tetrachlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
2,3,5,6-Tetrachlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
1,2,4-Trichlorobenzene								
2,4,5-Trichlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
2,4,6-Trichlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
*Benzo(a)pyrene equivalents	26.334	25.118	120.39	37.884	9.7055	14.1868	8.1028	381.315
*See Section 2.0 of report for discussior								

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6GV2	TC-SED-6LV	TC-SED-6PV2	TC-SED-6QV	TC-SED-6RV	TC-SED-6SV	TC-SED-6TV	TC-SED-6VV
Depth interval (feet)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Acenaphthene	<3.3	7.5J	3.4J	33.7	258	829	3	4.5
Acenaphthylene	<3.7	<3.2	6.7J	<4	14.2	15.7	<3.3	12.3
Aniline								
Anthracene	<5.4	<4.7	16.2J	6.4	49.1	160	<4.8	30.2
Benzo(a)anthracene	<3.3	<2.9	19.1J	3.8	68.9	28	3.9	23.8
Benzo(a)pyrene	<3.8	<3.3	17.0J	<4.1	38.2	21.2	4.3	27.2
Benzo(b)fluoranthene	<4	<3.5	21.4J	<4.3	40.2	22.8	5.5	44.9
Benzo(e)pyrene	<3.7	<3.2	13.1J	<4	24.2	12.1	4.1	28.9
Benzo(g,h,i)perylene	<3.1	<2.7	10.1J	<3.3	14.3	10	3	16.3
Benzo(k)fluoranthene	<4.3	<3.8	17.2J	5.9	49.7	21.1	6	40.5
Biphenyl								
Bis(2-chloroethoxy)methane								
Bis(2-chloroethyl)ether								
Bis(2-chloroisopropyl)ether								
Bis(2-ethylhexyl)phthalate								
4-Bromophenyl phenyl ether								
Butyl benzyl phthalate								
4-Chloro-3-Methylphenol								
4-Chloroaniline								
2-Chloronaphthalene								
2-Chlorophenol								
4-Chlorophenyl phenyl ether								
Chrysene	<4.2	<3.7	23.0J	5.2	72.5	27.3	6	36.5
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<6.3	<5.5	<6.4	<6.8	<6.7	<5.8	<5.6	6.4
Dibenzofuran								
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3'-Dichlorobenzidine								
2,4-Dichlorophenol								

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6GV2	TC-SED-6LV	TC-SED-6PV2	TC-SED-6QV	TC-SED-6RV	TC-SED-6SV	TC-SED-6TV	TC-SED-6VV
Depth interval (feet)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Diethyl phthalate								
Dimethyl phthalate								
2,4-Dimethylphenol								
Di-n-butyl phthalate								
4,6-Dinitro-2-methylphenol								
2,4-Dinitrophenol								
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
Di-n-octyl phthalate								
Fluoranthene	<11.6	15.5J	70.3	23.8	285	190	40.1	43.7
C1-Fluoranthenes/Pyrenes								
Fluorene	<5.8	<5.0	<5.9	7.8	86.4	327	<5.1	<5.3
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclopentadiene								
Hexachloroethane								
Indeno(1,2,3-cd)pyrene	<3.3	<2.9	9.4J	<3.6	12.9	10.3	<2.9	16.3
Isophorone								
1-Methylnaphthalene	<3.5	<3.1	<3.6	<3.8	<3.8	177	<3.1	<3.2
2-Methylnaphthalene	<3.5	<3.1	<3.6	<3.8	8.8	5.4	<3.1	4.1
2-Methylphenol								
4-Methylphenol								
Naphthalene	<4.1	5.6J	11.3J	<4.4	27.9	10.9	<3.6	8.6
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline								
3-Nitroaniline								
4-Nitroaniline								
Nitrobenzene								
2-Nitrophenol								
4-Nitrophenol								
N-Nitrosodimethylamine								
N-Nitrosodi-n-propylamine								
N-Nitrosodiphenylamine								

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6GV2	TC-SED-6LV	TC-SED-6PV2	TC-SED-6QV	TC-SED-6RV	TC-SED-6SV	TC-SED-6TV	TC-SED-6VV
Depth interval (feet)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Pentachlorophenol								
Perylene								
Phenanthrene	<5.1	<4.5	10.1J	9.7	51.9	546	<4.5	11.1
C1-Phenanthrenes/Anthracenes								
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol								
Pyrene	<4.2	11.8J	50.4	16.2	172	105	27.5	52.5
2,3,4,5-Tetrachlorophenol								
2,3,4,6-Tetrachlorophenol								
2,3,5,6-Tetrachlorophenol								
1,2,4-Trichlorobenzene								
2,4,5-Trichlorophenol								
2,4,6-Trichlorophenol								
*Benzo(a)pyrene equivalents	5.6036	4.88585	25.385	6.2892	54.3195	30.4483	8.251	42.5415

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6WV	TC-SED-6WV2	TC-SED-6WV6	TC-SED-6WV6	TC-SED-6WV7	TC-SED-6XV	TC-SED-6YV	TC-SED-6YV
Depth interval (feet)	0-0.75	0-1	0.5-1	0-0.5	0-1	0-1.25	0-1	0-0.5
Acenaphthene	2810	6280	17.7J	32.1	1770	26300	9.6	1750
Acenaphthylene	<35	79.6J	<3.7	<3.9	15.8J	538	<3.5	16.9J
Aniline								
Anthracene	223	837	6.8J	23.6J	73.1	7100	<5.1	208
Benzo(a)anthracene	82.5	134J	6.4J	13.5J	20.9J	1710	<3.1	<12.2
Benzo(a)pyrene	<36	<48.9	6.2J	7.7J	<9.9	415	<3.6	<14.0
Benzo(b)fluoranthene	<38	52.9J	6.7J	11.1J	<10.5	425	<3.8	<14.8
Benzo(e)pyrene	<35.1	<47.7	3.8J	5.8J	<9.7	<321	<3.5	<13.7
Benzo(g,h,i)perylene	<29.1	<39.4	4.0J	5.2J	<8.0	<266	<2.9	<11.3
Benzo(k)fluoranthene	56.5	80.2J	6.3J	10.2J	<11.3	532	<4	<15.9
Biphenyl								
Bis(2-chloroethoxy)methane								
Bis(2-chloroethyl)ether								
Bis(2-chloroisopropyl)ether								
Bis(2-ethylhexyl)phthalate								
4-Bromophenyl phenyl ether								
Butyl benzyl phthalate								
4-Chloro-3-Methylphenol								
4-Chloroaniline								
2-Chloronaphthalene								
2-Chlorophenol								
4-Chlorophenyl phenyl ether								
Chrysene	97.9	189J	7.5J	13.1J	25.3J	1630	<3.9	<15.5
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<59.9	<81.3	<6.3	<6.7	<16.5	<548	<5.9	<23.3
Dibenzofuran								
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3'-Dichlorobenzidine								
2,4-Dichlorophenol								

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6WV	TC-SED-6WV2	TC-SED-6WV6	TC-SED-6WV6	TC-SED-6WV7	TC-SED-6XV	TC-SED-6YV	TC-SED-6YV
Depth interval (feet)	0-0.75	0-1	0.5-1	0-0.5	0-1	0-1.25	0-1	0-0.5
Diethyl phthalate								
Dimethyl phthalate								
2,4-Dimethylphenol								
Di-n-butyl phthalate								
4,6-Dinitro-2-methylphenol								
2,4-Dinitrophenol								
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
Di-n-octyl phthalate								
Fluoranthene	165	1170	35.1	79.2	214	13000	12.8	87.7
C1-Fluoranthenes/Pyrenes								
Fluorene	2080	3680	12.4J	24.4J	859	24100	<5.4	473
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclopentadiene								
Hexachloroethane								
Indeno(1,2,3-cd)pyrene	<31.3	<42.4	3.5J	4.0J	<8.6	<286	<3.1	<12.2
Isophorone								
1-Methylnaphthalene	1680	78.8J	<3.6	<3.8	88.6	14900	<3.3	434
2-Methylnaphthalene	<33.6	53.1J	<3.6	4.8J	<9.3	22300	<3.3	61.1J
2-Methylphenol								
4-Methylphenol								
Naphthalene	261	206J	<4.1	10J	24.3J	51800	3.9	204
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline								
3-Nitroaniline								
4-Nitroaniline								
Nitrobenzene								
2-Nitrophenol								
4-Nitrophenol								
N-Nitrosodimethylamine								
N-Nitrosodi-n-propylamine								
N-Nitrosodiphenylamine								

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6WV	TC-SED-6WV2	TC-SED-6WV6	TC-SED-6WV6	TC-SED-6WV7	TC-SED-6XV	TC-SED-6YV	TC-SED-6YV
Depth interval (feet)	0-0.75	0-1	0.5-1	0-0.5	0-1	0-1.25	0-1	0-0.5
Pentachlorophenol								
Perylene								
Phenanthrene	1730	2390	19.7J	63.7	157	48800	<4.8	915
C1-Phenanthrenes/Anthracenes								
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol								
Pyrene	114	731	20.6J	51.4	141	7630	8.3	49.3J
2,3,4,5-Tetrachlorophenol								
2,3,4,6-Tetrachlorophenol								
2,3,5,6-Tetrachlorophenol								
1,2,4-Trichlorobenzene								
2,4,5-Trichlorophenol								
2,4,6-Trichlorophenol								
*Benzo(a)pyrene equivalents	60.3279	86.901	11.0805	14.0251	16.3268	923.75	5.27195	20.69725

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6ZY	TC-SED-5A	TC-SED-5B	TC-SED-5C	TC-SED-6A	TC-SED-6A	TC-SED-6B	TC-SED-6B
Depth interval (feet)	0-1	0-1	0-1	0.5-1	0-0.5	0.5-1	0-0.5	0.5-1
Acenaphthene	13.0J	160	<30	110	<100	<30	1340	2090
Acenaphthylene	<3.6	<30	<30	<30	<100	<30	<330	<30
Aniline		<30	<30	<30	<100	<30	<330	<30
Anthracene	6.0J	<30	<30	<30	<100	<30	<330	260
Benzo(a)anthracene	5.1J	60	<30	<30	<100	<30	<330	60
Benzo(a)pyrene	3.8J	150	<30	<30	<100	<30	<330	<30
Benzo(b)fluoranthene	4.7J	30	<30	<30	<100	<30	<330	30
Benzo(e)pyrene	<3.6							
Benzo(g,h,i)perylene	<3.0	<30	<30	<30	<100	<30	<330	<30
Benzo(k)fluoranthene	5.0J	<30	<30	<30	<100	<30	<330	<30
Biphenyl								
Bis(2-chloroethoxy)methane		<30	<30	<30	<100	<30	<330	<30
Bis(2-chloroethyl)ether		<30	<30	<30	<100	<30	<330	<30
Bis(2-chloroisopropyl)ether		<30	<30	<30	<100	<30	<330	<30
Bis(2-ethylhexyl)phthalate		<30	<30	<30	<100	<30	<330	<30
4-Bromophenyl phenyl ether		<30	<30	<30	<100	<30	<330	<30
Butyl benzyl phthalate		<30	<30	<30	<100	<30	<330	<30
4-Chloro-3-Methylphenol		<30	<30	<30	<100	<30	<330	<30
4-Chloroaniline		<30	<30	<30	<100	<30	<330	<30
2-Chloronaphthalene		<30	<30	<30	<100	<30	<330	<30
2-Chlorophenol		<30	<30	<30	<100	<30	<330	<30
4-Chlorophenyl phenyl ether		<30	<30	<30	<100	<30	<330	<30
Chrysene	6.3J	50	<30	<30	<100	<30	<330	50
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<6.2	<30	<30	<30	<100	<30	<330	<30
Dibenzofuran		<30	<30	<30	<100	<30	<330	1120
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene		<30	<30	<30	<100	<30	<330	<30
1,3-Dichlorobenzene		<30	<30	<30	<100	<30	<330	<30
1,4-Dichlorobenzene		<30	<30	<30	<100	<30	<330	<30
3,3'-Dichlorobenzidine		<30	<30	<30	<100	<30	<330	<30
2,4-Dichlorophenol		<30	<30	<30	<100	<30	<330	<30

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6ZY	TC-SED-5A	TC-SED-5B	TC-SED-5C	TC-SED-6A	TC-SED-6A	TC-SED-6B	TC-SED-6B
Depth interval (feet)	0-1	0-1	0-1	0.5-1	0-0.5	0.5-1	0-0.5	0.5-1
Diethyl phthalate		<30	<30	<30	<100	<30	<330	<30
Dimethyl phthalate		<30	<30	<30	<100	<30	<330	<30
2,4-Dimethylphenol		<30	<30	<30	<100	<30	<330	<30
Di-n-butyl phthalate		<30	<30	<30	<100	<30	<330	<30
4,6-Dinitro-2-methylphenol		<130	<130	<130	<390	<130	<1300	<130
2,4-Dinitrophenol		<130	<130	<130	<390	<130	<1300	<130
2,4-Dinitrotoluene		<30	<30	<30	<100	<30	<330	<30
2,6-Dinitrotoluene		<30	<30	<30	<100	<30	<330	<30
Di-n-octyl phthalate		<30	<30	<30	<100	<30	<330	<30
Fluoranthene	13.6J	380	<30	70	<100	<30	1270	480
C1-Fluoranthenes/Pyrenes								
Fluorene	12.1J	160	<30	<30	<100	<30	700	1750
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene		<30	<30	<30	<100	<30	<330	<30
Hexachlorobutadiene		<30	<30	<30	<100	<30	<330	<30
Hexachlorocyclopentadiene		<30	<30	<30	<100	<30	<330	<30
Hexachloroethane		<30	<30	<30	<100	<30	<330	<30
Indeno(1,2,3-cd)pyrene	<3.2	<30	<30	<30	<100	<30	<330	<30
Isophorone		<30	<30	<30	<100	<30	<330	<30
1-Methylnaphthalene	8.3J	<30	<30	<30	<100	<30	<330	950
2-Methylnaphthalene	16.2J							
2-Methylphenol		<30	<30	<30	<100	<30	<330	<30
4-Methylphenol		<30	<30	<30	<100	<30	<330	<30
Naphthalene	23	<30	<30	<30	<100	<30	<330	560
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline		<30	<30	<30	<100	<30	<330	<30
3-Nitroaniline		<30	<30	<30	<100	<30	<330	<30
4-Nitroaniline		<30	<30	<30	<100	<30	<330	<30
Nitrobenzene		<30	<30	<30	<100	<30	<330	<30
2-Nitrophenol		<30	<30	<30	<100	<30	<330	<30
4-Nitrophenol		<30	<30	<30	<100	<30	<330	<30
N-Nitrosodimethylamine		<30	<30	<30	<100	<30	<330	<30
N-Nitrosodi-n-propylamine		<30	<30	<30	<100	<30	<330	<30
N-Nitrosodiphenylamine		<30	<30	<30	<100	<30	<330	<30

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6ZY	TC-SED-5A	TC-SED-5B	TC-SED-5C	TC-SED-6A	TC-SED-6A	TC-SED-6B	TC-SED-6B
Depth interval (feet)	0-1	0-1	0-1	0.5-1	0-0.5	0.5-1	0-0.5	0.5-1
Pentachlorophenol		<30	<30	<30	<100	<30	<330	<30
Perylene								
Phenanthrene	23	<30	<30	<30	<100	<30	1290	1910
C1-Phenanthrenes/Anthracenes								
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol		<30	<30	<30	<100	<30	<330	<30
Pyrene	10.6J	260	<30	50	<100	<30	870	370
2,3,4,5-Tetrachlorophenol		<30	<30	<30	<100	<30	<330	<30
2,3,4,6-Tetrachlorophenol		<30	<30	<30	<100	<30	<330	<30
2,3,5,6-Tetrachlorophenol		<30	<30	<30	<100	<30	<330	<30
1,2,4-Trichlorobenzene		<30	<30	<30	<100	<30	<330	<30
2,4,5-Trichlorophenol		<30	<30	<30	<100	<30	<330	<30
2,4,6-Trichlorophenol		<30	<30	<30	<100	<30	<330	<30
*Benzo(a)pyrene equivalents	8.0963	175.7	34.665	34.665	115.55	34.665	381.315	40.7

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6BV	TC-SED-6C	TC-SED-6C	TC-SED-6CV	TC-SED-6D	TC-SED-6DV	TC-SED-6F	TC-SED-6H
Depth interval (feet)	0-1	0-0.5	0.5-0.8	0-0.7	0-0.8	0-1	0-1	0.5-1
Acenaphthene	560	86800	520	<30	<30	<30	98200	30
Acenaphthylene	<30	<990	<30	<30	<30	<30	<990	<170
Aniline	<30	<990	<30	<30	<30	<30	<990	<170
Anthracene	40	37000	390	<30	<30	<30	50000	1860
Benzo(a)anthracene	<30	16500	190	<30	<30	<30	16900	<170
Benzo(a)pyrene	<30	3810	40	<30	<30	<30	3810	<170
Benzo(b)fluoranthene	<30	6900	80	<30	<30	<30	6550	<170
Benzo(e)pyrene								
Benzo(g,h,i)perylene	<30	1130	<30	<30	<30	<30	1150	<170
Benzo(k)fluoranthene	<30	2020	30	<30	<30	<30	2070	<170
Biphenyl								
Bis(2-chloroethoxy)methane	<30	<990	<30	<30	<30	<30	<990	<170
Bis(2-chloroethyl)ether	<30	<990	<30	<30	<30	<30	<990	<170
Bis(2-chloroisopropyl)ether	<30	<990	<30	<30	<30	<30	<990	<170
Bis(2-ethylhexyl)phthalate	<30	<990	<30	<30	<30	<30	<990	<170
4-Bromophenyl phenyl ether	<30	<990	<30	<30	<30	<30	<990	<170
Butyl benzyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
4-Chloro-3-Methylphenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Chloroaniline	<30	<990	<30	<30	<30	<30	<990	<170
2-Chloronaphthalene	<30	<990	<30	<30	<30	<30	<990	<170
2-Chlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Chlorophenyl phenyl ether	<30	<990	<30	<30	<30	<30	<990	<170
Chrysene	<30	12800	150	<30	<30	<30	12800	<170
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<30	<990	<30	<30	<30	<30	<990	<170
Dibenzofuran	<30	71800	840	<30	<30	<30	82500	13200
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
1,3-Dichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
1,4-Dichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
3,3'-Dichlorobenzidine	<30	<990	<30	<30	<30	<30	<990	<170
2,4-Dichlorophenol	<30	<990	<30	<30	<30	<30	<990	<170

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6BV	TC-SED-6C	TC-SED-6C	TC-SED-6CV	TC-SED-6D	TC-SED-6DV	TC-SED-6F	TC-SED-6H
Depth interval (feet)	0-1	0-0.5	0.5-0.8	0-0.7	0-0.8	0-1	0-1	0.5-1
Diethyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
Dimethyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
2,4-Dimethylphenol	<30	<990	<30	<30	<30	<30	<990	<170
Di-n-butyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
4,6-Dinitro-2-methylphenol	<130	<3900	<130	<130	<130	<130	<3900	<650
2,4-Dinitrophenol	<130	<3900	<130	<130	<130	<130	<3900	<650
2,4-Dinitrotoluene	<30	<990	<30	<30	<30	<30	<990	<170
2,6-Dinitrotoluene	<30	<990	<30	<30	<30	<30	<990	<170
Di-n-octyl phthalate	<30	<990	<30	<30	<30	<30	<990	<170
Fluoranthene	270	98500	1090	<30	<30	<30	112000	1080
C1-Fluoranthenes/Pyrenes								
Fluorene	210	91700	1110	<30	<30	<30	111000	13000
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
Hexachlorobutadiene	<30	<990	<30	<30	<30	<30	<990	<170
Hexachlorocyclopentadiene	<30	<990	<30	<30	<30	<30	<990	<170
Hexachloroethane	<30	<990	<30	<30	<30	<30	<990	<170
Indeno(1,2,3-cd)pyrene	<30	1250	<30	<30	<30	<30	1180	<170
Isophorone	<30	<990	<30	<30	<30	<30	<990	<170
1-Methylnaphthalene	<30	30200	120	<30	<30	<30	13500	14200
2-Methylnaphthalene								
2-Methylphenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Methylphenol	<30	<990	<30	<30	<30	<30	<990	<170
Naphthalene	<30	55100	160	<30	<30	<30	6140	58000
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline	<30	<990	<30	<30	<30	<30	<990	<170
3-Nitroaniline	<30	<990	<30	<30	<30	<30	<990	<170
4-Nitroaniline	<30	<990	<30	<30	<30	<30	<990	<170
Nitrobenzene	<30	<990	<30	<30	<30	<30	<990	<170
2-Nitrophenol	<30	<990	<30	<30	<30	<30	<990	<170
4-Nitrophenol	<30	<990	<30	<30	<30	<30	<990	<170
N-Nitrosodimethylamine	<30	<990	<30	<30	<30	<30	<990	<170
N-Nitrosodi-n-propylamine	<30	<990	<30	<30	<30	<30	<990	<170
N-Nitrosodiphenylamine	<30	<990	<30	<30	<30	<30	<990	<170

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6BV	TC-SED-6C	TC-SED-6C	TC-SED-6CV	TC-SED-6D	TC-SED-6DV	TC-SED-6F	TC-SED-6H
Depth interval (feet)	0-1	0-0.5	0.5-0.8	0-0.7	0-0.8	0-1	0-1	0.5-1
Pentachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
Perylene								
Phenanthrene	230	315000	3880	<30	<30	<30	356000	18800
C1-Phenanthrenes/Anthracenes								
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol	<30	<990	<30	<30	<30	<30	<990	<170
Pyrene	240	63200	820	<30	<30	<30	71900	550
2,3,4,5-Tetrachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
2,3,4,6-Tetrachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
2,3,5,6-Tetrachlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
1,2,4-Trichlorobenzene	<30	<990	<30	<30	<30	<30	<990	<170
2,4,5-Trichlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
2,4,6-Trichlorophenol	<30	<990	<30	<30	<30	<30	<990	<170
*Benzo(a)pyrene equivalents	34.665	6803	83.95	34.665	34.665	34.665	6801.5	196.435

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6H	TC-SED-6I	TC-SED-6I	TC-SED-6J	TC-SED-6J	TC-SED-6K	TC-SED-6K	TC-SED-6L
Depth interval (feet)	0-0.5	0-0.5	0.5-1	0.5-1	0-0.5	0-0.5	0.5-1.2	0-0.7
Acenaphthene	10400	2070	18500	<30	70	<30	710	<30
Acenaphthylene	<330	<30	<330	<30	<30	<30	<30	<30
Aniline	<330	<30	<330	<30	<30	<30	<30	<30
Anthracene	5290	1350	14600	<30	30	<30	60	<30
Benzo(a)anthracene	3240	420	3050	<30	30	<30	<30	<30
Benzo(a)pyrene	1310	110	910	<30	<30	<30	<30	<30
Benzo(b)fluoranthene	1950	180	1380	<30	50	<30	<30	<30
Benzo(e)pyrene								
Benzo(g,h,i)perylene	480	30	330	<30	<30	<30	<30	<30
Benzo(k)fluoranthene	670	70	520	<30	<30	<30	<30	<30
Biphenyl								
Bis(2-chloroethoxy)methane	<330	<30	<330	<30	<30	<30	<30	<30
Bis(2-chloroethyl)ether	<330	<30	<330	<30	<30	<30	<30	<30
Bis(2-chloroisopropyl)ether	<330	<30	<330	<30	<30	<30	<30	<30
Bis(2-ethylhexyl)phthalate	<330	50	<330	<30	60	<30	<30	<30
4-Bromophenyl phenyl ether	<330	<30	<330	<30	<30	<30	<30	<30
Butyl benzyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
4-Chloro-3-Methylphenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Chloroaniline	<330	<30	<330	<30	<30	<30	<30	<30
2-Chloronaphthalene	<330	<30	<330	<30	<30	<30	<30	<30
2-Chlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Chlorophenyl phenyl ether	<330	<30	<330	<30	<30	<30	<30	<30
Chrysene	2800	320	2300	<30	40	<30	<30	<30
C1-Chrysenes								
C2-Chrysenes								
C3-Chrysenes								
C4-Chrysenes								
Dibenz(a,h)anthracene	<330	<30	<330	<30	<30	<30	<30	<30
Dibenzofuran	8230	2090	16700	<30	<30	<30	<30	<30
Dibenzothiophene								
C1-Dibenzothiophenes								
C2-Dibenzothiophenes								
C3-Dibenzothiophenes								
1,2-Dichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
1,3-Dichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
1,4-Dichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
3,3'-Dichlorobenzidine	<330	<30	<330	<30	<30	<30	<30	<30
2,4-Dichlorophenol	<330	<30	<330	<30	<30	<30	<30	<30

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6H	TC-SED-6I	TC-SED-6I	TC-SED-6J	TC-SED-6J	TC-SED-6K	TC-SED-6K	TC-SED-6L
Depth interval (feet)	0-0.5	0-0.5	0.5-1	0.5-1	0-0.5	0-0.5	0.5-1.2	0-0.7
Diethyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
Dimethyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
2,4-Dimethylphenol	<330	<30	<330	<30	<30	<30	<30	<30
Di-n-butyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
4,6-Dinitro-2-methylphenol	<1300	<130	<1300	<130	<130	<130	<130	<130
2,4-Dinitrophenol	<1300	<130	<1300	<130	<130	<130	<130	<130
2,4-Dinitrotoluene	<330	<30	<330	<30	<30	<30	<30	<30
2,6-Dinitrotoluene	<330	<30	<330	<30	<30	<30	<30	<30
Di-n-octyl phthalate	<330	<30	<330	<30	<30	<30	<30	<30
Fluoranthene	15000	2700	21500	130	310	<30	170	<30
C1-Fluoranthenes/Pyrenes								
Fluorene	11500	2730	20300	<30	<30	<30	520	<30
C1-Fluorenes								
C2-Fluorenes								
C3-Fluorenes								
Hexachlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
Hexachlorobutadiene	<330	<30	<330	<30	<30	<30	<30	<30
Hexachlorocyclopentadiene	<330	<30	<330	<30	<30	<30	<30	<30
Hexachloroethane	<330	<30	<330	<30	<30	<30	<30	<30
Indeno(1,2,3-cd)pyrene	510	30	340	<30	<30	<30	<30	<30
Isophorone	<330	<30	<330	<30	<30	<30	<30	<30
1-Methylnaphthalene	6150	300	1390	<30	<30	<30	<30	<30
2-Methylnaphthalene								
2-Methylphenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Methylphenol	<330	<30	<330	<30	<30	<30	<30	<30
Naphthalene	9220	400	2670	50	<30	<30	<30	<30
C2-Naphthalenes								
C3-Naphthalenes								
C4-Naphthalenes								
2-Nitroaniline	<330	<30	<330	<30	<30	<30	<30	<30
3-Nitroaniline	<330	<30	<330	<30	<30	<30	<30	<30
4-Nitroaniline	<330	<30	<330	<30	<30	<30	<30	<30
Nitrobenzene	<330	<30	<330	<30	<30	<30	<30	<30
2-Nitrophenol	<330	<30	<330	<30	<30	<30	<30	<30
4-Nitrophenol	<330	<30	<330	<30	<30	<30	<30	<30
N-Nitrosodimethylamine	<330	<30	<330	<30	<30	<30	<30	<30
N-Nitrosodi-n-propylamine	<330	<30	<330	<30	<30	<30	<30	<30
N-Nitrosodiphenylamine	<330	<30	<330	<30	<30	<30	<30	<30

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6H	TC-SED-6I	TC-SED-6I	TC-SED-6J	TC-SED-6J	TC-SED-6K	TC-SED-6K	TC-SED-6L
Depth interval (feet)	0-0.5	0-0.5	0.5-1	0.5-1	0-0.5	0-0.5	0.5-1.2	0-0.7
Pentachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
Perylene								
Phenanthrene	27400	7210	48700	<30	<30	<30	380	<30
C1-Phenanthrenes/Anthracenes								
C2-Phenanthrenes/Anthracenes								
C3-Phenanthrenes/Anthracenes								
C4-Phenanthrenes/Anthracenes								
Phenol	<330	<30	<330	<30	<30	<30	<30	<30
Pyrene	10700	1780	13300	80	170	<30	130	<30
2,3,4,5-Tetrachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
2,3,4,6-Tetrachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
2,3,5,6-Tetrachlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
1,2,4-Trichlorobenzene	<330	<30	<330	<30	<30	<30	<30	<30
2,4,5-Trichlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
2,4,6-Trichlorophenol	<330	<30	<330	<30	<30	<30	<30	<30
*Benzo(a)pyrene equivalents	2054.5	189.02	1559.5	34.665	39.69	34.665	34.665	34.665

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6L	TC-SED-5DV	TC-SED-6C	TC-SED-6W	TC-SED-6W	BD-1	TC-SED-10	TC-SED-2
Depth interval (feet)	0.8-0.2	0.5-1	0-1	0-0.5	0.5-1.5	0.5-1	0.5-1	0.5-1
Acenaphthene	<30	<30	88500	<30	<30	18	31	<3.4
Acenaphthylene	<30	<30	<100	<30	<30	<9.6	<3.8	<3.4
Aniline	<30	<30	<100	<30	<30			
Anthracene	<30	<30	50900	<30	<30	24	12	<3.4
Benzo(a)anthracene	<30	<30	17000	<30	<30	64	14	10
Benzo(a)pyrene	<30	30	4050	<30	<30	68	10	8.2
Benzo(b)fluoranthene	<30	40	5800	<30	<30	130	22	17
Benzo(e)pyrene						65	11	8.3
Benzo(g,h,i)perylene	<30	60	1240	<30	<30	65	9.9	7
Benzo(k)fluoranthene	<30	<30	2630	<30	<30	39	8	5.3
Biphenyl						<9.6	<3.8	<3.4
Bis(2-chloroethoxy)methane	<30	<30	<100	<30	<30			
Bis(2-chloroethyl)ether	<30	<30	<100	<30	<30			
Bis(2-chloroisopropyl)ether	<30	<30	<100	<30	<30			
Bis(2-ethylhexyl)phthalate	<30	<30	<100	<30	<30			
4-Bromophenyl phenyl ether	<30	<30	<100	<30	<30			
Butyl benzyl phthalate	<30	<30	<100	<30	<30			
4-Chloro-3-Methylphenol	<30	<30	<100	<30	<30	<30	<30	<30
4-Chloroaniline	<30	<30	<100	<30	<30			
2-Chloronaphthalene	<30	<30	<100	<30	<30			
2-Chlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
4-Chlorophenyl phenyl ether	<30	<30	<100	<30	<30			
Chrysene	<30	<30	12000	<30	<30	54	16	8.4
C1-Chrysenes						55	13	12
C2-Chrysenes						29	8.7	13
C3-Chrysenes						28	5.1	17
C4-Chrysenes						<9.6	<5	7.2
Dibenz(a,h)anthracene	<30	<30	180	<30	<30	14	<3.8	<3.4
Dibenzofuran	<30	<30	89000	<30	<30	<9.6	11	<3.4
Dibenzothiophene						<9.6	4.5	<3.4
C1-Dibenzothiophenes						<9.6	<5	<5
C2-Dibenzothiophenes						10	<5	<5
C3-Dibenzothiophenes						15	<5	5.2
1,2-Dichlorobenzene	<30	<30	<100	<30	<30			
1,3-Dichlorobenzene	<30	<30	<100	<30	<30			
1,4-Dichlorobenzene	<30	<30	<100	<30	<30			
3,3'-Dichlorobenzidine	<30	<30	<100	<30	<30			
2,4-Dichlorophenol	<30	<30	<100	<30	<30			

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6L	TC-SED-5DV	TC-SED-6C	TC-SED-6W	TC-SED-6W	BD-1	TC-SED-10	TC-SED-2
Depth interval (feet)	0.8-0.2	0.5-1	0-1	0-0.5	0.5-1.5	0.5-1	0.5-1	0.5-1
Diethyl phthalate	<30	<30	<100	<30	<30			
Dimethyl phthalate	<30	<30	<100	<30	<30			
2,4-Dimethylphenol	<30	<30	<100	<30	<30	<30	<30	<30
Di-n-butyl phthalate	<30	<30	<100	<30	<30			
4,6-Dinitro-2-methylphenol	<130	<130	<390	<130	<130			
2,4-Dinitrophenol	<130	<130	<390	<130	<130	<130	<130	<130
2,4-Dinitrotoluene	<30	<30	<100	<30	<30			
2,6-Dinitrotoluene	<30	<30	<100	<30	<30			
Di-n-octyl phthalate	<30	<30	<100	<30	<30			
Fluoranthene	<30	70	95300	<30	<30	200	75	29
C1-Fluoranthenes/Pyrenes						85	25	16
Fluorene	<30	<30	110000	<30	<30	9.8	18	<3.4
C1-Fluorenes						<9.6	6.7	<5
C2-Fluorenes						14	5.6	<5
C3-Fluorenes						18	7.3	<5
Hexachlorobenzene	<30	<30	<100	<30	<30			
Hexachlorobutadiene	<30	<30	<100	<30	<30			
Hexachlorocyclopentadiene	<30	<30	<100	<30	<30			
Hexachloroethane	<30	<30	<100	<30	<30			
Indeno(1,2,3-cd)pyrene	<30	60	1280	<30	<30	65	10	6.8
Isophorone	<30	<30	<100	<30	<30			
1-Methylnaphthalene	<30	<30	81800	<30	<30	<9.6	<3.8	<3.4
2-Methylnaphthalene						<9.6	<3.8	<3.4
2-Methylphenol	<30	<30	<100	<30	<30			
4-Methylphenol	<30	<30	<100	<30	<30			
Naphthalene	<30	<30	235000	<30	<30	9.7	<3.8	<3.4
C2-Naphthalenes						15	5.2	<5
C3-Naphthalenes						13	6.3	<5
C4-Naphthalenes						16	5.5	<5
2-Nitroaniline	<30	<30	<100	<30	<30			
3-Nitroaniline	<30	<30	<100	<30	<30			
4-Nitroaniline	<30	<30	<100	<30	<30			
Nitrobenzene	<30	<30	<100	<30	<30			
2-Nitrophenol	<30	<30	<100	<30	<30			
4-Nitrophenol	<30	<30	<100	<30	<30			
N-Nitrosodimethylamine	<30	<30	<100	<30	<30			
N-Nitrosodi-n-propylamine	<30	<30	<100	<30	<30			
N-Nitrosodiphenylamine	<30	<30	<100	<30	<30			

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A

Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)

Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-6L	TC-SED-5DV	TC-SED-6C	TC-SED-6W	TC-SED-6W	BD-1	TC-SED-10	TC-SED-2
Depth interval (feet)	0.8-0.2	0.5-1	0-1	0-0.5	0.5-1.5	0.5-1	0.5-1	0.5-1
Pentachlorophenol	<30	<30	<100	<30	<30	<70	<70	<70
Perylene						28	7.6	4.8
Phenanthrene	<30	<30	258000	<30	<30	36	39	<3.4
C1-Phenanthrenes/Anthracenes						37	16	<5
C2-Phenanthrenes/Anthracenes						41	11	<5
C3-Phenanthrenes/Anthracenes						42	9.3	14
C4-Phenanthrenes/Anthracenes						16	<5	7.6
Phenol	<30	<30	<100	<30	<30	<30	<30	<30
Pyrene	<30	60	60400	<30	<30	150	52	26
2,3,4,5-Tetrachlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
2,3,4,6-Tetrachlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
2,3,5,6-Tetrachlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
1,2,4-Trichlorobenzene	<30	<30	<100	<30	<30			
2,4,5-Trichlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
2,4,6-Trichlorophenol	<30	<30	<100	<30	<30	<30	<30	<30
*Benzo(a)pyrene equivalents	34.665	56.665	6676.3	34.665	34.665	108.344	16.596	13.3414

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-6	TC-SED-7	TC-SED-8	TC-SED-9	TC Sed Seep
Depth interval (feet)	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0-0.5
Acenaphthene	15	4.3	21	20	5.2	7.1	9.6	<330
Acenaphthylene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	<330
Aniline								
Anthracene	9.7	9.2	29	32	<3.3	4.1	<3.4	<330
Benzo(a)anthracene	19	23	72	48	5.7	9.3	5.1	<330
Benzo(a)pyrene	15	17	69	24	5.8	8.9	4.7	<330
Benzo(b)fluoranthene	32	27	150	40	11	18	7.9	<330
Benzo(e)pyrene	17	13	84	18	5.9	9.8	4.2	
Benzo(g,h,i)perylene	19	11	86	13	5.4	7.9	4	<330
Benzo(k)fluoranthene	11	13	49	14	3.8	5.9	<3.4	<330
Biphenyl	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	
Bis(2-chloroethoxy)methane								
Bis(2-chloroethyl)ether								
Bis(2-chloroisopropyl)ether								
Bis(2-ethylhexyl)phthalate								
4-Bromophenyl phenyl ether								
Butyl benzyl phthalate								
4-Chloro-3-Methylphenol	<30	<30	<30	<30	<30	<30	<30	<330
4-Chloroaniline								
2-Chloronaphthalene								
2-Chlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
4-Chlorophenyl phenyl ether								
Chrysene	24	38	100	44	7.5	7.8	5.8	<330
C1-Chrysenes	15	21	66	30	5.8	9.7	<5	
C2-Chrysenes	11	15	55	13	<5	6.1	<5	
C3-Chrysenes	<5	<5	<11	9.7	<5	5.7	<5	
C4-Chrysenes	<5	<5	<11	<5	<5	<5	<5	
Dibenz(a,h)anthracene	4.2	<3.3	20	3.5	<3.3	<3.4	<3.4	<330
Dibenzofuran	4.4	<3.3	11	11	<3.3	<3.4	<3.4	
Dibenzothiophene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	
C1-Dibenzothiophenes	<5	<5	<11	5.5	<5	<5	<5	
C2-Dibenzothiophenes	<5	<5	<11	<5	<5	<5	<5	
C3-Dibenzothiophenes	<5	<5	<11	<5	<5	<5	<5	
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3'-Dichlorobenzidine								
2,4-Dichlorophenol								

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-6	TC-SED-7	TC-SED-8	TC-SED-9	TC Sed Seep
Depth interval (feet)	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0-0.5
Diethyl phthalate								
Dimethyl phthalate								
2,4-Dimethylphenol	<30	<30	<30	<30	<30	<30	<30	<330
Di-n-butyl phthalate								
4,6-Dinitro-2-methylphenol								
2,4-Dinitrophenol	<130	<130	<130	<130	<130	<130	<130	<330
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
Di-n-octyl phthalate								
Fluoranthene	83	31	220	130	17	33	27	<330
C1-Fluoranthenes/Pyrenes	34	30	110	68	9.2	17	11	
Fluorene	<4	<3.3	<11	15	<3.3	<3.4	<3.4	<330
C1-Fluorenes	5.6	<5	11	14	<5	<5	<5	
C2-Fluorenes	8.5	<5	18	15	<5	<5	<5	
C3-Fluorenes	<5	<5	20	13	<5	<5	<5	
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclopentadiene								
Hexachloroethane								
Indeno(1,2,3-cd)pyrene	19	13	86	14	5.4	7.9	3.8	<330
Isophorone								
1-Methylnaphthalene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	
2-Methylnaphthalene	<4	<3.3	<11	<3.4	<3.3	<3.4	<3.4	<330
2-Methylphenol								
4-Methylphenol								
Naphthalene	<4	<3.3	<11	3.5	<3.3	<3.4	<3.4	<330
C2-Naphthalenes	5.2	<5	16	7.1	<5	<5	<5	
C3-Naphthalenes	6.6	<5	16	15	<5	<5	<5	
C4-Naphthalenes	7.3	<5	20	12	<5	<5	<5	
2-Nitroaniline								
3-Nitroaniline								
4-Nitroaniline								
Nitrobenzene								
2-Nitrophenol								
4-Nitrophenol								
N-Nitrosodimethylamine								
N-Nitrosodi-n-propylamine								
N-Nitrosodiphenylamine								

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-6	TC-SED-7	TC-SED-8	TC-SED-9	TC Sed Seep
Depth interval (feet)	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0-0.5
Pentachlorophenol	<70	<70	<70	<70	<70	<70	<70	<330
Perylene	9.3	5.4	36	7.1	<3.3	6	<3.4	
Phenanthrene	10	7.7	42	14	3.3	3.6	3.7	<330
C1-Phenanthrenes/Anthracenes	10	14	40	46	<5	<5	<5	
C2-Phenanthrenes/Anthracenes	13	9.1	60	45	<5	9.2	<5	
C3-Phenanthrenes/Anthracenes	8.5	10	38	22	<5	6.5	5.7	
C4-Phenanthrenes/Anthracenes	<5	<5	17	7	<5	<5	<5	
Phenol	<30	<30	<30	<30	<30	<30	<30	<330
Pyrene	63	21	180	79	13	27	19	<330
2,3,4,5-Tetrachlorophenol	<30	<30	<30	<30	<30	<30	<30	
2,3,4,6-Tetrachlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
2,3,5,6-Tetrachlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
1,2,4-Trichlorobenzene								
2,4,5-Trichlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
2,4,6-Trichlorophenol	<30	<30	<30	<30	<30	<30	<30	<330
*Benzo(a)pyrene equivalents	26.334	25.118	120.39	37.884	9.7055	14.1868	8.1028	381.315

*Benzo()pyrene equivalents calculated as discussed in Section 2.0 of report
B = detected in blank; D = sample diluted for analysis; J = estimated value

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Upstream of Site

Sample Number	SED TC101	SED TC102	SED TC103	SED TC104	SED TC105	TC-SED-1
Depth interval (feet)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0.5-1
Acenaphthene	0.87	<0.76	<0.76	<0.76	<0.76	<3.6
Acenaphthylene	<0.59	<0.59	<0.59	<0.59	<0.59	<3.6
Anthracene	1.2	<0.58	<0.58	<0.58	<0.58	<3.6
Benz(a)anthracene	6.1	1.1	<0.72	2	2.3	4.5
Benzo(a)pyrene	9.1	1.3	<0.76	2	3	5.5
Benzo(b)fluoranthene	16	2.1	<0.92	2.8	4.8	12
Benzo(e)pyrene	9.6	1.6	0.61	1.7	3	6.9
Benzo(g,h,i)perylene	8.2	1.8	<0.85	1.1	2.7	6.9
Benzo(k)fluoranthene	5.2	<0.87	<0.87	1.1	1.8	3.7
Biphenyl						<3.6
4-Chloro-3-Methylphenol						<30
2-Chlorophenol						<30
Chrysene	6	0.98	<0.8	1.4	1.8	4.6
C1-Chrysenes						5.7
C2-Chrysenes						<5
C3-Chrysenes						<5
C4-Chrysenes						<5
Dibenz(a,h)anthracene	1.6	<0.8	<0.8	<0.8	<0.8	<3.6
Dibenzofuran	0.63	<0.63	<0.63	<0.63	<0.63	<3.6
Dibenzothiophene						<3.6
C1-Dibenzothiophenes						<5
C2-Dibenzothiophenes						<5
C3-Dibenzothiophenes						<5
2,4-Dimethylphenol						<30
2,4-Dinitrophenol						<130
Fluoranthene	21	3.9	<0.98	4.1	6.1	15
C1-Fluoranthenes/Pyrenes						6.1
Fluorene	0.69	<0.61	<0.61	<0.61	<0.61	<3.6
C1-Fluorenes						<5
C2-Fluorenes						<5
C3-Fluorenes						<5
Indeno(1,2,3-cd)pyrene	8.7	1.3	<0.87	1.3	2.4	6.6
1-Methylnaphthalene	<0.51	<0.51	<0.51	<0.51	<0.51	<3.6
2-Methylnaphthalene	0.55	<0.46	<0.46	<0.46	<0.46	<3.6
Naphthalene	1.5	0.84	<0.6	0.91	0.8	<3.6

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report
B = present in blank ;D = sample diluted for analysis; J = estimated concentration

Appendix A
Sediment Analysis Results - Semi-volatile Organic Compounds (concentrations in ug/kg)
Turkey Creek - Upstream of Site

Sample Number	SED TC101	SED TC102	SED TC103	SED TC104	SED TC105	TC-SED-1
Depth interval (feet)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0.5-1
C2-Naphthalenes						<5
C3-Naphthalenes						<5
C4-Naphthalenes						<5
Pentachlorophenol						<70
Perylene	5.8	2.1	<0.72	1.2	1.5	<3.6
Phenanthrene	4.1	<1.4	<1.4	<1.4	<1.4	<3.6
C1-Phenanthrenes/Anthracenes						<5
C2-Phenanthrenes/Anthracenes						<5
C3-Phenanthrenes/Anthracenes						<5
C4-Phenanthrenes/Anthracenes						<5
Phenol						<30
Pyrene	15	2.6	<0.76	3.2	4.6	12
2,3,4,5-Tetrachlorophenol						<30
2,3,4,6-Tetrachlorophenol						<30
2,3,5,6-Tetrachlorophenol						<30
2,4,5-Trichlorophenol						<30
2,4,6-Trichlorophenol						<30
*Benzo(a)pyrene equivalents	13.8	2.2	0.9	3.0	4.4	9.7

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report
B = present in blank ;D = sample diluted for analysis; J = estimated concentration

Appendix A
Sediment Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-2	TC-SED-3	TC-SED-4	TC-SED-5	TC-SED-5 Dup	TC-SED-6	TC-SED-7	TC-SED-8
Octachlorodibenzofuran(OCDF)	44	113	21.9	426	185	38.7	43.6	147
Octachlorodibenzo-p-dioxin(OCDD)	686	1800	347	6170	2590	616	666	1880
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11.1	30.6	6.36	113	50.8	10.1	12.1	39.6
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	57.4	145	29.7	513	220	47.8	54.5	159
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.607JK	2.21J	0.367JK	8.14	3.66J	0.586JK	0.957J	2.75J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.856J	1.78J	0.384JK	5.85J	2.69J	0.633J	0.671JK	1.96J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.216JK	0.794J	0.143J	2.91J	1.2J	0.332J	0.253JK	0.714JK
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.319J	0.979J	0.242JK	3.46J	1.32J	0.349J	0.368JK	1.05J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.64J	4.1	0.804J	13.9	5.82J	1.25J	1.69J	4.51
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.216	<0.232	<0.127	<0.965	<0.463	<0.0898	<0.128	<0.174
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.64J	3.86	0.756J	10.3	4.27J	1.26J	1.32J	3.35
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0837	0.214JK	<0.0874	0.717JK	0.308J	<0.0785	<0.0853	0.169J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.088	0.285J	<0.0892	0.981J	<0.185	<0.0985	<0.0694	0.341J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.184	0.516J	0.202J	3.2J	<0.396	0.274JK	0.209JK	0.329JK
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0828	0.268J	<0.0865	0.889J	<0.257	<0.0776	<0.0844	0.177JK
2,3,7,8-Tetrachlorodibenzofuran(TCDF)	<0.0928	<0.125	<0.102	<0.266	<0.385	<0.0841	<0.254	<0.155
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0846	0.232J	<0.0849	<0.241	<0.272	<0.125	<0.108	<0.0799
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	1.50	4.18	0.84	13.73	5.45	1.32	1.46	4.27

B = detected in blank
EMPC = estimated maximum possible concentration
J = estimated value

Appendix A
Sediment Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)
Turkey Creek - Adjacent to or Downstream of Site

Sample Number	TC-SED-9	TC-SED-10
Octachlorodibenzofuran(OCDF)	39.2	144
Octachlorodibenzo-p-dioxin(OCDD)	630	2250
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11.8	38.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	47.7	165
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.812J	2.67J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.737J	2.56J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.456J	0.736J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.436J	1.24J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.39J	4.22
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.116	<0.289
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.35J	3.45
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0761	0.288JK
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0718	0.248JK
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.167J	0.753J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0752	0.363J
2,3,7,8-Tetrachlorodibenzofuran(TCDF)	<0.118	0.32J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0711	0.241JK
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	1.35	4.73

B = detected in blank
EMPC = estimated maximum possible concentration
J = estimated value

Appendix A
Sediment Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)
Turkey Creek - Upstream of Site

Sample Number	SED TC101	SED TC102	SED TC103	SED TC104	SED TC105	TC-SED-1
Octachlorodibenzofuran (OCDF)	49.7	8	2.46J	12.5	13.8	98.1
Octachlorodibenzo-p-dioxin (OCDD)	1210	218	98.8	240	368	1680
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	16.3	3.2	0.896J	4.39	4.52	23.2
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	96.7	17.8	7.2	21.2	27.8	132
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.58J	<0.266J EMPC	<0.045	0.373J	<0.447J EMPC	1.51JK
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	<1.15J EMPC	0.222J	<0.0217	0.182J	0.362J	1.31J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.802J EMPC	0.143J	<0.0578	<0.136J EMPC	<0.274J EMPC	0.785J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.731J	<0.145J EMPC	<0.0853J EMPC	0.201J	<0.0703	0.672J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.96	<0.573J EMPC	0.217J	0.682J	0.711J	3.42
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.404J EMPC	<0.0542	<0.0302	<0.0417	<0.0961	<0.236
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.82	0.704J	<0.423J EMPC	<0.559J EMPC	1.18J	3.22
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.236J	0.0509J	0.0388J	0.072J	<0.0526	<0.0756
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.321J	0.0904J	<0.0553	<0.0563	<0.0538	0.19J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.992J	0.196J	<0.101J EMPC	0.241J	<0.207J EMPC	0.46J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.461J	<0.102J EMPC	0.0931J	<0.176J EMPC	<0.0514	<0.0748
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.219J EMPC	<0.128J EMPC	<0.143J EMPC	<0.0439	<0.0664	<0.0734
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.308J EMPC	<0.102J EMPC	<0.0382	<0.14J EMPC	<0.0778	<0.0781
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	3.12	0.61	0.25	0.63	0.78	3.34

B = present in blank
EMPC = estimated maximum possible concentration
J = estimated concentration

Appendix A

Fish Analysis Results - Polycylic Aromatic Hydrocarbons (PAHs) (concentrations in ug/kg)

Fish species	Atlantic Croaker		Blue Catfish		Black Drum		Black Drum		Blue Gill	
Location	Background		Turkey Creek Adjacent to Site		Background		Bayou Bernard Downstream		Turkey Creek Adjacent to Site	
Date sampled	11/7/2011		10/26/2011		11/7/2011		10/26/2011		11/1/2011	
Laboratory	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS
Acenaphthene	0.056 J	0.202J	4	1.31	0.21 J	0.169J	<0.047	0.0656J	0.72	0.153J
Acenaphthylene	0.11 J	<0.0878	4.6	<0.0489	<0.046	<0.0485	<0.046	<0.0497	<0.046	<0.0804
Anthracene	0.042 J	0.277J	9.9	0.287J	0.054 J	0.117J	<0.038	<0.0497	0.18 J	<0.0804
Benz(a)anthracene	<0.038	<0.0878	0.42 J	<0.0489	0.083 J	<0.0485	<0.038	<0.0497	<0.038	<0.0804
Benzo(a)pyrene	<0.073	<0.0878	<0.15	<0.0489	<0.073	<0.0485	<0.073	<0.0497	<0.073	<0.0804
Benzo(b)fluoranthene	<0.066	<0.0878	<0.14	<0.0489	<0.066	<0.0485	<0.066	<0.0497	<0.066	<0.0804
Benzo(e)pyrene	<0.05	<0.0878	<0.1	<0.0489	<0.05	<0.0485	<0.05	<0.0497	<0.05	<0.0804
Benzo(g,h,i)perylene	<0.095	<0.0878	<0.19	<0.0489	<0.095	<0.0485	<0.095	<0.0497	<0.095	<0.0804
Benzo(k)fluoranthene	<0.057	<0.0878	<0.12	<0.0489	<0.057	<0.0485	<0.057	<0.0497	<0.057	<0.0804
Chrysene	<0.055	<0.0878	0.18 J	<0.0489	0.078 J	<0.0485	<0.055	<0.0497	<0.055	<0.0804
Dibenz(a,h)anthracene	<0.086	<0.0878	<0.18	<0.0489	<0.086	<0.0485	<0.086	<0.0497	<0.11	<0.0804
Dibenzofuran	0.14 J	0.836	1.8	0.745	0.2 J	0.488	0.094 J	0.234J	0.41 J	0.374J
Fluoranthene	0.14 J	1.09	6.8	2.1	0.16 J	0.429	0.15 J	<0.102	0.66	<0.166
Fluorene	0.26 J	0.611J	2.5	0.825	0.25 J	0.343J	0.18 J	0.152J	0.46 J	0.27J
Indeno(1,2,3-cd)pyrene	<0.096	<0.0878	<0.2	<0.0489	<0.096	<0.0485	<0.096	<0.0497	<0.096	<0.0804
1-Methylnaphthalene	0.18 J	0.135J	0.98 J	0.318J	0.18 J	0.0905J	0.18 J	0.0569J	0.22 J	0.0938J
2-Methylnaphthalene	0.16 J	0.242J	1.3	0.481	0.19 J	0.168J	0.19 J	0.119J	0.23 J	0.181J
Naphthalene	0.37 J	0.362J	1.6	0.819	0.26 J	0.232J	0.29 J	0.2J	0.41 J	0.351J
Perylene	<0.12	<0.0878	<0.24	<0.0489	<0.12	<0.0485	<0.12	<0.0497	<0.12	<0.0804
Phenanthrene	0.36 J	3.53B	2.3	1.06	0.33 J	1.69B	0.25 J	0.585	0.59	0.636J
Pyrene	0.085 J	0.552J	2.7	0.617	0.1 J	0.235J	0.074 J	0.03525	0.26 J	0.0557
*Benzo(a)pyrene equivalents	0.090318	0.1014529	0.22478	0.05650395	0.098768	0.05604175	0.090318	0.05742835	0.102318	0.0929022

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank

D = sample diluted for analysis

J = estimated value

Appendix A

Fish Analysis Results - Polycylic Aromatic Hydrocarbons (PAHs) (concentrations in ug/kg)

Fish species	Channel Catfish		Common Carp		Ground Mullet		Large Mouth Bass		Large Mouth Bass	
Location	Bayou Bernard Upstream		Bayou Bernard Downstream		Background		Background		Bayou Bernard Downstream	
Date sampled	11/1/2011		10/26/2011		11/8/2011		10/26/2011		10/27/2011	
Laboratory	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS
Acenaphthene	na	0.227J	15 D	3.44	0.36 JD	0.266J	0.094 J	0.0735J	0.24 J	0.154J
Acenaphthylene	na	<0.0492	1.4 JD	<0.0463	0.12 JD	<0.0492	0.059 J	<0.0481	0.049 J	<0.0488
Anthracene	na	<0.0492	6.7 JD	0.14J	0.2 JD	0.149J	0.059 J	<0.0481	0.079 J	<0.0488
Benz(a)anthracene	na	<0.0492	3.6 JD	<0.0463	<0.28	<0.0492	0.13 J	<0.0481	<0.038	<0.0488
Benzo(a)pyrene	na	<0.0492	<1.5	<0.0463	<0.15	<0.0492	0.087 J	<0.0481	<0.073	<0.0488
Benzo(b)fluoranthene	na	<0.0492	2.5 JD	<0.0463	0.17 JD	<0.0492	0.22 J	<0.0481	<0.066	<0.0488
Benzo(e)pyrene	na	<0.0492	<1	<0.0463	<0.1	0.0502J	0.18 J	<0.0481	<0.05	<0.0488
Benzo(g,h,i)perylene	na	<0.0492	<1.9	<0.0463	<0.19	<0.0492	0.19 J	<0.0481	<0.095	<0.0488
Benzo(k)fluoranthene	na	<0.0492	2 JD	<0.0463	<0.12	<0.0492	0.13 J	<0.0481	<0.057	<0.0488
Chrysene	na	<0.0492	4.8 JD	<0.0463	<0.43	<0.0492	0.14 J	<0.0481	<0.055	<0.0488
Dibenz(a,h)anthracene	na	<0.0492	2.1 JD	<0.0463	<0.18	<0.0492	0.15 J	<0.0481	<0.086	<0.0488
Dibenzofuran	na	<0.0492	5.3 JD	0.999	0.37 JD	0.611	0.11 J	0.222J	0.17 J	0.265J
Fluoranthene	na	0.11J	9.2 JD	1.37	0.47 JD	0.575	0.32 J	0.103J	0.21 J	0.107J
Fluorene	na	<0.0492	11 D	1.73	0.48 JD	0.467	0.14 J	0.152J	0.25 J	0.185J
Indeno(1,2,3-cd)pyrene	na	<0.0492	<2	<0.0463	<0.2	<0.0492	0.18 J	<0.0481	<0.096	<0.0488
1-Methylnaphthalene	na	<0.0492	3.6 JD	0.394	0.28 JD	0.138J	0.14 J	0.0589J	0.16 J	<0.0488
2-Methylnaphthalene	na	<0.0492	2.7 JD	0.397	0.3 JD	0.234J	0.17 J	0.119J	0.17 J	0.127J
Naphthalene	na	0.113J	3.5 JD	0.868	0.38 JD	0.301J	0.28 J	0.25J	0.27 J	0.253J
Perylene	na	<0.0492	<2.4	<0.0463	<0.24	<0.0492	<0.12	<0.0481	<0.12	<0.0488
Phenanthrene	na	<0.0492	12 D	2.32	0.86 JD	1.85B	0.4 J	0.512	0.33 J	0.537
Pyrene	na	<0.0698	15 D	0.584	<0.77	0.27J	0.15 J	0.0341	0.093 J	0.03415
*Benzo(a)pyrene equivalents	#VALUE!	0.1137012	3.5848	0.05349965	0.206815	0.0568506	0.29144	0.05557955	0.0898125	0.0563884

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank

D = sample diluted for analysis

J = estimated value

Appendix A

Fish Analysis Results - Polycylic Aromatic Hydrocarbons (PAHs) (concentrations in ug/kg)

Fish species	Large Mouth Bass		Large Mouth Bass		Large Mouth Bass		Orange Spotted Sun Fish		Pumpkinseed Bream	
Location	Bayou Bernard Upstream		Turkey Creek Adjacent to Site		Turkey Creek Upstream		Turkey Creek Upstream		Background	
Date sampled	10/26/2011		10/26/2011		10/26/2011		10/31/2011		11/10/2011	
Laboratory	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS
Acenaphthene	0.68	0.3J	0.57	0.301J	0.41 J	0.185J	0.63	0.179J	0.17 J	0.181J
Acenaphthylene	0.053 J	<0.05	0.076 J	<0.0481	0.052 J	<0.0495	0.052 J	<0.0863	0.055 J	<0.049
Anthracene	0.15 J	0.065J	0.18 J	0.0936J	0.13 J	<0.0495	0.13 J	<0.0863	0.1 J	0.128J
Benz(a)anthracene	<0.038	0.0557J	<0.038	<0.0481	<0.038	<0.0495	<0.038	<0.0863	<0.038	<0.049
Benzo(a)pyrene	<0.073	<0.05	<0.073	<0.0481	<0.073	<0.0495	<0.073	<0.0863	<0.073	<0.049
Benzo(b)fluoranthene	<0.066	<0.05	<0.066	<0.0481	<0.066	<0.0495	<0.066	<0.0863	<0.066	<0.049
Benzo(e)pyrene	<0.05	<0.05	<0.05	<0.0481	<0.05	<0.0495	<0.05	<0.0863	<0.05	<0.049
Benzo(g,h,i)perylene	<0.095	<0.05	<0.095	<0.0481	<0.095	<0.0495	<0.095	<0.0863	<0.095	<0.049
Benzo(k)fluoranthene	<0.057	<0.05	<0.057	<0.0481	<0.057	<0.0495	<0.057	<0.0863	<0.057	<0.049
Chrysene	<0.055	0.062J	<0.055	<0.0481	<0.055	<0.0495	<0.055	<0.0863	<0.055	<0.049
Dibenz(a,h)anthracene	<0.086	<0.05	<0.086	<0.0481	<0.086	<0.0495	<0.086	<0.0863	<0.086	<0.049
Dibenzofuran	0.38 J	0.345J	0.34 J	<0.0481	0.26 J	0.287J	0.2 J	0.381J	0.21 J	0.53
Fluoranthene	0.51	0.242J	0.49 J	0.254J	0.59	0.196J	0.46 J	<0.178	0.21 J	0.311J
Fluorene	0.66	0.336J	0.49 J	0.302J	0.4 J	0.244J	0.25 J	0.263J	0.3 J	0.414
Indeno(1,2,3-cd)pyrene	<0.096	<0.05	<0.096	<0.0481	<0.096	<0.0495	<0.096	<0.0863	<0.096	<0.049
1-Methylnaphthalene	0.18 J	0.0891J	0.27 J	0.151J	0.21 J	0.0912J	0.22 J	0.104J	0.17 J	0.0983J
2-Methylnaphthalene	0.2 J	0.155J	0.37 J	0.256J	0.29 J	0.177J	0.28 J	0.218J	0.2 J	0.167J
Naphthalene	0.31 J	0.33J	0.47 J	0.478	0.4 J	0.307J	0.71 J	0.46J	0.27 J	0.225J
Perylene	<0.12	<0.05	<0.12	<0.0481	<0.12	<0.0495	<0.12	<0.0863	<0.12	<0.049
Phenanthrene	0.89	0.673	0.61	0.748	0.42 J	0.589	0.35 J	0.723	0.41 J	1.58B
Pyrene	0.18 J	0.13J	0.23 J	0.135J	0.24 J	0.0958J	0.16 J	<0.123	0.085 J	0.155J
*Benzo(a)pyrene equivalents	0.0898125	0.060882	0.0898125	0.05557955	0.0898125	0.05719725	0.0898125	0.1000663	0.0898125	0.0566195

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank

D = sample diluted for analysis

J = estimated value

Appendix A

Fish Analysis Results - Polycylic Aromatic Hydrocarbons (PAHs) (concentrations in ug/kg)

Fish species	Redfish		Redfish		Sheep Head		Striped Bass		Striped Mullet	
Location	Bayou Bernard Downstream		Bayou Bernard Upstream		Bayou Bernard Downstream		Turkey Creek Upstream		Background	
Date sampled	10/26/2011		10/26/2011		10/26/2011		10/25/2011		10/28/2011	
Laboratory	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS
Acenaphthene	0.22 J	0.135J	0.37 J	0.297J	0.13 JX	0.0795J	3.2 D	0.83	0.77 JD	0.269J
Acenaphthylene	0.14 J	<0.0463	0.074 J	<0.0497	0.062 J	<0.0489	1.2 JD	<0.0478	<0.46	0.0905J
Anthracene	0.24 J	<0.0463	0.076 J	0.151J	0.052 J	<0.0489	2.6 D	0.0721J	<1.8	0.146J
Benz(a)anthracene	<0.038	<0.0463	<0.038	<0.0497	<0.038	<0.0489	<0.19	<0.0478	<0.38	<0.0462
Benzo(a)pyrene	<0.073	<0.0463	<0.073	<0.0497	<0.073	<0.0489	<0.37	<0.0478	<0.73	<0.0462
Benzo(b)fluoranthene	<0.066	<0.0463	<0.066	<0.0497	<0.066	<0.0489	<0.33	<0.0478	<0.66	<0.0462
Benzo(e)pyrene	<0.05	<0.0463	<0.05	0.0527J	<0.05	<0.0489	<0.25	<0.0478	<0.5	<0.0462
Benzo(g,h,i)perylene	<0.095	<0.0463	<0.095	<0.0497	<0.095	<0.0489	<0.48	<0.0478	<0.95	<0.0462
Benzo(k)fluoranthene	<0.057	<0.0463	<0.057	<0.0497	<0.057	<0.0489	<0.29	<0.0478	<0.57	<0.0462
Chrysene	<0.055	<0.0463	<0.055	<0.0497	<0.055	<0.0489	<0.28	<0.0478	<0.55	<0.0462
Dibenz(a,h)anthracene	<0.086	<0.0463	<0.086	<0.0497	<0.086	<0.0489	<0.43	<0.0478	<0.86	<0.0462
Dibenzofuran	0.29 J	0.244J	0.25 J	0.599	0.2 J	0.236J	1.6 JD	0.517	0.52 JD	0.366J
Fluoranthene	0.37 J	0.15J	0.24 J	0.612	0.22 J	0.106J	3.1 D	0.58	<0.49	0.458
Fluorene	0.54	0.149J	0.4 J	0.539	<0.48	0.154J	2.9 D	0.511	2.1 JD	0.395
Indeno(1,2,3-cd)pyrene	<0.096	<0.0463	<0.096	<0.0497	<0.096	<0.0489	<0.48	<0.0478	<0.96	<0.0462
1-Methylnaphthalene	0.3 J	0.113J	0.19 J	0.128J	0.23 J	0.0669J	1.2 JD	0.212J	1.7 JD	0.258J
2-Methylnaphthalene	0.38 J	0.229J	0.2 J	0.201J	0.26 J	0.127J	1.6 JD	0.301J	2.4 JD	0.484
Naphthalene	0.64 J	0.376	0.41 J	0.316J	0.48 J	0.205J	1.8 JD	0.46	2.1 JD	0.588
Perylene	<0.12	<0.0463	<0.12	<0.0497	<0.12	<0.0489	<0.6	<0.0478	<1.2	<0.0462
Phenanthrene	0.38 J	0.357J	0.37 J	1.88B	0.31 J	0.483	2.8 D	0.683	4.3 JD	0.803
Pyrene	<0.46	<0.0658	0.083 J	0.304J	0.12 J	<0.0694	<0.25	0.175J	<0.5	0.212J
*Benzo(a)pyrene equivalents	0.0898125	0.05349965	0.0898125	0.05742835	0.0898125	0.05650395	0.27024	0.0667879	0.900825	0.0533841

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank

D = sample diluted for analysis

J = estimated value

Appendix A

Fish Analysis Results - Polycylic Aromatic Hydrocarbons (PAHs) (concentrations in ug/kg)

Fish species	Striped Mullet		Striped Mullet		Striped Mullet		Striped Mullet		Tabby Catfish	
Location	Bayou Bernard Downstream		Bayou Bernard Upstream		Turkey Creek Adjacent to Site		Turkey Creek Upstream		Turkey Creek Upstream	
Date sampled	10/27/2011		10/26/2011		10/26/2011		10/25/2011			
Laboratory	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS	CAS	SGS
Acenaphthene	0.97 JD	0.274J	4.7 JD	1.6	8 JD	2.57	5.8 JD	1.37	na	<0.0496
Acenaphthylene	<0.46	<0.0489	<0.46	<0.0483	1.2 JD	<0.0467	<0.92	<0.0452	na	<0.0496
Anthracene	<2.9	0.0858J	<2.2	0.237J	6 JD	0.368J	4.9 JD	0.0964J	na	<0.0496
Benz(a)anthracene	<0.38	<0.0489	<0.38	<0.0483	3 JDX	0.111J	3.2 JD	<0.0452	na	<0.0496
Benzo(a)pyrene	<0.73	<0.0489	<0.73	<0.0483	<1.5	<0.0467	<1.5	<0.0452	na	<0.0496
Benzo(b)fluoranthene	<0.66	<0.0489	<0.66	<0.0483	2.1 JD	<0.0467	1.9 JD	<0.0452	na	<0.0496
Benzo(e)pyrene	<0.5	<0.0489	<0.5	<0.0483	<1	<0.0467	<1	<0.0452	na	<0.0496
Benzo(g,h,i)perylene	<0.95	<0.0489	<0.95	<0.0483	<1.9	<0.0467	<1.9	<0.0452	na	<0.0496
Benzo(k)fluoranthene	<0.57	<0.0489	<0.57	<0.0483	1.3 JD	<0.0467	1.3 JD	<0.0452	na	<0.0496
Chrysene	<0.55	<0.0489	<0.55	<0.0483	4.3 JDX	<0.0467	4.6 JD	<0.0452	na	<0.0496
Dibenz(a,h)anthracene	<0.86	<0.0489	<0.86	<0.0483	2.3 JD	<0.0467	2.1 JD	<0.0452	na	<0.0496
Dibenzofuran	0.67 JD	0.363J	2.3 JD	1.09	5.2 JD	1.14	3.1 JD	<0.0452	na	<0.0496
Fluoranthene	<0.49	0.684	<5.3	1.5	7.7 JD	1.29	5.5 JD	0.925	na	<0.102
Fluorene	2 JD	0.331J	4.5 JD	1.35	8.4 JD	1.06	6.9 JD	0.798	na	<0.0496
Indeno(1,2,3-cd)pyrene	<0.96	<0.0489	<0.96	<0.0483	<2	<0.0467	<2	<0.0452	na	<0.0496
1-Methylnaphthalene	1.8 JD	0.167J	1.6 JD	0.295J	5 JD	0.969	3.4 JD	0.307J	na	<0.0496
2-Methylnaphthalene	2 JD	0.339J	2.6 JD	0.476	5.5 JD	1.41	<2.4	0.515	na	<0.0496
Naphthalene	1.6 JD	0.48	1.8 JD	0.593	3.8 JD	1.49	<3	0.74	na	0.0527J
Perylene	<1.2	<0.0489	<1.2	<0.0483	<2.4	<0.0467	<2.4	<0.0452	na	<0.0496
Phenanthrene	2.5 JD	0.822	5.8 D	1.89	8.4 JD	1.74	6.3 JD	0.979	na	<0.0496
Pyrene	<0.5	0.26J	<5.5	0.421	<6.5	0.346J	<5.4	0.284J	na	<0.0704
*Benzo(a)pyrene equivalents	0.900825	0.05650395	0.900825	0.05581065	3.6773	0.06272685	3.4776	0.0522286	0	0.1146256

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank

D = sample diluted for analysis

J = estimated value

Appendix A

Fish Analysis Results - Polycylic Aromatic Hydrocarbons (PAHs) (concentrations in ug/kg)

Fish species	White Trout	
Location	Background	
Date sampled	11/7/2011	
Laboratory	CAS	SGS
Acenaphthene	0.13 J	0.17J
Acenaphthylene	0.092 J	<0.049
Anthracene	0.046 J	0.149J
Benz(a)anthracene	<0.038	<0.049
Benzo(a)pyrene	<0.073	<0.049
Benzo(b)fluoranthene	<0.066	<0.049
Benzo(e)pyrene	<0.05	<0.049
Benzo(g,h,i)perylene	<0.095	<0.049
Benzo(k)fluoranthene	<0.057	<0.049
Chrysene	<0.055	<0.049
Dibenz(a,h)anthracene	<0.086	<0.049
Dibenzofuran	0.19 J	0.631
Fluoranthene	0.13 J	0.451
Fluorene	0.34 J	0.465
Indeno(1,2,3-cd)pyrene	<0.096	<0.049
1-Methylnaphthalene	0.25 J	0.13J
2-Methylnaphthalene	0.36 J	0.251J
Naphthalene	0.46 J	0.318J
Perylene	<0.12	<0.049
Phenanthrene	0.35 J	2.02B
Pyrene	0.082 J	0.212J
*Benzo(a)pyrene equivalents	0.0898125	0.0566195

*Benzo(a)pyrene equivalents calculated as discussed in Section 2.0 of report

B = detected in blank

D = sample diluted for analysis

J = estimated value

Appendix A

Fish Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)

Fish species	Atlantic Croaker	Blue Catfish	Black Drum	Black Drum
Location	Background	Turkey Creek Adjacent to Site	Background	Bayou Bernard Downstream
Date sampled	11/7/2011	10/26/2011	11/7/2011	10/26/2011
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.51J	<0.0435	0.82J	<0.0715
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.26J	1.83	<0.0342	<0.245J EMPC
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.15	<0.0844J EMPC	0.632	<0.0136
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	<0.101	1.07	<0.0392	<0.0402
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	<0.175	<0.0321	<0.0671	<0.0228
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	<0.764J EMPC	<0.0168	0.222J	<0.0129
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0678	0.17J	<0.0219	<0.0277
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.186J	<0.0175	<0.0238	<0.0121
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.065	0.6	<0.0229	<0.0312
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.14	<0.0239	<0.0352	<0.0187
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0683	0.256J	<0.0231	<0.0305
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0437	<0.0245	0.0357J	<0.014
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0743	0.528	<0.0473	<0.0189
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.124	<0.0221	<0.0336	<0.0155
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.186J	<0.129J EMPC	0.093J	<0.0165
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.0762	<0.0781J EMPC	<0.0273	<0.0299
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0648	<0.15EMPC	<0.025	<0.0336
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	0.2339	0.7451	0.1038	0.0383

B = present in blank

EMPC = estimated maximum possible concentration

J = estimated concentration

Appendix A

Fish Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)

Fish species	Blue Gill	Common Carp	Ground Mullet	Large Mouth Bass
Location	Turkey Creek Adjacent to Site	Bayou Bernard Upstream	Background	Background
Date sampled	11/1/2011	10/26/2011	11/8/2011	10/26/2011
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	<1.51J EMPC	0.933J	0.548J	<0.055
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.04J	1.58	<0.209J EMPC	<0.0406
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	<1.27EMPC	0.927	0.625	<0.0116
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	<0.564J EMPC	0.757	<0.0307	<0.0399
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	<0.23	<0.109	<0.0502	<0.0188
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.511J	0.408J	0.234J	<0.0103
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.058	<0.121J EMPC	<0.0179J EMPC	<0.0218
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0827	<0.171J EMPC	<0.0267	<0.0101
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.058	<0.289J EMPC	0.123J	<0.0209
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.123	<0.0724	<0.0402	<0.0158
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0598	0.115J	<0.0205	<0.022
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0482	<0.0318	<0.0394J EMPC	<0.0112
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0706	<0.146J EMPC	<0.0306	<0.0218
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.103	<0.0532	<0.0317	<0.016
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0591	0.259J	<0.0498J EMPC	<0.0155
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.0662	<0.0445	<0.0218	<0.0446
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0522	<0.0429	<0.023	<0.0382
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	0.1605	0.2806	0.0854	0.0409

B = present in blank

EMPC = estimated maximum possible concentration

J = estimated concentration

Appendix A

Fish Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)

Fish species	Large Mouth Bass	Large Mouth Bass	Large Mouth Bass	Large Mouth Bass
Location	Bayou Bernard Downstream	Bayou Bernard Upstream	Turkey Creek Adjacent to Site	Turkey Creek Upstream
Date sampled	10/27/2011	10/26/2011	10/26/2011	10/26/2011
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	<0.0425	<0.0389	<0.074	<0.0425
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	<0.0526	<0.0445	<1.03EMPC	0.533J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	<0.139J EMPC	<0.0136	1.59DPE	<0.0689J EMPC
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	<0.0354	<0.0331	0.762	<0.622EMPC
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	<0.0264	<0.0234	<0.0437	<0.0277
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0179	<0.0122	<0.0196	<0.01
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0278	<0.0274	<0.0374	<0.0306
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0181	<0.0129	<0.128J DPE EMPC	<0.0101
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0272	<0.0266	<0.0383	<0.0319
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.0265	<0.0196	<0.0287	<0.0137
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0284	<0.0279	<0.0391	<0.0322
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0167	<0.016	<0.0211	<0.0127
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0276	<0.0224	<0.0285	<0.0203
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0229	<0.0189	<0.0289	<0.0138
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0206	<0.0236	<0.0289	<0.0163
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.0271	<0.0438	<0.0629	<0.0338
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0304	<0.0303	<0.0554	<0.034
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	0.0432	0.0400	0.0897	0.0423

B = present in blank

EMPC = estimated maximum possible concentration

J = estimated concentration

Appendix A

Fish Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)

Fish species	Orange Spotted Sun Fish	Pumpkinseed Bream	Redfish	Redfish
Location	Turkey Creek Upstream	Background	Bayou Bernard Downstream	Bayou Bernard Upstream
Date sampled	10/31/2011	11/10/2011	10/26/2011	10/26/2011
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	<0.0732	1.19	<0.0416	0.852J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	<1.66J EMPC	<0.093	<0.0708	<0.0693
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	<0.122J EMPC	<1.08EMPC	<0.0128	0.74
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.319J	<0.0674	<0.0243	<0.046
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	<0.0585	<0.128	<0.019	<0.0799
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	<0.021	<0.378J EMPC	<0.00874	0.272J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0379	<0.0565	<0.0225	<0.0347
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0204	<0.054	<0.0083	<0.0364
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.271J EMPC	<0.0566	<0.0251	<0.0335
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.0343	<0.0856	<0.0118	<0.0575
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.04	<0.0583	<0.0246	<0.0351
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0342	<0.0344	<0.0166	<0.0222
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0382	<0.064	<0.0222	<0.0524
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0336	<0.0649	<0.0119	<0.0465
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0493	<0.0416	<0.022	<0.0269
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.0657	<0.0569	<0.0525	<0.0407
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0431	<0.064	<0.0291	<0.0444
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	0.0791	0.1180	0.0378	0.1025

B = present in blank

EMPC = estimated maximum possible concentration

J = estimated concentration

Appendix A

Fish Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)

Fish species	Sheeps Head	Striped Bass	Striped Mullet	Striped Mullet
Location	Bayou Bernard Downstream	Turkey Creek Upstream	Background	Bayou Bernard Downstream
Date sampled	10/26/2011	10/25/2011	10/28/2011	10/27/2011
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	<0.0652	<0.0498	<0.037	<0.0604
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	<0.0672	<0.374J EMPC	0.428J	<0.372J EMPC
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	<0.0181	<0.0155	<0.0426J EMPC	<0.0763J EMPC
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	<0.0362	<0.22J EMPC	<0.0291	<0.211J EMPC
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	<0.0294	<0.0258	<0.0305	<0.0211
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0114	<0.0287	<0.0132	<0.0146
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0286	<0.023	<0.0331	<0.0352
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0111	<0.0289	<0.0126	<0.0152
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.031	0.0979J	<0.0353	<0.0363
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.0169	<0.0451	<0.0197	<0.0227
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0308	<0.0238	<0.0353	<0.0369
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0194	<0.0214	<0.0168	<0.0227
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0322	<0.0216	2.79	<0.0324
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0182	<0.0423	<0.0162	<0.0194
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0271	0.138J	<0.0547J EMPC	<0.0288
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.06	<0.0406	<0.174EMPC	0.192
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0468	<0.0364	<0.0942J EMPC	<0.0475
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	0.0547	0.0935	2.8632	0.0744

B = present in blank

EMPC = estimated maximum possible concentration

J = estimated concentration

Appendix A

Fish Analysis Results - Polychlorinated Dibenzodioxins and Dibenzofurans (concentrations in ng/kg)

Fish species	Striped Mullet	Striped Mullet	Striped Mullet	White Trout
Location	Bayou Bernard Upstream	Turkey Creek Adjacent to Site	Turkey Creek Upstream	Background
Date sampled	10/26/2011	10/26/2011	10/25/2011	11/7/2011
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	<0.0682	<0.0456	<0.0371	0.485J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.84	1.49	1.99	<0.0636
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	<0.0207	0.0829J	<0.1J EMPC	0.481J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	<0.236J EMPC	0.386J	0.237J	<0.0483
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	<0.0335	<0.027	<0.0177	<0.0991
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0197	<0.0944J EMPC	<0.0391J EMPC	<0.245J EMPC
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0555	<0.138J EMPC	<0.0921J EMPC	<0.0307
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0189	<0.0948J EMPC	0.0304J	<0.0295
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0585	0.415J	<0.184J EMPC	<0.0313
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	<0.0323	<0.019	<0.0138	<0.05
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	<0.0588	<0.0282	<0.0308	<0.0319
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	<0.0267	<0.0717J EMPC	<0.013	<0.0188
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	<0.0555	<0.243J EMPC	<0.105J EMPC	<0.0473
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	<0.0294	<0.0174	<0.0123	<0.04
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	<0.213J EMPC	<0.207J EMPC	<0.13J EMPC	<0.0232
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	<0.0748	<0.402EMPC	0.185	<0.0334
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	<0.0642	<0.27EMPC	0.199	<0.0356
Total Dioxin Equivalents (NDs at 1/2 Detection Limit)	0.1116	0.3751	0.3149	0.0755

B = present in blank

EMPC = estimated maximum possible concentration

J = estimated concentration

Appendix B

Fish Composite Data

Appendix B

Fish Composite Data

Appendix B
Data for Fish Making Up Composite Samples Analyzed for PAHs and PCDDs/PCDFs

Species	Station Description	Number of Fish in Composite	Fish length (inches)	Weight (grams)	Total Weight of Composite (grams)	Percent Lipid (NOAA)	Percent Lipid (Gravimetric)	Latititude	Longitude	Sample Date	Sample ID
Atlantic Croaker	Background Sample/Old Fort Bayou	4	9	132	393	0.13	0.08	30° 25' 12.4"	88° 47' 42"	11/7/2011	2-ACBKG17, ACBKG COMPOSITE
			8.5	100				30° 25' 6.9"	88° 49' 51.4"	11/7/2011	2-ACBKG22, ACBKG COMPOSITE
			8	97				30° 25' 26.7"	88° 50' 15.8"	11/8/2011	2-ACBKG27, ACBKG COMPOSITE
			7.25	64				30° 25' 26.7"	88° 50' 15.8"	11/8/2011	2-ACBKG28, ACBKG COMPOSITE
Blue Catfish	Turkey Creek around the CFI site (Turkey Creek Site)	3	31	6340	21920	3.1	0.92	30° 25' 25.7"	89° 4' 3.2"	10/26/2011	1-BCTCS39, BCTCS COMPOSITE
			31	7900				32° 25' 25.7"	89° 4' 3.2"	10/28/2011	1-BCTCS40, BCTCS COMPOSITE
			31.5	7680				30° 25' 25.7"	89° 4' 3.2"	10/26/2011	1-BCTCS41, BCTCS COMPOSITE
Black Drum	Background Sample/Old Fort Bayou	4	10	254	1246	0.16	0.02	30° 25' 12.4"	88° 47' 42"	11/7/2011	2-BDBKG16, BDBKG COMPOSITE
			8.5	160				30° 25' 10.8"	88° 49' 39.3"	11/7/2011	B-BDBKG17, BDBKG COMPOSITE
			12	368				30° 25' 15.2"	88° 50' 22.8"	11/7/2011	B-BDBKG25, BDBKG COMPOSITE
			13	464				30° 25' 26.1"	88° 50' 15.8"	11/8/2011	B-BDBKG27, BDBKG COMPOSITE
Black Drum	Bayou Bernard Downstream	5	25	3460	8200	0.22	0.01	30° 25' 34.1"	89° 3' 8"	10/26/2011	1-BDBBD67, BDBBD COMPOSITE
			18.5	1340				30° 25' 34.4"	89° 3' 9.1"	10/26/2011	1-BDBBD69, BDBBD COMPOSITE
			17.5	960				30° 25' 34.4"	89° 3' 9.1"	10/26/2011	1-BDBBD70, BDBBD COMPOSITE
			17	1300				30° 25' 34.4"	89° 3' 10.7"	10/26/2011	1-BDBBD71, BDBBD COMPOSITE
			17	1140				30° 20' 54.6"	89° 3' 3.1"	10/27/2011	1-BDBBD81, BDBBD COMPOSITE
Blue Gill	Turkey Creek around the CFI site (Turkey Creek Site)	5	7.75	127	474	0.22	0.06	30° 25' 25.7"	89° 4' 3.2"	11/1/2011	2-BGTCS07, BGTCS COMPOSITE
			6.25	67				30° 25' 25.7"	89° 4' 3.2"	11/1/2011	2-BGTCS09, BGTCS COMPOSITE
			7.25	121				30° 25' 25.7"	89° 4' 3.2"	11/1/2011	2-BGTCS10, BGTCS COMPOSITE
			6	58				30° 25' 25.7"	89° 4' 3.2"	11/1/2011	2-BGTCS11, BGTCS COMPOSITE
			7.5	101				30° 25' 25.7"	89° 4' 3.2"	11/1/2011	2-BGTCS12, BGTCS COMPOSITE
Channel Cat	Bayou Bernard Upstream	6	9.5	88	1469	NR	0.93	30° 26' 12.6"	89° 5' 42.7"	11/3/2011	CCBBU Composite
			NR	NR				30° 25' 29.9"	89° 4' 1.1"	11/4/2011	CCBBU Composite
			11.5	260				30° 25' 30.2"	89° 4' 3.9"	11/1/2011	CCBBU Composite
			13.5	384				30° 25' 30.2"	89° 4' 3.9"	11/1/2011	CCBBU Composite
			12	427				30° 25' 41.3"	89° 4' 10.1"	11/3/2011	CCBBU Composite
			10.5	310				30° 25' 29.9"	89° 4' 1.1"	11/4/2011	CCBBU Composite
Common Carp	Bayou Bernard Upstream	2	29	5820	12120	3.7, 5.2, & 4.4	0.61	30° 26' 8.2"	89° 5' 41.8"	10/26/2011	1-CABBU61, CABBU COMPOSITE
			30.5	6300				30° 26' 8.2"	89° 5' 41.8"	10/26/2011	1-CABBU63, CABBU COMPOSITE
Ground Mullet	Background Sample/Old Fort Bayou	4	10	171	844	0.97	0.24	30° 25' 26.7"	88° 50' 15.8"	11/8/2011	2-GMBKG24, BMBKG COMPOSITE
			10	192				30° 25' 26.7"	88° 50' 15.8"	11/8/2011	2-GMBKG25, GMBKG COMPOSITE
			10.5	190				30° 25' 26.7"	88° 50' 15.8"	11/8/2011	2-GMBKG26, GMBKG COMPOSITE
			11	291				30° 25' 28.8"	88° 34' 4"	11/9/2011	2-GMBKG30, GMBKG COMPOSITE
Large Mouth Bass	Background Sample/Old Fort Bayou	3	13.5	640	1500	0.54	0.34	30° 26' 47.1"	88° 43' 11.5"	10/28/2011	1-LBBKG96, LBBKG COMPOSITE
			13.5	460				30° 26' 47.1"	88° 43' 11.5"	10/28/2011	1-LBBKG97, LBBKG COMPOSITE
			12.5	400				30° 26' 53.4"	88° 43' 16.5"	10/28/2011	1-LBBKG98, LBBKG COMPOSITE
Large Mouth Bass	Bayou Bernard Downstream	5	12.5	520	2040	0.5	0.04	30° 25' 31.8"	89° 3' 3.8"	10/27/2011	1-LBBBD77, LBBBD COMPOSITE
			11.5	320				30° 25' 25.5"	89° 2' 53.3"	10/27/2011	1-LBBBD82, LBBBD COMPOSITE
			13	420				30° 25' 25.5"	89° 2' 53.3"	10/27/2011	1-LBBBD83, LBBBD COMPOSITE
			11.5	320				30° 25' 28.5"	89° 2' 53.3"	10/27/2011	1-LBBBD84, LBBBD COMPOSITE
			12.5	460				30° 25' 28.1"	89° 2' 55.8"	10/27/2011	1-LBBBD85, LBBBD COMPOSITE
Large Mouth Bass	Bayou Bernard Upstream	4	10.5	240	2960	0.36	0.19	30° 25' 55.7"	89° 5' 19.4"	10/26/2011	1-LBBBU49, LBBBU COMPOSITE
			14.5	580				30° 26' 1.4"	89° 5' 26.4"	10/26/2011	1-LBBBU56, LBBBU COMPOSITE
			15	960				30° 26' 1.4"	89° 5' 26.4"	10/26/2011	1-LBBBU57. LBBBU COMPOSITE
			16	1180				30° 26' 3.3"	89° 5' 27.9"	10/26/2011	1-LBBBU58, LBBBU COMPOSITE

Appendix B
Data for Fish Making Up Composite Samples Analyzed for PAHs and PCDDs/PCDFs

Species	Station Description	Number of Fish in Composite	Fish length (inches)	Weight (grams)	Total Weight of Composite (grams)	Percent Lipid (NOAA)	Percent Lipid (Gravimetric)	Latititude	Longitude	Sample Date	Sample ID
Large Mouth Bass	Turkey Creek around the CFI site (Turkey Creek Site)	4	11.5	380	3180	0.65	0.46	30° 25' 26"	89° 4' 11.5"	10/26/2011	1-LBTCS20, LBTCS COMPOSITE
			11.5	400				30° 25' 28.5"	89° 4' 8.9"	10/26/2011	1-LBTCS22, LBTCS COMPOSITE
			13.75	1800				30° 25' 23.7"	89° 4' 40.5"	10/26/2011	1-LBTCS26, LBTCS COMPOSITE
			9.5	600				Not reported	Not reported	10/27/2011	2-LBTCS05, LBTCS COMPOSITE
Large Mouth Bass	Upstream Turkey Creek	6	NR	NR	1740	0.4	0.3	30° 25' 23.2"	89° 4' 17.7"	10/25/2011	2-LBTC101, LBTC1 COMPOSITE
			NR	NR				30° 25' 17.7"	89° 4' 25.5"	10/20/2011	2-LBTC102, LBTC1 COMPOSITE
			NR	NR				30° 25' 17.7"	89° 4' 25.5"	10/26/2011	2-LBTC103, LBTC1 COMPOSITE
			12	340				30° 25' 12.8"	89° 4' 33.7"	10/26/2011	Not reported
			16	820				30° 25' 12.8"	89° 4' 33.7"	10/26/2011	1-LBTC115, LBTC1 COMPOSITE
			11	580				30° 25' 12.8"	89° 4' 33.7"	10/26/2011	1-LBTC116, LBTC1 COMPOSITE
Orange Spotted Sun Fish	Upstream Turkey Creek	5	5	41	442	0.14	0.04	30° 25' 24.9"	89° 4' 13.9"	10/31/2011	B-SFTC101, SFTC1 COMPOSITE
			7.5	114				30° 25' 24.9"	89° 4' 13.9"	10/31/2011	B-SFTC102, SFTC1 COMPOSITE
			6	54				30° 25' 22.8"	89° 1' 17.2"	10/31/2011	B-SFTC103, SFTC1 COMPOSITE
			7	97				30° 25' 22.8"	89° 4' 17.2"	10/31/2011	B-SFTC104, SFTC1 COMPOSITE
			8	136				30° 25' 22.8"	89° 4' 17.2"	10/31/2011	B-SFTC105, SFTC1 COMPOSITE
Pumpkinseed Bream	Background Sample/Old Fort Bayou	6	9.5	290	1136	0.31	0.09	30° 26' 56.7"	88° 43' 20.5"	11/10/2011	2-GMBKG31, GMBKG COMPOSITE
			9.5	290				30° 26' 56.7"	88° 43' 20.5"	11/10/2011	2-PBBKG32, PBBKG COMPOSITE
			7.5	205				30° 26' 56.7"	88° 44' 20.5"	11/10/2011	2-PBBKG33, PBBKG COMPOSITE
			7.5	175				30° 27' 1.4"	88° 43' 23.4"	11/10/2011	2-PBBKG34, PBBKG COMPOSITE
			7	87				30° 27' 2.7"	88° 43' 24.3"	11/10/2011	2-PBBKG35, PBBKG COMPOSITE
			6	89				30° 26' 45.5"	88° 42' 12.4"	11/10/2011	2-PBBKG36, PBBKG COMPOSITE
Redfish	Bayou Bernard Downstream	3	17	820	2280	1.4	1.05	30° 25' 34.1"	89° 3' 8"	10/26/2011	1-RFBBD65, RFBBD COMPOSITE
			16	760				30° 25' 34.1"	89° 3' 8"	10/26/2011	1-RFBBD66, RFBBD COMPOSITE
			15.5	700				30° 25' 34.4"	89° 3' 9.1"	10/26/2011	1-RFBBD68, RFBBD COMPOSITE
Redfish	Bayou Bernard Upstream	3	13.5	420	3839.6	0.5	0.06	30° 25' 59.2"	89° 5' 24"	10/26/2011	1-RFBBU51, RFBBU COMPOSITE
			18	698				30° 25' 30.2"	89° 4' 3.9"	11/1/2011	B-RFBBU08, RFBBU COMPOSITE
			34	2721.6				30° 25' 33.7"	89° 4' 29"	11/3/2011	B-RFBBU10, RFBBU COMPOSITE
Sheep Head	Bayou Bernard Downstream	3	14	760	2580	0.92	0.49	30° 25' 34.4"	89° 3' 10.7"	10/26/2011	1-SHBBD72, SHBBD COMPOSITE
			13	440				30° 25' 34.4"	89° 3' 10.7"	10/26/2011	1-SHBBD73, SHBBD COMPOSITE
			17	1380				30° 25' 54.6"	89° 3' 3.1"	10/27/2011	1-SHBBD80, SHBBD COMPOSITE
Striped Bass	Upstream Turkey Creek	3	20.5	1560	4500	1.8	1.33	30° 25' 20.3"	89° 4' 21.9"	10/25/2011	1-SBTC106, SBTC1 COMPOSITE
			20	1440				30° 25' 20.3"	89° 4' 21.9"	10/25/2011	1-SBTC107, SBTC1 COMPOSITE
			20.5	1500				30° 25' 10.1"	89° 4' 35.6"	10/25/2011	1-SBTC108, SBTC1 COMPOSITE
Striped Mullet	Background Sample/Old Fort Bayou	5	16	800	2660	4.1	1.04	30° 26' 23.7"	88° 43' 39.7"	10/28/2011	1-SMBKG88, SMBKG COMPOSITE
			14.5	480				30° 26' 23.7"	88° 43' 39.7"	10/28/2011	1-SMBKG89, SMBKG COMPOSITE
			14.5	500				30° 26' 27"	88° 43' 30.1"	10/28/2011	1-SMBKG91, SMBKG COMPOSITE
			13.5	440				30° 26' 36.7"	88° 43' 17.6"	10/28/2011	1-SMBKG92, SMBKG COMPOSITE
			14	440				30° 26' 36.7"	88° 43' 17.6"	10/28/2011	1-SMBKG93, SMBKG COMPOSITE
Striped Mullet	Bayou Bernard Downstream	5	13.5	400	1820	3.6	3.69	30° 25' 31.8"	89° 3' 3.8"	10/27/2011	1-SMBBD74, SMBBD COMPOSITE
			13.5	460				30° 25' 31.8"	89° 3' 3.8"	10/27/2011	1-SMBBD75, SMBBD COMPOSITE
			13	360				30° 25' 31.8"	89° 3' 3.8"	10/27/2011	1-SMBBD76, SMBBD COMPOSITE
			12	360				30° 25' 31.8"	89° 3' 3.8"	10/27/2011	1-SMBBD78, SMBBD COMPOSITE
			11.5	240				30° 25' 34.6"	89° 3' 3.1"	10/27/2011	1-SMBBD79, SMBBD COMPOSITE
Striped Mullet	Bayou Bernard Upstream	5	13	400	1680	3.7	6.24	30° 25' 55.7"	89° 5' 19.4"	10/26/2011	1-SMBBU42, SMBBU COMPOSITE
			13.5	400				30° 25' 55.7"	89° 5' 19.4"	10/26/2011	1-SMBBU45, SMBBU COMPOSITE
			11	240				30° 25' 55.7"	89° 5' 19.4"	10/26/2011	1-SMBBU46, SMBBU COMPOSITE
			13	400				30° 25' 55.7"	89° 5' 19.4"	10/26/2011	1-SMBBU47, SMBBU COMPOSITE
			11	240				30° 25' 55.7"	89° 5' 19.4"	10/26/2011	1-SMBBU48, SMBBU COMPOSITE

Appendix B
Data for Fish Making Up Composite Samples Analyzed for PAHs and PCDDs/PCDFs

Species	Station Description	Number of Fish in Composite	Fish length (inches)	Weight (grams)	Total Weight of Composite (grams)	Percent Lipid (NOAA)	Percent Lipid (Gravimetric)	Latititude	Longitude	Sample Date	Sample ID
Striped Mullet	Turkey Creek around the CFI site (Turkey Creek Site)	6	11.5	260	2140	3.4	1	30° 25' 26"	89° 4' 8.9"	10/26/2011	1-SMTCS21, SMTCS COMPOSITE
			11	200				30° 25' 28.5"	89° 4' 8.9"	10/26/2011	1-SMTCS23, SMTCS COMPOSITE
			13.5	480				30° 25' 25.7"	89° 4' 3.2"	10/26/2011	1-SMTCS27, SMTCS COMPOSITE
			14	480				30° 25' 25.7"	89° 4' 3.2"	10/26/2011	1-SMTCS28, SMTCS COMPOSITE
			19	380				30° 25' 25.7"	89° 4' 3.2"	10/26/2011	1-SMTCS29, SMTCS COMPOSITE
			12.5	340				30° 25' 25.7"	89° 4' 3.5"	10/26/2011	Not reported
Striped Mullet	Upstream Turkey Creek	5	13.25	460	1960	2.9	0.49	30° 25' 20.9"	89° 4' 19.7"	10/25/2011	1-SMTC101, SMTC1 COMPOSITE
			12	300				30° 25' 20.9"	89° 4' 19.7"	10/25/2011	1-SMTC102, SMTC1 COMPOSITE
			13.5	420				30° 25' 20.9"	89° 4' 19.7"	10/25/2011	1-SMTC103, SMTC1 COMPOSITE
			14.5	540				30° 25' 20.9"	89° 4' 19.7"	10/25/2011	1-SMTC104, SMTC1 COMPOSITE
			11.5	240				30° 25' 20.9"	89° 4' 19.7"	10/25/2011	1-SMTC105, SMTC1 COMPOSITE
Tabby Cat	Upstream Turkey Creek	1	14.5	565	565	NR	0.07	30° 25' 19.2"	89° 4' 21.8"	11/2/2011	TCTC113
White Trout	Background Sample/Old Fort Bayou	4	11.25	212	648	1.1	0.17	30° 25' 6.9"	88° 49' 51.4"	11/7/2011	2-WTBKG18, WTBKG COMPOSITE
			9.5	148				60° 25' 6.9"	88° 49' 51.4"	11/7/2011	2-WTBKG19, WTBKG COMPOSITE
			9.25	115				30° 25' 6.9"	88° 49' 51.4"	11/7/2011	2-WTBKG20, WTBKG COMPOSITE
			10	173				30° 25' 6.9"	88° 49' 51.4"	11/7/2011	2-WTBKG23, WTBKG COMPOSITE

Appendix C

Determination of Exposure Frequency for the Recreational Swimmer

Potential surface water and sediment exposures will be considered for recreational populations at off-Site surface water locations in Turkey Creek. Although recreational visitors to Turkey Creek could potentially engage in a variety of activities, the recreational swimmer is more likely to have a greater exposure to COPCs in surface water than other recreational receptors.

In the *Human Health Risk Assessment Bulletins—Supplement to RAGS* (USEPA, 2000), EPA Region IV suggests an exposure frequency of 45 days/year for a recreational swimmer in the southeast. Considering that large portions of Turkey Creek near the CFI site are undeveloped and public access areas are not available for swimmers, CTEH determined that in the absence of site-specific information an exposure frequency of 20 days/year would provide a conservative estimate of actual exposures to COPCs in surface water. An exposure frequency of 20 days per year assumes an individual would swim/wade in Turkey Creek one day a week (1 day/week) for one hour (1 hour/day) from May through September (5 months/year) (4 days/month x 5 months/year = 20 days/year). The proposed exposure frequency of 4 days per month for 5 months is consistent with EPA's recommended value of 181 swimming minutes/month for 2 to >65 year olds which equates to about 3 hours of swimming time per month. (USEPA, 2009; Table 16-1).

Appendix D

Fish Consumption Survey and Summary Data from Survey

Local Fish Survey Questionnaire

Turkey Creek and Bayou Bernard/Industrial Seaway

Name: _____

Address: _____

_____

1.) **Do you fish in Turkey Creek and/or Bayou Bernard/Industrial Seaway? Yes No**

2.) **Do you consume fish, frogs, crawfish, and/or crabs caught in Turkey Creek and/or Bayou Bernard? Yes No**

3.) **If you answered yes to question 2 check the species you consume from Turkey Creek and/or Bayou Bernard.**

Check all that apply:

__ Bass	**__ Mullet**	**__ Frog**
__ Catfish	**__ Crab**	**__ Other (specify) _____**
__ Bream/Perch/Sunfish	**__ Crawfish**	**__ Other (specify) _____**

4.) **How often do you eat species caught in Turkey Creek and/or Bayou Bernard?**

Fish: _____times per month

Crabs: _____ times per month

Frogs: _____ times per month

Crawfish: _____ times per month

Other (specify): _____ _____ times per month

Other (specify): _____ _____ times per month

5.) **Indicate the number of individuals in household who consume species caught in Turkey Creek and/or Bayou Bernard: _____**

Number of children 2 to 6 years old: _____

Number of individuals 6 to 16 years old: _____

Number of individuals 16 years old and older: _____

Survey of Community Living Near Turkey Creek and Bayou Bernard
Consumption of Fish and Other Edible Aquatic Species Consumption
Turkey Creek and Bayou Bernard

Name	Address	Do you fish in Turkey Creek and/or Bayou Bernard/Industrial Seaway?	Do you consume (Yes or No)?								
			Fish	Bass	Mullet	Catfish	Bream/ Perch/ Sunfish	Crab	Crawfish	Frog	Other (Write out any other species consumed)
K.T.	Hallsehl Rd., Gulfport, MS 39101	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
J.D.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	N/A
M.B.	Rippy Rd., Gulfport, MS 39503	No	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
D.T.	Rippy Rd., Gulfport, MS 39503	?	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
R.W.	Magnolia Ridge, Stone Mtn, GP, 30087	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
R.J.	Rippy Rd., Gulfport, MS 39503	No	Yes	No	No	Yes	No	No	No	No	N/A
M.E.	Not given	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
D.J.	Fisher Blvd., Gulfport, MS 39503	?	Yes	No	No	Yes	No	No	No	No	N/A
S.T.	Rippy Road, Gulfport, MS 39503	No	Yes	Yes	No	Yes	Yes	No	No	No	N/A
R.J.	Rippy Rd,. Gulfport, MS 39503	Yes	Yes	Yes	Yes	No	No	No	No	No	N/A
W.W.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
T.S.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Gar
R.W.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
E.W.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
A.R.	Cortenay Ave., Passchristain	Yes	Yes	Yes	No	Yes	No	No	No	No	N/A
F.W.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
R.W.	Holly Dr.?	Yes	Yes	Yes	Yes	Yes	No	No	No	No	N/A
J.B.	Florida Ave. ?	Yes	Yes	No	Yes	No	Yes	No	No	No	N/A
T.W.	E. Tandy Dr., ?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
E.W.	Three Rivers Rd., ?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
C.I.	Idom St., Gulfport, MS 39503	No	No	No	No	No	No	No	No	No	N/A
G.K.	Not given	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	N/A
A.S.	Rippy Rd., Gulfport, MS 39503	No	Yes	Yes	Yes	No	Yes	No	No	No	N/A
D.C.	Idom St., Gulfport, MS 39503	Yes	Yes	No	Yes	Yes	Yes	No	No	No	N/A
G.I.	Idom St., Gulfport, MS 39503	No	No	No	No	No	No	No	No	No	N/A
L.W.	Popps Ferry Rd. L220 D'Iberville, MS 39540	No	No	No	No	No	No	No	No	No	N/A
M.D.	Karli Lane, Biloxi, MS 39537	No	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
R.W.	Rippy Rd., Gulfport, MS 39503	Yes	No	No	No	No	No	No	No	No	N/A
Y.M.	Mockingbird Lane, Gulfport, MS 39507	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
E.C.	Churchwood Dr., Gulfport, MS 39503	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A
J.B.	Fairview Dr., Biloxi, MS	Yes	Yes	Yes	No	No	Yes	No	No	No	?
S.W.	Searle Ave., Gulfport, MS 39507	No	Yes	Yes	Yes	No	No	No	No	No	N/A
W.H.	Wright Ave., Long Beach, MS 39560	No	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A

N/A - no answer given
red text and numbers indicate uncertain or illegible answer; entered value is best approximation of answer

Survey of Community Living Near Turkey Creek and Bayou Bernard
Consumption of Fish and Other Edible Aquatic Species Consumption
Turkey Creek and Bayou Bernard

Name	Address	Do you fish in Turkey Creek and/or Bayou Bernard/Industrial Seaway?	Do you consume (Yes or No)?								
			Fish	Bass	Mullet	Catfish	Bream/ Perch/ Sunfish	Crab	Crawfish	Frog	Other (Write out any other species consumed)
R.J.	Indiana Ave., Gulfport, MS ?	?	?	Yes	Yes	No	No	No	No	No	N/A
T.F.	13th Ave., Gulfport, MS 39501	Yes	Yes	Yes	Yes	No	No	No	No	No	N/A
K.R.	Northwood Dr., Gulfport, MS 39503	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
H.J.	Rippy Rd., Gulfport, MS 39503	?	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
D.J.	Mallard Cove, Gulfport, MS ?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
R.J.	Rippy Rd., Gulfport, MS 39501	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	N/A
R.S.	S. 3rd Ave., Gulfport, MS 39501	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
D.B.	Halsal Rd., Gulfport, MS 39501	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
C.B.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	N/A
D.H.	Rippy Rd., Gulfport, MS 39503	No	No	No	No	No	No	No	No	No	N/A
G.C.	Boyce Rd., Gulfport, MS 39501	?	Yes	No	Yes	Yes	Yes	No	No	No	N/A
M.F.	Eisenhower Dr. #43, Bilioxi, MS 39531	Yes	Yes	No	Yes	Yes	Yes	No	No	No	N/A
E.C.	Eisenhower Dr. #43, Bilioxi, MS 39531	Yes	Yes	No	Yes	Yes	Yes	No	No	No	N/A
J.M.	Idom St., Gulfport, MS 39503	Yes	No	No	No	No	No	No	No	No	N/A
C.B.	26 1/2 St., Gulfport, MS 39507	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
T.W.	Rippy Rd., Gulfport, MS 39503	No	No	No	No	No	No	No	No	No	N/A
T.W.	Jeff Rd., ?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
S.G.	Engram Dr., Gulfport, MS 39503	No	No	No	No	No	No	No	No	No	N/A
A.S.	Jeff Rd., ?	Yes	Yes	Yes	No	Yes	Yes	No	No	No	N/A
J.B.	55th Ave., Gulfport, MS 39503	Yes	Yes	No	Yes	Yes	Yes	No	No	No	N/A
O.I.	Idom St., Gulfport, MS 39503	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
D.S.	Rippy Rd., Gulfport, MS 39503	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A
	Number of "yes" answers	37	46	39	34	40	36	7	3	1	
	Number of "no" answers	13	8	16	21	15	19	48	52	54	
	Total answers of "yes" or "no"	50	54	55	55	55	55	55	55	55	
	Persons not responding to question	5	1	0	0	0	0	0	0	0	
	Percent fishing/consuming fish	74.0%	85.2%	70.9%	61.8%	72.7%	65.5%	12.7%	5.5%	1.8%	

N/A - no answer given
red text and numbers indicate uncertain or illegible answer; entered value is best approximation of answer

Survey of Community Living Near Turkey Creek and Bayou Bernard
Consumption of Fish and Other Edible Aquatic Species Consumption
Turkey Creek and Bayou Bernard

Name	Address	How often do you eat species caught in Turkey Creek and/or Bayou Bernard? (Times per month)					Indicate the number of individuals in household who consume species caught in Turkey Creek and/or Bayou Bernard in the following age groups:			
		Fish	Crab	Crawfish	Frog	Other	0-2	2-6	6-16	>16
K.T.	Hallsehl Rd., Gulfport, MS 39101	4								1
J.D.	Rippy Rd., Gulfport, MS 39503	?								3
M.B.	Rippy Rd., Gulfport, MS 39503	1								1
D.T.	Rippy Rd., Gulfport, MS 39503	1								3
R.W.	Magnolia Ridge, Stone Mtn, GP, 30087	1								1
R.J.	Rippy Rd., Gulfport, MS 39503	1							1	1
M.E.	Not given	3								1
D.J.	Fisher Blvd., Gulfport, MS 39503	1								1
S.T.	Rippy Road, Gulfport, MS 39503	1								3
R.J.	Rippy Rd,. Gulfport, MS 39503	10	25	50						
W.W.	Rippy Rd., Gulfport, MS 39503	2								1
T.S.	Rippy Rd., Gulfport, MS 39503	8	4							1
R.W.	Rippy Rd., Gulfport, MS 39503	1								1
E.W.	Rippy Rd., Gulfport, MS 39503	2								2
A.R.	Cortenay Ave., Passchristain	6								1
F.W.	Rippy Rd., Gulfport, MS 39503	3					1	1	1	2
R.W.	Holly Dr.?	2								1
J.B.	Florida Ave. ?	3						1	2	
T.W.	E. Tandy Dr., ?	1								1
E.W.	Three Rivers Rd., ?	2								3
C.I.	Idom St., Gulfport, MS 39503									
G.K.	Not given	2	2							2
A.S.	Rippy Rd., Gulfport, MS 39503	2								1
D.C.	Idom St., Gulfport, MS 39503									2
G.I.	Idom St., Gulfport, MS 39503									3
L.W.	Popps Ferry Rd. L220 D'Iberville, MS 39540									
M.D.	Karli Lane, Biloxi, MS 39537	1						1	1	3
R.W.	Rippy Rd., Gulfport, MS 39503								1	2
Y.M.	Mockingbird Lane, Gulfport, MS 39507	1							1	2
E.C.	Churchwood Dr., Gulfport, MS 39503	4	1	1					3	2
J.B.	Fairview Dr., Biloxi, MS									
S.W.	Searle Ave., Gulfport, MS 39507	3							1	
W.H.	Wright Ave., Long Beach, MS 39560	3								1

N/A - no answer given
red text and numbers indicate uncertain or illegible answer; entered value is best approximation of answer

Survey of Community Living Near Turkey Creek and Bayou Bernard
Consumption of Fish and Other Edible Aquatic Species Consumption
Turkey Creek and Bayou Bernard

Name	Address	How often do you eat species caught in Turkey Creek and/or Bayou Bernard? (Times per month)					Indicate the number of individuals in household who consume species caught in Turkey Creek and/or Bayou Bernard in the following age groups:			
		Fish	Crab	Crawfish	Frog	Other	0-2	2-6	6-16	>16
R.J.	Indiana Ave., Gulfport, MS ?					Special Events				1
T.F.	13th Ave., Gulfport, MS 39501	1								1
K.R.	Northwood Dr., Gulfport, MS 39503	1						1		4
H.J.	Rippy Rd., Gulfport, MS 39503	25					40?	100?		
D.J.	Mallard Cove, Gulfport, MS ?	2					1		2	3
R.J.	Rippy Rd., Gulfport, MS 39501	2								1
R.S.	S. 3rd Ave., Gulfport, MS 39501	5								3
D.B.	Halsal Rd., Gulfport, MS 39501	3								1
C.B.	Rippy Rd., Gulfport, MS 39503	2	2							2
D.H.	Rippy Rd., Gulfport, MS 39503									
G.C.	Boyce Rd., Gulfport, MS 39501	2					1		1	5
M.F.	Eisenhower Dr. #43, Bilioxi, MS 39531	2								2
E.C.	Eisenhower Dr. #43, Bilioxi, MS 39531	2								2
J.M.	Idom St., Gulfport, MS 39503									
C.B.	26 1/2 St., Gulfport, MS 39507	2						1		1
T.W.	Rippy Rd., Gulfport, MS 39503									1
T.W.	Jeff Rd., ?	1								1
S.G.	Engram Dr., Gulfport, MS 39503									
A.S.	Jeff Rd., ?	2								1
J.B.	55th Ave., Gulfport, MS 39503	2								1
O.I.	Idom St., Gulfport, MS 39503	3								4
D.S.	Rippy Rd., Gulfport, MS 39503	3	3	1						1
	Number of respondents	44	6	3	0	1	4	6	10	45
	Minimum times eaten per month	1	1	1	0	0	1	1	1	1
	Maximum times eaten per month	25	25	50	0	0	1	1	3	5
	Average times eaten per month	3.0	6.2	17.3	0.0	0.0	1.0	1.0	1.4	1.8
	Median	2	2.5	1	0	0	1	1	1	1
	90th percentile times eaten per month	4.8	14.5	40.2	0	0	1	1	2.1	3

N/A - no answer given
red text and numbers indicate uncertain or illegible answer; entered value is best approximation of answer

Appendix E
ProUCL Outputs for Exposure Point Concentrations for Polycyclic Aromatic Hydrocarbons in Sediment

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2	**Benzo(a)pyrene equivalents-Turkey Creek Sediment-Adjacent to Site**											
3												
4	General Statistics											
5	Number of Valid Observations					56	Number of Distinct Observations					42
6												
7	Raw Statistics						Log-transformed Statistics					
8	Minimum					4.886	Minimum of Log Data					1.586
9	Maximum					6803	Maximum of Log Data					8.825
10	Mean					495.4	Mean of log Data					3.981
11	Median					34.67	SD of log Data					1.751
12	SD					1545						
13	Std. Error of Mean					206.5						
14	Coefficient of Variation					3.119						
15	Skewness					3.772						
16												
17	Relevant UCL Statistics											
18	Normal Distribution Test						Lognormal Distribution Test					
19	Lilliefors Test Statistic					0.434	Lilliefors Test Statistic					0.213
20	Lilliefors Critical Value					0.118	Lilliefors Critical Value					0.118
21	Data not Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level					
22												
23	Assuming Normal Distribution						Assuming Lognormal Distribution					
24	95% Student's-t UCL					841	95% H-UCL					551.6
25	95% UCLs (Adjusted for Skewness)						95% Chebyshev (MVUE) UCL					567.9
26	95% Adjusted-CLT UCL (Chen-1995)					946.4	97.5% Chebyshev (MVUE) UCL					713
27	95% Modified-t UCL (Johnson-1978)					858.3	99% Chebyshev (MVUE) UCL					998.1
28												
29	Gamma Distribution Test						Data Distribution					
30	k star (bias corrected)					0.304	Data do not follow a Discernable Distribution (0.05)					
31	Theta Star					1630						
32	MLE of Mean					495.4						
33	MLE of Standard Deviation					898.6						
34	nu star					34.05						
35	Approximate Chi Square Value (.05)					21.7	Nonparametric Statistics					
36	Adjusted Level of Significance					0.0457	95% CLT UCL					835.1
37	Adjusted Chi Square Value					21.44	95% Jackknife UCL					841
38							95% Standard Bootstrap UCL					834.8
39	Anderson-Darling Test Statistic					8.479	95% Bootstrap-t UCL					1062
40	Anderson-Darling 5% Critical Value					0.861	95% Hall's Bootstrap UCL					765.9
41	Kolmogorov-Smirnov Test Statistic					0.313	95% Percentile Bootstrap UCL					838.7
42	Kolmogorov-Smirnov 5% Critical Value					0.129	95% BCA Bootstrap UCL					1013
43	Data not Gamma Distributed at 5% Significance Level						95% Chebyshev(Mean, Sd) UCL					1396
44							97.5% Chebyshev(Mean, Sd) UCL					1785
45	Assuming Gamma Distribution						99% Chebyshev(Mean, Sd) UCL					2550
46	95% Approximate Gamma UCL					777.3						
47	95% Adjusted Gamma UCL					786.7						
48												
49	Potential UCL to Use						Use 95% Chebyshev (Mean, Sd) UCL					1396

Naphthalene - Turkey Creek Sediment - Adjacent to Site

General Statistics

Number of Valid Observations	56	Number of Distinct Observations	35

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.65	Minimum of Log Data	0.501
Maximum	235000	Maximum of Log Data	12.37
Mean	7510	Mean of log Data	3.568
Median	15	SD of log Data	2.954
SD	33379		
Std. Error of Mean	4461		
Coefficient of Variation	4.445		
Skewness	6.122		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Lilliefors Test Statistic	0.457	Lilliefors Test Statistic	0.257
Lilliefors Critical Value	0.118	Lilliefors Critical Value	0.118
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	14973	95% H-UCL	22871
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	7454
95% Adjusted-CLT UCL (Chen-1995)	18746	97.5% Chebyshev (MVUE) UCL	9833
95% Modified-t UCL (Johnson-1978)	15581	99% Chebyshev (MVUE) UCL	14504
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	0.148	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	50581		
MLE of Mean	7510		
MLE of Standard Deviation	19490		
nu star	16.63		
Approximate Chi Square Value (.05)	8.408	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0457	95% CLT UCL	14847
Adjusted Chi Square Value	8.253	95% Jackknife UCL	14973
		95% Standard Bootstrap UCL	14749
Anderson-Darling Test Statistic	10.33	95% Bootstrap-t UCL	33712
Anderson-Darling 5% Critical Value	0.949	95% Hall's Bootstrap UCL	36523
Kolmogorov-Smirnov Test Statistic	0.341	95% Percentile Bootstrap UCL	15274
Kolmogorov-Smirnov 5% Critical Value	0.134	95% BCA Bootstrap UCL	20282
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	26953
		97.5% Chebyshev(Mean, Sd) UCL	35366
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	51892
95% Approximate Gamma UCL	14853		
95% Adjusted Gamma UCL	15132		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	35366

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.