Final

Site Investigation Report
11th Chemical Motor Pool Area,
Parcels 29(7), 30(7), and 74(7)

Fort McClellan
Calhoun County, Alabama

Prepared for:

U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama 36602

Prepared by:

IT Corporation
312 Directors Drive
Knoxville, Tennessee 37923

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Executive Summary

In accordance with Contract Number DACA21-96-D-0018, Task Order CK05, IT Corporation completed a site investigation (SI) at the 11th Chemical Motor Pool Area, Parcels 29(7), 30(7), and 74(7), at Fort McClellan in Calhoun County, Alabama. The SI was conducted to determine whether chemical constituents are present at the 11th Chemical Motor Pool Area, Parcels 29(7), 30(7), and 74(7), and, if present, whether the concentrations present an unacceptable risk to human health or the environment. The SI at the 11th Chemical Motor Pool Area, Parcels 29(7), 30(7), and 74(7), consisted of the sampling and analysis of four surface soil samples, two depositional soil samples, ten subsurface soil samples, fourteen groundwater samples, and three surface water and sediment samples. In addition, ten groundwater monitoring wells were installed in the residuum groundwater zone to facilitate groundwater sample collection and to provide site-specific geological and hydrogeological characterization information.

Chemical analyses of samples collected at the 11th Chemical Motor Pool Area, Parcels 29(7), 30(7), and 74(7), indicate that metals, volatile organic compounds (VOC), and semivolatile organic compounds (SVOC) were detected in the environmental media sampled. To evaluate whether detected constituents pose an unacceptable risk to human health or the environment, analytical results were compared to human health site-specific screening levels (SSSL), ecological screening values (ESV), and background screening values for Fort McClellan.

Five metals (aluminum, arsenic, chromium, iron, and manganese) were detected in surface/depositional and subsurface soils at concentrations exceeding SSSLs but within background concentrations or the range of background values. The PAH benzo(a)pyrene was detected at a concentration (0.31 milligrams per kilogram [mg/kg]) exceeding its SSSL (0.085 mg/kg) in one subsurface soil sample; benzo(a)pyrene was not detected in any of the other subsurface soil samples. Given the limited distribution and low concentration of benzo(a)pyrene, this compound is not expected to pose a threat to human health or the environment. Volatile organic compound concentrations in surface/depositional and subsurface soils were below SSSLs.

In groundwater, several metals were detected at concentrations exceeding SSSLs and background concentrations. The majority of these metals were present in samples that had high turbidity at the time of sample collection that likely influenced the results. Excluding the high-turbidity samples, the concentrations of six metals (aluminum, barium, iron, manganese, thallium, and vanadium) exceeded SSSLs and background concentrations. Naphthalene and

2-methylnaphthalene were detected at concentrations exceeding SSSLs in one groundwater sample located in an underground storage tank excavation area.

Currently, there is no established U.S. Environmental Protection Agency drinking water standard (maximum contaminant level) for either compound. The concentration of naphthalene (0.078 milligrams per liter [mg/L]) is well below its U.S. Environmental Protection Agency Lifetime Health Advisory (0.1 mg/L) and is not expected to induce adverse health effects. A health advisory value does not exist for 2-methylnaphthalene (detected at a concentration of 0.092 mg/L). The hazard index estimated from the SSSL (0.025 mg/L), however, is well below the threshold limit of 1, suggesting that adverse health effects are unlikely. It is concluded that exposure to the two VOCs in groundwater does not represent an unacceptable human health risk.

Several metals were detected in site media (primarily surface and depositional soils) at concentrations exceeding ESVs and background concentrations. In addition, four polynuclear aromatic hydrocarbons (PAH) (anthracene, benzo[a]pyrene, fluoranthene, and pyrene) were detected in one surface soil sample, and the SVOC bis(2-ethylhexyl)phthalate was detected in one surface water sample at concentrations exceeding ESVs. The concentrations of the four PAHs in the surface soil sample were below PAH background screening values.

The potential impact to ecological receptors is expected to be minimal, based on existing habitat and site conditions. The site is located in a well-developed portion of the Main Post. Viable ecological habitat is limited and is not expected to increase in the future land-use scenario. Consequently, the potential threat to ecological receptors is expected to be low.

Based on the results of the SI, past operations at 11th Chemical Motor Pool Area, Parcels 29(7), 30(7), and 74(7), do not appear to have adversely impacted the environment. The metals and chemical compounds detected in site media do not pose an unacceptable risk to human health or the environment. Therefore, IT recommends "No Further Action" and unrestricted land reuse at 11th Chemical Motor Pool Area, Parcels 29(7), 30(7), and 74(7).