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MEMORANDUM

TO: Omo Manufacturing Site File

cc: Janis Tsang, On-Scene Coordinator (OSC), U.S. Environmental Protection Agency (EPA) Region I, Emergency Planning and Response Branch (EPRB)

FROM: Gerald Hornok, Site Leader, Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team III (START)

DATE: 7 April 2010

THRU: John Kelly, Project Leader, START

RE: Sediment Sampling Activities at the Omo Manufacturing Site, Middletown, Middlesex County, Connecticut. TDD Number (No.) 01-09-03-0004; Task No. 0512; Document Control (DC) No. R-5928.

INTRODUCTION

On 7 October 2009, Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team III (START) personnel John Kelly, Gerald Hornok, and Timothy Benton mobilized to the Omo Manufacturing Site (the Site) (formerly known as the Marino Property Site) located in Middletown, Middlesex County, Connecticut (CT). The purpose of the trip was to conduct sediment sampling activities along the drainage ditch and Sumner Brook, both located west of the Site, to determine if a release of hazardous materials had occurred to the surface water bodies.

SITE DESCRIPTION

The Site is located at 50 Walnut Street, in Middletown, Middlesex County, CT [1-2]. The geographical coordinates of the Site, as measured from its approximate center, are 41° 33′ 23.1″ north latitude and 72° 38′ 25.6″ west longitude (see Attachment A, Figure 1) [3-4]. The property is identified by the City of Middletown (the City) Tax Assessor's Map Number (No.) 34, as Block No. 24-7, Lot No. 9 [2; 12; 52]. The Site is bordered to the north by River Road, railroad tracks, and the Connecticut River; to the east by Walnut Street and residential properties; to the south by Route 9 and state-owned land; and to the west by Sumner Brook, a small drainage ditch, Route 9, and state-owned land [12]. The Site is owned by RLO Properties Inc., c/o Mr. J.R. Marino [52]. Mrs. Tamba Marino is the president of American Contractors, LLC, which operates on the Site [12]. The Site is approximately 10.2 acres, of which approximately 1.25 acres are occupied by the footprint of the two on-site buildings [52]. A discontinuous fence surrounds the Site, with openings in the northeast corner and along the western edge of the Site.

The nearest residence is located east of Building No. 2, which is located on the southeastern portion of the Site. A parking area is located across Walnut Street to the east of Building No. 1, which is located on the northeastern portion of the Site (see Attachment A, Figure 2) [2].

The Site was originally the location of the Omo Manufacturing Company, a rubber and artificial leather factory that was built in the late 1800s. Prior to the 1930s, a 2- to 4-acre wetland area was located on the western portion of the Site. From the early 1930s until approximately the mid-1950s, the wetlands were used by the City as a municipal landfill (the City Landfill). According to Mr. JR Marino, the City Landfill accepted industrial waste from facilities located throughout the City. Waste oils, paints, and refuse from the on-site rubber manufacturing process were also allegedly disposed of west of Building No. 1. In approximately the mid-1950s, during the construction of Route 9, the State of Connecticut altered the topography of the Site, including modifying the course of Sumner Brook and constructing a drainage ditch located adjacent to (west of) the Site. Also around the mid-1950s, a portion of the City Landfill was relocated approximately 2 miles northwest of the Site. After the City Landfill was moved, the Site was purchased by Georgia Bonded Fibers. Georgia Bonded Fibers operated on the Site until the property was purchased by Hildebrand Industries. In the early 1970s, the Connecticut Development Commission obtained the rights to the Site through a foreclosure of Hildebrand Industries. The Site was subsequently purchased by Mr. Salvatore J. Marino Sr., who reportedly filled in the remaining wetlands on the property with approximately 2 to 3 feet of soil of unknown origin [5; 7-10].

Previous Site investigations have indicated that hazardous substances containing volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals exist on the Site [5-11]. Previous sediment sampling, conducted as part of the Camp, Dresser and McKee (CDM) Federal Programs Corporation Alternative Remedial Contracting Strategy (ARCS) Site Inspection (SI), indicated the presence of VOCs, SVOCs, pesticides, and metals in sediment samples collected from the drainage ditch and Sumner Brook [9]. In addition, groundwater elevation surveys conducted in 2000 and 2009 as part of the EPA Removal Program Preliminary Assessment/Site Investigations (PA/SIs) have indicated that groundwater flows to the west, through the Site, into the drainage ditch and Sumner Brook [11; 56].

SITE ACTIVITIES

On 7 October 2009, as part of a U.S. Environmental Protection Agency (EPA) Site Assessment Program Site Reassessment, START members Kelly, Hornok, and Benton mobilized to the Site to conduct sediment sampling activities in the drainage ditch and Sumner Brook located west of the Site. Site Health and Safety Coordinator (SHSC) Kelly conducted a tailgate health and safety meeting, and all on-site START personnel signed the site-specific health and safety plan (HASP). START personnel established a support zone and calibrated air monitoring instruments, including a Thermo Electron Corporation Toxic Vapor Analyzer [Model TVA-1000B, combination photoionization detector (PID) and flame ionization detector (FID)], a

MultiRae Plus unit [lower explosive limit (LEL), oxygen (O_2), carbon monoxide (CO), hydrogen sulfide (H_2S), and VOC detectors], and a Model 19A radiation meter (RAD meter). Ambient conditions were recorded in the site-specific HASP as follows: PID = 0.0 parts per million (ppm); FID = 0.0 ppm; LEL = 0 percent (%); O_2 = 20.9%; CO = 0 ppm; H_2S = 0 ppm; VOC = 0 ppm; and RAD = 8-12 microRoentgens per hour (µR/hr). Air monitoring was conducted for the duration of the sediment sampling activities. In addition, a YSI 63 water quality parameter meter was checked with pH and conductivity solutions, and a LaMotte 2020 Turbidity meter was calibrated. Non-dedicated sampling materials (hand augers, bowls, and scoops) were decontaminated prior to the beginning of sediment sampling activities, and before and after being utilized to collected sample material from each sediment sample location. Sediment sampling activities were conducted in modified Level D personnel protection equipment (PPE) [2].

As part of the sediment sampling activities, START performed a reconnaissance of water bodies adjacent to, downstream of, and upstream of the Omo Manufacturing Site. Adjacent to the Site, START personnel observed the drainage ditch, which flows northwest along the western property boundary from a drainage culvert adjacent CT Route 9 to its confluence with Sumner Brook. START personnel had previously observed that the drainage culvert originates on the west side of CT Route 9 in a low-lying area adjacent to the CT Route 17 on/off ramps, but START also noted that there was no ponded/standing water in this low-lying area. Within the drainage ditch, START personnel observed household trash, plastic, wood, metal, concrete, asphalt, empty and partially crushed 55-gallon drums, and other debris, some of which was protruding from the embankments of the drainage ditch. START personnel also noted rusted containers and 55-gallon drums along the drainage ditch banks. The drainage ditch was observed to be very shallow, mostly less than 1 foot deep, and to have a low flow rate [estimated to be less than 10 cubic feet per second (cfs)]. Previous investigations (US EPA Removal Program PA/SI Report, dated January 2010) and START observations indicate that at least the northern portion of the drainage ditch is tidally influenced. In addition, START personnel also observed the downstream portion of Sumner Brook. This portion of Sumner Brook extends from the CT Route 9 overpass bridge northwest to its confluence with the Connecticut River. The flow rate of the downstream portion of Sumner Brook was estimated to be significantly greater than the drainage ditch and water depths ranged to greater than 6 feet deep. Within this portion of Sumner Brook, START personnel observed household trash (*e.g.* bottles, cans, paper, plastic bags), wood, asphalt, plastic, glass, concrete, metal (*e.g.* pipe, flat iron bar), and other debris (soccer ball, *etc*). START noted petroleum sheens while stepping in sediments and sampling in the drainage ditch upstream of its confluence with Sumner Brook and within the downstream portion of Sumner Brook, upstream of the railroad bridge. START personnel also observed the upstream portion of the Sumner Brook surface water pathway, southwest of the CT Route 9 Overpass Bridge. Within this portion of Sumner Brook, START personnel observed concrete, brick, asphalt fragments, metal objects, glass, household trash (*e.g.* bottles, cans, paper, plastic bags), litter, and other debris (including a shopping cart). The flow rate of this portion of Sumner Brook is consistent with the downstream portion of Sumner Brook; however, the river bed was much wider and water depths at the time of sediment sampling were much lower, approximately 1 to 2 feet deep between the CT Route 9 Overpass Bridge and East Main Street.

As part of sediment sampling activities, START personnel collected eight sediment samples (including a field duplicate) (SD-03 thorough SD-06 and SD-09 through SD-12) from locations downstream of and adjacent to the Site to determine if a release of hazardous materials had occurred (see Attachment A, Figure 3, and Attachment B, Photodocumentation Log). Sediment samples SD-03 through SD-06 and SD-12 were collected from the drainage ditch located directly west of the Site. Sediment samples SD-09 through SD-11 were collected from Sumner Brook. In addition, two sediment samples, SD-07 and SD-08 (total metals analysis only), were collected from Sumner Brook upstream of the Omo Manufacturing Site, presumably outside any influence associated with the Site. START had originally intended to collect two additional samples (SD-01 and SD-02) from the area adjacent to the CT Route 17 on/off ramps on the west side of CT Route 9. However, observations indicated a forested area with a lack of water and sediment; and there were no drainage catchbasins visible. Therefore, START was unable to collect these samples as originally planned. Sampling activities were conducted in a progression sequence from the most downstream sample collection location SD-11, to the most upstream collection locations (SD-07 and SD-08), so as not to cause any influence or disturbance of surface water conditions or sediment sample integrity.

All sediment sampling activities were conducted in accordance with the EPA Site-Specific Quality Assurance Project Plan (QAPP) and START Standard Operating Procedures (SOPs), with the exception of the collection of sediment samples SD-01 and SD-02. As noted previously, these two samples could not be collected as planned due to the lack of water and sediment upstream of sediment sample location SD-03. Sediment samples SD-03 through SD-07 and SD-09 through SD-12 were submitted to the EPA Office of Environmental Measurement and Evaluation (OEME) Laboratory for low-level VOC, SVOC, PCB, total metals, including mercury, and cyanide analyses. However, three samples submitted for low-level VOC analysis were analyzed by the EPA laboratory via the high-level VOC analysis method. This deviation from the sampling design is explained in greater detail in the Analytical Data Summaries section of this memorandum. Upstream sediment sample SD-08 was collected and submitted to the EPA OEME Laboratory for total metals analysis only (see Attachment C, Chain-of-Custody Record). VOC, SVOC, and PCB analyses were performed via gas chromatograph/mass spectrometry (GC/MS); total metals analysis was performed via inductively coupled plasma (ICP); mercury analysis was performed via cold vapor atomic absorption (CVAA); and cyanide analysis was performed via semi-automated colorimetry [57-64].

ANALYTICAL DATA SUMMARIES

Drainage Ditch Samples:

Analytical results of START sediment samples collected from the drainage ditch located directly west of the Site (SD-03 through SD-06 and SD-12) indicated the presence of five VOCs, 18 SVOCs, two PCBs, 15 total metals, and cyanide at concentrations above the laboratory sample-adjusted reporting limits (RLs) (see Attachment D, Tables 1 through 4, and Attachment E, Table 1). In addition, of the substances detected, 10 SVOCs, two PCBs, and six total metals were also

detected at concentrations above their respective National Oceanographic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQuiRTs) Threshold Effects Level (TEL) and/or Probable Effects Level (PEL) values for freshwater sediment. The State of CT does not currently have established state sediment standards. Therefore, for comparison purposes only, analytical results of START sediment samples are compared to NOAA SQuiRTs TEL and PEL values for freshwater sediment. NOAA SQuiRTs have two values for comparison (TELs and PELs), which represent the level at which adverse effects to benthic organisms are expected. TELs represent the concentration below which adverse effects are expected to occur only rarely. PELs represent the level above which adverse effects are frequently expected to occur. Screening with conservative, lower-threshold values (*e.g.* TELs) ensure, with a high degree of confidence, that any contamination sources eliminated from future consideration pose no potential threat. Conversely, it does not predict toxicity. Upper threshold values (*e.g.* PELs) identify compounds which are more probably elevated to toxic levels. NOAA SQuiRTs TELs and PELs were developed for screening purposes only. The NOAA SQuiRT TELs and PELs are not enforceable by law, nor do they constitute criteria or clean-up levels, and are intended for comparison purposes only [2; 58-65].

The following five VOCs were detected above the laboratory sample-adjusted RLs in START sediment samples collected from the drainage ditch (maximum concentration and sample location in parentheses): 2-butanone [methyl ethyl ketone (MEK)] [2.5 micrograms per kilogram (µg/Kg) in SD-06]; 2-propanone (acetone) (16 µg/Kg in SD-06); 4-methyl-2-pentanone [methyl isobutyl ketone (MIBK)] (26 µg/Kg in SD-05); carbon disulfide (2.1 µg/Kg in SD-06); and tetrahydrofuran (28 µg/Kg in SD-06). Three of the five samples collected from the drainage ditch (SD-03, SD-04, and SD-12) and submitted for low-level VOC analysis were analyzed by the EPA Laboratory using the high-level method, which is reflected in the higher sample-adjusted RL. The laboratory did not provide the reason for this change in the level of analysis in the laboratory report documentation. Due to the high analyses performed by the laboratory, resulting in a higher sample-adjusted RL for these three samples, no VOC concentrations were detected above the sample-adjusted RL and were listed as non-detect (ND) for all VOC analytes in the three samples. It is possible that VOC concentrations in these three samples may exist at levels lower than the high-level sample analyses RL, but above the low-level analyses RLs. None of the VOCs detected in sediment samples collected from the drainage ditch exceeded their respective NOAA SQuiRTs TEL and/or PEL for freshwater sediment (see Attachment D, Table 1, and Attachment E, Table 1) [2; 58-59; 65].

The following 18 SVOCs were detected above the laboratory sample-adjusted RLs in START sediment samples collected from the drainage ditch (maximum concentration and sample location in parentheses): acenaphthylene (250 µg/Kg in SD-04); anthracene (1,100 µg/Kg in SD-05); benzo(a)anthracene (3,300 µg/Kg in SD-05); benzo(a)pyrene (2,900 µg/Kg in SD-05); benzo(b)fluoranthene (3,000 µg/Kg in SD-05); benzo(g,h,i)perylene (2,000 µg/Kg in SD-05); benzo(k)fluoranthene (3,200 µg/Kg in SD-05); bis(2-ethylhexyl)phthalate (32,000 µg/Kg in SD-12); carbazole (1,100 µg/Kg in SD-05); chrysene (3,900 µg/Kg in SD-05); di-n-butylphthalate (370 µg/Kg in SD-06); di-n-octylphthalate (350 µg/Kg in SD-03); dibenzo(a,h)anthracene (520 µg/Kg in SD-12); fluoranthene (9,300 µg/Kg in SD-05); fluorene (400 µg/Kg in SD-05);

indeno(1,2,3-cd)pyrene (2,000 µg/Kg in SD-05); phenanthrene (5,300 µg/Kg in SD-05); and pyrene (7,100 µg/Kg in SD-05). Ten of these SVOCs [acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, phenanthrene, and pyrene] were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL values for freshwater sediment (see Attachment D, Table 2, and Attachment E, Table 1) [2; 60; 65].

The following two PCBs were detected above laboratory sample-adjusted RLs in START sediment samples collected from the drainage ditch (maximum concentration and sample location in parentheses): Aroclor-1254 [0.07 L milligrams per kilogram (mg/Kg) in SD-12] (where the laboratory L qualifier indicates the estimated value is below the calibration range); and Aroclor-1260 (0.27 mg/Kg in SD-12). Both PCBs detected in START sediment samples collected from the drainage ditch were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL values for freshwater sediment (see Attachment D, Table 3, and Attachment E, Table 1) [2; 61; 65].

The following 15 total metals were detected above the laboratory sample-adjusted RLs in START sediment samples collected from the drainage ditch (maximum concentration and sample location in parentheses): aluminum (8,900 mg/Kg in SD-12); arsenic (6.0 mg/Kg in SD-12); barium (220 mg/Kg in SD-06); calcium (2,900 mg/Kg in SD-06); chromium (27 mg/Kg in SD-05); cobalt (6.1 mg/Kg in SD-12); copper (120 mg/Kg in SD-12); iron (20,000 mg/Kg in SD-12); lead (190 mg/Kg in SD-12); magnesium (3,500 mg/Kg in SD-12); manganese (190 mg/Kg in SD-12); nickel (21 mg/Kg in SD-04); vanadium (32 mg/Kg in SD-12); zinc (360 mg/Kg in SD-04); and mercury (0.49 mg/Kg in SD-04). Six total metals (arsenic, copper, lead, mercury, nickel, and zinc) were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL value for freshwater sediment (see Attachment D, Table 4, and Attachment E, Table 1) [2; 62-63; 65].

Cyanide was detected above the laboratory sample-adjusted RLs in one START sediment sample collected from the drainage ditch (SD-03) at a concentration of 1.2 mg/Kg. A NOAA SQuiRTs TEL and/or PEL value for freshwater sediment does not currently exist for cyanide (see Attachment D, Table 4, and Attachment E, Table 1) [2; 64-65].

Sumner Brook Downstream Samples:

Analytical results of START downstream sediment samples collected from Sumner Brook (SD-09 through SD-11) indicated the presence of six VOCs, 17 SVOCs, and 15 total metals at concentrations above laboratory RLs (see Attachment D, Tables 1 through 4, and Attachment E, Table 1). In addition, of the substances detected, 11 SVOCs and four total metals were also detected at concentrations above NOAA SQuiRTs TELs and/or PELs for freshwater sediment [2; 58-65].

The following six VOCs were detected above the laboratory sample-adjusted RLs in START sediment samples collected from Sumner Brook (maximum concentration and sample location in

parentheses): MEK (8.1 µg/Kg in SD-09); acetone (37 µg/Kg in SD-09); benzene (2.4 µg/Kg in SD-11); carbon disulfide (3.0 µg/Kg in SD-11); naphthalene (12 µg/Kg in SD-11); and tetrahydrofuran (28 µg/Kg in SD-09 and SD-10). None of the VOCs detected in START downstream sediment samples collected from Sumner Brook exceeded their respective NOAA SQuiRTs TEL and/or PEL for freshwater sediment (see Attachment E, Table 1) [2; 58-59; 65].

The following 17 SVOCs were detected above the laboratory sample-adjusted RLs in START downstream sediment samples collected from Sumner Brook (maximum concentration and sample location in parentheses): 3&4-methylphenol (570 µg/Kg in SD-11); acenaphthene (220 µg/Kg in SD-11); acenaphthylene (430 µg/Kg in SD-11); anthracene (790 µg/Kg in SD-11); benzo(a)anthracene (2,300 µg/Kg in SD-11); benzo(a)pyrene (2,000 µg/Kg in SD-11); benzo(b)fluoranthene (1,800 J µg/Kg in SD-11); benzo(g,h,i)perylene (1,300 µg/Kg in SD-11); benzo(k)fluoranthene (1,700 J µg/Kg in SD-11); carbazole (160 µg/Kg in SD-11); chrysene (2,100 µg/Kg in SD-11); dibenz(a,h)anthracene (360 µg/Kg in SD-11); fluoranthene (5,200 µg/Kg in SD-11); fluorene (3,200 µg/Kg in SD-11); indeno(1,2,3-cd)pyrene (1,200 µg/Kg in SD-11); phenanthrene (3,200 µg/Kg in SD-11); and pyrene (4,000 µg/Kg in SD-11). Of the substances detected, 11 SVOCs [acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, phenanthrene, and pyrene] were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL values for freshwater sediment (see Attachment D, Table 2, and Attachment E, Table 1) [2; 60; 65].

No PCBs were detected above the laboratory sample-adjusted RLs in START sediment samples collected from Sumner Brook (see Attachment D, Table 3, and Attachment E, Table 1) [2; 61; 65].

The following 15 total metals were detected above the laboratory sample-adjusted RLs in START downstream sediment samples collected from Sumner Brook (maximum concentration and sample location in parentheses): aluminum (9,200 mg/Kg in SD-09); arsenic (2.1 mg/Kg in SD-09); barium (88 mg/Kg in SD-09); calcium (2,100 mg/Kg in SD-09); chromium (17 mg/Kg in SD-09); cobalt (6.1 mg/Kg in SD-09); copper (660 mg/Kg in SD-11); iron (16,000 mg/Kg in SD-10); lead (41 mg/Kg in SD-11); magnesium (3,700 mg/Kg in SD-09); manganese (210 mg/Kg in SD-09); mercury (0.026 mg/Kg in SD-10); nickel (19 J3 mg/Kg in SD-10); vanadium (25 mg/Kg in SD-09); and zinc (290 mg/Kg in SD-11). Of the substances detected, four of the total metals (copper, lead, nickel, and zinc) were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL value for freshwater sediment (see Attachment D, Table 4, and Attachment E, Table 1) [2; 62-63; 65].

Cyanide was not detected above the laboratory sample-adjusted RL in sediment samples collected from Sumner Brook (see Attachment D, Table 4, and Attachment E, Table 1) [2; 64-65].

Sumner Brook Upstream Samples:

Analytical results of START sediment samples collected from two upstream locations along Sumner Brook (SD-07 and SD-08) indicated the presence of five VOCs, 21 SVOCs, and 14 total metals at concentrations above the laboratory sample-adjusted RLs (see Attachment D, Tables 1 through 4, and Attachment E, Table 1). In addition, of the substances detected, 12 SVOCs and four total metals were detected at concentrations above NOAA SQuiRTs TELs and/or PELs for freshwater sediment. Sediment sample SD-08 was analyzed for total metals only [2; 58-65].

The following five VOCs were detected above the laboratory sample-adjusted RLs in START sediment sample SD-07 collected from an upstream location along Sumner Brook (maximum concentration in parentheses): MEK (3.0 µg/Kg); acetone (19 µg/Kg); carbon disulfide (4.1 µg/Kg); naphthalene (9 µg/Kg in SD-11); and tetrahydrofuran (16 µg/Kg). None of the VOCs detected in sediment sample collected from upstream the location along Sumner Brook exceeded their respective NOAA SQuiRTs TEL and/or PEL for freshwater sediment (see Attachment E, Table 1) [2; 58-59; 65].

The following 21 SVOCs were detected above the laboratory sample-adjusted RLs in START sediment sample SD-07 collected from an upstream location along Sumner Brook (maximum concentration in parentheses): acenaphthene (320 µg/Kg); acenaphthylene (550 µg/Kg); anthracene (1,600 µg/Kg); benzo(a)anthracene (4,100 µg/Kg); benzo(a)pyrene (3,400 µg/Kg); benzo(b)fluoranthene (3,000 µg/Kg); benzo(g,h,i)perylene (2,200 µg/Kg); benzo(k)fluoranthene (3,400 µg/Kg); bis(2-ethylhexyl)phthalate (350 µg/Kg); carbazole (250 µg/Kg); chrysene (3,800 µg/Kg); di-n-butylphthalate (160 µg/Kg); di-n-octylphthalate (300 µg/Kg); dibenz(a,h)anthracene (470 µg/Kg); dibenzofuran (280 µg/Kg); fluoranthene (11,000 µg/Kg); fluorene (740 µg/Kg); indeno(1,2,3-cd)pyrene (2,100 µg/Kg); naphthalene (160 µg/Kg); phenanthrene (5,200 µg/Kg); and pyrene (9,200 µg/Kg). Of the substances detected, 12 SVOCs [acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene] were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL values for freshwater sediment (see Attachment D, Table 2, and Attachment E, Table 1) [2; 60; 65].

No PCBs were detected above the laboratory sample-adjusted RLs in sediment sample SD-07 collected from an upstream location along Sumner Brook (see Attachment D, Table 3, and Attachment E, Table 1) [2; 61; 65].

The following 14 total metals were detected above the laboratory sample-adjusted RLs in START sediment samples collected from upstream locations along Sumner Brook (maximum concentration and location in parentheses): aluminum (6,600 mg/Kg in SD-08); barium (33 mg/Kg in SD-08); calcium (3,500 mg/Kg in SD-08); chromium (7.5 mg/Kg in SD-07); cobalt (7.7 mg/Kg in SD-08); copper (1,600 mg/Kg in SD-07); iron (19,000 mg/Kg in SD-08); lead (91 mg/Kg in SD-07); magnesium (3,800 mg/Kg in SD-08); manganese (160 mg/Kg in SD-08); nickel (9.1 mg/Kg in SD-08); vanadium (39 mg/Kg in SD-08); zinc (840 mg/Kg in SD-07); and

mercury (0.190 mg/Kg in SD-07). Of the substances detected, four of the total metals (copper, lead, mercury, and zinc) were also detected at concentrations exceeding their respective NOAA SQuiRTs TEL and/or PEL value for freshwater sediment (see Attachment D, Table 4, and Attachment E, Table 1) [2; 62-63; 65].

Cyanide was not detected above the laboratory sample-adjusted RL in the one sediment sample collected from an upstream location along Sumner Brook (see Attachment D, Table 4, and Attachment E, Table 1) [2; 64-65].

Review of the analytical results of START sediment samples collected from two upstream locations along Sumner Brook (SD-07 and SD-08) indicated that numerous substances were detected at concentrations greater than the concentrations detected downstream in Sumner Brook samples and drainage ditch samples. Follow-up discussions with City of Middletown, CT personnel on 26 October 2009 revealed that while conducting subsurface excavations for city waterline service, ash and other waste materials had been observed in the general vicinity of the upstream Sumner Brook sediment sample locations (*i.e.* along East Main Street). The City of Middletown, CT employees further volunteered that there were several potential sources of contaminants in the general vicinity of the upstream Sumner Brook sediment sample locations, including a former coal gasification plant, the former City incinerator facility, and former City ash/landfill disposal areas near Sumner Brook, upstream of CT Route 9. Contaminants from these additional source areas may be contributing to the contaminants detected in the two START sediment samples collected from two upstream locations along Sumner Brook [2]. To date, no known additional investigations of these potential sources areas have been completed.

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[60] U.S. Environmental Protection Agency. 2009. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 09100011. [Marino Property, Middletown, CT – BNAs in Soil Medium Level]. 20 October.

[61] U.S. Environmental Protection Agency. 2009. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 09100011. [Marino Property, Middletown, CT – PCBs Medium Level in Soils and Sediments]. 29 October.

[62] U.S. Environmental Protection Agency. 2009. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 09100011. [Marino Property, Middletown, CT – Metals in Soil Medium Level by ICP]. 30 October.

[63] U.S. Environmental Protection Agency. 2009. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 09100011. [Marino Property, Middletown, CT – Total Mercury in Soil]. 19 October.

[64] U.S. Environmental Protection Agency. 2009. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 09100011. [Marino Property, Middletown, CT – Total Cyanide in Soil]. 22 October.

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Attachments

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Attachment A

Figures

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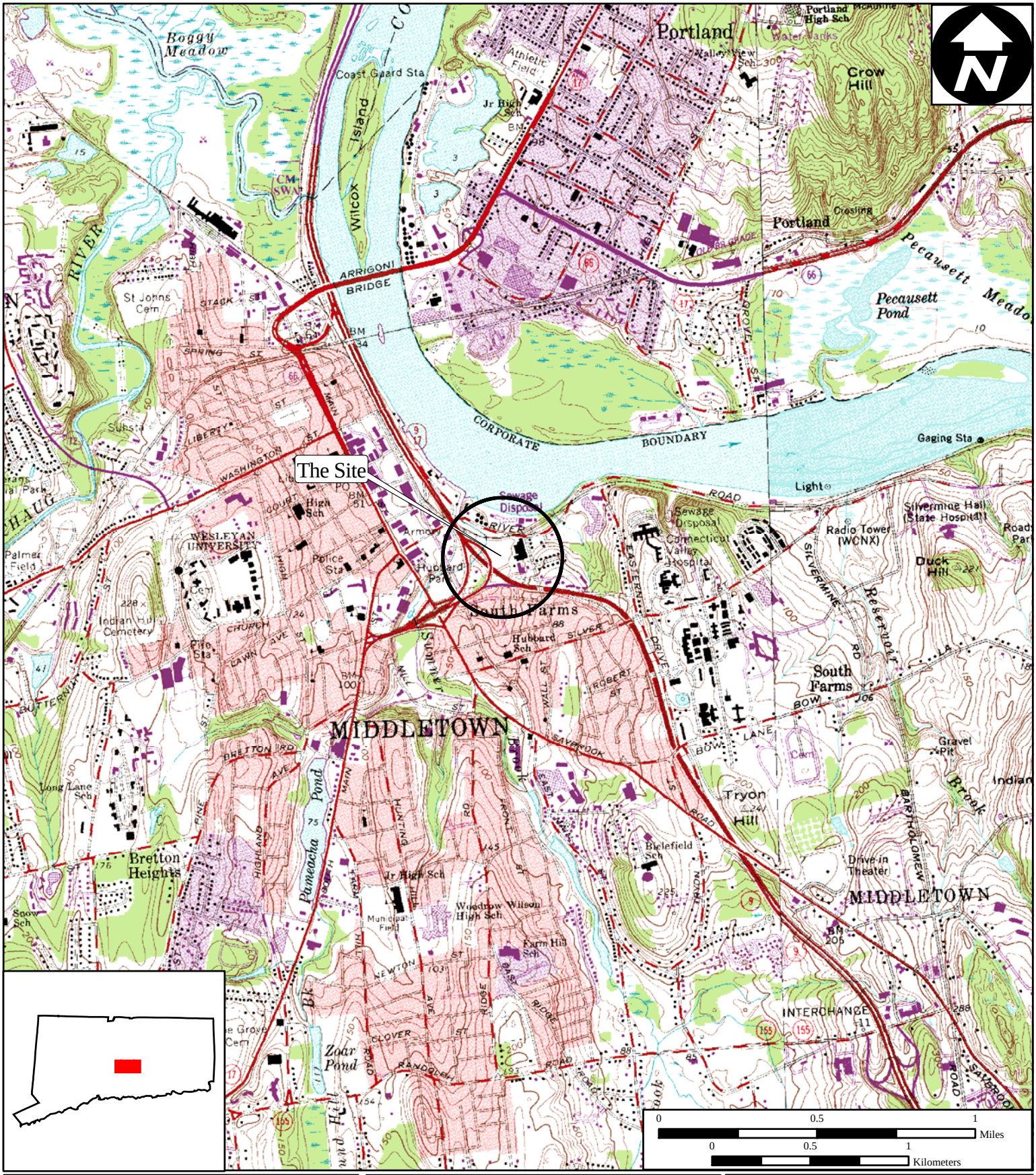

Figure 1

Site Location Map

Omo Manufacturing Site
50 Walnut Street
Middletown, Connecticut

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	09-03-0004
Created by:	G. Hornok
Created on:	8 March 2007
Modified by:	G. Hornok
Modified on:	31 December 2009

Data Sources:
Topos: MicroPath/USGS
Quad. Name(s): Middle Haddam, Middletown, CT
All other data: START

WESTON SOLUTIONS
Restoring Resource Efficiency

E:\Ct_gis\Marino Property Removal\MXD\PA SI Report\Fig 1 - Site Location.mxd

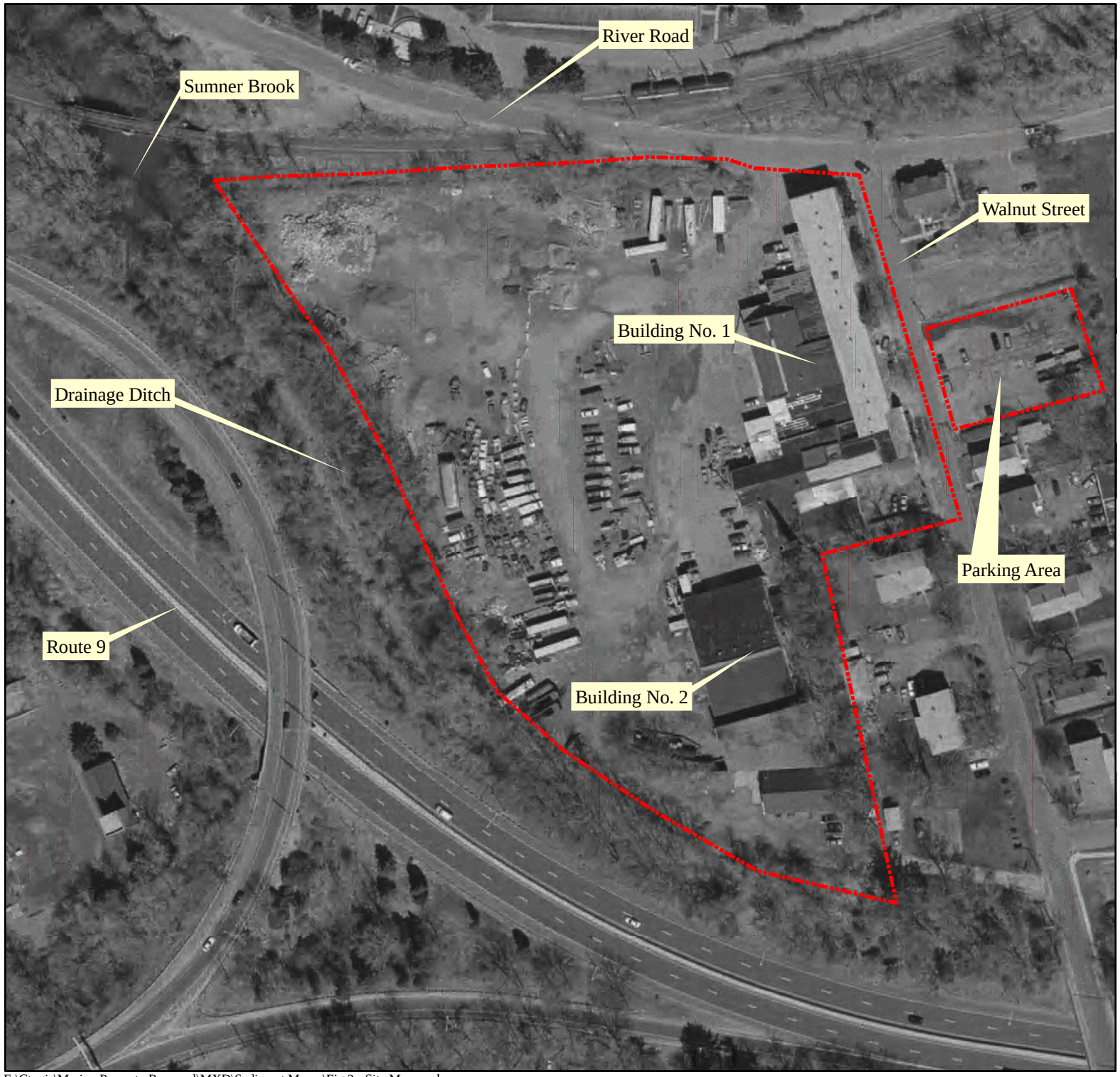

Figure 2

Site Map

Omo Manufacturing Site
50 Walnut Street
Middletown, Connecticut

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	09-03-0004
Created by:	G. Hornok
Created on:	24 September 2009
Modified by:	G. Hornok
Modified on:	31 December 2009

LEGEND

Site Boundary

N

0 25 50 100 150 200 Feet

Data Sources:

Imagery: CT CLEAR
Base Aerial Photograph from the State of Connecticut 2004 Statewide Aerial Survey
All other data: START

WESTON SOLUTIONS
Restoring Resource Efficiency

E:\Ct_gis\Marino Property Removal\MXD\Sediment Memo\Fig 2 - Site Map.mxd

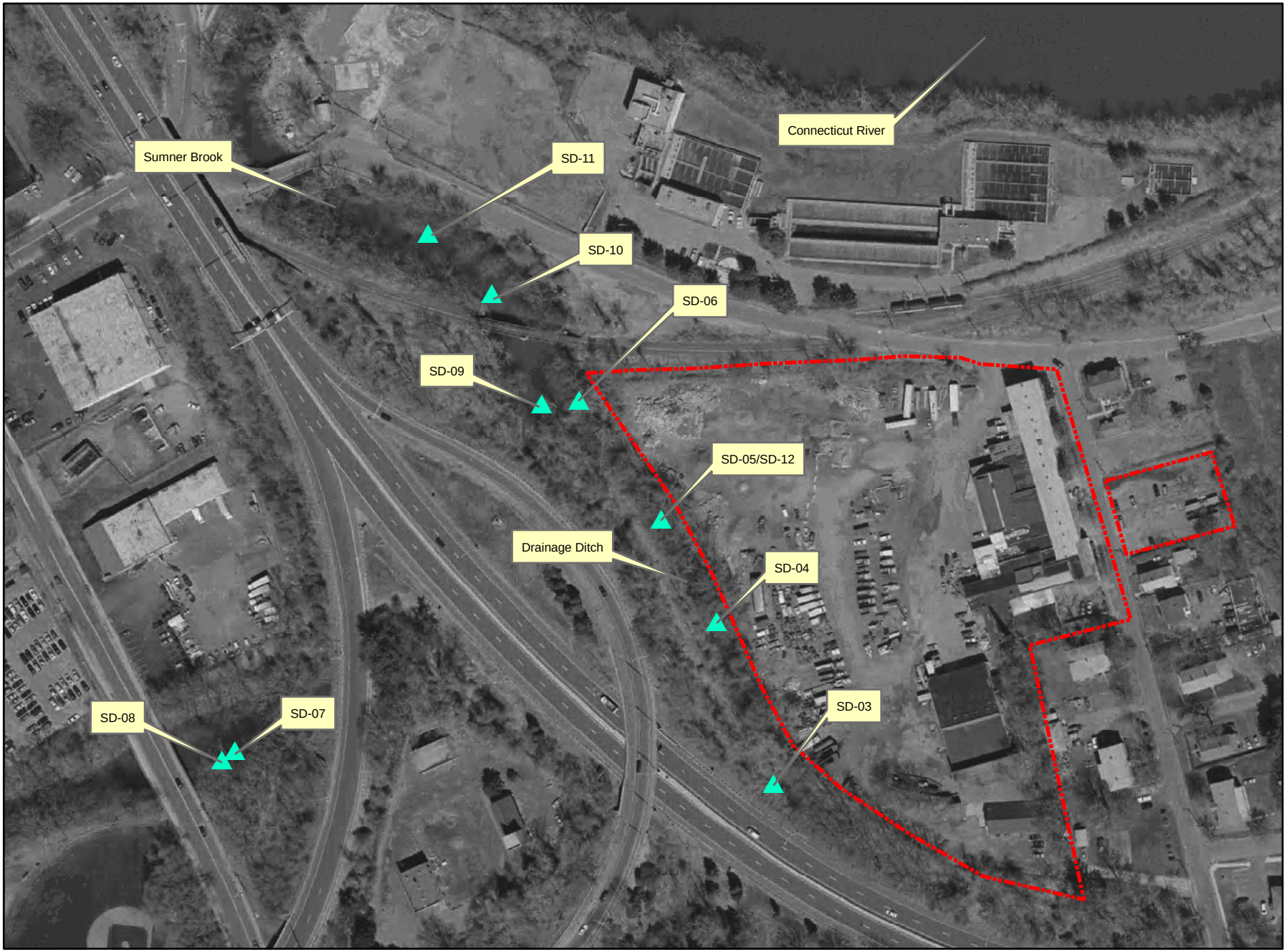

Figure 3

Sediment Sample Location Map

Omo Manufacturing Site
50 Walnut Street
Middletown, Connecticut

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	09-03-0004
Created by:	G. Hornok
Created on:	3 November 2009
Modified by:	G. Hornok
Modified on:	25 January 2010

LEGEND

- Site Boundary
- Sediment Sample

N

0 25 50 100 150 200
Feet

Data Sources:
Imagery: CT CLEAR
Base Aerial Photograph from the State of Connecticut 2004 Statewide Aerial Survey
All other data: START

WESTON SOLUTIONS
Restoring Resource Efficiency

E:\Ct_gis\Marino Property Removal\MXD\Sediment Memo\Fig 3 - Sediment Sample Location.mxd

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Attachment B

Photodocumentation Log

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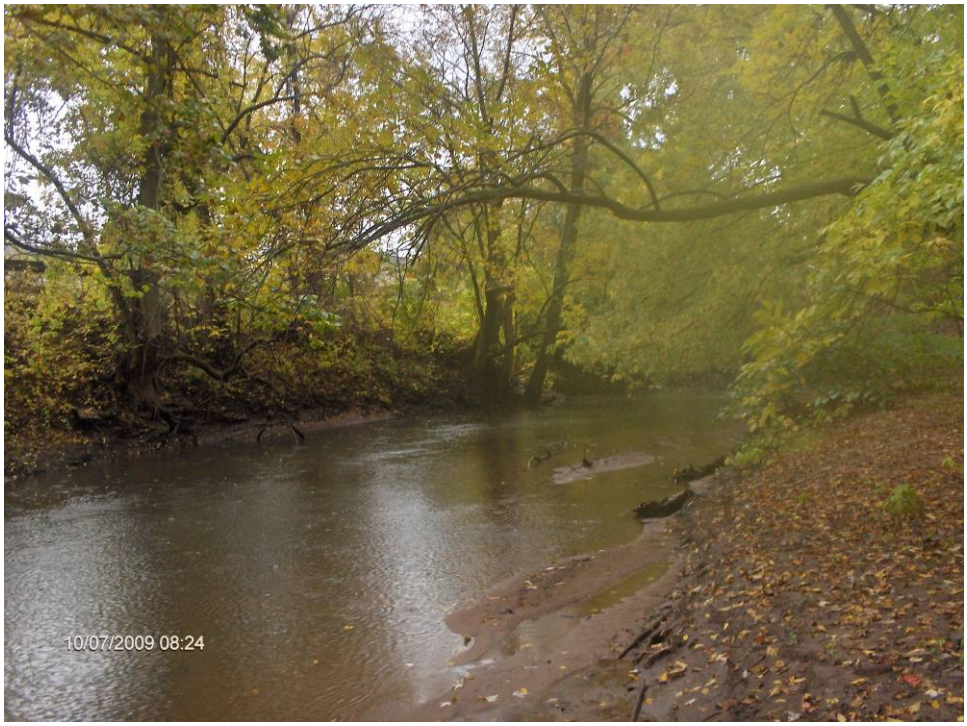
PHOTODOCUMENTATION LOG
Omo Manufacturing Site ● Middletown, Connecticut

SCENE: View of Sumner Brook, downstream of sediment sample location SD-11. Photograph taken facing northwest (downstream).
DATE: 7 October 2009 **TIME:** 0824 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100



SCENE: View of Sumner Brook and sediment sample location SD-11. Photograph taken facing southeast (upstream).

DATE: 7 October 2009 **TIME:** 0824 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

SCENE: View of railroad overpass adjacent to the northwest corner of the Omo Manufacturing Site and the location of sediment sample SD-10. Photograph taken facing east-southeast.

DATE: 7 October 2009 **TIME:** 0825 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

SCENE: View of sediment sample location SD-03, located along the drainage ditch. Photograph taken facing southeast.

DATE: 7 October 2009 **TIME:** 1015 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

TOP

SCENE: View of the drainage ditch located west of the Omo Manufacturing Site. Photograph taken facing northwest (downstream).
DATE: 7 October 2009 **TIME:** 1017 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

TOP

SCENE: View of general debris (metal, empty 55-gallon steel drums, etc.) adjacent to the drainage ditch located west of the Omo Manufacturing Site. Photograph taken facing east.
DATE: 7 October 2009 **TIME:** 1019 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

TOP

SCENE: View of the drainage ditch located west of the Omo Manufacturing Site and the location of sediment sample SD-05/SD-12. Photograph taken facing south (upstream).
DATE: 7 October 2009 **TIME:** 1020 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

SCENE: View of Sumner Brook, footing at base of Route 9 overpass tunnel, and the location of sediment sample SD-09. Photograph taken facing west (upstream).
DATE: 7 October 2009 **TIME:** 1022 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

PHOTODOCUMENTATION LOG
Omo Manufacturing Site ● Middletown, Connecticut

TOP

SCENE: View of the drainage ditch, located west of the Omo Manufacturing Site, slightly upstream of the confluence with Sumner Brook and the location of sediment sample SD-06. Photograph taken facing southeast (upstream).
DATE: 7 October 2009 **TIME:** 1024 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

SCENE: View of Sumner Brook and the railroad overpass, directly downstream of its confluence with the drainage ditch west of the Omo Manufacturing Site. Photograph taken facing northwest (downstream).
DATE: 7 October 2009 **TIME:** 1024 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

PHOTODOCUMENTATION LOG
Omo Manufacturing Site ● Middletown, Connecticut

SCENE: View of Sumner Brook, entrance to the Route 9 overpass tunnel, and the location of sediment samples SD-07 and SD-08 (adjacent to the right side bank). Photograph taken facing northeast (downstream).
DATE: 7 October 2009 **TIME:** 1133 hours
PHOTOGRAPHER: Gerald Hornok **CAMERA:** Nikon CoolPix 3100

Attachment C

Chain-of-Custody Record

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PN: 09100011

USEPA Site Assessment Program
Sediment Samples
Generic Chain of Custody

Reference Case
Client No:
SDG No: L

Date Shipped:	10/8/2009
Carrier Name:	Hand-Delivered
Airbill:	
Shipped to:	EPA OEME Laboratory 11 Technology Drive North Chelmsford MA 01863 (617) 918-8300

Chain of Custody Record

Relinquished By	(Date / Time)	Sampler Signature: Received By	(Date / Time)
1 Timothy Bock	10/8/09 11:10		10/8/09 11:10
2			
3			
4			

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
D22186	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	001 (NaHSO4), 002 (NaHSO4), 003 (CH3OH), 004 (Ice Only), 005 (Ice Only), 006 (Ice Only), 007 (Ice Only), 008 (Ice Only) (8)	SD-03	S: 10/7/2009	10:00	
D22187	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	009 (NaHSO4), 010 (NaHSO4), 011 (CH3OH), 012 (Ice Only), 013 (Ice Only), 014 (Ice Only), 015 (Ice Only), 016 (Ice Only) (8)	SD-04	S: 10/7/2009	9:50	
D22188	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	017 (NaHSO4), 018 (NaHSO4), 019 (CH3OH), 020 (Ice Only), 021 (Ice Only), 022 (Ice Only), 023 (Ice Only), 024 (Ice Only) (8)	SD-05	S: 10/7/2009	9:30	
D22189	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	025 (NaHSO4), 026 (NaHSO4), 027 (CH3OH), 028 (Ice Only), 029 (Ice Only), 030 (Ice Only), 031 (Ice Only), 032 (Ice Only) (8)	SD-06	S: 10/7/2009	8:55	
D22190	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	033 (NaHSO4), 034 (NaHSO4), 035 (CH3OH), 036 (Ice Only), 037 (Ice Only), 038 (Ice Only), 039 (Ice Only), 040 (Ice Only) (8)	SD-07	S: 10/7/2009	11:15	
D22191	Sediment	M/G	Metals+Hg (28)	041 (Ice Only) (1)	SD-08	S: 10/7/2009	11:20	

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: D22186	Additional Sampler Signature(s): Timothy Bock	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:

Analysis Key: **Concentration:** L = Low, M = Low/Medium, H = High **Type/Designate:** Composite = C, Grab = G

Custody Seal Intact? ___ **Shipment Iced?** ___

CN = Method (EIASOP-INGCN10), L/M VOCs = Method (EIASOP-VOAGCMS8), Metals+Hg = Methods (EIASOP-INGDVICP1 & INGMERC8), PCB-S = Method (EIASOP-PESTSOIL2), PCB-W = Method (GCPESWALL6), PER_SOL = Percent Solids, SVOC-S = Method (EIASOP-BNAS1), SVOC-W = Method (EIASOP-BNAW1)

R Number: 1-581445056-100809-0001

R provides preliminary results. Requests for preliminary results will increase analytical costs.

end Copy to: Site Assessment Manager Gerardo Millan-Ramos, 1 Congress Street, Suite 1100 (HBS), Boston, MA 02114, email: illan-Ramos.Gerardo@epamail.epa.gov

LABORATORY COPY

USEPA Site Assessment Program
Sediment Samples
Generic Chain of Custody

PN: 091000 11

Reference Case
Client No:
SDG No: L

Date Shipped:	10/8/2009
Carrier Name:	Hand-Delivered
Airbill:	
Shipped to:	EPA OEME Laboratory 11 Technology Drive North Chelmsford MA 01863 (617) 918-8300

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	10/8/09 1110	10/8/09 11:10
2		
3		
4		

Sampler Signature:

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
D22192	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	042 (NaHSO4), 043 (NaHSO4), 044 (CH3OH), 045 (Ice Only), 046 (Ice Only), 047 (Ice Only), 048 (Ice Only), 049 (Ice Only) (8)	SD-09	S: 10/7/2009	9:10	
D22193	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	050 (NaHSO4), 051 (NaHSO4), 052 (CH3OH), 053 (Ice Only), 054 (Ice Only), 055 (Ice Only), 056 (Ice Only), 057 (Ice Only) (8)	SD-10	S: 10/7/2009	8:15	
D22194	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	058 (NaHSO4), 059 (NaHSO4), 060 (CH3OH), 061 (Ice Only), 062 (Ice Only), 063 (Ice Only), 064 (Ice Only), 065 (Ice Only) (8)	SD-11	S: 10/7/2009	8:00	
D22195	Sediment	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-S (28), PER_SOL (28), SVOC-S (28)	066 (NaHSO4), 067 (NaHSO4), 068 (Ice Only), 069 (Ice Only), 070 (Ice Only), 071 (Ice Only), 072 (Ice Only), 073 (Ice Only) (8)	SD-12	S: 10/7/2009	9:30	
D22196	Field QC	M/G	CN (28), L/M VOCs (28), Metals+Hg (28), PCB-W (28), SVOC-W (28)	074 (HCL), 075 (HCL), 076 (HCL), 077 (HCL), 078 (Ice Only), 079 (Ice Only), 080 (Ice Only), 081 (Ice Only), 082 (HNO3), 083 (NaOH) (10)	RB-01	S: 10/7/2009	12:45	
D22197	Field QC	M/G	L/M VOCs (28)	084 (HCL), 085 (HCL) (2)	TB-01	S: 10/6/2009	16:00	

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC: D22186	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ___	Shipment Iced? ___

CN = Method (EIASOP-INGCN10), L/M VOCs = Method (EIASOP-VOAGCMS8), Metals+Hg = Methods (EIASOP-INGDVICP1 & INGMERC8), PCB-S = Method (EIASOP-PESTSOIL2), PCB-W = Method (GCPESWALL6), PER_SOL = Percent Solids, SVOC-S = Method (EIASOP-BNAS1), SVOC-W = Method (EIASOP-BNAW1)

R Number: 1-581445056-100809-0001

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end Copy to: Site Assessment Manager Gerardo Millan-Ramos, 1 Congress Street, Suite 1100 (HBS), Boston, MA 02114, email: llan-Ramos.Gerardo@epamail.epa.gov

USEPA Site Assessment Program
Sediment Samples
Generic Chain of Custody

PN: 09100011

Reference Case
Client No:
SDG No: L

Date Shipped:	10/8/2009
Carrier Name:	Hand-Delivered
Airbill:	
Shipped to:	EPA OEME Laboratory 11 Technology Drive North Chelmsford MA 01863 (617) 918-8300

Chain of Custody Record

	Relinquished By	(Date / Time)	Sampler Signature: Received By	(Date / Time)
1	Timothy Bock	10/8/09 1110		10/8/09 1110
2				
3				
4				

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
D22198	Field QC	L/G	L/M VOCs (28)	086 (NaHSO4) (1)	PB-01	S: 10/7/2009	6:30	
D22199	Field QC	M/G	L/M VOCs (28)	087 (CH3OH) (1)	PB-02	S: 10/7/2009	6:30	
D22200	PE Soil	M/G	L/M VOCs (28)	088 (Ice Only) (1)	PE-SRS0053	S: 10/7/2009	6:30	
D22201	PE Soil	M/G	SVOC-S (28)	089 (Ice Only) (1)	PE-SS1127	S: 10/7/2009	6:30	
D22202	PE Soil	M/G	PCB-S (28)	090 (Ice Only) (1)	PE-TT2487	S: 10/7/2009	6:30	
D22203	PE Soil	M/G	Metals+Hg (28)	091 (Ice Only) (1)	PE-IS5241	S: 10/7/2009	6:30	
D22204	PE Soil	M/G	CN (28)	092 (Ice Only) (1)	PE-CNS0209	S: 10/7/2009	6:30	

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: D22186	Additional Sampler Signature(s): Timothy Bock	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? ___ Shipment Iced? ___

CN = Method (EIASOP-INGCN10), L/M VOCs = Method (EIASOP-VOAGCMS8), Metals+Hg = Methods (EIASOP-INGDVICP1 & INGMERC8), PCB-S = Method (EIASOP-PESTSOIL2), PCB-W = Method (GCPESWALL6), PER_SOL = Percent Solids, SVOC-S = Method (EIASOP-BNAS1), SVOC-W = Method (EIASOP-BNAW1)

R Number: 1-581445056-100809-0001

R provides preliminary results. Requests for preliminary results will increase analytical costs.

end Copy to: Site Assessment Manager Gerardo Millan-Ramos, 1 Congress Street, Suite 1100 (HBS), Boston, MA 02114, email: lillan-Ramos.Gerardo@epamail.epa.gov

LABORATORY COPY

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Attachment D

U.S. Environmental Protection Agency, Office of Environmental Measurement and Evaluation
Laboratory Data

Table 1	Volatile Organic Compounds in Soil Low and High Level Methods
Table 2	Semivolatile Organic Compounds in Soil Analysis
Table 3	Polychlorinated Biphenyls Medium Level in Soils
Table 4	Inorganics in Soil

Note: The EPA OEME Laboratory reports the sediment sample analyses as soil sample analyses

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SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL LOW AND HIGH LEVEL METHODS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	SD-03			SD-04			SD-05			SD-06			SD-07			SD-09			SD-10		
SAMPLE NUMBER:	D22186			D22187			D22188			D22189			D22190			D22192			D22193		
LABORATORY NUMBER:	AA99143			AA99144			AA99145			AA99146			AA99147			AA99149			AA99150		
COMPOUND		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**
1,1,1,2-Tetrachloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1,1-Trichloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1,2,2-Tetrachloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1,2-Trichloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1-dichloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1-Dichloroethylene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,1-Dichloropropene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2,3-Trichlorobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2,3-Trichloropropane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2,4-Trichlorobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2,4-Trimethylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2-Dibromo-3-Chloropropane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2-Dibromoethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2-Dichlorobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2-Dichloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,2-Dichloropropane	ND	80		ND	100		ND	1.0		ND	1.0.		ND	1.0		ND	2.1		ND	1.0	
1,3,5-Trimethylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,3-Dichlorobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,3-Dichloropropane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
1,4-Dichlorobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
2,2-Dichloropropane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
2-Butanone (MEK)	ND	80		ND	100		2.2	1.0		2.5	1.0		3.0	1.0		8.1	2.1		2.4	1.0	
2-Chlorotoluene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
2-Hexanone	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
2-Propanone (acetone)	ND	80		ND	100		9.9	1.0		16	1.0		19	1.0		37	2.1		20	1.0	
4-Chlorotoluene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
4-Methyl-2-Pentanone(MIBK)	ND	80		ND	100		26	1.0		2.1	1.0		ND	1.0		ND	2.1		ND	1.0	
Acrylonitrile	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Benzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Bromobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Bromochloromethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Bromodichloromethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Bromoform	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Bromomethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
c-1,3-dichloropropene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Carbon Disulfide	ND	80		ND	100		ND	1.0		2.1	1.0		4.1	1.0		ND	2.1		1.7	1.0	
Carbon tetrachloride	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Chlorobenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Chloroethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Chloroform	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Chloromethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
cis-1,2-Dichloroethylene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Dibromochloromethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Dibromomethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Dichlorodifluoromethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Ethyl Ether	ND	80		ND	100		ND	2.0		ND	2.0		ND	2.0		ND	4.2		ND	2.0	
Ethylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
DILUTION:	**50**			**50**			**1**			**1**			**1**			**1**			**1**		
PERCENT SOLIDS	**78**			**74**			**76**			**78**			**82**			**48**			**82**		
DATE SAMPLED:	**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/15/09**			**10/15/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**		
DATE ANALYZED:	**10/15/09**			**10/15/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**		

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL LOW AND HIGH LEVEL METHODS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	SD-03			SD-04			SD-05			SD-06			SD-07			DS-09			SD-10		
SAMPLE NUMBER:	D22186			D22187			D22188			D22189			DD22190			D22192			DD22193		
LABORATORY NUMBER:	AA99143			AA99144			AA99145			AA99146			AA99147			AA99149			AA99150		
COMPOUND		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**
Hexachlorobutadiene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Isopropylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
M/P Xylene	ND	160		ND	210		ND	2.0		ND	2.0		ND	2.0		ND	4.2		ND	2.0	
Methylene Chloride	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Methyl-t-Butyl Ether	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Naphthalene	ND	80		ND	100		ND	1.0		ND	1.0		9	1.0		ND	2.1		2.6	1.0	
N-Butylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
N-Propylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Ortho Xylene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Para-Isopropyltoluene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Sec-Butylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Styrene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
t-1,3-Dichloropropene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Tert-Butylbenzene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Tetrachloroethylene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Tetrahydrofuran	ND	80		ND	100		ND	1.0		28	1.0		16	1.0		28	2.1		28	1.0	
Toluene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Trans-1,2-Dichloroethylene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Trichloroethylene	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Trichlorofluoromethane	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Vinyl Acetate	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
Vinyl Chloride	ND	80		ND	100		ND	1.0		ND	1.0		ND	1.0		ND	2.1		ND	1.0	
DILUTION:	**50**			**50**			**1**			**1**			**1**			**1**			**1**		
PERCENT SOLIDS	**78**			**74**			**76**			**78**			**82**			**48**			**82**		
DATE SAMPLED:	**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/15/09**			**10/15/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**		
DATE ANALYZED:	**10/15/09**			**10/15/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**			**10/14/09**		

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL LOW AND HIGH LEVEL METHODS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	**SD-11**			**SD-12**		
SAMPLE NUMBER:	**D22194**			**D22195**		
LABORATORY NUMBER:	**AA99151**			**AA99152**		
COMPOUND		**RL**	**Q**		**RL**	**Q**
1,1,1,2-Tetrachloroethane	ND	1.0		ND	92	
1,1,1-Trichloroethane	ND	1.0		ND	92	
1,1,2,2-Tetrachloroethane	ND	1.0		ND	92	
1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0		ND	92	
1,1,2-Trichloroethane	ND	1.0		ND	92	
1,1-dichloroethane	ND	1.0		ND	92	
1,1-Dichloroethylene	ND	1.0		ND	92	
1,1-Dichloropropene	ND	1.0		ND	92	
1,2,3-Trichlorobenzene	ND	1.0		ND	92	
1,2,3-Trichloropropane	ND	1.0		ND	92	
1,2,4-Trichlorobenzene	ND	1.0		ND	92	
1,2,4-Trimethylbenzene	ND	1.0		ND	92	
1,2-Dibromo-3-Chloropropane	ND	1.0		ND	92	
1,2-Dibromoethane	ND	1.0		ND	92	
1,2-Dichlorobenzene	ND	1.0		ND	92	
1,2-Dichloroethane	ND	1.0		ND	92	
1,2-Dichloropropane	ND	1.0		ND	92	
1,3,5-Trimethylbenzene	ND	1.0		ND	92	
1,3-Dichlorobenzene	ND	1.0		ND	92	
1,3-Dichloropropane	ND	1.0		ND	92	
1,4-Dichlorobenzene	ND	1.0		ND	92	
2,2-Dichloropropane	ND	1.0		ND	92	
2-Butanone (MEK)	1.7	1.0		ND	92	
2-Chlorotoluene	ND	1.0		ND	92	
2-Hexanone	ND	1.0		ND	92	
2-Propanone (acetone)	23	1.0		ND	92	
4-Chlorotoluene	ND	1.0		ND	92	
4-Methyl-2-Pentanone(MIBK)	ND	1.0		ND	92	
Acrylonitrile	ND	1.0		ND	92	
Benzene	2.4	1.0		ND	92	
Bromobenzene	ND	1.0		ND	92	
Bromochloromethane	ND	1.0		ND	92	
Bromodichloromethane	ND	1.0		ND	92	
Bromoform	ND	1.0		ND	92	
Bromomethane	ND	1.0		ND	92	
c-1,3-dichloropropene	ND	1.0		ND	92	
Carbon Disulfide	3.0	1.0		ND	92	
Carbon tetrachloride	ND	1.0		ND	92	
Chlorobenzene	ND	1.0		ND	92	
Chloroethane	ND	1.0		ND	92	
Chloroform	ND	1.0		ND	92	
Chloromethane	ND	1.0		ND	92	
cis-1,2-Dichloroethylene	ND	1.0		ND	92	
Dibromochloromethane	ND	1.0		ND	92	
Dibromomethane	ND	1.0		ND	92	
Dichlorodifluoromethane	ND	1.0		ND	92	
Ethyl Ether	ND	2.0		ND	92	
Ethylbenzene	ND	1.0		ND	92	
DILUTION:	**1**			**50**		
PERCENT SOLIDS	**81**			**76**		
DATE SAMPLED:	**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/14/09**			**10/15/09**		
DATE ANALYZED:	**10/14/09**			**10/15/09**		

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL LOW AND HIGH LEVEL METHODS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	**SD-11**			**SD-12**		
SAMPLE NUMBER:	**D22194**			**D22195**		
LABORATORY NUMBER:	**AA99151**			**AA99152**		
COMPOUND		**RL**	**Q**		**RL**	**Q**
Hexachlorobutadiene	ND	1.0		ND	92	
Isopropylbenzene	ND	1.0		ND	92	
M/P Xylene	ND	2.0		ND	92	
Methylene Chloride	ND	1.0		ND	92	
Methyl-t-Butyl Ether	ND	1.0		ND	180	
Naphthalene	12	1.0		ND	92	
N-Butylbenzene	ND	1.0		ND	92	
N-Propylbenzene	ND	1.0		ND	92	
Ortho Xylene	ND	1.0		ND	92	
Para-Isopropyltoluene	ND	1.0		ND	92	
Sec-Butylbenzene	ND	1.0		ND	92	
Styrene	ND	1.0		ND	92	
t-1,3-Dichloropropene	ND	1.0		ND	92	
Tert-Butylbenzene	ND	1.0		ND	92	
Tetrachloroethylene	ND	1.0		ND	92	
Tetrahydrofuran	24	1.0		ND	92	
Toluene	ND	1.0		ND	92	
Trans-1,2-Dichloroethylene	ND	1.0		ND	92	
Trichloroethylene	ND	1.0		ND	92	
Trichlorofluoromethane	ND	1.0		ND	92	
Vinyl Acetate	ND	1.0		ND	92	
Vinyl Chloride	ND	1.0		ND	92	
DILUTION:	**1**			**50**		
PERCENT SOLIDS	**81**			**76**		
DATE SAMPLED:	**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/14/09**			**10/15/09**		
DATE ANALYZED:	**10/14/09**			**10/15/09**		

NOTES
START has reported the data as it was received from the EPA OEME Laboratory. START has not performed data validation of the EPA OEME Laboratory data. An internal data review was performed by EPA OEME Laboratory personnel prior to submittal to the EPA Contracting Officer's Representative.
OEME = EPA Office of Environmental Measurement and Evaluation.
Sample analysis was conducted following EPA REGION I SOP, EIASOP-VOAGCMS8, via Gas Chromtograph/Mass Spectrmometry (GC/MS).
Results are reported on a Dry Weight Basis.
mg/Kg = milligrams per Kilogram.
ND = Non-Detected.
RL = Sample Adjusted Reporting Limit.
Q = Qualifier.

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 2
SEMIVOLATILE ORGANIC COMPOUND IN SOIL ANALYSIS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	SD-03			SD-04			SD-05			SD-06			SD-07			SD-09			SD-10		
SAMPLE NUMBER:	D22186			D22187			D22188			D22189			DD22190			D22192			D22193		
LABORATORY NUMBER:	AA99143			AA99144			AA99145			AA99146			AA97763			AA99149			AA99150		
COMPOUND		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**
1,2,4,5-Tetrachlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1,2,4-Trichlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1,2-Dichlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1,3-Dichlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1,3-Dinitrobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1,4-Dichlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1,4-Naphthoquinone	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
1-Methylnaphthalene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,2'-oxybis(1-Chloropropane)	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,3,4,6-Tetrachlorophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,4,5-Trichlorophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,4,6-Trichlorophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,4-Dichlorophenol	ND	150		ND	320		ND	170		ND	140		ND	160		ND	290		ND	130	
2,4-Dinitrophenol	ND	300		ND	160		ND	340		ND	280		ND	310		ND	580		ND	270	
2,4-Dinitrotoluene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,4-dimethylphenol	ND	300		ND	320		ND	340		ND	280		ND	310		ND	290		ND	270	
2,6-Dichlorophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2,6-Dinitrotoluene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2-Chloronaphthalene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2-Chlorophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2-Methylnaphthalene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2-Methylphenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2-Nitroaniline	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
2-Nitrophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
3&4-Methylphenol	ND	300		ND	320		ND	340		ND	140		ND	310		ND	580		ND	270	
3,3'-Dichlorobenzidine	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
3-Methylcholanthrene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
3-Nitroaniline	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4,6-Dinitro-2-methylphenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-Bromophenyl-phenylether	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-Chloro-3-methylphenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-Chloroaniline	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-Chlorophenyl-phenylether	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-Nitroaniline	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-Nitrophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
4-nitroquinoline-1-oxide	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Acenaphthene	ND	150		ND	160		ND	170		ND	140		320	160		ND	290		ND	130	
Acenaphthylene	ND	150		250	160		190	170		ND	140		550	160		ND	290		ND	130	
Acetophenone	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Aniline	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Anthracene	ND	150		430	160		1,100	170		340	140		1,600	160		ND	290		ND	130	
Aramite	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Azobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Benzidine	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Benzo(a)anthracene	420	150		1,500	160		3,300	170		1,300	140		4,100	160		ND	290		300	130	
Benzo(a)pyrene	440	150		1,400	160		2,900	170		1,100	140		3,400	160		1,100	290		290	130	
Benzo(b)fluoranthene	480	150	J	1,400	160	J	3,000	840		1,200	140	J	3,000	780		ND	290		240	130	J
Benzo(g,h,i)perylene	400	150		1,200	160		2,000	170		780	140		2,200	160		ND	290		210	130	
Benzo(k)fluoranthene	500	150	J	1,300	160	J	3,200	840		1,100	140	J	3,400	780		ND	290		240	130	J
Benzoic Acid	ND	300		ND	320		ND	340		ND	280		ND	310		ND	580		ND	270	
Benzyl Alcohol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
DILUTION FACTOR:	**1**			**1**			**1**			**1**			**1**			**1**			**1**		
PERCENT SOLIDS:	**78**			**74**			**76**			**78**			**82**			**48**			**82**		
DATE SAMPLED:	**10/07/09**			**10/07/09**			**10/07/09**			**10/07/09**			**10/7/2009**			**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/09/09**			**10/09/09**			**10/09/09**			**10/09/09**			**10/09/09**			**10/09/09**			**10/09/09**		
DATE ANALYZED:	**10/13/09**			**10/13/09**			**10/13/09**			**10/13/09**			**10/13/09**			**10/13/09**			**10/13/09**		

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 2
SEMIVOLATILE ORGANIC COMPOUND IN SOIL ANALYSIS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	SD-03			SD-04			SD-05			SD-06			SD-07			SD-09			SD-10		
SAMPLE NUMBER:	D22186			D22187			D22188			D22189			DD22190			D22192			D22193		
LABORATORY NUMBER:	AA99143			AA99144			AA99145			AA99146			AA97763			AA99149			AA99150		
COMPOUND		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**		**RL**	**Q**
Bis(2-Chloroethyl)ether	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
bis(2-Ethylhexyl)phthalate	830	150		1,500	160		2,000	170		760	140		350	160		ND	290		ND	130	
Butylbenzylphthalate	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Carbazole	ND	150		180	160		1,100	170		250	140		250	160		ND	290		ND	130	
Chlorobenzilate	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Chrysene	590	150		1,600	160		3,900	170		1,400	140		3,800	160		ND	290		340	130	
Di-n-butylphthalate	ND	150		220	160		ND	170		370	140		160	160		ND	290		ND	130	
Di-n-octyl phthalate	350	150		300	160		ND	170		ND	140		300	160		ND	290		ND	130	
Dibenz(a,h)anthracene	180	150		490	160		450	170		230	140		470	160		ND	290		ND	130	
Dibenzofuran	ND	150		ND	160		ND	170		ND	140		280	160		ND	290		ND	130	
Diethylphthalate	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Dimethyl phthalate	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Dinoseb	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Ethyl methanesulfonate	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Fluoranthene	1,100	150		3,200	160		9,300	840		3,000	140		11,000	780		ND	290		590	130	
Fluorene	ND	150		160	160		400	170		ND	140		740	160		ND	290		ND	130	
Hexachlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Hexachlorobutadiene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Hexachlorocyclopentadiene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Hexachloroethane	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Hexachloropropene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Indeno(1,2,3-cd)pyrene	360	150		1,100	160		2,000	170		760	140		2,100	160		ND	290		200	130	
Isodrin	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Isophorone	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Isosafrole	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Kepone	ND	300		ND	320		ND	340		ND	280		ND	310		ND	580		ND	270	
Methyl methanesulfonate	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
N-Nitrosodiphenylamine	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
N-nitroso-di-n-propylamine	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
N-nitrosodimethylamine	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Naphthalene	ND	150		ND	160		ND	170		ND	140		160	160		ND	290		ND	130	
Nitrobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Pentachlorobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Pentachloronitrobenzene	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Pentachlorophenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Phenacetin	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Phenanthrene	540	150		1,500	160		5,300	170		1,500	140		5,200	160		ND	290		310	130	
Phenol	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Pyrene	900	150		2,800	160		7,100	840		2,300	140		9,200	780		ND	290		590	130	
Pyridine	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
Safrole	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
bis(-2-Chloroethoxy)methane	ND	150		ND	160		ND	170		ND	140		ND	160		ND	290		ND	130	
DILUTION FACTOR:	1			1			1			1			1			1			1		
PERCENT SOLIDS:	78			74			76			78			82			48			82		
DATE SAMPLED:	10/07/09			10/07/09			10/07/09			10/07/09			10/7/2009			10/07/09			10/07/09		
DATE EXTRACTED:	10/09/09			10/09/09			10/09/09			10/09/09			10/09/09			10/09/09			10/09/09		
DATE ANALYZED:	10/13/09			10/13/09			10/13/09			10/13/09			10/13/09			10/13/09			10/13/09		

SAMPLE LOCATION:	SD-11	SD-12

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 2
SEMIVOLATILE ORGANIC COMPOUND IN SOIL ANALYSIS
micrograms per kilogram (µg/Kg)

SAMPLE NUMBER:	**D22194**			**D22195**		
LABORATORY NUMBER:	**AA99151**			**AA99152**		
COMPOUND		**RL**	**Q**		**RL**	**Q**
1,2,4,5-Tetrachlorobenzene	ND	140		ND	160	
1,2,4-Trichlorobenzene	ND	140		ND	160	
1,2-Dichlorobenzene	ND	140		ND	160	
1,3-Dichlorobenzene	ND	140		ND	160	
1,3-Dinitrobenzene	ND	140		ND	160	
1,4-Dichlorobenzene	ND	140		ND	160	
1,4-Naphthoquinone	ND	140		ND	160	
1-Methylnaphthalene	ND	140		ND	160	
2,2'-oxybis(1-Chloropropane)	ND	140		ND	160	
2,3,4,6-Tetrachlorophenol	ND	140		ND	160	
2,4,5-Trichlorophenol	ND	140		ND	160	
2,4,6-Trichlorophenol	ND	140		ND	160	
2,4-Dichlorophenol	ND	140		ND	160	
2,4-Dinitrophenol	ND	280		ND	330	
2,4-Dinitrotoluene	ND	140		ND	160	
2,4-dimethylphenol	ND	280		ND	330	
2,6-Dichlorophenol	ND	140		ND	160	
2,6-Dinitrotoluene	ND	140		ND	160	
2-Chloronaphthalene	ND	140		ND	160	
2-Chlorophenol	ND	140		ND	160	
2-Methylnaphthalene	ND	140		ND	160	
2-Methylphenol	ND	140		ND	160	
2-Nitroaniline	ND	140		ND	160	
2-Nitrophenol	ND	140		ND	160	
3&4-Methylphenol	570	280		ND	160	
3,3'-Dichlorobenzidine	ND	140		ND	160	
3-Methylcholanthrene	ND	140		ND	160	
3-Nitroaniline	ND	140		ND	160	
4,6-Dinitro-2-methylphenol	ND	140		ND	160	
4-Bromophenyl-phenylether	ND	140		ND	160	
4-Chloro-3-methylphenol	ND	140		ND	160	
4-Chloroaniline	ND	140		ND	160	
4-Chlorophenyl-phenylether	ND	140		ND	160	
4-Nitroaniline	ND	140		ND	160	
4-Nitrophenol	ND	140		ND	160	
4-nitroquinoline-1-oxide	ND	140		ND	160	
Acenaphthene	220	140		ND	160	
Acenaphthylene	430	140		ND	160	
Acetophenone	ND	140		ND	160	
Aniline	ND	140		ND	160	
Anthracene	790	140		580	160	
Aramite	ND	140		ND	160	
Azobenzene	ND	140		ND	160	
Benzidine	ND	140		ND	160	
Benzo(a)anthracene	2,300	140		1,600	160	
Benzo(a)pyrene	2,000	140		1,600	160	
Benzo(b)fluoranthene	1,800	140	J	2,400	820	
Benzo(g,h,i)perylene	1,300	140		1,200	160	
Benzo(k)fluoranthene	1,700	140	J	2,100	820	
Benzoic Acid	ND	280		ND	330	
Benzyl Alcohol	ND	140		ND	160	
DILUTION FACTOR:	**1**			**1**		
PERCENT SOLIDS:	**81**			**76**		
DATE SAMPLED:	**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/09/09**			**10/09/09**		
DATE ANALYZED:	**10/13/09**			**10/13/09**		

SITE: OMO MANUFACTURING SITE
PROJECT NO: 09100011
LABORATORY: OEME

TABLE 2
SEMIVOLATILE ORGANIC COMPOUND IN SOIL ANALYSIS
micrograms per kilogram (µg/Kg)

SAMPLE LOCATION:	**SD-11**			**SD-12**		
SAMPLE NUMBER:	**D22194**			**D22195**		
LABORATORY NUMBER:	**AA99151**			**AA99152**		
COMPOUND		**RL**	**Q**		**RL**	**Q**
Bis(2-Chloroethyl)ether	ND	140		ND	300	
bis(2-Ethylhexyl)phthalate	ND	140		32,000	820	
Butylbenzylphthalate	ND	140		ND	300	
Carbazole	160	140		ND	300	
Chlorobenzilate	ND	140		ND	160	
Chrysene	2,100	140		1,900	160	
Di-n-butylphthalate	ND	140		ND	160	
Di-n-octyl phthalate	ND	140		ND	160	
Dibenz(a,h)anthracene	360	140		520	160	
Dibenzofuran	ND	140		ND	160	
Diethylphthalate	ND	140		ND	160	
Dimethyl phthalate	ND	140		ND	160	
Dinoseb	ND	140		ND	160	
Ethyl methanesulfonate	ND	140		ND	160	
Fluoranthene	5,200	140		3,900	160	
Fluorene	3,200	140		ND	160	
Hexachlorobenzene	ND	140		ND	160	
Hexachlorobutadiene	ND	140		ND	160	
Hexachlorocyclopentadiene	ND	140		ND	160	
Hexachloroethane	ND	140		ND	160	
Hexachloropropene	ND	140		ND	160	
Indeno(1,2,3-cd)pyrene	1,200	140		1,100	160	
Isodrin	ND	140		ND	160	
Isophorone	ND	140		ND	160	
Isosafrole	ND	140		ND	160	
Kepone	ND	280		ND	330	
Methyl methanesulfonate	ND	140		ND	160	
N-Nitrosodiphenylamine	ND	140		ND	160	
N-nitroso-di-n-propylamine	ND	140		ND	160	
N-nitrosodimethylamine	ND	140		ND	160	
Naphthalene	ND	140		ND	160	
Nitrobenzene	ND	140		ND	160	
Pentachlorobenzene	ND	140		ND	160	
Pentachloronitrobenzene	ND	140		ND	160	
Pentachlorophenol	ND	140		ND	160	
Phenacetin	ND	140		ND	160	
Phenanthrene	3,200	140		2,000	160	
Phenol	ND	140		ND	160	
Pyrene	4,000	140		3,200	160	
Pyridine	ND	140		ND	160	
Safrole	ND	140		ND	160	
bis(-2-Chloroethoxy)methane	ND	140		ND	160	
DILUTION FACTOR:	**1**			**1**		
PERCENT SOLIDS:	**81**			**76**		
DATE SAMPLED:	**10/07/09**			**10/07/09**		
DATE EXTRACTED:	**10/09/09**			**10/09/09**		
DATE ANALYZED:	**10/13/09**			**10/13/09**		

NOTES:
START has reported the data as it was received from the EPA OEME Laboratory. START has not performed data validation of the EPA OEME Laboratory data. An internal data review was performed by EPA OEME Laboratory personnel prior to submittal to the EPA Contracting Officer's Representative.
OEME = EPA Office of Environmental Measurement and Evaluation.
Sample analysis was conducted following EPA REGION I SOP, EIASOP-BNAS1, via Gas Chromtograph/Mass Spectrometry (GC/MS).
Results are reported on a Dry Weight Basis.
mg/Kg = milligrams per Kilogram.
ND = Non-Detected.
J = Estimated value.
RL = Sample Adjusted Reporting Limit.
Q = Qualifier.

SITE: OMO MANUFACTURING SITE
PROJECT NO.: 09100011
LABORATORY: OEME

TABLE 3
POLYCHLORINATED BIPHENYL MEDIUM LEVEL IN SOILS
mg/Kg

SAMPLE LOCATION:	SD-03			SD-04			SD-05			SD-06			SD-07			SD-09			SD-10					
SAMPLE NUMBER:	D22186			D22187			D22188			D22189			D22190			D22192			D22193					
LABORATORY NUMBER:	AA99143			AA99144			AA99145			AA99146			AA99147			AA99149			AA99150					
COMPOUND		RL	Q		RL	Q		RL	Q		RL	Q		RL	Q		RL	Q		RL	Q			
Aroclor-1016	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1221	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1232	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1242	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1248	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1254	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1260	ND	0.11		0.15	0.11		0.11	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1262	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
Aroclor-1268	ND	0.11		ND	0.11		ND	0.11		ND	0.11		ND	0.09		ND	0.17		ND	0.10				
DILUTION FACTOR:	1			1			1			1			1			1			1					
DATE SAMPLED:	10/7/2009			10/7/2009			10/7/2009			10/7/2009			10/7/2009			10/7/2009			10/7/2009					
DATE EXTRACTED:	10/13/2009			10/13/2009			10/13/2009			10/13/2009			10/13/2009			10/13/2009			10/13/2009					
DATE ANALYZED:	10/20/2009			10/20/2009			10/20/2009			10/20/2009			10/20/2009			10/20/2009			10/20/2009					
% SOLIDS:	79			74			67			77			81			47			83					

SITE: OMO MANUFACTURING SITE
PROJECT NO.: 09100011
LABORATORY: OEME

TABLE 3
POLYCHLORINATED BIPHENYL MEDIUM LEVEL IN SOILS
mg/Kg

SAMPLE LOCATION:	SD-11		SD-12		
SAMPLE NUMBER:	D22194		D22195		
LABORATORY NUMBER:	AA99151		AA99152		
COMPOUND		RL Q		RL	Q
Aroclor-1016	ND	0.10	ND	0.12	
Aroclor-1221	ND	0.10	ND	0.12	
Aroclor-1232	ND	0.10	ND	0.12	
Aroclor-1242	ND	0.10	ND	0.12	
Aroclor-1248	ND	0.10	ND	0.12	
Aroclor-1254	ND	0.10	0.07	0.12	L
Aroclor-1260	ND	0.10	0.27	0.12	
Aroclor-1262	ND	0.10	ND	0.12	
Aroclor-1268	ND	0.10	ND	0.12	
DILUTION FACTOR:	1		1		
DATE SAMPLED:	10/7/2009		10/7/2009		
DATE EXTRACTED:	10/13/2009		10/13/2009		
DATE ANALYZED:	10/20/2009		10/20/2009		
% SOLIDS:	82		75		

Notes:

START has reported the data as it was received from the EPA OEME Laboratory. START has not performed data validation of the EPA OEME Laboratory data. An internal data review was performed by EPA OEME Laboratory personnel prior to submittal to the EPA Contracting Officer's Representative (COR).
Samples were analyzed by EPA Region I Standard Operating Procedure (SOP) EIASOP-PESTSOIL2.SOP, using gas chromotography/electron capture detector (GC/ECD).
Results are reported on a dry weight basis.
mg/Kg = milligram per Kilogram
RL = Reporting Limit
Q = Qualifier
% = Percent
L = Estimated value is below the calibration range.
ND = Not Detected

SITE: OMO MANUFACTURING SITE
PROJECT NO. 0910011
LABORATORY: OEME

TABLE 4
INORGANICS IN SOIL
mg/Kg

SAMPLE LOCATION:		**SD-03**			**SD-04**			**SD-05**			**SD-06**			**SD-07**			**SD-08**			**SD-09**		
SAMPLE NUMBER:		**D22186**			**D22187**			**D22188**			**D22189**			**D22190**			**D22191**			**D22192**		
LABORATORY NUMBER:		**AA99143**			**AA99144**			**AA99145**			**AA99146**			**AA99147**			**AA99148**			**AA99149**		
DATE SAMPLED:		**10/7/09**			**10/7/09**			**10/7/09**			**10/7/09**			**10/7/09**			**10/7/09**			**10/7/09**		
INORGANIC ANALYTES	**METHOD**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**
ALUMINUM	ICP	3,000	11		3,300	11		7,700	11		3,200	11		2,800	11		6,600	11		9,200	11	
ANTIMONY	ICP	ND	2.0	J1,J4	ND	2.0	J4	ND	2.0	J4	ND	2.0	J4	ND	2.0	J4	ND	2.0	J4	ND	2.0	J4
ARSENIC	ICP	ND	2.0		2.5	2.0		4.5	2.0		4.4	2.0		ND	2.0		ND	2.0		2.1	2.0	
BARIUM	ICP	26	2.0		73	2.0		98	2.0		220	2.0		30	2.0		33	2.0		88	2.0	
BERYLLIUM	ICP	ND	0.80		ND	0.80		ND	0.80		ND	0.80		ND	0.80		ND	0.78		ND	0.78	
CADMIUM	ICP	ND	1.0		ND	1.0		ND	1.0		ND	1.0		ND	1.0		ND	0.98		ND	0.98	
CALCIUM	ICP	1,800	10		2,000	10		2,100	10		2,900	10		1,100	10		3,500	9.8		2,100	9.8	
CHROMIUM	ICP	13	2.0		13	2.0		27	2.0		11	2.0		7.5	2.0		6.8	2.0		17	2.0	
COBALT	ICP	2.8	2.0		4.4	2.0		4.9	2.0		2.3	2.0		2.9	2.0		7.7	2.0		6.1	2.0	
COPPER	ICP	25	2.0		74	2.0		110	2.0		81	2.0		1,600	2.0		320	2.0		150	2.0	
IRON	ICP	10,000	4.0		16,000	4.0		18,000	4.0		8,400	4.0		11,000	4.0		19,000	3.9		12,000	3.9	
LEAD	ICP	20	4.0		170	4.0		180	4.0		34	4.0		91	4.0		43	3.9		5.3	3.9	B
MAGNESIUM	ICP	1,700	10		1,600	10		3,000	10		1,700	10		1,400	10		3,800	9.8		3,700	9.8	
MANGANESE	ICP	91	2.0		120	2.0		160	2.0		80	2.0		63	2.0		160	2.0		210	2.0	
NICKEL	ICP	6.1	2.0		21	2.0		15	2.0		6.0	2.0		8.3	2.0		9.1	2.0		13	2.0	
SELENIUM	ICP	ND	2.0		ND	2.0		ND	2.0		ND	2.0		ND	2.0		ND	2.0		ND	2.0	
SILVER	ICP	ND	1.0		ND	1.0		ND	1.0		ND	1.0		ND	1.0		ND	0.98		ND	0.98	
THALLIUM	ICP	ND	4.0		ND	4.0		ND	4.0		ND	4.0		ND	4.0		ND	3.9		ND	3.9	
VANADIUM	ICP	19	2.0		21	2.0		28	2.0		14	2.0		18	2.0		39	2.0		25	2.0	
ZINC	ICP	62	2.0		360	2.0		250	2.0		92	2.0		840	2.0		200	2.0		41	2.0	
MERCURY	CVAA	ND	0.024		0.49	0.250		0.44	0.024		0.03	0.025		0.190	0.024		0.039	0.024		ND	0.025	
CYANIDE	AS	1.2	0.2		ND	0.28		ND	0.19		ND	0.17		ND	0.23		ND	0.42		ND	0.28	
DATE PREPARED:		10/14/09			10/14/09			10/14/09			10/14/09			10/14/09			10/14/09			10/14/09		
DATE ANALYZED:		10/16/09			10/16/09			10/16/09			10/16/09			10/16/09			10/16/09			10/16/09		
DILUTION:		1			1			1			1			1			1			1		

SITE: OMO MANUFACTURING SITE
PROJECT NO. 0910011
LABORATORY: OEME

TABLE 4
INORGANICS IN SOIL
mg/Kg

SAMPLE LOCATION:		**SD-10**			**SD-11**			**SD-12**		
SAMPLE NUMBER:		**D22193**			**D22194**			**D22195**		
LABORATORY NUMBER:		**AA99150**			**AA99151**			**AA00152**		
DATE SAMPLED:		**10/7/09**			**10/7/09**			**10/7/09**		
INORGANIC ANALYTES	**METHOD**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**	**RESULT**	**RL**	**Q**
ALUMINUM	ICP	3,700	11		5,500	11		8,900	11	
ANTIMONY	ICP	ND	2.0	J4	ND	2.0	J4	ND	2.0	J4
ARSENIC	ICP	ND	2.0		ND	2.0		6.0	2.0	
BARIUM	ICP	31	2.0		48	2.0		110	2.0	
BERYLLIUM	ICP	ND	0.78		ND	0.78		ND	0.78	
CADMIUM	ICP	ND	0.98		ND	0.98		ND	0.98	
CALCIUM	ICP	1,500	9.8	J3	1,500	9.8		2,500	9.8	
CHROMIUM	ICP	15	2.0		12	2.0		26	2.0	
COBALT	ICP	3.5	2.0		3.7	2.0		6.1	2.0	
COPPER	ICP	360	2.0		660	2.0		120	2.0	
IRON	ICP	16,000	3.9		13,000	3.9		20,000	3.9	
LEAD	ICP	34	3.9		41	3.9		190	3.9	
MAGNESIUM	ICP	2,100	9.8		2,600	9.8		3,500	9.8	
MANGANESE	ICP	160	2.0		130	2.0		190	2.0	
NICKEL	ICP	19	2.0	J3	10	2.0		17	2.0	
SELENIUM	ICP	ND	2.0		ND	2.0		ND	2.0	
SILVER	ICP	ND	0.98		ND	0.98		ND	0.98	
THALLIUM	ICP	ND	3.9		ND	3.9		ND	3.9	
VANADIUM	ICP	17	2.0		19	2.0		32	2.0	
ZINC	ICP	230	2.0		290	2.0		320	2.0	
MERCURY	CVAA	0.026	0.024		ND	0.02		0.34	0.024	
CYANIDE	AS	ND	0.28		ND	0.26		ND	0.22	
DATE PREPARED:		10/14/09			10/14/09			10/14/09		
DATE ANALYZED:		10/16/09			10/16/09			10/16/09		
DILUTION:		1			1			1		

ANALYTICAL METHOD

ICP = Inductively Coupled Plasma. Samples were analyzed following EPA Region I SOP EIASOP-INGICP7.
CVAA = Cold Vapor Atomic Absorption. Samples were analyzed following EPA Region I SOP EIASOP-INGMERC8.
AS = Semi-Automated Colorimetry. Samples were analyzed following EPA Region I SOP EIASOP-INGCN10

NOTES

START has reported the data as it was received from the EPA OEME Laboratory. START has not performed data validation of the EPA OEME Laboratory data. An internal data review was performed by EPA OEME Laboratory personnel prior to submittal to the EPA Contracting Officer's Representative.
OEME = EPA Office of Environmental Measurement and Evaluation.
Results are reported on a Dry Weight Basis.
mg/Kg = milligrams per Kilogram
RL = Reporting Limit
Q = Qualifier
ND = Non-Detected
J1 = Estimated value due to MS (Matrix Spike) Recovery outside acceptance criteria.
J3= Estimated value due to RPD (relative percent difference) result outside acceptance criteria.
J4 = Estimated value due to LCS (laboratory control sample) result outside acceptance criteira.
B = Analyte is associated with the lab blank or trip blank contamination.

Attachment E

Sediment Summary Table

Table 1 Summary of Analytical Results for Sediment Samples

Note: The EPA OEME Laboratory reports the sediment sample analyses as soil sample analyses

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Table 1
Summary of Analytical Results for Sediment Samples

	Sediment Sample Location										NOAA SQuiRTs	
Compound	SD-03	SD-04	SD-05	SD-06	SD-07	SD-08	SD-09	SD-10	SD-11	SD-12	TEL	PEL
VOCS												
2-Butanone (MEK)	ND*	ND*	2.2 µg/Kg	2.5 µg/Kg	3.0 µg/Kg	NA	8.1 µg/Kg	2.4 µg/Kg	1.7 µg/Kg	ND*	NL	NL
2-Propanone (acetone)	ND*	ND*	9.9 µg/Kg	16 µg/Kg	19 µg/Kg	NA	37 µg/Kg	20 µg/Kg	23 µg/Kg	ND*	NL	NL
4-Methyl-2-Pentanone (MIBK)	ND*	ND*	26 µg/Kg	2.1 µg/Kg	ND	NA	ND	ND	ND	ND*	NL	NL
Benzene	ND*	ND*	ND	ND	ND	NA	ND	ND	2.4 µg/Kg	ND*	NL	NL
Carbon disulfide	ND*	ND*	ND	2.1 µg/Kg	4.1 µg/Kg	NA	ND	1.7 µg/Kg	3.0 µg/Kg	ND*	NL	NL
Napthalene	ND*	ND*	ND	ND	9 µg/Kg	NA	ND	2.6 µg/Kg	12 µg/Kg	ND*	34.6 µg/Kg	391 µg/Kg
Tetrahyrofuran	ND*	ND*	ND	28 µg/Kg	16 µg/Kg	NA	28 µg/Kg	28 µg/Kg	24 µg/Kg	ND*	NL	NL
SVOCs												
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	570 µg/Kg	ND	NL	NL
Acenaphthene	ND	ND	ND	ND	**320 µg/Kg**	NA	ND	ND	**220 µg/Kg**	ND	6.71 µg/Kg	88.9 µg/Kg
Acenaphthylene	ND	**250 µg/Kg**	**190 µg/Kg**	ND	**550 µg/Kg**	NA	ND	ND	**430 µg/Kg**	ND	5.87 µg/Kg	128 µg/Kg
Anthracene	ND	**430 µg/Kg**	**1,100 µg/Kg**	**340 µg/Kg**	**1,600 µg/Kg**	NA	ND	ND	**790 µg/Kg**	**580 µg/Kg**	46.9 µg/Kg	245 µg/Kg
Benzo(a)anthracene	420 µg/Kg	**1,500 µg/Kg**	**3,300 µg/Kg**	**1,300 µg/Kg**	**4,100 µg/Kg**	NA	ND	**300 µg/Kg**	**2,300 µg/Kg**	**1,600 µg/Kg**	31.7 µg/Kg	385 µg/Kg
Benzo(a)pyrene	440 µg/Kg	**1,400 µg/Kg**	**2,900 µg/Kg**	**1,100 µg/Kg**	**3,400 µg/Kg**	NA	**1,100 µg/Kg**	**290 µg/Kg**	**2,000 µg/Kg**	**1,600 µg/Kg**	31.9 µg/Kg	782 µg/Kg
Benzo(b)fluoranthene	480 J µg/Kg	1,400 J µg/Kg	3,000 µg/Kg	1,200 J µg/Kg	3,000 µg/Kg	NA	ND	240 J µg/Kg	1,800 J µg/Kg	2,400 µg/Kg	NL	NL
Benzo(g,h,i)perylene	400 µg/Kg	1,200 µg/Kg	2,000 µg/Kg	780 µg/Kg	2,200 µg/Kg	NA	ND	210 µg/Kg	1,300 µg/Kg	1,200 µg/Kg	NL	NL
Benzo(k)fluoranthene	500 J µg/Kg	1,300 J µg/Kg	3,200 µg/Kg	1,100 J µg/Kg	3,400 µg/Kg	NA	ND	240 J µg/Kg	1,700 J µg/Kg	2,100 µg/Kg	NL	NL
Bis(2-ethylhexl)phthalate	830 µg/Kg	1,500 µg/Kg	2,000 µg/Kg	760 µg/Kg	350 µg/Kg	NA	ND	ND	ND	32,000 µg/Kg	NL	NL
Carbazole	ND	180 µg/Kg	1,100 µg/Kg	250 µg/Kg	250 µg/Kg	NA	ND	ND	160 µg/Kg	ND	NL	NL
Chrysene	**590 µg/Kg**	**1,600 µg/Kg**	**3,900 µg/Kg**	**1,400 µg/Kg**	**3,800 µg/Kg**	NA	ND	**340 µg/Kg**	**2,100 µg/Kg**	**1,900 µg/Kg**	57.1 µg/Kg	862 µg/Kg
Di-n-butylphthalate	ND	220 µg/Kg	ND	370 µg/Kg	160 µg/Kg	NA	ND	ND	ND	ND	NL	NL
Di-n-octyl phthalate	350 µg/Kg	300 µg/Kg	ND	ND	300 µg/Kg	NA	ND	ND	ND	ND	NL	NL
Dibenz(a,h)anthracene	**180 µg/Kg**	**490 µg/Kg**	**450 µg/Kg**	**230 µg/Kg**	**470 µg/Kg**	NA	ND	ND	**360 µg/Kg**	**520 µg/Kg**	6.22 µg/Kg	135 µg/Kg
Dibenzofuran	ND	ND	ND	ND	280 µg/Kg	NA	ND	ND	ND	ND	NL	NL
Fluoranthene	**1,100 µg/Kg**	**3,200 µg/Kg**	**9,300 µg/Kg**	**3,000 µg/Kg**	**11,000 µg/Kg**	NA	ND	**590 µg/Kg**	**5,200 µg/Kg**	**3,900 µg/Kg**	111 µg/Kg	2,355 µg/Kg
Fluorene	ND	**160 µg/Kg**	**400 µg/Kg**	ND	**740 µg/Kg**	NA	ND	ND	**3,200 µg/Kg**	ND	21.2 µg/Kg	144 µg/Kg
Indeno(1,2,3-cd)pyrene	360 µg/Kg	1,100 µg/Kg	2,000 µg/Kg	760 µg/Kg	2,100 µg/Kg	NA	ND	200 µg/Kg	1,200 µg/Kg	1,100 µg/Kg	NL	NL
Napthalene	ND	ND	ND	ND	**160 µg/Kg**	NA	ND	ND	ND	ND	34.6 µg/Kg	391 µg/Kg
Phenanthrene	**540 µg/Kg**	**1,500 µg/Kg**	**5,300 µg/Kg**	**1,500 µg/Kg**	**5,200 µg/Kg**	NA	ND	**310 µg/Kg**	**3,200 µg/Kg**	**2,000 µg/Kg**	41.9 µg/Kg	515 µg/Kg
Pyrene	**900 µg/Kg**	**2,800 µg/Kg**	**7,100 µg/Kg**	**2,300 µg/Kg**	**9,200 µg/Kg**	NA	ND	**590 µg/Kg**	**4,000 µg/Kg**	**3,200 µg/Kg**	53 µg/Kg	875 µg/Kg
PCBs												
Aroclor-1254	ND	ND	ND	ND	ND	NA	ND	ND	ND	**0.07 L mg/Kg**	0.06 mg/Kg†	0.34 mg/Kg†
Aroclor-1260	ND	**0.15 mg/Kg**	**0.11 mg/Kg**	ND	ND	NA	ND	ND	ND	**0.27 mg/Kg**	0.0341 mg/Kg†	0.277 mg/Kg†
INORGANICS												
Aluminum	3,000 mg/Kg	3,300 mg/Kg	7,700 mg/Kg	3,200 mg/Kg	2,800 mg/Kg	6,600 mg/Kg	9,200 mg/Kg	3,700 mg/Kg	5,500 mg/Kg	8,900 mg/Kg	NL	NL
Arsenic	ND	2.5 mg/Kg	4.5 mg/Kg	4.4 mg/Kg	ND	ND	2.1 mg/Kg	ND	ND	**6.0 mg/Kg**	5.9 mg/Kg	17 mg/Kg
Barium	26 mg/Kg	73 mg/Kg	98 mg/Kg	220 mg/Kg	30 mg/Kg	33 mg/Kg	88 mg/Kg	31 mg/Kg	48 mg/Kg	110 mg/Kg	NL	NL
Calcium	1,800 mg/Kg	2,000 mg/Kg	2,100 mg/Kg	2,900 mg/Kg	1,100 mg/Kg	3,500 mg/Kg	2,100 mg/Kg	1,500 J3 mg/Kg	1,500 mg/Kg	2,500 mg/Kg	NL	NL
Chromium	13 mg/Kg	13 mg/Kg	27 mg/Kg	11 mg/Kg	7.5 mg/Kg	6.8 mg/Kg	17 mg/Kg	15 mg/Kg	12 mg/Kg	26 mg/Kg	37.3 mg/Kg	90 mg/Kg
Cobalt	2.8 mg/Kg	4.4 mg/Kg	4.9 mg/Kg	2.3 mg/Kg	2.9 mg/Kg	7.7 mg/Kg	6.1 mg/Kg	3.5 mg/Kg	3.7 mg/Kg	6.1 mg/Kg	NL	NL
Copper	25 mg/Kg	**74 mg/Kg**	**110 mg/Kg**	**81 mg/Kg**	**1,600 mg/Kg**	**320 mg/Kg**	**150 mg/Kg**	**360 mg/Kg**	**660 mg/Kg**	**120 mg/Kg**	35.7 mg/Kg	197 mg/Kg
Iron	10,000 mg/Kg	16,000 mg/Kg	18,000 mg/Kg	8,400 mg/Kg	11,000 mg/Kg	19,000 mg/Kg	12,000 mg/Kg	16,000 mg/Kg	13,000 mg/Kg	20,000 mg/Kg	NL	NL
Lead	20 mg/Kg	**170 mg/Kg**	**180 mg/Kg**	34 mg/Kg	**91 mg/Kg**	**43 mg/Kg**	5.3 B mg/Kg	34 mg/Kg	**41 mg/Kg**	**190 mg/Kg**	35 mg/Kg	91.3 mg/Kg
Magnesium	1,700 mg/Kg	1,600 mg/Kg	3,000 mg/Kg	1,700 mg/Kg	1,400 mg/Kg	3,800 mg/Kg	3,700 mg/Kg	2,100 mg/Kg	2,600 mg/Kg	3,500 mg/Kg	NL	NL
Manganese	91 mg/Kg	120 mg/Kg	160 mg/Kg	80 mg/Kg	63 mg/Kg	160 mg/Kg	210 mg/Kg	160 mg/Kg	130 mg/Kg	190 mg/Kg	NL	NL
Nickel	6.1 mg/Kg	**21 mg/Kg**	15 mg/Kg	6.0 mg/Kg	8.3 mg/Kg	9.1 mg/Kg	13 mg/Kg	**19 J3 mg/Kg**	10 mg/Kg	17 mg/Kg	18 mg/Kg	36 mg/Kg
Vanadium	19 mg/Kg	21 mg/Kg	28 mg/Kg	14 mg/Kg	18 mg/Kg	39 mg/Kg	25 mg/Kg	17 mg/Kg	19 mg/Kg	32 mg/Kg	NL	NL
Zinc	62 mg/Kg	**360 mg/Kg**	**250 mg/Kg**	92 mg/Kg	**840 mg/Kg**	**200 mg/Kg**	41 mg/Kg	**230 mg/Kg**	**290 mg/Kg**	**320 mg/Kg**	123 mg/Kg	315 mg/Kg
Mercury	ND	**0.49 mg/Kg**	**0.44 mg/Kg**	0.03 mg/Kg	**0.190 mg/Kg**	0.039 mg/Kg	ND	0.026 mg/Kg	ND	**0.34 mg/Kg**	0.174 mg/Kg	0.486 mg/Kg
Cyanide	1.2 mg/Kg	ND	ND	ND	ND	NA	ND	ND	ND	ND	NL	NL

START has reported the data as it was received from the EPA OEME Laboratory. START has not performed data validation of the EPA OEME Laboratory data. An internal data review was performed by EPA OEME Laboratory personnel prior to submittal to the EPA Contracting Officer's Representative.

Sediment samples SD-03 through SD-06 and SD-12 were collected form the Draniage Ditch, SD-07 and SD-08 were collected from Sumner Brook Upstream of the Site, and SD-09 through SD-11 were collected from Sumner Brook Downstream of the Site.
NOAA SQuiRT TELs and PELs represent the level at which adverse effects to benthic organisms are expected. TELs represent the concentration below which adverse effects are expected to occur only rarely. PELs represent the level above which adverse effects are frequently expected to occur. Screening with conservative, lower-threshold values (e.g. TELs) ensure, with a high degree of confidence, that any contamination sources eliminated from future consideration pose no potential threat. Conversely, it does not predict toxicity. Upper threshold values (e.g. PELs) identify compounds which are more probably elevated to toxic levels. NOAA SQuiRTs TELs and PELs were developed for screening purposes only. The NOAA SQuiRT TELs and PELs are not enforceable by law, nor do they constitute criteria or clean-up levels, and for the purpose of this evaluation are included for comparison purposes only.
Bolded values indicate the compound or element was detected at a concentration equal to or greater than its respective NOAA SQuiRTs TEL and/or PEL values in freshwater sediment.

Bolded values indicate the compound or element was detected at a concentration equal to or greater than its respective NOAA SquiRTs TEL and/or PEL values for freshwater sediment.
* High Level VOC Analysis is reported as lab did not provide analytical results for the low/medium level analysis.
† Indicates that the NOAA SQuiRTs TEL and PEL for total PCBs is listed.
Notes:
Preservative Blank (PB-01) was analyzed using the VOAs low level method. 2-propanone (acetone) and Tetrahydrofuran were detected in the preservative blank at 7.4 µg/Kg and 35 µg/Kg, respectivly.
ND = Not Detected. The compound was analyzed for but not detected above the sample specific reporting limit.
NA = Not Analyzed. Sediment sample SD-08 was collected for Metals including Mercury analysis only and was not analyzed for VOCs, SVOCs, PCBs, or Cyanide.
VOC = Volatile Organic Compound.
SVOC = Semi-volatile Organic Compound.
PCB = Polychlorinated Biphenyl.
J = Estimated Value.
J3 = Estimated value due to relative percent difference result outside acceptance criteria.
B = Analytie is associated with the lab blank or trip blank contamination.
µg/Kg = micrograms per kilogram.
L = Estimated value is below the calibration range.
NOAA SQuiRTs = National Oceanic and Atmospheric Administration Screening Quick Reference Tables.
mg/Kg = milligrams per kilogram.
NL = The associated NOAA SQuiRTs TEL and/or PEL is not listed.
TEL = Threshold Effects Level.
PEL = Probable Effects Level.