



**Site Assessment Report
Gerry Curtis Park (HWR-777)**

1901 NW 24th Avenue
Miami, Florida

Prepared for:

City of Miami



Miami Riverside Center
444 Southwest 2nd Avenue, 8th Floor
Miami, Florida 33130

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April 21, 2014
File No. 09213010.24

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INTRODUCTION

SCS Engineers (SCS), on behalf of the City of Miami (City), prepared this site assessment report (SAR) for Gerry Curtis Park (site), located at 1901 NW 24th Avenue, Miami, Florida, pursuant to the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (DERM) January 6 and January 30, 2014, letters (**Appendix A**). Sampling and analysis was conducted in accordance with the February 13, 2014 sampling plan and DERM's February 19, 2014 modifications (**Appendix B**).

BACKGROUND

Gerry Curtis Park is an approximately 25-acre park, which includes a football field, baseball field, basketball courts, a playground and a swimming pool. See **Figure 1** for a Site Location Map depicting the location of the site with respect to local landmarks.

On December 17 and 20, 2013, inspections were conducted at the site as part of a screening effort of City-owned parks to identify sites potentially impacted by incinerator ash. During the inspections, solid waste was observed at the surface in non-vegetated areas. In response to the findings, the City closed the park to the public on December 20, 2013. On December 23, 2013, SCS collected seven soil samples (Curtis 1-7) from the zero to six inch (0-0.5') interval for analyses targeting barium, cadmium, aluminum, antimony, arsenic, chromium, copper, iron, lead and mercury. Soil analyses confirmed the presence of antimony, arsenic, barium, copper, iron and lead above the soil cleanup target levels (SCTLs); these results are included on summary tables provided herein. In response to these findings and the requirements stipulated in the above-referenced DERM letters, visual solid waste delineation, soil assessment, groundwater assessment and localized source removal were conducted, as detailed below.

SURROUNDING AREA WELL SURVEY

On March 18, 2014, an Area of Interest Report was received from the South Florida Water Management District (SFWMD). The report indicated that there are no water use permits on file for potable/non-potable wells located within an approximately one-mile radius of the site. A copy of the Area of Interest Report is provided in **Appendix C**.

SOURCE REMOVAL

Due to concentrations reported in soil sample Curtis 4 (0-0.5') collected on December 23, 2013, and in accordance with the January 30, 2014 DERM correspondence, a localized source removal was conducted by a City contractor on February 3, 2014. An approximately 270-square foot area was excavated to a depth of 2 feet below ground surface (bgs). Approximately 23 tons of excavated material was disposed at Medley Landfill and the excavation was backfilled with clean fill from Tropical Sands, Inc. to bring the area back to grade. Soil sample Curtis 4 (0-0.5') was analyzed for Total Characteristic Leachate Procedure (TCLP) lead for disposal characterization. Results of the TCLP analysis demonstrated that the soil is not a RCRA hazardous waste. Copies of the disposal manifests and fill tickets are provided in **Appendix D**.

Prior to backfilling, SCS collected confirmation sidewall soil samples. Four soil samples, SB-4(1) through SB-4(4), were collected from the zero to six inch (0-0.5') interval and analyzed for antimony, arsenic, barium, chromium, copper, iron and lead. Concentrations were reported below the SCTLs, with the exception of arsenic which was reported between 7.0 mg/kg and 16 mg/kg.

SITE ASSESSMENT ACTIVITIES

Assessment activities were generally conducted in two phases: 1) visual solid waste delineation, and 2) soil sampling and analyses. Based on the findings from the visual delineation, a sampling and analysis plan was developed and submitted to DERM for approval, and was subsequently implemented. Some additional sampling requested by DERM, mainly in the baseball field, was conducted following the initial results discussed in the background section, to evaluate potential exposure in that portion of the park. The assessment activities are discussed below.

Visual Delineation of Solid Waste

An electromagnetic (EM) survey was conducted by Spotlight Geophysical Services at the site on January 24, 2014. The EM survey targeted the artificial turf football field, bonded rubber track and the immediately adjacent area, in an attempt to identify buried solid waste using a non-invasive method. A copy of the EM Survey is provided as **Appendix E**.

The buried solid waste in the remaining areas of the park was visually delineated using direct push soil borings. From January 27 through February 4, 2014, SCS advanced approximately 170 soil borings throughout the park, including the pool and boat ramp area located south of North NW River Drive and the empty lot east of the baseball field. Based on the size of the park, a sampling grid approximately 75 feet by 75 feet on center was used for horizontal delineation. Vertical delineation was accomplished by advancing each boring to the depth at which the solid waste terminated. **Figure 2** illustrates the delineation soil boring locations and the visible solid waste. The associated soil boring logs are provided as **Appendix F**. A summary of visible solid waste is presented on **Table 1**.

Soil and Groundwater Sampling

Pursuant to DERM's request, SCS advanced nine soil borings (SB-8 through SB-17) using the direct push method within the limits of the baseball field on January 31, 2014. Soil samples were collected from the zero to six inch (0-0.5') and six inch to two foot (0.5'-2') intervals at each of the ten locations.

In accordance with the February 19, 2014 sampling plan approval, SCS advanced 63 soil borings (SB-18 through SB-81) and sampled four temporary groundwater monitoring wells. Soil samples were collected from each boring location at varying intervals from land surface to a maximum depth of two feet bgs for laboratory analyses. **Figure 3** illustrates the soil and groundwater sampling locations. The table provided in the February 13, 2014 sampling plan (**Appendix B**) presents the soil intervals collected at each boring location. Soil boring logs are provided as **Appendix F**.

Investigation-derived wastes (IDW - excess soil not used for analyses, and decontamination, development and purge water) accumulated during assessment efforts were placed in 55-gallon drums for proper off-site disposal. The drums will remain onsite in a secure location until assessment is deemed complete.

Laboratory Analyses

Laboratory analytical reports, including quality control information, chain-of-custody records and benzo(a)pyrene and dioxin conversion tables are provided in **Appendix G**. Samples were analyzed by TestAmerica, a NELAC accredited laboratory, as follows (see also the sampling plan table provided in **Appendix B**):

- Soil samples SB-8 through SB-17 were analyzed for antimony, arsenic, barium, copper, lead and polycyclic aromatic hydrocarbons (PAHs).
- Soil samples SB-18 through SB-81 were analyzed for antimony, arsenic, barium, copper, iron, and lead. In addition, select samples within the solid waste footprint were analyzed for aluminum, cadmium, chromium, mercury, selenium, silver, polychlorinated biphenyl (PCBs) and dioxins.
- Groundwater samples TMW-1 through TMW-4 were analyzed for aluminum, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, mercury, selenium, silver, PCBs and dioxins.

RESULTS AND DISCUSSION

Delineation of Solid Waste

In general, surficial solid waste was observed in non-vegetated areas (i.e., around bases of trees and fences where herbicide is sprayed, and densely shaded areas, such as the playground and beneath bleachers). Buried solid waste was identified throughout the site predominantly from land surface to a depth of approximately four feet bgs, with the exception of the eastern parking lot and pool area, which exhibited localized areas of buried waste. Marginal areas of solid waste were observed below four feet bgs, to a depth of approximately eight feet. **Figure 2** illustrates the visual solid waste impacts.

Soil Analytical Results

Soil analytical results are summarized in **Tables 2** and **3** and depicted on **Figure 4** through **Figure 6**. Dioxin conversion tables are presented in **Appendix G**. **Figure 8** illustrates the depth of clean soil coverage based on the visual delineation and soil analytical data.

In general, samples collected onsite, in the right of way (ROW) east of the baseball field, and within the northern ROW (NW 20th Street) reported elevated levels of heavy metals, specifically antimony, arsenic, barium, copper, iron, and lead, above the residential SCTLs, primarily in soil samples with visible solid waste.

Results from soil samples that did not contain visible solid waste were generally reported as BDL or below the SCTLs, with the exception of some samples collected from intervals which

abutted an interval with observed solid waste. Arsenic was reported above the SCTL in several samples collected outside the solid waste footprint; however, the reported concentrations are within DERM's anthropogenic background range (Miami-Dade County Anthropogenic Background Study, April 3, 2014).

Dioxins, which were analyzed in a total of twenty-five samples, were reported above the residential SCTL in twelve samples and above the commercial SCTL in two samples, primarily in soil samples with visible solid waste. However, it is our understanding that the concentrations are less than the screening criteria utilized by the Florida Department of Health.

PAH concentrations from samples collected within the baseball field and its perimeter were reported below the detection limit (BDL) or below the SCTLs. PCBs, which were analyzed in select samples, were reported either BDL or below the SCTL.

Groundwater Analytical Results

Analytical results for groundwater samples are summarized in **Table 4** and depicted on **Figure 7**. Dioxin conversion tables are presented in **Appendix G**.

The samples collected from TMW-2 reported antimony above the groundwater cleanup target level (GCTL). The sample collected from TMW-3 exceeded the aluminum GCTL; however, it is unlikely that the elevated concentration is leaching from the soil since aluminum concentrations in soil are generally consistent with the anthropogenic background range. Iron was detected above the GCTL at TMW-1, TMW-3 and TMW-4, but within the natural background range (Background Concentrations of Iron in Groundwater in Miami-Dade County, December 8, 2005). The remaining COCs were reported BDL or below the GCTLs.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings above, SCS concludes the following:

- The extent of the solid waste footprint and the heavy metal impacts have been delineated onsite, with the exception of the eastern property boundary abutting the residential area and the northern ROW along NW 20th Street.
- There is sufficient onsite data to develop a Corrective Action Plan for the park.
- COC's do not appear to be leaching into the groundwater with the exception of antimony at TMW-2.

SCS recommends the following:

- Obtain offsite access as needed.
- Conduct soil sampling and analyses to the north and east within the upper two feet of soil near SB-72, SB-73, SB-76, SB-78, SB-79, SB-80 and SB-81 to complete delineation in these areas
- Install and sample a permanent monitoring well in the vicinity of TMW-2 and analyze for antimony

- Prepare a CAP for the park