



Haley & Aldrich, Inc.  
7926 Jones Branch Drive  
Suite 870  
McLean, VA 22102  
703.336.6200

## MEMORANDUM

30 November 2015  
File No. 40223-002

TO: McKissack & McKissack  
Mark Babbitt, P.E.

FROM: Haley & Aldrich, Inc.  
David A. Schoenwolf, P.E.  
Dana Kennard, P.E.

SUBJECT: Addendum to the Executive Summary  
Voluntary Cleanup Program  
Buzzard Point D.C. United Soccer Stadium Development  
Washington, D.C

This "Addendum to the Executive Summary" provides clarification of the groundwater conditions at the eight Buzzard Point parcels located in southwest Washington, D.C. (Site) that will be redeveloped as the new D.C. United professional soccer stadium. An "Executive Summary" dated 13 October 2015 was prepared to summarize the information provided in the "Revised Cleanup Action Plan" (CAP) dated 30 September 2015.

Documented environmental Site investigations were conducted at the Site since 1990. A recent geotechnical engineering investigation was performed to gather soil and groundwater data for foundation design of the new stadium. A review of the results of the environmental and geotechnical investigations indicates that the Site is underlain by a surficial layer of fill soil to approximately 10 feet below ground surface (bgs) that consists of clayey sand and sandy clay with variable amounts of gravel and small quantities of construction debris. Below the fill layer, there is a stratum of natural Alluvium soil to approximately 35 feet bgs that primarily consists of clay with sands and clayey gravel. The Alluvium is underlain by natural Terrace deposits generally consisting of dense to very dense sandy gravel and gravelly sand. The Potomac Formation underlies the Terrace deposits and generally consists of dense silty sand and hard clay. Bedrock was not encountered during previous investigations. The subsurface profile showing the stratification is provided as Figure 1.

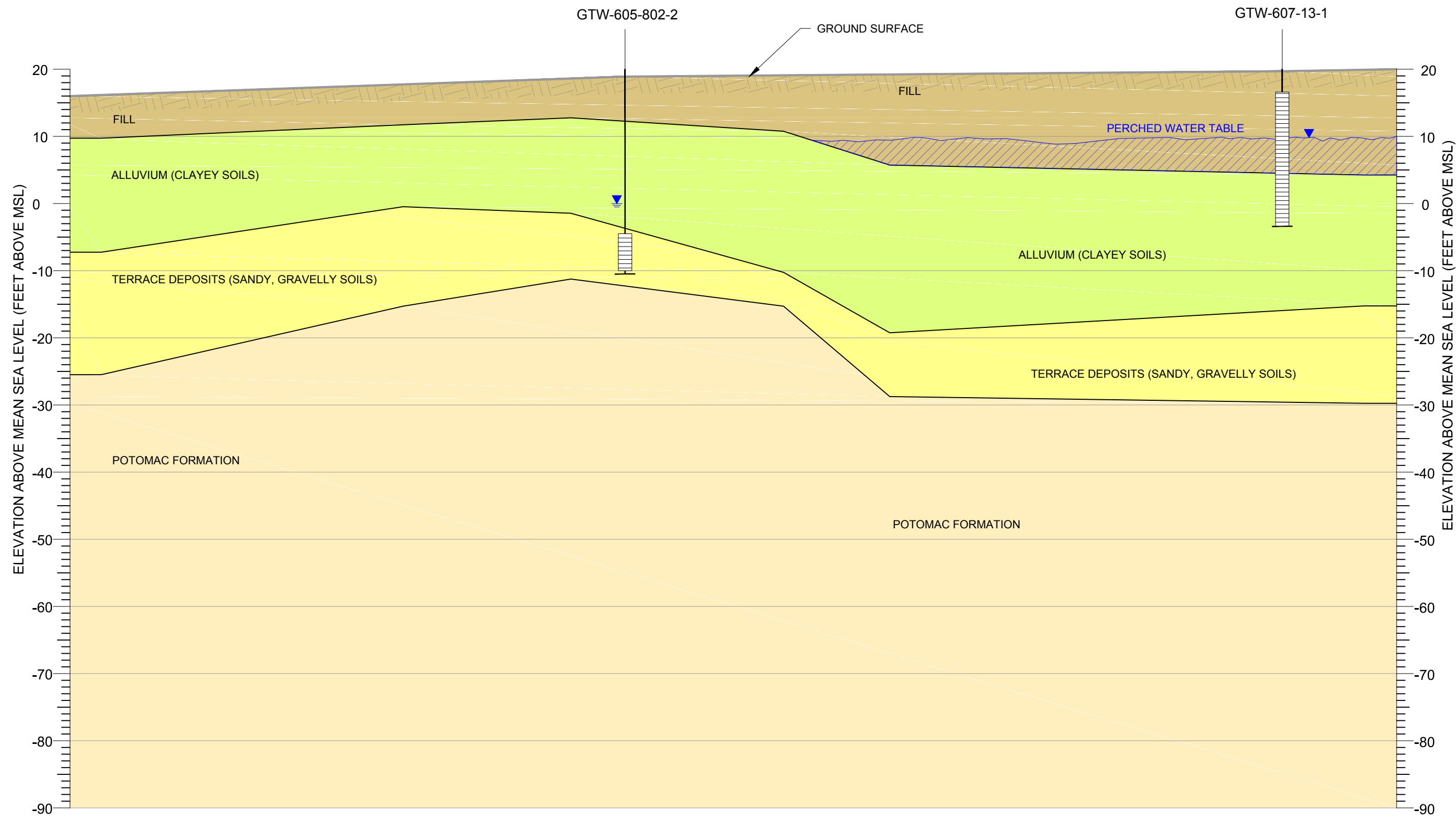
Groundwater monitoring wells were installed during the various phases of environmental investigations and the recent geotechnical investigation to investigate Site groundwater. Since the stratification is variable throughout the Site, some wells were screened in the Alluvium stratum (clay soils) and some wells were screened in the Terrace deposit stratum (sandy gravel, gravelly sand). Groundwater monitoring wells GTW-605-802-2 and GTW-607-13-1 shown in Figure 1 depict these different screen

interval scenarios. Water level measurements and analytical results collected at wells screened in the Alluvium stratum may not be representative of the regional groundwater table since groundwater would not easily migrate through this layer and into the well screen. A review of the groundwater monitoring well installation logs and direct-push soil borings (advanced during environmental investigations) identified two water tables: the perched water table at approximately 10 feet bgs and the regional groundwater table at approximately 20 feet bgs, consistent with the nearby Anacostia River level. It is therefore likely that water level measurements and analytical results collected at groundwater monitoring wells screened in the Alluvium stratum are representative of the identified perched water.

A perched water zone is typically formed by precipitation infiltrating through the unsaturated zone (fill layer) through pore spaces in the soil, collecting on the relatively impermeable clay layer (Alluvium stratum) above the true stabilized groundwater table as shown in Figure 1. The Site stratigraphy is conducive to perched water formation and supported by previous Site investigation results.

Based on current understanding of Site geology and redevelopment plans, the perched water table may be encountered during Site redevelopment but regional groundwater will not be encountered. If perched water is encountered and localized dewatering is required, the water will be treated, if necessary, prior to discharge to the municipal stormwater sewer system. As stated in the CAP, groundwater monitoring will be addressed under separate cover.

MOBINI, DARIUSH Printed: 11/30/2015 2:31 PM Layout: A-A  
 G:\40223 BUZZARDPOINT\GLOBAL\CAD\40223-002-0001-GEOLOGICALPROFILE.DWG



- LEGEND**
- FILL
  - ALLUVIUM
  - TERRACE DEPOSITS
  - POTOMAC FORMATION
  - PERCHED WATER LEVEL
  - GROUNDWATER ELEVATION LEVEL

- EXPLORATION LEGEND**
- EXPLORATION DESIGNATION
  - SCREENED INTERVAL

**HALEY ALDRICH** BUZZARD POINT DC UNITED SOCCER STADIUM STADIUM DEVELOPMENT AREA WASHINGTON D.C.

**GENERALIZED GEOLOGICAL PROFILE**

SCALE: NOT TO SCALE  
 NOVEMBER 2015

**FIGURE 1**