

CHATHAM COUNTY PURCHASING DEPARTMENT

ADDENDUM NO. 3 TO BID NO. 13-0118-4


FOR: TURNER'S CREEK BOAT RAMP IMPROVEMENTS

PLEASE SEE THE FOLLOWING FOR ADDITIONS, CLARIFICATIONS AND/OR CHANGES:

1. See attached additional Responses to Questions Received. (1 sheet)
2. Replace the Bid Sheets that was issued with Addendum 2 and replace with the attached *Revised* Bid Sheets. (2 sheets)
3. See attached *Geotechnical Report - Turner's Creek Boat Ramp Area* (11 sheets)

THE BID OPENING REMAINS:
2PM, WEDNESDAY, FEBRUARY 26, 2014.

1-16-14
DATE


ROBERT E. MARSHALL
SENIOR PROCUREMENT SPECIALIST
CHATHAM COUNTY

Turner's Creek Bid Addendum #3

1. What water testing will be required? (GA well screen, RAD samples, Salinity...)
Testing shall be in accordance with the Georgia EPD Minimum Standards for Public Water Systems, Current Edition. The physical and chemical "screening" of the raw water shall be performed for the following parameters:

pH	Zinc
Alkalinity (as CaCO ₃)	Iron
Hardness (as CaCO ₃)	Manganese
Chloride	Sulfate
Fluoride	Turbidity (NTUs)
Nitrate (as N)	Carbon dioxide
Nitrite (as N)	Color (color units)
Total Nitrate & Nitrite (as N)	Total Dissolved Solids
Salinity	

The "screening" shall be completed by an EPD acceptable water laboratory. A copy of the "screening" results shall be provided to Chatham County and Engineer at which time a decision on the well alternative to be selected.

2. Do you have any information on the existing well? (Structure, year completed, was it grouted? Does not appear to be a slab)
On February 16, 2011 Thomas & Hutton visited the site to examine the existing well. At that time, there was a visible well pump control box with a name plate. Based on the information on the plate, the pump was a 1 horsepower, 230 volt, single phase Goulds pump with control box model 00064. The pump was not run at that time. No additional information about the existing well is known.
3. Electrical tie in: how far away is available power for us to tie into
The power feed for the well is to come from the proposed building and grinder pump station, approx. 150' away. Refer to the electrical plans for the connection. Any additional electrical connections made by the contractor shall be coordinated by the Contractor and completed at the Contractor's expense.
4. I don't see any specifications for these items (doors, hardware, toilet accessories and toilet partitions) after my first review of the plans? Is there any information available?
Refer to the structural and electrical sheets for information regarding the items in question. Contractor shall submit his proposed materials for approval as shop drawings.

Included with this Addendum:

1. Revised Bid Form (second revision) – revised ARV quantity and added plug valve

**TURNERS CREEK BOAT RAMP IMPROVEMENTS
CHATHAM COUNTY BOARD OF COMMISSIONERS**

BID FORM - 2nd REVISION

ITEM	DESCRIPTION	QUANTITY		COST	
		NUMBER OF UNITS	UNIT MEASURE	PER UNIT	TOTAL COST
WATER DISTRIBUTION SYSTEM					
1	Connect 2" to Well	1	ea		\$ -
2	2" PVC SDR-21	206	lf		\$ -
3	2" Gate Valve & Box	1	ea		\$ -
4	1" Ball Valve & Box	1	ea		\$ -
5	Fittings	10	lb		\$ -
6	1" Frost-Proof Hydrant	1	ea		\$ -
7	1" Meter	1	ea		\$ -
8	1" RPZ	1	ea		\$ -
9	Single Service Connection	1	ea		\$ -
10	1" HDPE Service Line	30	lf		\$ -
11	Hydropneumatic Water Tank (incl. power, testing, insulating and appurtenances)	1	ea		\$ -
WATER DISTRIBUTION SYSTEM SUBTOTAL					\$ -
SANITARY SEWER SYSTEM					
1	Connect to Existing Manhole	1	ea		\$ -
2	6" Sewer - Ductile Iron (0'-6')	10	lf		\$ -
3	8" Sewer - PVC SDR-26 (16'-18')	13	lf		\$ -
4	4 ft Manhole (0'-6')	1	ea		\$ -
5	4 ft Manhole (16'-18')	1	ea		\$ -
6	4 ft Saddle Manhole on Existing Sewer (16'-18')	1	ea		\$ -
7	Single Service Connection	1	ea		\$ -
8	2" Air Release in Manhole	7	ea		\$ -
9	Plug Valve	1	ea		\$ -
10	Sewer Mag Meter	1	ea		\$ -
11	Fittings	832	lb		\$ -
12	Pump Station	1	ea		\$ -
13	Force Main (2" inch)	5191	lf		\$ -
14	Directional Drill Force Main (2" inch)	68	lf		\$ -
SANITARY SEWER SYSTEM SUBTOTAL					\$ -
GRADING & DRAINAGE					
1	Grading Complete	1	ls		\$ -
2	Unsuitable Material - Remove & Replace	800	cy		\$ -
3	5' Sidewalk	883	sy		\$ -
4	18" V. F. Curb & Gutter	4950	lf		\$ -
5	6" Header Curb	464	lf		\$ -
6	12" Flush Header Curb	814	lf		\$ -
7	Concrete Flume	7	ea		\$ -
8	Roof Inlet (4'x4')	6	ea		\$ -
9	Storm Manhole	1	ea		\$ -
10	Grate Inlet (4'x4')	2	ea		\$ -
11	4" Concrete Ditch	378	sy		\$ -
12	15" Tongue & Groove RCP	284	lf		\$ -
13	18" Tongue & Groove RCP	718	lf		\$ -
14	Control Structure No.1	1	ea		\$ -
15	Control Structure No. 2	1	ea		\$ -
16	Oyster Bags	780	sy		\$ -
17	Rip-Rap	24	sy		\$ -
18	Rip-Rap, Type 3	40	tons		\$ -
19	Straight Headwall with Flapgate	1	ea		\$ -
20	Gravity Wall	318	cy		\$ -
21	Gravel Construction Exit	2	ea		\$ -
22	Silt Fence (Type "A")	1618	lf		\$ -
23	Silt Fence (Type "C")	10838	lf		\$ -
24	Inlet Sediment Filter	10	ea		\$ -
25	Temporary Grassing	22000	sy		\$ -
26	Permanent Grassing	22000	sy		\$ -
27	2" Conduit	130	lf		\$ -
28	4" Conduit	260	lf		\$ -
29	6" Conduit	130	lf		\$ -
30	Traffic Control	1	ls		\$ -
31	Stop Sign	2	ea		\$ -
32	Yield Sign	2	ea		\$ -

TURNERS CREEK BOAT RAMP IMPROVEMENTS CHATHAM COUNTY BOARD OF COMMISSIONERS					
BID FORM - 2nd REVISION					
ITEM	DESCRIPTION	QUANTITY		COST	
		NUMBER OF UNITS	UNIT MEASURE	PER UNIT	TOTAL COST
33	Do Not Enter Sign	1	ea		\$ -
34	Pavement Markings	1	ls		\$ -
35	Guardrail, TP W	535	lf		\$ -
36	Guardrail Anchorage, TP1	1	ea		\$ -
37	Guardrail Bridge Connection	1	ea		\$ -
GRADING & DRAINAGE SUBTOTAL					\$ -
PAVING					
1	8" GABC	15577	sy		\$ -
2	2" - AC 12.5mm Superpave	15577	sy		\$ -
3	Prime Coat	4677	gl		\$ -
PAVING SUBTOTAL					\$ -
LANDSCAPING/IRRIGATION					
1	Landscaping/Irrigation Complete	1	ls		\$ -
RETAINING WALL SYSTEM					
1	Excavation	3750	cy		\$ -
2	Augercast Piles	9955	lf		\$ -
3	Reinforced Concrete	725	cy		\$ -
4	Temporary Shoring	500	lf		\$ -
RETAINING WALL SYSTEM SUBTOTAL					\$ -
BUILDING/PAVILION					
1	Combined Unit Price (Includes but is not limited to structure, mechanical, electrical, & plumbing)	1	ls		\$ -
BUILDING/PAVILION SUBTOTAL					\$ -
DOCK, PIER, AND BOAT RAMP					
1	Slab on Grade at Boat Ramp	1	ls		\$ -
2	Precast Concrete Piles	480	lf		\$ -
3	Concrete Floating Dock	1160	sf		\$ -
4	Pressure Treated Timber Construction at Pier	1	ls		\$ -
5	Aluminum Gangway	1	ea		\$ -
DOCK, PIER, AND BOAT RAMP SUBTOTAL					\$ -
PROJECT BASE BID TOTAL					
ADD ALTERNATE #1					
1	New Well Pump, Piping & Controls	1	ls		\$ -
ADD ALTERNATE #2					
2	New Well System	1	ls		\$ -

NAME / TITLE

COMPANY

ADDRESS

PHONE/FAX

E-MAIL

Geotechnical Report
Turner's Creek Boat
Ramp Area

Savannah, Georgia

WPC Project # WPC3207.00152

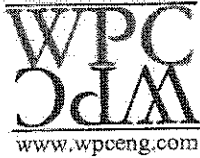
PREPARED FOR:

Chatham County Department of Engineering
Post Office Box 8161
Savannah, Georgia 31412

PREPARED BY:

WPC
2201 Rowland Avenue
Savannah, Georgia 31404
(912) 629-4000

October 31, 2007



ENGINEERING, ENVIRONMENTAL
& CONSTRUCTION SERVICES

LISTEN • RESPOND • PERFORM

October 31, 2007

Mr. Al Bungard, P.E.
Chatham County Department of Engineering
Post Office Box 8161
124 Bull Street
Savannah, GA 31412

**Report of Geotechnical Exploration and Pavement Evaluation
Turner's Creek Boat Ramp Area
Savannah, GA
WPC Project No. WPC3207.00152**

Dear Mr. Bungard:

WPC has completed the subsurface exploration and geotechnical engineering evaluation for the proposed **Turner's Creek Boat Ramp Area** in Savannah, GA. The purpose of the geotechnical study is to evaluate the surface and subsurface conditions at the boat ramp area and roadway area that are planned for improvement, and to provide recommendations on the pavement design and construction. The following paragraphs present a brief description of the proposed project and site conditions, our exploration procedures and findings, and recommendations on pavement design and construction.

1.0 PROJECT DESCRIPTION

The proposed site is located within the existing Turner's Creek Boat Ramp Areas and access road located at the intersection of Turner's Creek Road and Johnny Mercer Boulevard in Savannah, GA. An engineer and a technician from WPC visited the site on October 17, 2007 and performed hand auger (HA) borings and pavement coring at the proposed site. The area between HA1 and HA4 is paved with asphalt, and the other parts between HA4 and HA10 are covered with stone base. The existing asphalt between HA1 and HA4 is generally in very poor condition with many cracks and large potholes on the surface. The area between the existing paved boat ramp and Johnny Mercer Boulevard has been cleared recently. The ground surface is relatively even and no standing water

was observed during our field exploration. However, standing water was observed along the side of the road at the bottom of the slope. In fact, the area between the paved road and the slope of the bridge approach was very wet and unstable.

2.0 EXPLORATION PROCEDURES AND FINDINGS

The subsurface conditions of the site were explored with ten (10) hand auger (HA) borings (designated as HA1 to HA10). The hand auger borings were drilled to a depth of approximately 5 feet below ground surface (BGS). In addition to hand auger (HA) borings, three pavement cores (designated as A1 to A3) were performed on the existing asphalt pavement to evaluate the existing pavement system. The locations of hand auger (HA) borings and pavement cores are shown in the attached Site Aerial Photo with Boring Locations in the appendix.

Details of the subsurface conditions encountered by hand auger borings are shown in the appendix. These subsurface exploration records represent an interpretation of subsurface conditions at the test locations. The soil conditions between test locations may vary.

The hand auger borings encountered dark gray and brown silty fine sands in the upper 5 feet BGS across the entire explored area. Two (2) inches of asphalt underlain by stone base were encountered during the pavement coring. The thickness of the stone base was relatively thin and variable. No organic or other deleterious materials were encountered during our field exploration.

Groundwater was encountered by the hand auger (HA) borings at a depth of 2 to 3 feet BGS during field explorations. Groundwater levels can be anticipated to fluctuate with changes in weather conditions. Groundwater levels can be significantly higher after a major rainfall or in the rainy season. As such, the water table must be checked immediately prior to construction to assess its effect on site work and other construction activities. Rain and other surface runoff have accumulated in the area between the paved road and the slope, making the area very wet and unstable.

3.0 EVALUATIONS AND RECOMMENDATIONS

The following evaluations and recommendations are based upon our understanding of the proposed construction and the field exploration performed. If the above-described project conditions are incorrect or changed after this report, or subsurface conditions encountered during construction are different from those reported, WPC should be notified and these recommendations must be re-evaluated to make appropriate revisions.

3.1 Site Preparation Recommendations

The ease and difficulty of the site work will largely be dependent on the weather conditions and the contractor's means and methods in controlling surface drainage and protecting the subgrade. Site preparation should include site clearing, installation of site drainage system, densification, and proofrolling. The following paragraphs present our considerations and recommendations for the site and subgrade preparation.

3.1.1 Site Clearing

The existing asphalt pavement is in very poor condition and should be removed as part of the site preparation. The asphalt may be milled and re-used as fill for the new pavement. The underlying stone base should be stripped and stockpiled for re-use. After stripping the pavements, the existing sands should be generally suitable materials for the subgrade of the new pavement. After properly grading the site to the finished subgrade elevation, the subgrade should be proofrolled.

Hand auger HA5 and HA6 are located close to wetlands. We recommend a boundary of the wetland be delineated and the site plan should be developed in consideration of the wetland to avoid impacting the wetland from the proposed construction.

Some rather large pieces of rock were observed at the ground surface in the unpaved area below the bridge. These rocks are larger than graded aggregate base (GAB) material typically used for roadway construction. We recommend the existing rock be stripped and used as backfill material in the area in the bottom of the slope where mucking and backfilling is expected.



3.1.2 Site Drainage

We strongly recommend that a positive drainage system be installed prior to site preparation and grading activities to intercept surface water and to improve shallow drainage. For the currently very wet and unstable area between paved road and recently cleared area, we recommend the near surface soft soil (muck) be removed. A drainage system, such as sock drain should be installed along the road to intercept the surface runoff from the slope and to avoid accumulation of water in the area. The sock drain may consist of a 8-inch diameter perforated pipes wrapped with filter fabric and placed in gravel trench.

3.1.3 Densification and Proofrolling

The entire subgrade should be densified with a heavy-duty vibratory roller to achieve a uniform subgrade. The subgrade for the roadway should be thoroughly proofrolled after the completion of densification. Proofrolling will help detect any isolated soft or loose areas that "pump", deflect or rut excessively, and also densify the near surface soils for pavement support. A fully loaded pneumatic tired tandem axle dump truck, capable of transferring a load of in excess of 20 tons, should be utilized for this operation. Proofrolling should be performed under the geotechnical engineer's observation. During proofrolling, areas where pumping, excessive deflection or rutting is observed after successive passes of the proofrolling equipment, should be undercut, backfilled and properly compacted.

3.1.4 Fill Material Considerations

Structural fill should be placed over a stable or stabilized subgrade. The soils to be used as structural fill should be free of organics, roots, or other deleterious materials. It should be non-plastic granular material containing less than 25 percent fines passing the No. 200 sieve.

All structural fills for roadways should be placed in thin (eight to ten inches loose) lifts and compacted to a minimum of 95% of the soil's modified proctor maximum dry density (ASTM D- 1557). Fill brought to the site should be within three percent (wet or dry) of the optimum moisture content. Some manipulation of the moisture content (such as wetting, drying) will be required during the filling operation to obtain the required degree



of compaction. The manipulation of the moisture content is highly dependent on weather conditions and site drainage conditions. Therefore, the contractor should prepare both dry and wet fill materials to obtain the specified compaction during grading. Sufficient density tests should be performed to confirm the required compaction of the fill material.

3.2 Pavement Recommendations

No traffic load information was available for pavement evaluation. Based on our understanding, the pavement will be mainly subjected to trailer operation for boats. Even though not very heavy, the slow moving and frequent turning of the trailers are very damaging to asphalt pavement. The following pavement sections are recommended for the new pavement. Both crushed granite stone and limerock are commonly used as GAB base in this area. The base course of the pavement should be compacted to a minimum of 95% of the material's Modified Proctor maximum dry density (ASTM D-1557).

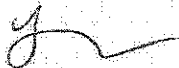
Table 1 Recommended Pavement Section

Layer		Thickness (inches)	Material Specification
	Surface Course	2.0	12.5 mm Superpave
	Intermediate Binder Course	0	
	Base Course	8.0	Graded aggregate base, granite
	Subgrade	12	Stable natural subgrade or fill compacted to 95% modified Proctor density

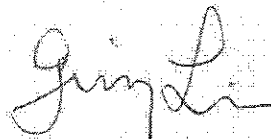
We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the information presented or if we can be of further assistance, please feel free to call us at (912) 629-4000.

Respectfully Submitted,

WPC, Inc.



Yong Tan, Ph.D.
Staff Geotechnical Engineer

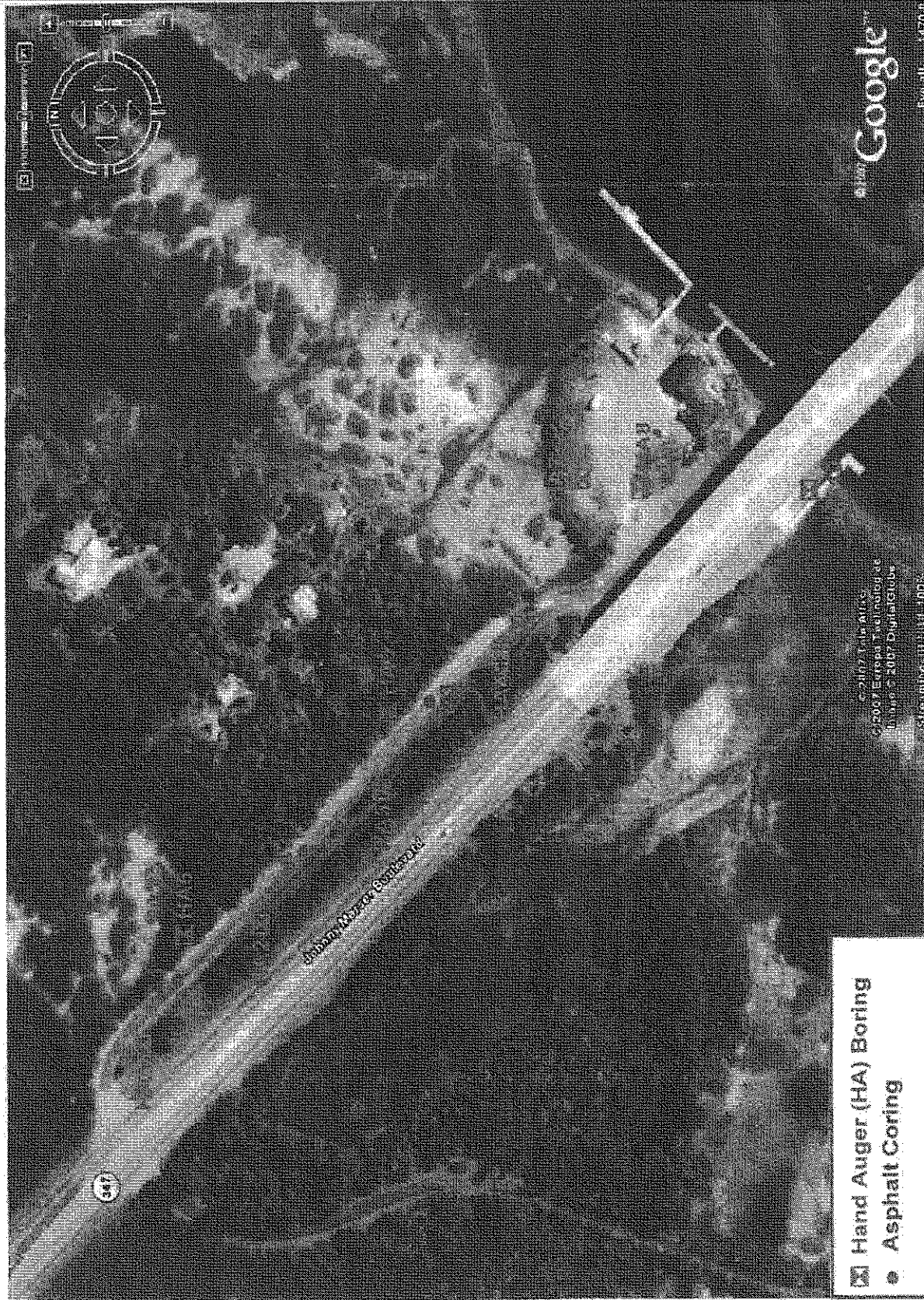


Guoming Lin, P.E., Ph.D.
VP/Chief Engineer

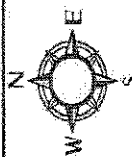
Cc: Mr. Doyle Kelley, P.E.
Thomas & Hutton Engineering Co

APPENDICES:

Site Aerial Photo with Boring Locations
Hand Auger (HA) Boring Logs



Hand Auger (HA) Boring
Asphalt Coring



SCALE: NTS
CHECKED BY: GL
DRAWN BY: YT
DATE: 10/17/2007



Engineering Environmental
& Construction Services

SITE AERIAL PHOTO WITH BORING LOCATIONS
TURNER'S CREEK BOAT RAMP AREA
SAVANNAH, GA
WPC 3207.001.52

Figure No.

I

Hand Auger Record

Project Name: Turner's Creek Boat Ramp Area

Project Number: WPC3207.00152

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HA 1		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-1.0	gray, brown, silty fine sands	SP/SM
1.0-2.0	gray, dark, silty fine sands	SP/SM
2.0-5.0	gray, brown, dark, silty fine sands	SP/SM
Ground Water @ 3.0 feet BGS		

HA 2		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-1.0	brown, silty fine sands	SP/SM
1.0-4.0	light-brown, dark, silty fine sands	SP/SM
4.0-5.0	dark, silty fine sands	SP/SM
Ground Water @ 3.0 feet BGS		

HA 3		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.0	dark, silty fine sands	SP/SM
2.0-3.0	dark, gray, silty fine sands	SP/SM
3.0-5.0	gray, silty fine sands	SP/SM
Ground Water @ 2.5 feet BGS		

HA 4		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.5	brown, silty fine sands	SP/SM
2.5-5.0	gray, brown, silty fine sands	SP/SM
Ground Water @ 3.0 feet BGS		

Hand Auger Record

Project Name: Turner's Creek Boat Ramp Area

Project Number: WPC3207.00152

Engineering Environmental
& Construction Services

HA 5		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-1.0	brown, silty fine sands	SP/SM
1.0-2.5	light-brown, silty fine sands	SP/SM
2.5-5.0	dark, brown, dark, silty fine sands	SP/SM
Ground Water @ 2.0 feet BGS		

HA 6		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.0	dark, gray, silty fine sands	SP/SM
2.0-3.0	dark, yellowish-brown, silty fine sands	SP/SM
3.0-5.0	dark, gray, silty fine sands	SP/SM
Ground Water @ 3.0 feet BGS		

HA 7		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.0	light-gray, silty fine sands	SP/SM
2.0-5.0	gray, yellowish-brown, silty fine sand	SP/SM
Ground Water @ 2.5 feet BGS		

HA 8		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.5	dark, brown, silty fine sands	SP/SM
2.5-5.0	dark, brown, silty fine sands with some shells	SP/SM
Ground Water @ 3.0 feet BGS		

Hand Auger Record

Project Name: Turner's Creek Boat Ramp Area

Project Number: WPC3207.00152

Engineering, Environmental
& Construction Services

HA 9		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.5	light-brown, silty fine sands	SP/SM
2.5-5.0	gray, silty fine sands	SP/SM
Ground Water @ 3.0 feet BGS		

HA 10		
Depth Below Grade (ft)	Material Description	USCS Classifications
0.0-2.0	light-brown, silty fine sands	SP/SM
2.0-3.0	dark, gray, silty fine sands	SP/SM
3.0-5.0	dark, gray, brown, silty fine sands	SP/SM
Ground Water @ 3.0 feet BGS		