

GEOTECHNICAL SUBSURFACE INVESTIGATION REPORT

Ballston Pond Geo Boring Arlington, Virginia



PREPARED FOR:

**RK&K
10306 Eaton Place
Willow Wood II, Suite 240
Fairfax, VA 22030**

PREPARED BY:



**AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706**

May 16, 2012

May 16, 2012

Attn: Mr. Bill Springer
RK&K
10306 Eaton Place
Willow Wood II, Suite 240
Fairfax, VA 22030

REF: Report of Subsurface Investigation and Studies
Ballston Pond Geo Boring
Arlington, Virginia
AB Job No. 12-033

Dear Mr. Springer:

AB Consultants, Inc. (ABC) is pleased to submit this soil report containing the results of the geotechnical investigation for the above referenced site. The project site is an existing stormwater management (SWM) pond that located in Arlington, Virginia. During our field operation, we noticed that large portion of the pond is covered with sediments and vegetation. A hiker path is found along the east and south boundary of the pond. The purpose of this study was to explore the subsurface conditions for the site improvement. It is understood that boardwalks that branch out from existing hiker path are proposed at various locations. Improvement may also include dredging of sediment in the SWM pond.

Field Investigation

Due to the limited accessibility of proposed boring locations, soil borings were only able to be performed by hand auger at site on April 27, 2012 by ABC. Borings were located in field by us and boring plan is included in the Appendix. To obtain information of the subsurface conditions, six (6) 5- to 7-ft deep borings were drilled on site. Boring depths were restricted by the shallow refusal and groundwater. A representative portion of sample was placed in a plastic bag and was transported to laboratory. Dynamic Cone Penetration (DCP) test were performed in accordance with ASTM Special Technical Publication #399 for each test pits at depth intervals of 1, 3 and 5 ft.

In the procedure of DCP test, the dynamic portable penetrometer is driven into the ground with a 15-pound hammer, free falling a distance of 20 inches. The blows required to advance the dynamic cone to a specified distance are recorded. The values are corrected to penetration resistance values which were obtained using the Standard Penetration Tests (SPT) in accordance with ASTM D1586. The values are shown on boring logs at the depths of their occurrence. The N-value is the sum of last two penetration resistance values.

Groundwater level was monitored in boring holes. Samples obtained from borings were inspected by a geotechnical engineer and the field logs were edited accordingly. The

final logs that indicate the subsurface conditions encountered are included in the Appendix. All samples obtained from soil borings will be retained in our laboratory for a period of thirty (30) days from the date of this report. They will be available for inspection during this period. After that time, the samples will be discarded.

Per the request of your office, three (3) water samples were also collected and forwarded to assigned testing laboratory for sediment analysis. Locations of water samples are included in the boring plan.

Laboratory Testing Program

Laboratory tests were performed on selected representative samples. Natural moisture contents were performed on all soil samples, and results are included in boring logs. Atterberg limits and sieve analysis were conducted on selected samples. Atterberg limits results are shown in test pits logs in correspondence with the sample depths and results of sieve analyses are presented in the Appendix. Results of some laboratory tests are summarized in the following table.

| SUMMARY OF LABORATORY TEST RESULTS | | | | | | | | | | |
|------------------------------------|-------------------|------------------|----|----------------------------|------|------|------|------|------|----------|
| Boring No. | Sample Depth (ft) | Atterberg Limits | | Sieve Analysis (% Passing) | | | | | | Classif. |
| | | LL | PI | 3/4" | 3/8" | #4 | #10 | #40 | #200 | |
| B-1 | 1 to 3 | - | - | 88.1 | 77.5 | 69.5 | 64.8 | 57.5 | 27.8 | SM |
| | 3 to 5 | 38 | 18 | - | - | - | - | - | 67.2 | CL |
| B-2 | 3 to 5 | - | - | 100 | 99.0 | 97.5 | 90.0 | 78.3 | 46.5 | SM |
| B-3 | 1 to 3 | - | - | 100 | 94.0 | 83.0 | 72.9 | 51 | 26.1 | SM |
| | 3 to 5 | - | - | 100 | 93.6 | 72.5 | 58.4 | 40.8 | 7.9 | SP-SM |
| B-4 | 3 to 5 | - | - | 87.2 | 86.7 | 84.1 | 83.3 | 71.9 | 19.7 | SM |
| B-5 | 1 to 3 | - | - | 92.8 | 86.4 | 78.8 | 62.3 | 17.5 | 1.4 | SP |
| B-6 | 3 to 5 | - | - | 100 | 87.7 | 83.9 | 78.5 | 55.5 | 18.5 | SM |

Subsurface Soil Conditions and Groundwater Observations

Various soil types were grouped into the major zones noted on the boring logs. A brief explanation of the terms and notes used in the logs is included with this report. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in situ, the transitions may be gradual. Detailed soil description and depth of various soil strata are given in boring logs, together with DCP blow counts with depths. In general, the encountered soils are grouped into major types and summarized as follows:

- Topsoil: Topsoil was encountered in all boring. Topsoil is defined as the more high-organic, weathered surficial soils horizon capable of supporting vegetation
- Type A: Below Topsoil, brown and gray silty fine sand to sand with gravel was encountered in most of all borings and extended 2.5-ft below existing ground or to completion depth of borings. Corrected N-values of these soil types were ranging from 7 to 24 blows per foot.

Type B: Localized brown fine sandy clay was encountered underneath Type A and extended to the completion depths in boring B-1. Corrected N-value of this soil type was 24 blows per foot.

Groundwater observations were made in boring during drilling, and after completion of drilling operations. As noted on boring logs, groundwater was observed in boring B-3, B-5 and B-6. Fluctuations in the level and quantity of ground water will occur due to variations in rainfall, temperature, soil permeability and other factors not evident at the time of the water level measurements recorded on test pit logs.

Findings and Summary

Based on information revealed from soil borings, the engineering properties of encountered soils are summarized in the following table. Soil parameters were based on laboratory results, empirical correlation from the corrected N-values and published information.

| SUMMARY OF ENCOUNTERED SOIL PROPERTIES | | | | | | |
|--|-----------------------|----------------------|---------------------|-------------------|--|--|
| Boring Number | DCP Test at Elevation | Sample Description | Uncorrected N-Value | Corrected N-Value | Range of Effective Unit Weight, γ (pcf) | Range of Friction Angle, ϕ (deg.) |
| B-1 | 254 | Silty fine sand (SM) | 11 | 11 | 115 to 120 | 28 to 32 |
| | 252 | Fine sandy clay (CL) | 37 | 24 | 115 to 120 | <15 |
| B-2 | 262 | Silty fine sand (SM) | 30 | 23 | 120 to 125 | 30 to 34 |
| | 260 | Silty fine sand (SM) | 35 | 24 | 120 to 125 | 30 to 34 |
| | 258 | Silty fine sand (SM) | 34 | 24 | 120 to 125 | 30 to 34 |
| B-3 | 259 | Silty fine sand (SM) | 16 | 16 | 115 to 120 | 28 to 32 |
| | 257 | Silty sand (SP-SM) | 14 | 14 | 115 to 120 | 30 to 34 |
| B-4 | 259 | Silty fine sand (SM) | 16 | 16 | 115 to 120 | 28 to 32 |
| | 257 | Silty fine sand (SM) | 32 | 24 | 120 to 125 | 30 to 34 |
| B-5 | 254 | Sand (SP) | 9 | 9 | 110 to 115 | 28 to 32 |
| | 252 | Sand (SP) | 9 | 9 | 110 to 115 | 28 to 32 |
| B-6 | 257 | Silty fine sand (SM) | 7 | 7 | 110 to 115 | 26 to 30 |
| | 255 | Silty fine sand (SM) | 7 | 7 | 110 to 115 | 26 to 30 |

Due to the site access restriction, field borings were manual dug at locations that were closed to the proposed improvements. Subsoil conditions may be varied. It is recommended that during construction of the boardwalk and improvement of SWM facility, the soil encountered at and below the planned structures elevations, to be verified in field by geotechnical engineer.

General Limitations

This report is based upon the data obtained from the test holes performed at indicated location and from any other information discussed in this report. This report does not reflect any variations that may occur across the site. If variations appear evident, the summary of this report should then be reviewed by ABC geotechnical engineer in light of the new information.

* * * * *

It has been a pleasure serving you on this project. If you have any questions regarding this report, or if we can be of further service in any way, please contact us.

Very truly yours,
AB Consultants, Inc.



Kim-Hou Chan, P.E.
Geotechnical & Field Services



APPENDIX

A. General Notes

B. Vicinity Map

C. Boring Plan

D. Boring Logs and Lab Test Results

GENERAL NOTES

Drilling and Sampling Symbols



N = Standard penetration, blows per foot of a 140 lbs hammer for 30" drop

RQD = Rock Quality Designation

LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index

Cohesionless Soils

If the sand or silt content of a soil is great enough, the soil becomes non-cohesive or semi-cohesive. The soil classification becomes SAND or SILT with the other soil constituents being modifying.

Based on N-Value

| | |
|---------------------------------|------------------------------|
| 0 to 4 Blows.....Very Loose | 30 to 59 Blows.....Dense |
| 5 to 9 Blows.....Loose | Over 60 Blows.....Very Dense |
| 10 to 29 Blows.....Medium Dense | |

Cohesive Soils

If clay content is sufficient so that clay dominates soil properties, then CLAY becomes the major soil constituent as modifier. Other minor soil constituents may be added according to classification breakdown for cohesion less soils: i.e. silty clay, trace of some sand, trace of gravel.

Based on N-Value

| | |
|----------------------------|-------------------------------|
| 0 to 3 Blows.....Very Soft | 16 to 30 Blows.....Stiff |
| 4 to 5 Blows.....Soft | 30 to 60 Blows.....Very Stiff |
| 6 to 16 Blows.....Firm | Over 61 Blows.....Hard |

Based on Penetrometer Value

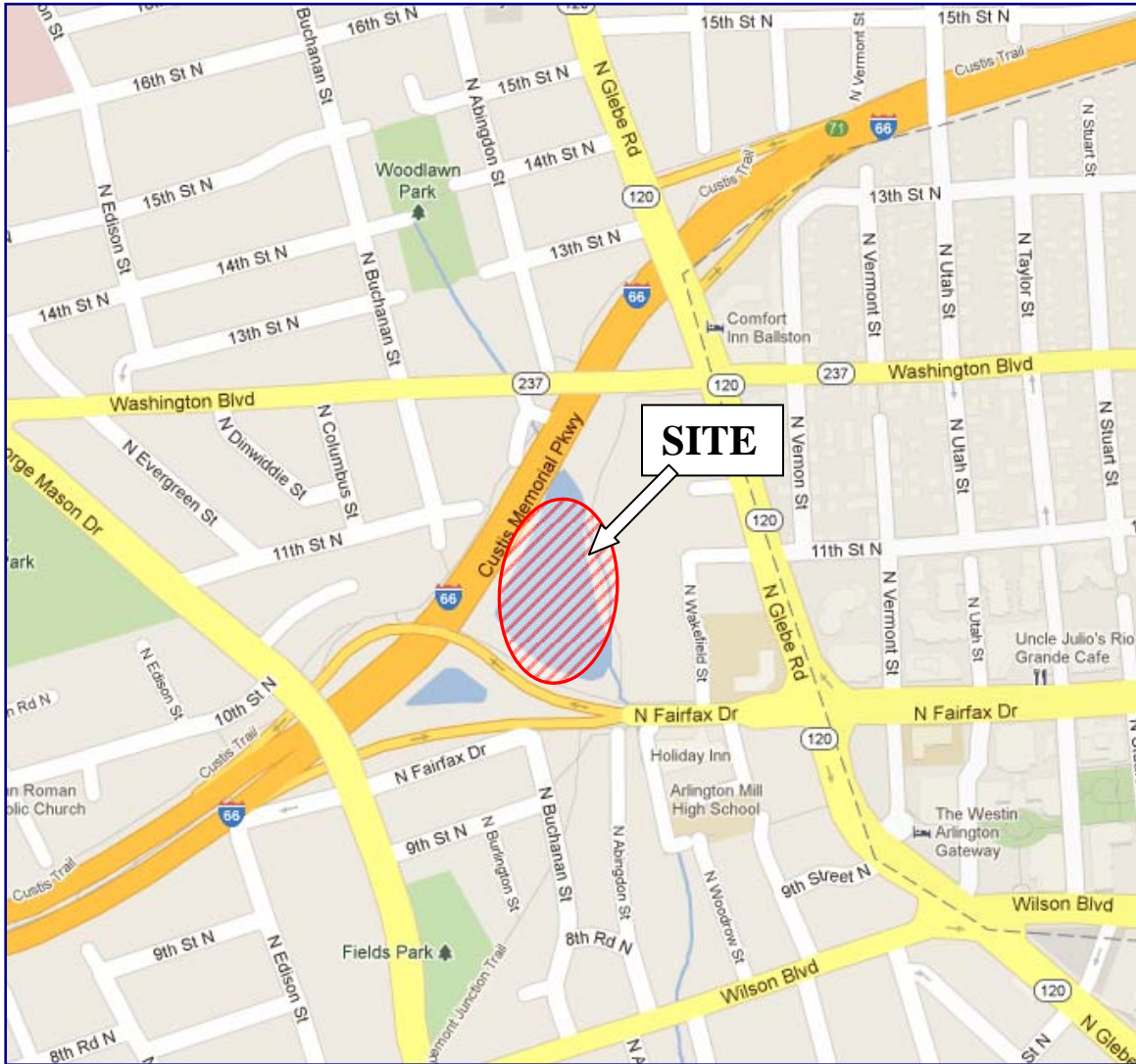
| | |
|--------------------------|-----------------------------|
| Below 0.25.....Very Soft | 1.00 to 1.99.....Stiff |
| 0.25 to 0.49.....Soft | 2.00 to 3.99.....Very Stiff |
| 0.50 to 0.99.....Firm | Over 4.00.....Hard |

Quantity Modifiers

| <u>Term</u> | <u>% of Dry Weight</u> |
|-------------|------------------------|
| trace | 0 to 10 |
| little | 11 to 20 |
| some | 21 to 35 |
| and/with | 36 to 50 |

Particle Size Identifications

| | |
|----------------|-------------------------------|
| Boulder | Over 8 inch diameter |
| Cobbles..... | 3 inch to 8 inch |
| Gravel..... | Coarse.....1 inch to 3 inch |
| | Medium.....1/2 inch to 1 inch |
| | Fine.....4.75 mm to 1/2 inch |
| Sand..... | Coarse.....2 mm to 4.75 mm |
| | Medium.....0.425 mm to 2 mm |
| | Fine.....0.075 mm to 0.425 mm |
| Silt/Clay..... | Below 0.075 mm |



VICINITY MAP
Ballston Pond Geo Boring
Arlington, Virginia

JOB NO.: 12-033
SCALE: N.T.S
DATE: 5/7/2012



BORING PLAN
 Ballston Pond Geo Boring
 Arlington, Virginia

JOB NO.: 12-033
 SCALE: N.T.S
 DATE: 5/7/2012

BORING LOG and LAB TEST RESULT

CLIENT: R.K.& K

PROJECT: Ballston Pond

ARCHITECT/ENGINEER:

SITE: Arlington Virginia

| SURFACE ELEV.: 255.0 ft. | GRAPHIC LOG | DEPTH (FT) | SAMPLES | | | | TESTS | | | | REMARKS/ ADDITIONAL DATA | |
|--|-------------|------------|------------------------------|--------|------|-----------------------------|--------------|----------------------|-------------|-------------------------|--------------------------------|--|
| | | | BLOWS/6" N - VALUE RQD | NUMBER | TYPE | IN. RECOVERED IN. DRIVEN | MOISTURE (%) | DRY DENSITY (PCF) | Qu (TSF) | % PASSING #200 SIEVE | | |
| 6" Topsoil | | 0.5 | | | | | | | | | | |
| 254.5 | | 0.5 | 5-5-6 N=11 | 1 | AU | 5.25 | 12 | | | 28 | | |
| Medium dense gray SILTY FINE SAND (SM) with mica, rock fragments and gravel | | | | | | | | | | | | |
| 252.5 | | 2.5 | 6-17-20 N=37 | 2 | AU | 5.25 | 17 | | | 67 | LL = 38 PL = 18 PI = 20 | |
| Dense brown FINE SANDY CLAY (CL) | | | | | | | | | | | | |
| 250.5 | | 4.5 | | | | | | | | | | |
| Auger Refusal @ 4.5 ft | | | | | | | | | | | | |

BORING LOG AB09 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/16/12

| WATER LEVEL OBSERVATIONS | | |
|--------------------------|-----|--------------|
| WL | Dry | @ Drilling |
| WL | Dry | @ 0 Hrs |
| WL | Dry | After 24 Hrs |



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 Fax: 301-306-3092

| | |
|------------------|-----------------------|
| STARTED: 4/27/12 | FINISHED: 4/27/12 |
| DRILL CO.: ABC | DRILL RIG: Hand Auger |
| DRILLER: ADP | ASST DRILLER: MB/JL |
| LOGGED BY: | APPROVED: |

CLIENT: R.K.& K

PROJECT: Ballston Pond

ARCHITECT/ENGINEER:

SITE: Arlington Virginia

| SURFACE ELEV.: 263.0 ft. | GRAPHIC LOG | DEPTH (FT) | SAMPLES | | | | TESTS | | | | |
|---|-------------|------------|----------------------|--------|------|--------------------------|--------------|-------------------|----------|----------------------|--------------------------|
| | | | BLOWS/6" N-VALUE RQD | NUMBER | TYPE | IN. RECOVERED IN. DRIVEN | MOISTURE (%) | DRY DENSITY (PCF) | Qu (TSF) | % PASSING #200 SIEVE | REMARKS/ ADDITIONAL DATA |
| 6" Topsoil | | 0.5 | | | | | | | | | |
| Dense brown SILTY FINE SAND (SM) with gravel and rock fragments | | 262.5 | 17-17-13 N=30 | 1 | AU | 5.25 | 12 | | | | |
| | | | 13-15-20 N=35 | 2 | AU | 5.25 | 17 | | | 47 | |
| | | 5 | 14-16-18 N=34 | 3 | AU | 5.25 | 16 | | | | |
| End of Boring @ 6 ft | | 6.0 | | | | | | | | | |

BORING LOG AB09 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/16/12

WATER LEVEL OBSERVATIONS

| | | |
|----|-----|--------------|
| WL | Dry | @ Drilling |
| WL | Dry | @ 0 Hrs |
| WL | Dry | After 24 Hrs |



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|------------------|-----------------------|
| STARTED: 4/27/12 | FINISHED: 4/27/12 |
| DRILL CO.: ABC | DRILL RIG: Hand Auger |
| DRILLER: ADP | ASS'T DRILLER: MB/JL |
| LOGGED BY: | APPROVED: |

CLIENT: R.K.& K PROJECT: Ballston Pond

ARCHITECT/ENGINEER: SITE: Arlington Virginia

| SURFACE ELEV.: 260.0 ft. | GRAPHIC LOG | DEPTH (FT) | SAMPLES | | | | TESTS | | | | |
|---|-------------|------------|----------------------|--------|------|--------------------------|--------------|-------------------|----------|----------------------|--------------------------|
| | | | BLOWS/6" N-VALUE RQD | NUMBER | TYPE | IN. RECOVERED IN. DRIVEN | MOISTURE (%) | DRY DENSITY (PCF) | Qu (TSF) | % PASSING #200 SIEVE | REMARKS/ ADDITIONAL DATA |
| 8" Topsoil | | 0.7 | | | | | | | | | |
| Medium dense brown and gray SILTY FINE SAND (SM) with clay and gravel | | 3.0 | 6-6-10 N=16 | 1 | AU | 5.25 | 17 | | | 26 | |
| Medium dense brown SILTY SAND (SP-SM) with some gravel | | 5.0 | 6-6-8 N=14 | 2 | AU | 5.25 | 25 | | | 8 | |
| Borehole kept caving in, cannot advance. End of Boring @ 5 ft | | | | | | | | | | | |

BORING LOG AB09 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/16/12

| WATER LEVEL OBSERVATIONS | | | |
|--------------------------|---|-----|--------------|
| WL | ▽ | 2.5 | @ Drilling |
| WL | ▼ | 2.5 | @ 0 Hrs |
| WL | ▽ | 0.5 | After 24 Hrs |



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| | | | |
|------------|---------|---------------|------------|
| STARTED: | 4/27/12 | FINISHED: | 4/27/12 |
| DRILL CO.: | ABC | DRILL RIG: | Hand Auger |
| DRILLER: | ADP | ASST DRILLER: | MB/JL |
| LOGGED BY: | | APPROVED: | |

CLIENT: R.K.& K

PROJECT: Ballston Pond

ARCHITECT/ENGINEER:

SITE: Arlington Virginia

| SURFACE ELEV.: 260.0 ft. | GRAPHIC LOG | DEPTH (FT) | SAMPLES | | | | TESTS | | | | REMARKS/ ADDITIONAL DATA | |
|---|-------------|------------|------------------------------|--------|------|-----------------------------|--------------|----------------------|-------------|-------------------------|--------------------------------|--|
| | | | BLOWS/6" N - VALUE RQD | NUMBER | TYPE | IN. RECOVERED IN. DRIVEN | MOISTURE (%) | DRY DENSITY (PCF) | Qu (TSF) | % PASSING #200 SIEVE | | |
| 6" Topsoil | | 0.5 | | | | | | | | | | |
| Medium dense to dense gray SILTY FINE SAND (SM) with roots | | 259.5 | 6-7-9 N=16 | 1 | AU | 5.25 | 11 | | | | | |
| | | | 27-16-16 N=32 | 2 | AU | 5.25 | 11 | | | 20 | | |
| Auger Refusal @ 4 ft | | 4.0 | | | | | | | | | | |
| Hand auger was done at two (2) other locations in 5 ft radius | | 256.0 | | | | | | | | | | |

WATER LEVEL OBSERVATIONS

| | | |
|----|-----|--------------|
| WL | Dry | @ Drilling |
| WL | Dry | @ 0 Hrs |
| WL | Dry | After 24 Hrs |



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| | |
|------------------|-----------------------|
| STARTED: 4/27/12 | FINISHED: 4/27/12 |
| DRILL CO.: ABC | DRILL RIG: Hand Auger |
| DRILLER: ADP | ASST DRILLER: MB/JL |
| LOGGED BY: | APPROVED: |

BORING LOG AB09 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/16/12

CLIENT: R.K.& K

PROJECT: Ballston Pond

ARCHITECT/ENGINEER:

SITE: Arlington Virginia

| SURFACE ELEV.: 255.0 ft. | GRAPHIC LOG | DEPTH (FT) | SAMPLES | | | | TESTS | | | | |
|--|-------------|------------|----------------------|--------|------|--------------------------|--------------|-------------------|----------|----------------------|--------------------------|
| | | | BLOWS/6" N-VALUE RQD | NUMBER | TYPE | IN. RECOVERED IN. DRIVEN | MOISTURE (%) | DRY DENSITY (PCF) | Qu (TSF) | % PASSING #200 SIEVE | REMARKS/ ADDITIONAL DATA |
| 6" Topsoil | | | | | | | | | | | |
| 0.5 | 254.5 | | | | | | | | | | |
| Loose dark brown SAND (SP) with some gravel | | | 4-4-5 N=9 | 1 | AU | 5.25 | 17 | | | | |
| | | | 4-5-4 N=9 | 2 | AU | 5.25 | 15 | | 1 | | |
| 4.5 | 250.5 | | | | | | | | | | |
| Borehole kept caving in, cannot advance. End of Boring @ 4.5 ft | | | | | | | | | | | |

BORING LOG AB09 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/16/12

| WATER LEVEL OBSERVATIONS | | | |
|--------------------------|---|------|--------------|
| WL | ▽ | 1.75 | @ Drilling |
| WL | ▽ | 1.5 | @ 0 Hrs |
| WL | ▽ | 0.75 | After 24 Hrs |



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| | | | |
|------------|---------|---------------|------------|
| STARTED: | 4/27/12 | FINISHED: | 4/27/12 |
| DRILL CO.: | ABC | DRILL RIG: | Hand Auger |
| DRILLER: | ADP | ASST DRILLER: | MB/JL |
| LOGGED BY: | | APPROVED: | |

CLIENT: R.K.& K PROJECT: Ballston Pond

ARCHITECT/ENGINEER: SITE: Arlington Virginia

| SURFACE ELEV.: 258.0 ft. | GRAPHIC LOG | DEPTH (FT) | SAMPLES | | | | TESTS | | | | |
|--|-------------|------------|----------------------|--------|------|--------------------------|--------------|-------------------|----------|----------------------|--------------------------|
| | | | BLOWS/6" N-VALUE RQD | NUMBER | TYPE | IN. RECOVERED IN. DRIVEN | MOISTURE (%) | DRY DENSITY (PCF) | Qu (TSF) | % PASSING #200 SIEVE | REMARKS/ ADDITIONAL DATA |
| 6" Topsoil | | 0.5 | | | | | | | | | |
| Loose dark brown SILTY FINE SAND (SM) | | 257.5 | 3-3-4 N=7 | 1 | AU | 5.25 | 55 | | | | |
| | | | 3-4-3 N=7 | 2 | AU | 5.25 | 45 | | 19 | | |
| | | 5.0 | | | | | | | | | |
| Borehole kept caving in, cannot advance. End of Boring @ 5 ft | | | | | | | | | | | |

BORING LOG AB09 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/16/12

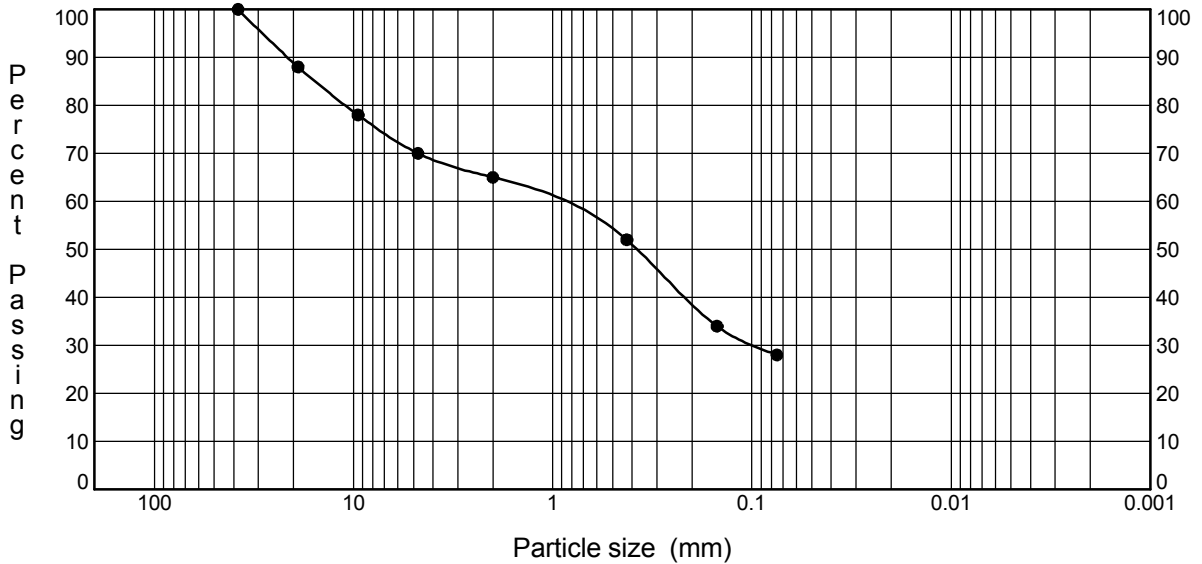
| WATER LEVEL OBSERVATIONS | | | |
|--------------------------|---|------|--------------|
| WL | ▽ | 1.75 | @ Drilling |
| WL | ▽ | 1.5 | @ 0 Hrs |
| WL | ▽ | 1 | After 24 Hrs |



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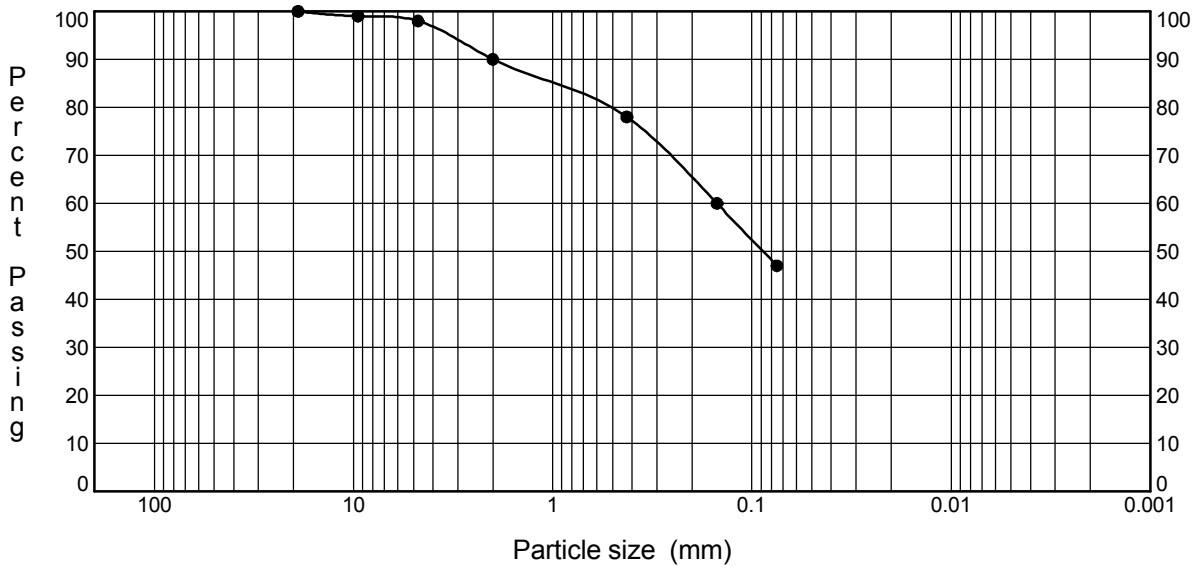
| | | | |
|------------|---------|---------------|------------|
| STARTED: | 4/27/12 | FINISHED: | 4/27/12 |
| DRILL CO.: | ABC | DRILL RIG: | Hand Auger |
| DRILLER: | ADP | ASST DRILLER: | MB/JL |
| LOGGED BY: | | APPROVED: | |

BOREHOLE NO. **B-1** DEPTH **1.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | | | | | |

BOREHOLE NO. **B-2** DEPTH **3.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | | | | | |

U.S. GSD DOUBLE 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/15/12

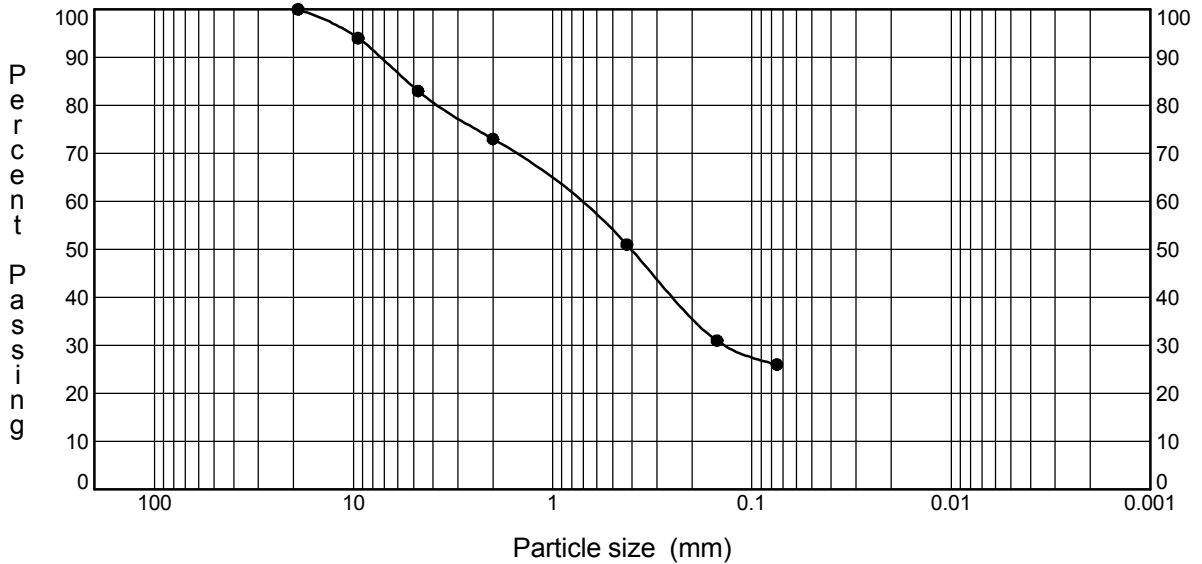


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GRAIN SIZE DISTRIBUTION

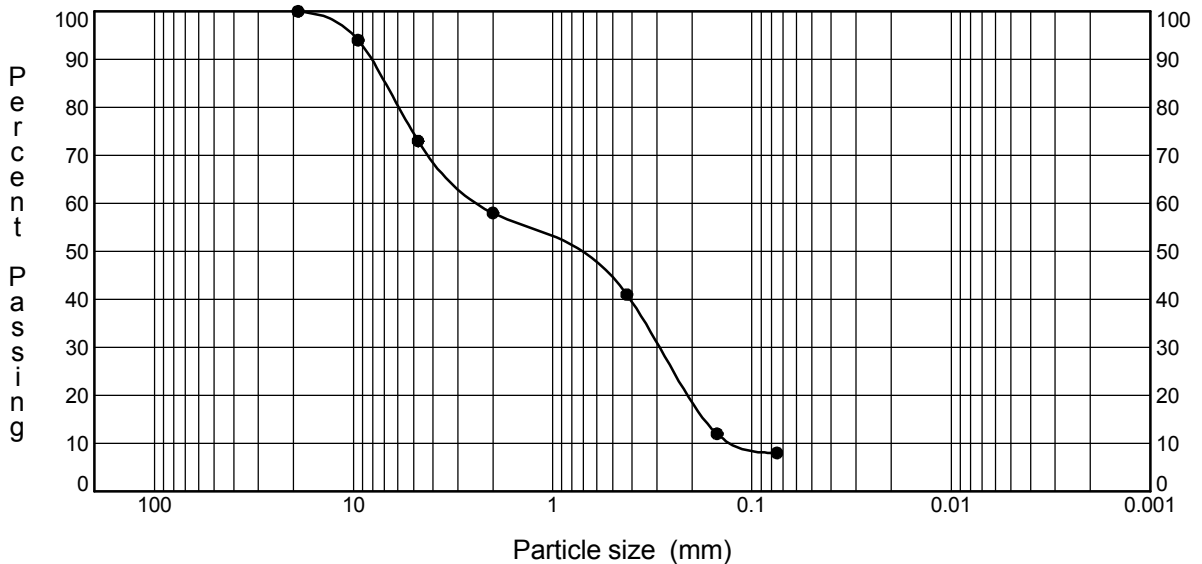
CLIENT: R.K.& K
 PROJECT NO.: 12-033
 PROJECT: Ballston Pond
 SITE: Arlington
 Virginia

BOREHOLE NO. **B-3** DEPTH **1.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | | | | | |

BOREHOLE NO. **B-3** DEPTH **3.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | | | | | |

US_GSD_DOUBLE_12-033 BALLSTONE POND.GPJ_AB_CONS.GDT_5/15/12



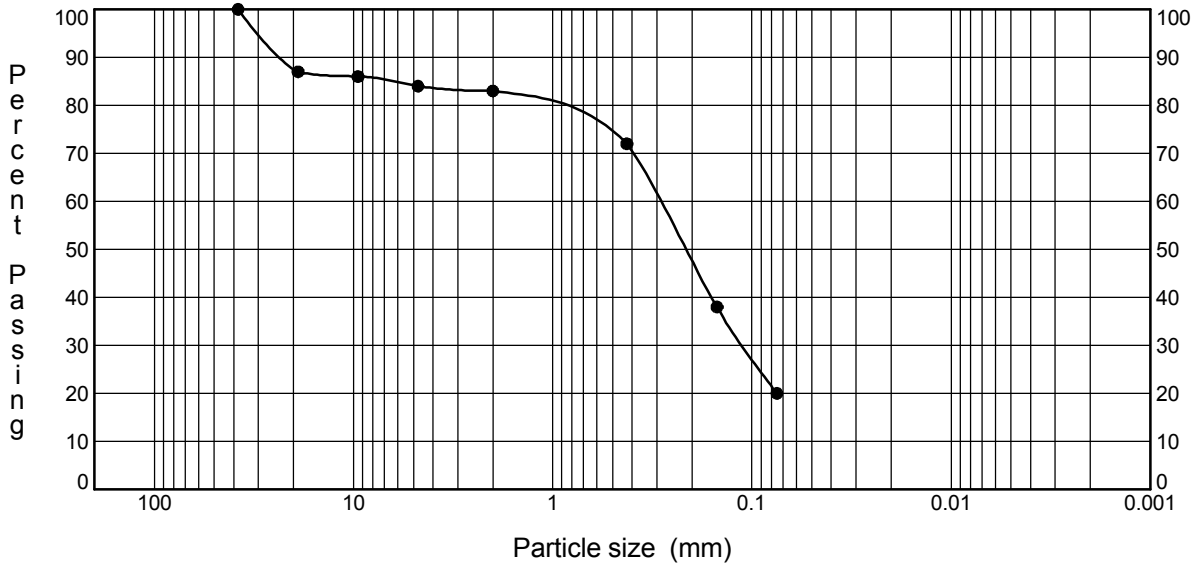
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GRAIN SIZE DISTRIBUTION

CLIENT: R.K.& K
 PROJECT NO.: 12-033
 PROJECT: Ballston Pond
 SITE: Arlington
 Virginia

BOREHOLE NO. **B-4**

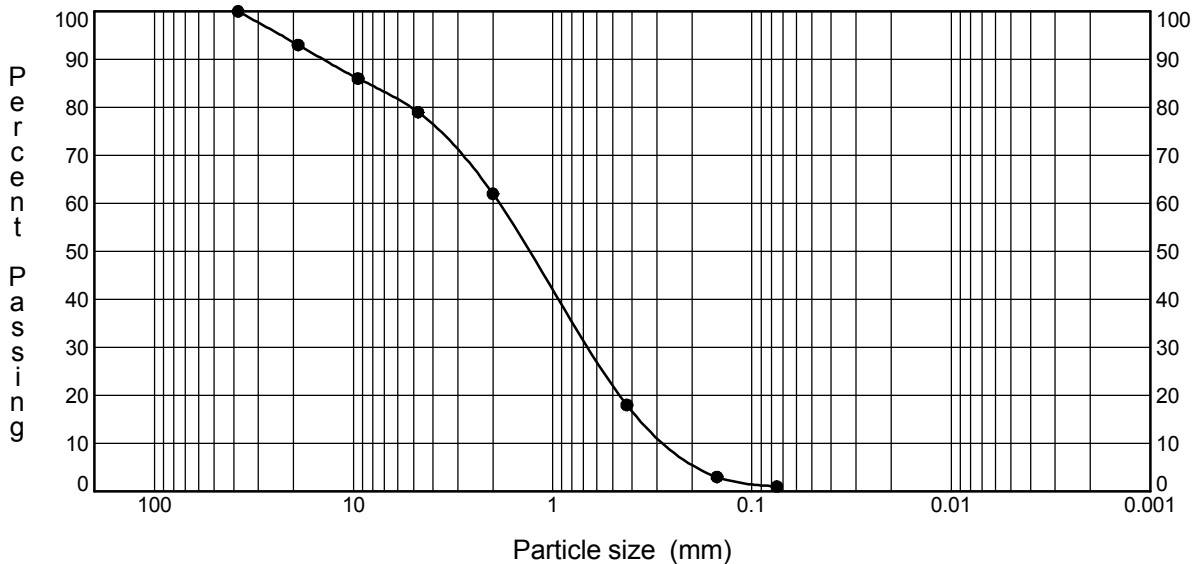
DEPTH **3.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | | | | | |

BOREHOLE NO. **B-5**

DEPTH **3.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | | | | | |

U.S. GSD DOUBLE 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/15/12



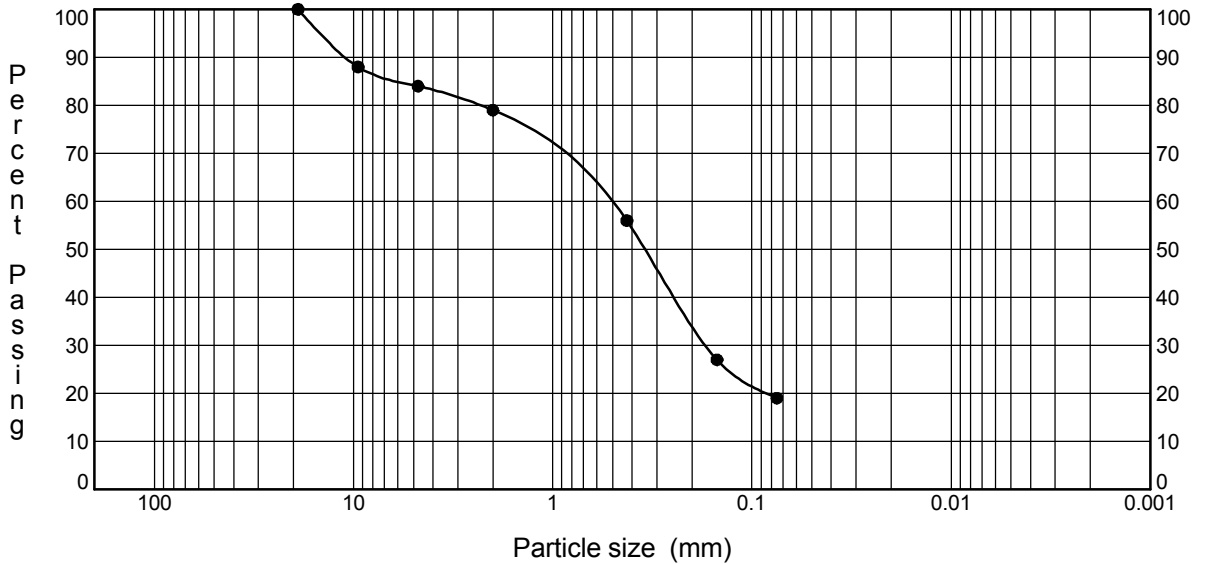
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 Phone: 301-306-3091
 Fax: 301-306-3092

GRAIN SIZE DISTRIBUTION

CLIENT: R.K.& K
 PROJECT NO.: 12-033
 PROJECT: Ballston Pond
 SITE: Arlington
 Virginia

BOREHOLE NO. **B-6**

DEPTH **3.0**



| | | | | | | | |
|---------|--------|------|--------|--------|------|------|------|
| Cobbles | coarse | fine | coarse | medium | fine | Silt | Clay |
| | Gravel | | Sand | | | | |

US_GSD_DOUBLE 12-033 BALLSTONE POND.GPJ AB_CONS.GDT 5/15/12



AB Consultants, Inc.
9450 Annapolis Road
Lanham, MD 20706
Phone: 301-306-3091
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