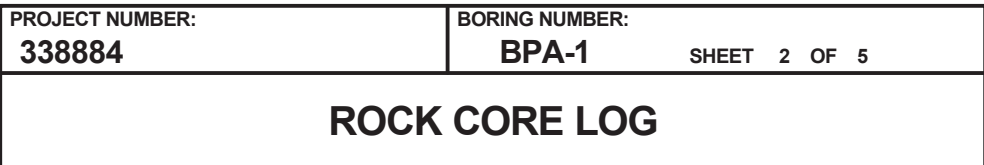


LOGGER : DT/JS

Rev. 5



LOCATION : (NAD 27) (686804.8 N, 2012129.3 E)

DRILLING CONTRACTOR : R. Norwood/M. Mosely, S&ME

ORIENTATION : Vertical

LOGGER : DT/JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-1

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686804.8 N, 2012129.3 E)

ELEVATION : 261.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood/M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

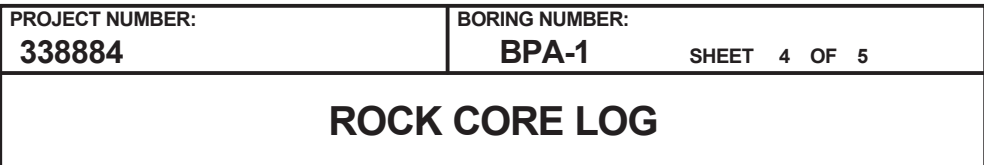
WATER LEVELS : 3.3 ft bgs

START : 4/20/06 13:29

END : 4/21/06 11:55

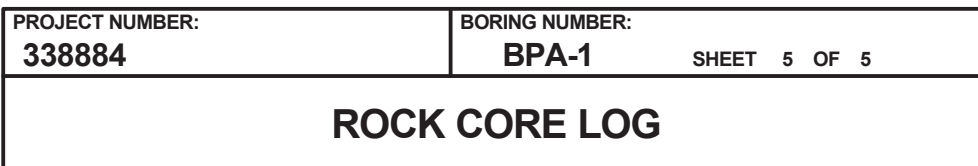
LOGGER : DT/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 226.3 < | | | | | | | |



LOGGER : DT/JS

Rev. 5



LOCATION : (NAD 27) (686804.8 N, 2012129.3 E)

DRILLING CONTRACTOR : R. Norwood/M. Mosely, S&ME

ORIENTATION : Vertical

LOGGER : DT/JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-2

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | PP (TSF) | COMMENTS |
|---------------------------------|---------------|------|-------|-----------------------------------|---|--------------|----------|--|
| | RECOVERY (in) | # | TYPE | | | | | |
| | | | | | | | | |
| 259.7 | 0.0 | 14.0 | SS1SS | 2-4-5-9 (9) | Silt (ML) 0.0-0.7' - dark reddish brown, moist, medium dense, possibly reworked native material Silty Sand (SM) 0.7-1.2' - light brownish gray, dry to moist, very loose, possible fill material | | 2.0 | PT-1 collected 11.0-13.0' Offset: 6.3' S35E of BPA-2 Lab Results USCS: SC |
| | 2.0 | | | | | | | |
| | 2.5 | 15.0 | SS2SS | 6-32-50/3 (82/9") | Silty Sand (SM) 2.5-3.8' - light brownish gray, dry to moist, very loose, very fine to fine grained, possible fill material | | | |
| | 4.5 | | | | | | | |
| 5 | | | | | | | | |
| 254.7 | 5.0 | 4.0 | SS3SS | 50/4 (50/4") | Silty Sand (SM) 5.0-5.3' - light brownish gray, dry to moist, very dense, fine grained, friable | | | |
| | 7.0 | | | | | | | |
| | 7.5 | 10.0 | SS4SS | 32-29-21-21 (50) | Clay (CL) 7.5-8.4' - dark reddish brown, moist, dense, fine grained, becoming lithified | | | |
| | 9.5 | | | | | | | |
| 10 | | | | | | | | |
| 249.7 | 10.0 | 5.0 | SS5SS | 50/5 (50/5") | Silt (ML) 10.0-10.5' - dark reddish brown, dry to moist, dense, fine grained, some black mottling | | | Soil sampling completed at 15:35 on 6/30/06 |
| | 12.0 | | | | | | | |
| | 12.5 | 6.0 | SS6SS | 12-50/5 (50/5") | Silt (ML) 12.5-13.0' - dark reddish brown, dry to moist, dense, fine grained, some black mottling | | | |
| | 14.5 | | | | | | | |
| 15 | | | | | | | | |
| 244.7 | 15.0 | 11.0 | SS7SS | 13-50/5 (50/5") | Silt (ML) 15.0-16.0' - dark reddish brown, dry to moist, dense, fine grained, some black mottling | | | |
| | 17.0 | | | | | | | |
| | 17.5 | 2.0 | SS8SS | 50/2 (50/2") | Silt (ML) 17.5-17.7' - dark reddish brown, dry to moist, dense, fine grained, nonplastic to low plasticity, some black mottling Begin Rock Coring at 17.7 ft bgs See the next sheet for the rock core log | | | |
| | 17.7 | | | | | | | |
| 20 | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-2

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 239.7 | 17.7 R1NQ 2.3 ft 100% | 0 | 0 | | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-2

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

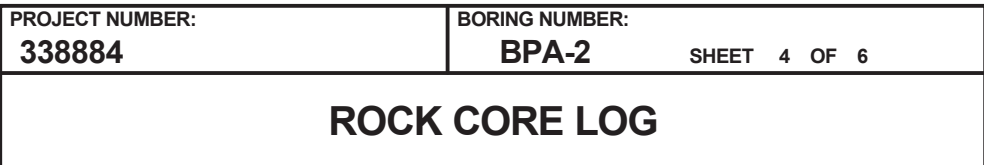
WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| | 92% | | | | | | |
| 40 | 40.0 | | 2 | 36.5' - Fracture, 40 deg, slickensided, undulating, opposite direction of above fractures | x | 38.5-38.9' - blue-green mottling, clay clasts 39.0-40.0' - trace very fine to fine sand | At 38.7': R-Scale = R1 |
| 219.7 | | | 0 | 38.0-38.3' - Fracture, 60 deg, slickensided, undulating, same direction as first few | x | | |
| | | | | 38.3-38.5' - Fracture, 60 deg, slickensided, undulating, opposite direction as above (same as 36.5') so wedge of 120 deg | x | | |
| | | | 2 | 40.5-42.0' - Fracture, vertical, rough, undulating | x | 40.0-45.0' - very fine to fine sand | R6: 13:08-13:40 |
| | | | 2 | | x | | |
| | | | | | x | | |
| | R6NQ 5 ft 108% | 74 | 0 | | x | 43.5-44.3' - heavily mottled | At 43.1': R-Scale = R3 SC-2 collected 43.5-44.6' |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 45 | 45.0 | | | | x | 45.0-45.6' - very soft to soft, grades to sandstone | R7: 13:45-14:25 |
| 214.7 | | | 0 | | x | | |
| | | | | | x | | |
| | | | 3 | 46.0-46.4' - Fractures, 60 deg and horizontal, rough, undulating, to smooth and undulating | x | 45.6-45.8' - white and very dark gray, soft to hard, very fine sand, fresh | At 48.5': R-Scale = R3 |
| | | | | | x | | |
| | | | | | x | | |
| | R7NQ 5 ft 100% | 100 | 1 | 47.0' - Fracture, horizontal, rough, undulating | x | 45.8-47.2' - dark reddish brown, very soft to soft, fresh, fine grained | R8: 14:37-15:03 |
| | | | 0 | 48.0' - Fracture, 10 deg, rough, undulating | x | | |
| | | | 0 | | x | | |
| 50 | 50.0 | | | | x | 47.2-48.0' - white and very dark gray, soft to hard, very fine sand, fresh | At 52.3': R-Scale = R2-R3 |
| 209.7 | | | | | x | | |
| | | | | | x | | |
| | | | 1 | 50.7' - Fracture, 30 deg, rough, slickensided | x | 48.0-49.3' - dark reddish brown, very soft to soft, fresh | R9: 15:10-15:30 |
| | | | 2 | 51.0-51.8' - Fracture (2), horizontal and vertical, rough, undulating, tightly healed at 51.45-51.75' | x | | |
| | | | | | x | | |
| | R8NQ 5 ft 100% | 88 | 2 | 52.4' - Fracture, 15 deg, rough, slickensided | x | 49.3-49.9' - white and very dark gray, mottled greenish gray and reddish black, soft to hard, very fine sand, fresh, some laminations | At 57.3': R-Scale = R3 |
| | | | | 52.7' - Fracture, 15 deg, rough, slickensided | x | | |
| | | | | | x | | |
| | | | 4 | 53.3-53.6' - Fracture (1), vertical, rough, undulating, slickensided, smooth | x | At 49.9' - dark reddish brown, soft 49.9-71.0' - fresh 50.0-51.0' - trace medium sand | |
| | | | 1 | | x | | |
| | | | | | x | | |
| 55 | 55.0 | | | 54.9' - Fracture, horizontal, rough, undulating | x | 53.5-55.8' - bedding on 45 degree angle | |
| 204.7 | | | 1 | | x | | |
| | | | | | x | | |
| | | | 3 | 55.8' - Fracture, horizontal and 20 deg, rough, undulating | x | 55.7-56.2' - trace medium to coarse sand | |
| | | | | 56.0-56.2' - Fracture (2), horizontal and 45 deg, slickensided, undulating | x | | |
| | | | | 56.8' - Fracture, horizontal, slickensided, undulating, smooth | x | | |
| | R9NQ 5 ft | 72 | 0 | | x | | |



LOGGER : JF/LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-2

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| | 94% | | 0 | | x | Siltstone At 78.2' - very dusky red to dark reddish brown, mottled blue gray and dark purple, very soft to soft, fresh | At 78.2': R-Scale = R1 |
| 80 | 80.0 | | 0 | | x | | |
| 179.7 | | | 0 | | x | | R14: 08:50-09:12 |
| | | | 0 | | x | | |
| | R14NQ 5 ft 106% | 86 | 0 | | x | | At 82.3': R-Scale = R3-R4 |
| | | | 1 | | x | | |
| | | | 3 | 83.9' - Fracture, 10 deg, rough, undulating | x | | |
| 85 | 85.0 | | 2 | 84.4-85.0' - Fracture, 70 deg and 80 deg, healed fracture, quartz infilling | x | | |
| 174.7 | | | 1 | 85.0-85.6' - Fracture, vertical, rough, undulating, trace white 1-2 mm speckles, clay seam | x | | R15: 09:17-09:45 |
| | | | 1 | 85.4' - Fracture, vertical, rough, undulating, trace white 1-2 mm speckles | x | | |
| | R15NQ 5 ft 100% | 80 | 1 | 87.5-87.7' - Fracture, 60 deg, rough, undulating | x | 85.0-96.8' | At 87.2': R-Scale = R3 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 90 | 90.0 | | 0 | | x | | R16: 09:50-10:16 |
| 169.7 | | | 0 | | x | | |
| | | | 0 | | x | | |
| | R16NQ 5 ft 100% | 100 | 0 | | x | | At 93.1': R-Scale = R3 |
| | | | 1 | 93.6' - Fracture, 30 deg, slickensided, undulating | x | | |
| | | | 0 | | x | | |
| 95 | 95.0 | | 0 | | x | | R17: 10:20-10:50 |
| 164.7 | | | 0 | | x | 95.6-96.1' - trace very fine to fine sand 96.3-96.4' - trace very fine to fine sand 96.8-97.5' - blue green, dark purple, and reddish black mottling | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | R17NQ 5 ft | 100 | 0 | | x | | At 98.7': R-Scale = R5 |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-2

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

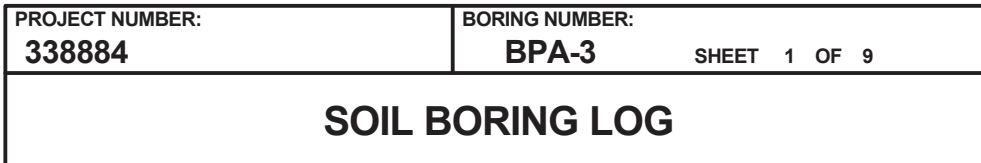
WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|--|-----------------|-----------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 100 | 104% | | 0 | | x x x x | 99.0-100.0' - trace very fine to fine sand | First water level = 8.6' bgs taken 7/6/06 at 13:50; second water level = 3.2' bgs taken 7/7/06 at 15:50 R-Scale performed after drilling on stored samples |
| 159.7 | 100.0 | | 0 | | x x x x | | |
| | | | x x x x | | | | |
| | | | | | | Bottom of Boring at 100.0 ft bgs on 7/6/06 11:00 | |
| 105 | | | | | | | |
| 154.7 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 110 | | | | | | | |
| 149.7 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 115 | | | | | | | |
| 144.7 | | | | | | | |
| | | | | | | | |



LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-3

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 5 255.6 | 2.9 R1NQ 1.3 ft 77% | 38 | 2 | 3.1' - Fracture, horizontal, rough, planar 3.4' - Fracture, horizontal, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 25 235.6 | 24.2 | | 0 | | | Conglomeratic Sandstone At 20.3' - white and dark gray, soft, fine sand to medium gravel, subangular to rounded, poorly sorted, fresh, coarsens with depth 24.2-28.5' - dark greenish gray fine to medium gravel | R6: 14:02-14:10 At 24.9': R-Scale = R3 At 26.8': R-Scale = R3 |
| 30 230.6 | R6NQ 5 ft 104% | 96 | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 2 | | | | |
| | | | 0 | 28.5' - Contact between siltstone and sandstone, 45 deg, tightly healed 28.7-29.1' - Fractures (2), 45 deg, slickensided, undulating 29.8' - Contact between siltstone and sandstone, 45 deg, tightly healed 30.4-30.5' - Fractures (2), horizontal, rough, undulating, sandstone lense runs 45 deg of fractures | | | |
| | | | 4 | | | Conglomeratic Sandstone 29.2-29.8' - white and dark gray, soft, fine sand to medium gravel, subangular to rounded, poorly sorted, fresh, coarsens with depth | R7: 14:16-14:25 At 29.5': R-Scale = R4 At 29.8-31.7': R-Scale = R2 |
| | R7NQ 5 ft 98% | 86 | 10+ | | | Siltstone 29.8-30.4' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds | At 31.7-31.9': R-Scale = R1 At 32.4': R-Scale = R3-R4 |
| | | | 1 | 30.9' - Fracture, horizontal, rough, undulating 31.1' - Fracture, 30 deg, rough, undulating 31.2' - Fracture, horizontal, rough, undulating 31.3-31.4' - Fracture zone, rough, undulating, siltstone, very soft 32.6' - Fracture, horizontal, smooth, planar, greenish gray in fracture 33.5' - Fracture, horizontal, smooth, planar | | | |
| | | | 1 | | | Sandstone 30.4-30.7' - fresh, on 45 degree angle, <0.07' thick | At 33.5-34.2': R-Scale = R0 At 34.2-34.8': R-Scale = R1 R8: 14:30-14:40 |
| 35 225.6 | 34.2 | | 10+ | 34.4-34.6' - Fracture zone, horizontal, rough, undulating, clay seams, very soft, friable material 34.8' - Fracture, horizontal, rough, planar | | Siltstone 30.7-31.1' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds | At 35.1': R-Scale = R3-R4 |
| | | | 0 | | | Sandstone 31.1-31.2' - fresh, on 45 degree angle, <0.07' thick | |
| | R8NQ 5 ft 98% | 98 | 0 | | | Siltstone At 31.2' - dark reddish brown, heavily mottled greenish gray and reddish black, very soft to soft, some laminated beds | At 37.2': R-Scale = R3-R4 |
| | | | 0 | | | 31.2-31.3' - fresh | |
| | | | 0 | | | 31.3-34.8' - slightly weathered 31.7-31.8' - clay seam, very soft, friable material | R9: 14:48-15:00 |
| | | | 0 | | | 33.6-33.7' - clay seam, very soft, friable material | |
| | | | 0 | | | 34.2-34.8' - almost all of core is mottled reddish black with small greenish gray mottles encircled by reddish black | At 40.1': R-Scale = R3.5 |
| 40 220.6 | 39.2 | | 0 | | | 34.8-48.1' - fresh | |
| | | | 0 | | | | |
| | R9NQ 5 ft 97% | 97 | 0 | | | | |
| | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------------|--------------------|---|--|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 45 215.6 | 44.2 | R10NQ 5 ft 102% | 96* | 0 | 48.1' - Fracture, horizontal, smooth, planar 48.6' - Fracture, horizontal, smooth, planar | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

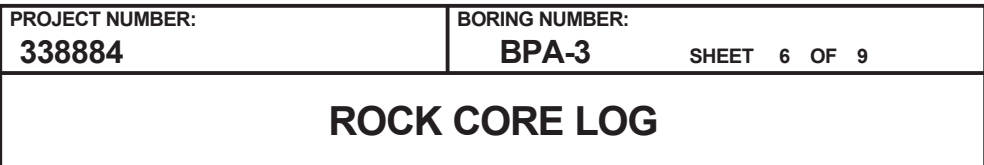
WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 65 195.6 | 64.2 | | 0 | 62.7' - Contact between siltstone and sandstone, 30 deg, tightly healed 62.8' - Fracture, 30 deg, rough, planar 62.9' - Fracture, 30 deg, smooth, planar, greenish gray mottle on upper side of fracture | x | | |



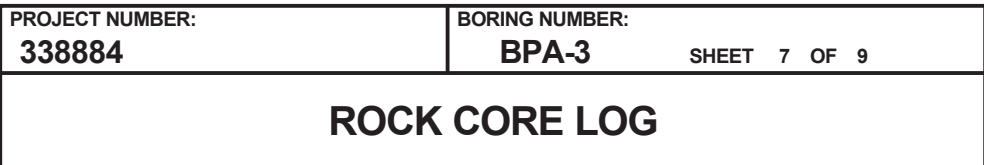
LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 5



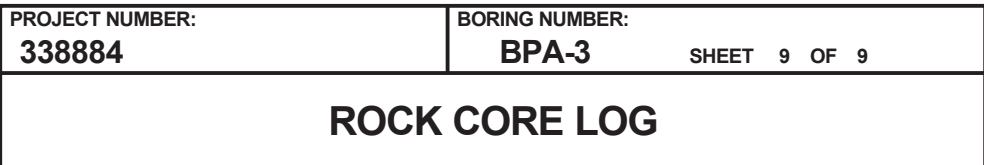
LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 5



LOGGER : LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer


ORIENTATION : Vertical

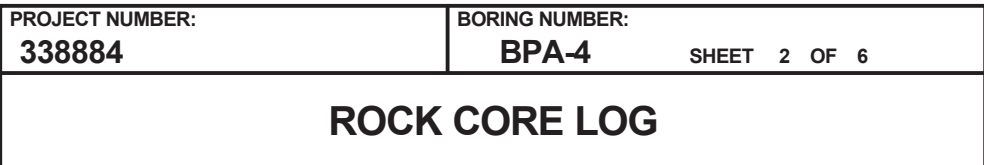
WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

| DEPTH BELOW EXISTING GRADE (ft) | STANDARD PENETRATION TEST RESULTS | | | SOIL DESCRIPTION | SYMBOLIC LOG | PP (TSF) | COMMENTS |
|---------------------------------|-----------------------------------|---------------|-------|------------------|---|----------|---|
| | INTERVAL (ft) | RECOVERY (in) | #TYPE | | | | |
| | | | | | | | |
| 259.6 | 0.0 | 10.0 | SS1SS | 2-3-4-50/5 (7) |  | 1.0 | ST-2 collected 2.4-4.1' Soil sampling completed at 14:30 on 7/6/06 |
| | 2.0 | | | | | | |
| | 2.5 | 1.0 | SS2SS | 50/1 (50/1") | | | |
| | 2.6 | | | | | | |
| 5 | 5.0 | | | | | | |
| 254.6 | | | | | Begin Rock Coring at 5.0 ft bgs See the next sheet for the rock core log | | |
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| 10 | | | | | | | |
| 249.6 | | | | | | | |
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| 244.6 | | | | | | | |
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LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JF/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|--|------------------------------------|-----------------|--------------------|--|--|--|--|--|
| | | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 234.6 | | R5NQ 5 ft 100% | 100 | 0 | 27.6' - Contact between siltstone and sandstone, sharp | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 214.6 | R9NQ 5 ft 100% | 96 | 0 | 44.1' - Fracture, 60 deg, rough, undulating | x | 44.8-45.0' - clay clasts, 80% | R9: 08:50-09:05 | |
| 1 | | | 46.8-47.1' - Fracture, 70 deg, rough, undulating | x | | | | |
| 1 | | | | x | | | | |
| 1 | | | | x | | | | |
| 1 | | | | x | | | | |
| 50 | R10NQ 5 ft 104% | 100 | 0 | 53.2' - Fracture, <5 deg, rough, undulating | x | 50.9-51.5' - 40-50% very fine to fine sand | R10: 09:10-09:30 | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 1 | | | x | | | | | |
| 0 | | | x | | | | | |
| 55 | R11NQ 5 ft 100% | 100 | 0 | 63.4-63.7' - Fracture, 70 deg, rough, undulating 63.4' - Fracture, <5 deg, smooth, undulating, top truncation from above 63.5' - Fracture | x | 55.0-60.0' - very dusky red, trace mottling | R11: 09:35-09:55 | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 60 | R12NQ 5 ft 90% | 70 | 0 | 64.0-64.1' - very soft, clay seam 64.1-64.2' - competent but rough outer surface | x | 64.0-64.1' - very soft, clay seam 64.1-64.2' - competent but rough outer surface | R12: 10:01-10:20 | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 3 | | | x | | | | | |
| 2 | | | x | | | | | |
| 65 | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-4

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | |
|--|------------------------------------|-----------------|--------------------|--|-------------------------------|--|--|---|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | |
| 194.6 | R13NQ 5 ft 104% | 76 | 0 | 66.6-67.3' - Fracture, 80 deg, rough, undulating 67.8' - Fracture, <10 deg, slickensided, undulating 67.8-68' - Fracture, 50 deg, slickensided, undulating | x | 64.2-64.5' - very soft, soil-like fractured rock | Drillers Remark: Rock is slipping, will not recover full run, soft at bottom R13: 10:30-11:05 At 66.2': R-Scale = R3 | | | |
| 1 | | | x | | | | | | | |
| 3 | | | x | | | | | | | |
| 1 | | | x | | | | | | | |
| 0 | | | x | | | | | | | |
| 70 | 70.0 | | x | x | 69.4-69.7' - 60% clay clasts | | | R14: 11:14-11:30 At 70.7': R-Scale = R3 | | |
| 189.6 | | x | x | x | | | | | | |
| | | 0 | x | x | | | | | | |
| | | 0 | x | x | | | | | | |
| | R14NQ 5 ft 100% | 100 | 0 | x | | | | | 72.2-73.0' - trace very fine to fine sand | |
| | | | 0 | x | | x | | | | |
| | | | 0 | x | | x | | | | |
| | | | 0 | x | | x | | | | |
| | | | 0 | x | | x | | | | |
| 75 | 75.0 | | 0 | x | | 76.5-77.4' - trace very fine to fine sand, laminated to very thin beds, 0.01-0.1' thick 77.4-78.4' - very soft to soft, reddish black and yellow mottling | R15: 11:38-11:45 At 76.0': R-Scale = R1 | | | |
| 184.6 | | 0 | x | x | | | | | | |
| | | 0 | x | x | | | | | | |
| | R15NQ 5 ft 102% | 74* | 2 | x | SC-3 collected 77.3-77.95' | | | | | |
| | | | 7 | x | | | | x | | |
| | | | 10+ | x | | | | x | | |
| | | | 10+ | x | | | | x | | |
| | | | 0 | x | | | | x | | |
| 80 | 80.0 | | x | x | | | | Siltstone At 78.4' - dark bluish gray, multicolored—olive, dark reddish brown, blue gray mottling, very soft 78.4-80.6' - moderately weathered 79.8-85.2' - soft, beds at 0-30 degrees 80.6-85.2' - fresh | R16: 13:30-13:54 At 82.1': R-Scale = R1 | |
| 179.6 | | 10+ | x | x | | | | | | |
| | | 10+ | x | x | | | | | | |
| | R16NQ 5 ft 100% | 86* | 0 | x | | 83.2' - dark reddish brown, gradually becomes dark reddish brown | | | | |
| | | | 0 | x | | | | | | x |
| | | | 0 | x | x | | | | | |
| | | | 0 | x | x | | | | | |
| | | | 0 | x | x | | | | | |
| 85 | 85.0 | | | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

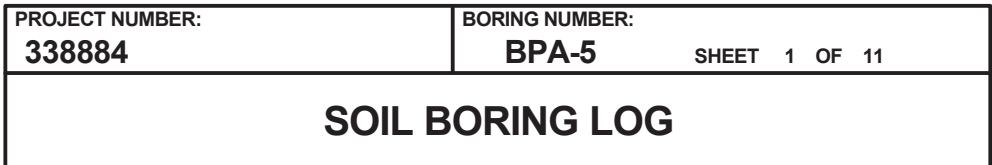
WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 174.6 | R17NQ 5 ft 104% | 100 | 0 | | X | Sandstone 85.2-87.2' - dark reddish gray, mottled blue-green and yellow-tan, soft to hard, medium bedding, fine sand, fresh | R17: 14:00-14:21 |
| | | | 0 | | X | | At 86.3': R-Scale = R2 |
| | | | 2 | | X | Siltstone 87.2-87.7' - dark bluish gray, heavily mottled olive, yellow, dark reddish brown, blue green, soft, fresh, beds at 0-30 degrees | |
| | | | 0 | | X | | |
| | | | 0 | | X | Siltstone At 87.7' - dark reddish brown, mottled, very soft to soft, fresh, fine grained | |
| 90 | 90.0 | | X | | X | | R18: 14:46-15:06 |
| 169.6 | R18NQ 5 ft 100% | 100 | 0 | | X | 91.1-91.4' - trace dark purple mottling | |
| | | | 0 | | X | | |
| | | | 0 | | X | | At 93.0': R-Scale = R3 |
| | | | 0 | | X | | |
| | | | 0 | | X | | |
| 95 | 95.0 | | 0 | | X | | R19: 15:17-15:37 |
| 164.6 | R19NQ 5 ft 100% | 100 | 0 | | X | | |
| | | | 0 | | X | | |
| | | | 0 | | X | | At 97.2': R-Scale = R1-R2 First water level = 5.2' bgs taken 7/7/06 at 17:15; second water level = 3.3' bgs taken 7/8/06 at 14:45 R-Scale performed after drilling on stored samples |
| | | | 0 | | X | | |
| | | | 0 | | X | | |
| 100 | 100.0 | | | | X | | |
| 159.6 | | | | | | Bottom of Boring at 100.0 ft bgs on 7/7/06 15:37 | |
| | | | | | | | |
| | | | | | | | |
| 105 | | | | | | | |



LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-5

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

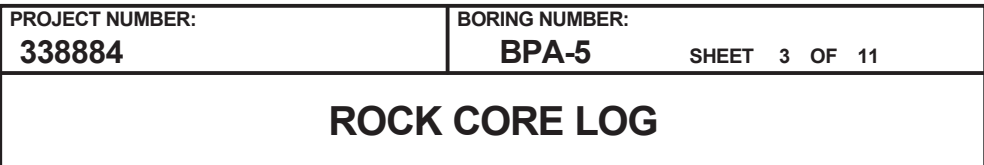
WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|----------------------|-----------------------------|--|-----------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 255.7 | 7.6 | 89 | 0 | 8.8-9.0' - Joint, 50 deg, rough, undulating, unsure of gap size (missing 0.4' of core) | | Rock coring began at 13:15 on 4/25/06 R1: 13:15-13:40 on 4/25/06 | |
| | R1HQ 3.4 ft 90% | | 1 | | | | |
| | 0 | | | | | | |
| | 11.0 | 100 | 0 | 11.2' - Contact between sandstone and conglomerate, sharp 11.6' - Contact between sandstone and conglomerate, sharp 12.1' - Contact between sandstone and conglomerate, sharp 12.7' - Contact between sandstone and conglomerate, sharp 13.2-13.8' - Fracture, vertical 14.2' - Contact between sandstone and conglomerate, sharp 14.6' - Contact between siltstone and conglomerate, sharp 15.5-15.9' - Fracture, vertical | | R2: 13:50-14:10 | |
| | 0 | | 0 | | | | |
| | 1 | | 1 | | | | |
| | 1 | | 1 | | | | |
| | 16.0 | | 2 | 16.0-16.6' - Fracture zone, vertical, rough, undulating 16.8-17.1' - Fractures, fractured with 1.5-2.0' white inclusions | | | |
| | 15 250.7 | R2HQ 5 ft 100% | 88 | 0 | | 17.8-18.0' - Fracture, horizontal, tight fit 18.0-26.0' - Microfractures, capillary pattern, becoming horizontal in orientation | R3: 14:20-15:00 |
| | | | | 0 | | | |
| 0 | | | | | | | |
| 0 | | | | | | | |
| 0 | | | | | | | |
| 21.0 | | 100 | 1 | 21.6-22.2' - Fracture, 65 deg, rough, undulating | R4: 15:05-15:30 | | |
| 1 | | | | | | | |
| 0 | | | | | | | |
| 0 | | | | | | | |
| 0 | | | | | | | |
| 26.0 | | 0 | 26.0-31.0' - very dusky red | R5: 08:00-08:20 on 4/26/06 | | | |
| 0 | | | | | | | |



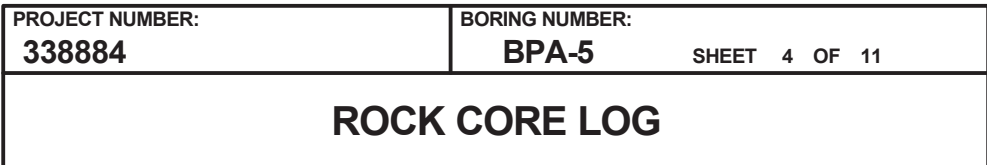
LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5



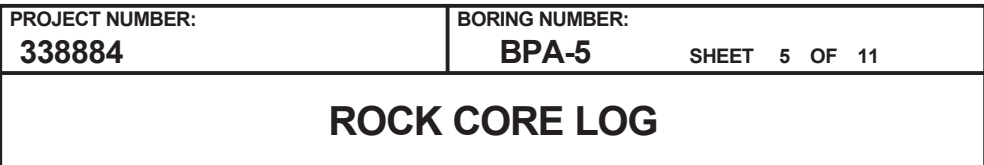
LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

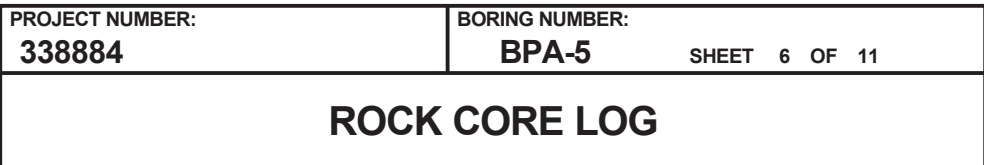
LOGGER : JS/JF

Rev. 5



LOGGER : JS/JF

Rev. 5



LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 7 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 110 155.7 | R21HQ 5 ft 100% | 100 | 1 | 107.1-111.0' - Numerous horizontal (80%) vertical (20%) capillary fractures | x x x x | Siltstone 107.1-114.6' - dark reddish brown, soft, fresh, fine grained | R22: 12:10-12:35 |
| | | | 0 | 108.0' - Fracture, <5 deg, rough to smooth, undulating | x x x x | | |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| 115 150.7 | R22HQ 5 ft 100% | 100 | 0 | | x x x x | Sandstone 114.6-115.0' - dark reddish brown, fresh | R23: 12:45-13:05 |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | Conglomerate 115.0-115.7' - hard, fresh, multicolored | R24: 13:30-14:05 |
| | | | 0 | | x x x x | | |
| 120 145.7 | R23HQ 5 ft 98% | 98 | 0 | 117.5' - Fracture | x x x x | Siltstone At 115.7' - dark reddish brown, trace blue-green mottling, soft, fresh, fine grained | R25: 14:15-14:45 |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | 121.0-124.5' - small (<0.4) white inclusions | SC-4 collected 126.1-127.0' |
| | | | 0 | | x x x x | | |
| 125 140.7 | R24HQ 5 ft 100% | 100 | 1 | 121.1' - Fracture, <5 deg, rough to smooth, undulating | x x x x | Sandstone At 124.5' - very dusky red, white mottling, soft to hard, fresh | |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | 126.1' - Fracture, <5 deg, rough, undulating | |
| | | | 0 | | x x x x | | |
| | | | 1 | | x x x x | | |

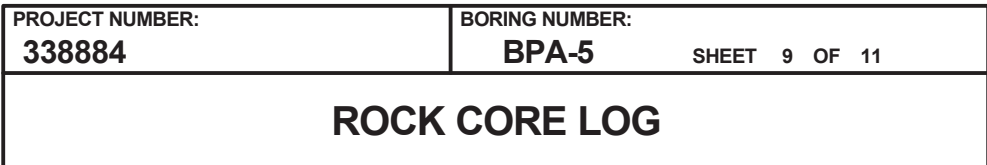


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| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-5</div> |
| SHEET 8 OF 11 | |
| <div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div> | |

| | |
|---|---|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (686869.4 N, 2012272.8 E) |
| ELEVATION : 265.7 ft MSL (NGVD 29) | DRILLING CONTRACTOR : A. Martin, S&ME |
| CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel | ORIENTATION : Vertical |

| | | | |
|---------------------------|-----------------------|--------------------|----------------|
| WATER LEVELS : 1.5 ft bgs | START : 4/19/06 08:40 | END : 5/2/06 10:55 | LOGGER : JS/JF |
|---------------------------|-----------------------|--------------------|----------------|

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | |
|---|------------------------------------|-----------------|--------------------|--|--|--|--|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | | | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 130 135.7 131.0 135 130.7 140 125.7 145 120.7 | R25HQ 5 ft 100% | 98 | 0 | 128.5' - Fracture, 25 deg, rough, undulating | 126.9-127.4' - conglomerate lense, multi-colored blue-green, reddish-brown, and gray-black, hard, coarse grained 128.0-128.2' - conglomerate lense, multi-colored blue-green, reddish-brown, and gray-black, hard, coarse grained Siltstone 129.0-151.0' - dark reddish brown, trace blue-green mottling at relic fractures, soft, fresh, fine grained | R26: 14:55-15:15 | | | | |
| | 1 | | | | | | | | | |
| | 0 | | | | | | | | | |
| | 0 | | | | | | | | | |
| | R26HQ 4.3 ft 100% | 100 | 0 | | | | 133.5-135.3' - Microfractures, capillary pattern | | | |
| | 0 | | | | | | | | | |
| | 0 | | | | | | | | | |
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| | R27HQ 5 ft 100% | 100 | 0 | | | | | | | |
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| R28HQ 5 ft 100% | 100 | 0 | | | | | | | | |
| 0 | | | | | | | | | | |
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| R29HQ 0.7 ft 100% | 100 | 0 | | | | | | | | |
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LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-5

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 170 95.7 | R34HQ 5 ft 96% | 71 | 4 | 167.4' - Fractures, <5 deg, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 190 75.7 | R38HQ 5 ft 100% | 92 | 1 | 187.8' - Fractures, <5 deg, rough, undulating 188.2' - Fractures, 30 deg and 40 deg, rough to slickensided, undulating 188.8' - Fractures, <5 deg | XXXXXX | | |

| | |
|---|--------------------------------|
| PROJECT NUMBER: 338884 | BORING NUMBER: BPA-6 |
| SHEET 1 OF 7 | |
| <h1 style="margin: 0;">SOIL BORING LOG</h1> | |

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer


ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

| DEPTH BELOW EXISTING GRADE (ft) | | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|-----|-------|-------|---|---|---|---|
| INTERVAL (ft) | | | | | | | |
| RECOVERY (in) | | #TYPE | | | | | |
| | | | | 6"-6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| 264.3 | 0.0 | 13.0 | SS1SS | 3-4-20-50/3 (24) | Clay (CL) 0.0-0.3' - reddish brown, moist, soft, low to medium plasticity Silt (ML) 0.3-1.1' - red, mottled bluish gray, dry to moist, soft, very loose, nonplastic, powdery |  | Soil sampling completed at 16:15 on 6/28/06 |
| 2.0 | | | | | | | |
| 2.5 2.8 | 3.0 | SS2SS | | 50/3 (50/3") | Silt (ML) 2.5-2.8' - red, mottled bluish gray, dry to moist, hard, nonplastic, powdery | | |
| 4.0 | | | | | | | |
| 5 259.3 | | | | | Begin Rock Coring at 4.0 ft bgs See the next sheet for the rock core log | | |
| 10 254.3 | | | | | | | |
| 15 249.3 | | | | | | | |
| 20 | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-6

SHEET 2 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 5 259.3 | 4.0 R1NQ 1 ft 100% | 0 | 2 | 5.9-6.0' - Fracture, 60 deg, rough, undulating, black staining on edge, tight fit | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 3 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

| WATER LEVELS : 12.51000 | | DISCONTINUITIES | | SYMBOLIC LOG | | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|--------------|--|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | SYMBOLIC LOG | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | COMMENTS | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| 25 239.3 | 25.0 | | 0 | | | XXXX | 24.9' - 0.1' thick 20 degree banding on relic bedding Sandstone 25.0-29.3' - reddish gray, medium bedding, slightly weathered to moderately weathered, very soft 25.0-27.0' - fine to medium grained 27.0-29.3' - medium to coarse grained | R6: 09:23-09:31 | |
| | R6NQ 5 ft 100% | 82* | 0 | | | | | At 25.7': R-Scale = R3 | |
| | | | 0 | | | | | At 26.5-29.0': R-Scale = R2 | |
| | | | 0 | | | | | At 28.2': R-Scale = R3 | |
| | | | 1 | 28.5-28.7' - Fracture, 60 deg, rough, undulating | | | | | |
| | | | 2 | 29.0' - Fracture, <5 deg, rough, undulating 29.3-29.4' - Fracture, <5 deg, rough, undulating, shattered rock, stained 29.4-29.6' - Fracture, crack in core with discoloration along surface of break 30.5-31.8' - Fracture, 85 deg, slickensided, undulating | | XXXX | | | |
| 30 234.3 | 30.0 | | | | | XXXX | Siltstone At 29.3' - dark purple and glue-green, very soft, slightly weathered 29.6-31.8' - dark reddish brown 30.0-31.3' - blue green mottling, very soft, fine grained, fine sand at bottom 31.3-31.8' - 25-30% very fine sand to fine sand Sandstone At 31.8' - dark reddish brown, very hard, laminated to massive bedding, fine sand to medium sand, coarse at bottom 31.8-35.0' - slightly weathered 32.2-32.3' - clay seam 32.3-35.0' - very dusky red, blue-green mottling 35.0-40.0' - gray, soft to hard, fine sand to coarse sand 35.0-47.0' - fresh 35.3' - large piece on dark reddish brown sandstone (4) 36.0-36.4' - trace black mottling 37.2-37.3' - soft, trace dark reddish brown mottling | R7: 09:35-09:53 At 30.4': R-Scale = R3 | |
| | R7NQ 5 ft 100% | 72 | 1 | | | XXXX | | At 32.5': R-Scale = R3 | |
| | | | 1 | | | XXXX | | At 34.2': R-Scale = R4 | |
| | | | 0 | 33.5-33.9' - Fracture, 60 deg, rough, undulating | | XXXX | | R8: 10:00-10:08 | |
| | | | 1 | | | XXXX | | At 36.4': R-Scale = R3 | |
| | | | 0 | | | XXXX | | At 39.3': R-Scale = R3-R4 | |
| 35 229.3 | 35.0 | | | | | | 40.0-45.0' - soft to hard, fine sand to coarse sand, angular to subangular, quartz and mica, red-brown staining at surface top (0.2') relic 20 degrees bedding | R9: 10:12-10:18 | |
| | R8NQ 5 ft 100% | 94 | 2 | 35.5-35.6' - Fracture, 45 deg, rough, undulating, black staining 35.9-36.0' - Fracture, 45 deg, rough, undulating, black staining 37.0-37.5' - Fracture, <5 deg, rough, undulating, trace yellow staining | | | | At 42.1': R-Scale = R3 | |
| | | | 0 | | | | | | |
| | | | 1 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| 40 224.3 | 40.0 | | | | | | | | |
| | R9NQ 5 ft 100% | 96 | 0 | 41.1' - Fracture, 60 deg, rough, undulating, light yellow staining | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 1 | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 4 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

| WATER LEVEL: 12.3 ft bgs | | START: 0.00/00 10.00 | | END: 0.00/00 10.00 | | LOGGER: J. ST | |
|--|------------------------------------|----------------------|---------------------------|---|---|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 45 219.3 | 45.0 | | 2 | | | SC-3 collected 40.0-41.1' | |
| | R10NQ 5 ft 100% | 100 | 0 | 43.5' - Fracture, 60 deg, rough, undulating, light yellow staining 44.1' - Fracture, 60 deg, rough, undulating, light yellow staining 44.2' - Fracture, 60 deg, rough, undulating, light yellow staining 47.0' - Fracture, 40 deg, rough, undulating, sharp contact | 45.0-47.0' - soft to hard, very thin to medium bedding, medium sand to coarse sand, angular to subangular, quartz and mica, red-brown staining at surface top (0.2') 20 degree relic bedding, alternating dark and light bands Siltstone 47.0-48.9' - dark reddish brown, mottled blue-green, very soft, fresh, fine grained, very soft, fine to medium sand (15%) more coarse at bottom Sandstone At 48.9' - reddish brown, soft, medium to thick bedding, fine sand to medium sand, fresh, coarse grained (10%) 50.0-53.0' - dusky red, mottled blue-green and gray, progressively more fine sand more coarse grains at bottom (medium - 20%), blue-green coloring at contact with siltstone | R10: 10:30-10:40 | |
| 0 | | | At 46.1': R-Scale = R3 | | | | |
| 1 | | | | | | | |
| 0 | | | At 48.4': R-Scale = R3-R4 | | | | |
| 0 | | | | | | | |
| 50 214.3 | 50.0 | | 2 | | | R11: 13:00-13:20 | |
| | R11NQ 5 ft 100% | 80 | 1 | 50.2' - Fracture, <5 deg, smooth, planar 50.4' - Fracture, 30 deg, smooth, planar, along bedding planes 51.6-52.1' - Fracture, 70 deg, rough, undulating, very thin 52.0' - Fracture, 45 deg, rough, undulating, tight fit 52.9' - Fracture, 30 deg, smooth, planar, along bedding planes | At 53.0' - dark reddish brown, 15% blue-green mottling, very soft, fine grained 53.0-55.5' - fresh | At 51.2': R-Scale = R3-R4 | |
| 3 | | | | | | | |
| 0 | | | At 52.7': R-Scale = R3 | | | | |
| 0 | | | | | | | |
| 0 | | | | | | | |
| 55 209.3 | 55.0 | | 2 | | | R12: 13:34-13:50 | |
| | R12NQ 5 ft 100% | 80 | 2 | 58.0' - Fracture, 20 deg, rough, undulating, along possible bedding plane 59.0' - Fracture, 20 deg, rough, undulating, along possible bedding plane | 55.0-60.0' - more fragile 55.5-57.0' - slightly weathered, large amount (35-40%) clay clasts up to 2, relic bedding at 20 degrees 57.0-64.7' - fresh | At 57.5': R-Scale = R3 | |
| 0 | | | | | | | |
| 1 | | | | | | | |
| 1 | | | | | | | |
| 1 | | | | | | | |
| 60 204.3 | 60.0 | | 2 | | | At 59.5': R-Scale = R3 | |
| | R13NQ 4.4 ft 100% | 89 | 0 | 60.4' - Fracture, <5 deg, rough, undulating 60.9' - Fracture, <5 deg, break, at clay seam 62.0-62.4' - Fracture, 65 deg, rough, undulating, trace dark purple staining | 60.0-65.0' - trace blue-green mottling | R13: 13:50-14:25 | |
| | | | 1 | | | | |
| | | | 0 | | | At 62.0': R-Scale = R3 | |
| | | | 0 | | | SC-4 collected 62.8-63.4 | |
| | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 5 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-------------------|--|--|---|---|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 65 199.3 | 64.4 | | 0 | <div>XXXXXX</div> | 64.7-68.0' - slightly weathered | R14: 14:28-14:55 | |
| | R14NQ 5 ft 100% | 4 | 64.7' - Fracture, <5 deg, rough, undulating, boundaries of clay seams 64.9' - Fracture, <5 deg, rough, undulating, boundaries of clay seams 65.1-65.2' - Fracture, <5 deg, rough, undulating, boundaries of clay seams 67.4-68.5' - Fracture, 60 deg, smooth, planar, below is heavily fractured rock | | | | |
| | | 0 | | | | | |
| | | 10+ | | | | | |
| | | 1 | | | | | |
| | | 0 | | | | | |
| 69.4 | | <div>XXXXXX</div> | <div>.....</div> | Sandstone At 68.0' - reddish brown, soft, medium bedding, fine sand, angular, slightly weathered 69.4-70.0' - dusky red, fine sand to medium sand, angular 70.0-72.0' - gray, fine sand to medium sand, possibly 20 degrees relic bedding 72.0-75.0' - medium sand to coarse sand | At 68.9': R-Scale = R3-R4 R15: 15:01-15:10 R16: 15:15-15:25 At 71.3': R-Scale = R3 | | |
| 70 194.3 | R15NQ 0.6 ft 100% | 0 | | | | 70.6' - Fracture, 20 deg, rough, undulating, tight fit 70.9' - Fracture, 20 deg, rough, undulating, tight fit 71.6' - Fracture, 50 deg, rough, undulating 72.1-72.4' - Fracture, 50 deg, rough, undulating 72.2' - Fracture, 50 deg, rough, undulating 72.3' - Fracture, 50 deg, rough, undulating 72.4' - Fracture, 50 deg, rough, undulating 72.6' - Fracture, 40 deg, rough, undulating, perpendicular to previous four fractures 73.8' - Fracture, 50 deg, rough, undulating 74.1' - Fracture, 50 deg, rough, undulating, undulating, rough, 50 deg 75' - Contact between siltstone and sandstone, sharp contact 75.8' - Fracture, <5 deg, rough, undulating 76.9' - Fracture, <5 deg, rough, undulating 78.0' - Fracture, <5 deg, rough, undulating 78.4-78.8' - Fracture, 70 deg, rough, planar, slight staining 78.9-79.1' - Fracture, 30 deg, smooth, undulating | |
| R16NQ 5 ft 100% | 1 | | | | | | |
| | 4 | | | | | | |
| | 2 | | | | | | |
| | 0 | | | | | | |
| 75 189.3 | 75.0 | | 1 | <div>XXXXXX</div> | Siltstone 75.0-86.8' - dark reddish brown, trace blue-green mottling, very soft, fine grained, very fine to fine sand throughout 75.0-84.0' - fresh 76.6-77.0' - very soft, fine grained, pink clay clasts 77.95-78.4' - pink clay clasts 78.4-78.5' - clay seam, trace blue-green mottling | R17: 15:35-15:45 At 76.4': R-Scale = R3 At 79.4': R-Scale = R3-R4 | |
| R17NQ 5 ft 100% | 1 | | | | | | |
| | 1 | | | | | | |
| | 1 | | | | | | |
| | 2 | | | | | | |
| 80 184.3 | 80.0 | | 1 | <div>XXXXXX</div> | 80.6-81.0' - Fracture, slightly healed fracture 81.3' - Fracture 83.0-83.4' - Fracture, 60 deg, smooth, undulating, crossed 5 deg plane | R18: 15:47-15:56 At 80.0-84.3': R-Scale = R2 | |
| R18NQ 5 ft 100% | 0 | | | | | | |
| | 0 | | | | | | |
| | 2 | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 6 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

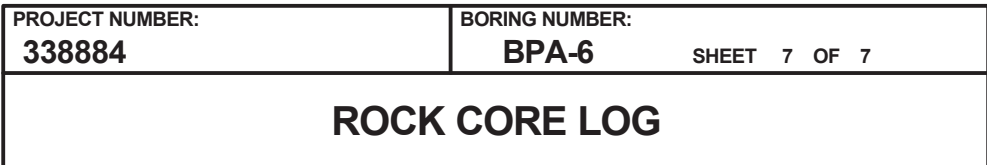
WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

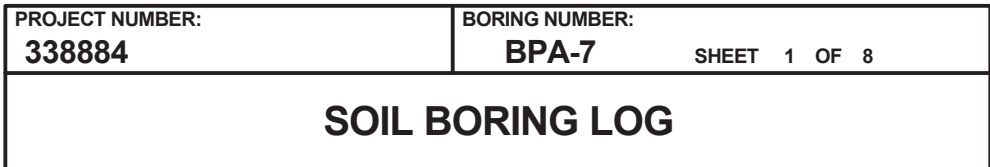
LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 85 179.3 | 85.0 | | 4 | 83.9' - Fracture, 10 deg, smooth, undulating, tight fit 84.4' - Fracture, <5 deg, smooth, planar, tight fit | 84.0-86.8' - highly weathered 85.0-86.8' - dark reddish gray, fine sand Sandy-Silt (ML) 86.8-87.5' - highly weathered, trace clay Siltstone 87.5-90.5' - dark reddish brown, very soft, highly weathered, fine grained, trace sand | At 84.3-87.5': R-Scale = R0-R1 R19: 16:00-16:25 | |
| 90 174.3 | R19NQ 5 ft 100% | 0 | 4 | 85.1' - Fracture, 75 deg, smooth, undulating, crosscut along 75 deg | | | |
| | | | 1 | 85.5' - Fracture, 75 deg, smooth, undulating, crosscut along 75 deg undulating, smooth | | | |
| | | | 1 | 85.7' - Fracture, 75 deg, smooth, undulating, crosscut along 75 deg undulating, smooth | | | |
| | | | 1 | 85.8' - Fracture, 75 deg, smooth, undulating, crosscut along 75 deg undulating, smooth | | | |
| | | | 7 | 88.2-88.3' - Fracture, 45 deg, rough, undulating 88.3-88.5' - Fracture, 60 deg, smooth, undulating, not same orientation 89.4-90.0' - Fracture, 75 deg, rough, undulating | | | |
| 95 169.3 | R20NQ 5 ft 64% | 20 | 3 | 90.0-90.5' - Fracture, 70 deg, smooth, planar, slight yellow staining on face 90.1' - Fracture, vertical, smooth, planar, truncation of vertical 91.1-92.9' - heavily fractured section is watery. Most likely washed away. | Silt (ML) 90.5-93.9' - dark reddish brown, soft, fine grained, low plasticity, highly weathered, soil-like Clay Seam 93.9-94.0' - highly weathered Siltstone At 94.0' - dark reddish brown, trace blue-green mottling, fine grained, very soft, very fragile 94.0-97.4' - slightly weathered | R20: 07:55-08:20 on 6/30/06 At 90.5': PP: 0.5-1.5 tsf 91.1-92.9' Missing, driller showed that the borehole was open to 95' At 91.9': R-Scale = R2 | |
| | | | 2 | 93.9' - Fracture, <5 deg, rough, undulating, tight fit, break at clay seam | | | |
| | | | 10+ | | | | |
| | | | 10+ | | | | |
| | | | 10+ | | | | |
| 100 164.3 | R21NQ 5 ft 83% | 48 | 0 | 96.8' - Fracture, 40 deg and vertical, smooth, planar, planar, smooth, white infilling on due edge 97.4' - Contact between siltstones, <5 deg, rough, undulating, dark gray | Siltstone At 97.4' - greenish gray, soft, fine grained 97.4-100.0' - highly weathered 97.9-100.0' - very dark gray - reddish brown, heavily mottled | R21: 08:24-08:40 At 96.0': R-Scale = R3 At 97.2-106.2': R-Scale = R0 At 97.4': PP: 0.5-3.0 tsf | |
| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 10+ | | | | |
| | | | 10+ | | | | |
| | R22NQ 5 ft 75% | 0 | 10+ | 102.5-106.3' - Fracture zone, 50 deg and 60 deg, slickensided, undulating, heavily fractured | Silt (ML) At 100.0' - greenish gray, very soft, soil-like 100.0-102.5' - highly weathered Silt (ML) 102.5-106.3' - reddish brown/greenish gray, mottled, highly weathered | R22: 08:48-09:25 | |
| | | | 10+ | | | | |
| | | | 10+ | | | | |
| | | | 10+ | | | | |
| | | | 10+ | | | | |



LOGGER : JF

Rev. 5



LOGGER : JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-7

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10.4 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 35 230.0 | R5NQ 5 ft 100% | 85 | 0 | 33.3-34.0' - Fractures (5), <5 deg, rough, undulating | XXXXXX XXXX | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 55 210.0 | R9NQ 5 ft 100% | 88 | 1 | 50.4' - Fracture, 65 deg, rough, undulating | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-7

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

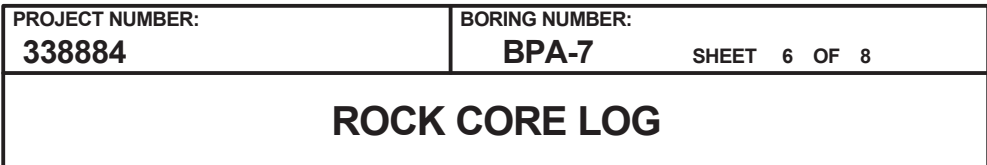
WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 75 | | | 0 | | x x | 70.8-70.9' - clay clasts | At 70.7': R-Scale = R3-R4 |
| | | | 0 | | x x | 71.5-71.9' - clay clasts | |
| | R13NQ 5 ft 100% | 100 | 1 | 72.3' - Fracture, 65 deg, rough, undulating, tight fit | x x | | |
| | | | 0 | | x x | 73.1-73.4' - clay clasts and blue-green mottling | |
| | | | 0 | | x x | 74.0-75.6' - clay clasts and blue-green mottling | |
| 190.0 | 75.0 | | | 75.0-85.0' - Small microfractures/capillary-like | x x | 75.0-85.0' - 10-15% very fine to fine sand | At 74.6': R-Scale = R3-R4 |
| | | | 1 | 75.6' - Fracture, <5 deg, rough, undulating, tight fit | x x | 75.6-87.3' - trace blue-green mottling, very soft | R14: 07:50-08:20 on 06/27/06 |
| | | | 0 | | x x | | At 77.0': R-Scale = R3 |
| | R14NQ 5 ft 100% | 100 | 0 | | x x | | |
| | | | 0 | | x x | | At 78.7': R-Scale = R3 |
| 80 | 80.0 | | 0 | | x x | | |
| 185.0 | | | 0 | | x x | | R15: 08:25-08:55 |
| | | | 0 | | x x | | At 81.4': R-Scale = R3-R4 |
| | R15NQ 5 ft 100% | 100 | 0 | | x x | | |
| | | | 0 | | x x | 83.0-87.3' - faint dark purple mottling, 20 degree bedding and trace clay clasts | At 84.1': R-Scale = R3-R4 |
| 85 | 85.0 | | 0 | | x x | | |
| 180.0 | | | 0 | | x x | 85.0-87.3' - trace very fine to fine sand | R16: 09:00-09:20 |
| | | | 0 | | x x | | At 85.8': R-Scale = R3-R4 |
| | R16NQ 5 ft 100% | 98 | 0 | | x x | 87.3-90.0' - very dusky red, heavily mottled blue-green and dark purple, very soft to soft, few clay clasts at surface | At 87.9': R-Scale = R3-R4 |
| | | | 2 | 88.8 and 88.9' - Fractures (2), <5 deg, rough, undulating, staining on edges, slickensided | x x | | |
| | | | 0 | | x x | | |
| 90 | 90.0 | | | | x x | | |
| 175.0 | | | | | x x | | R17: 09:25-09:45 |



LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-7

SHEET 7 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 115 150.0 | R21NQ 5 ft 100% | 60 | 2 | 110.5' - Fracture, <5 deg, rough, undulating 110.9' - Fracture, 30 deg, rough, undulating 111.8' - Fracture, <5 deg, rough, undulating 112.1-113.5' - Fracture, near vertical deg, rough, undulating < | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10


LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 135 | 135.0 | 100 | 0 | 131.7 and 132.7' - Fractures (2), <5 deg, slickensided, undulating, tight fit | x | 130.0-130.7' - mottled blue-green, trace very fine sand | SC-5 collected 130.7-131.7' At 132.0': R-Scale = R3 At 134.0': R-Scale = R3-R4 R26: 13:50-14:25 At 135.7': R-Scale = R3-R4 At 139.3': R-Scale = R3 R27: 14:30-15:05 First water level = 10.0' bgs taken 6/27/06 at 16:00; second water level = 9.0' bgs taken 6/28/06 at 15:10 R-Scale performed after drilling on stored samples |
| | | | 1 | | x | 130.7-131.7' - heavily mottled blue-green, 25% very fine sand | |
| | | | 1 | | x | 132.3-132.5' - white ripup clay clasts | |
| | | | 0 | | x | 132.5-135.0' - trace blue-green mottling | |
| | | | 0 | | x | 134.5-135.0' - trace very fine sand | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 140 | 140.0 | 100 | 0 | 131.7 and 132.7' - Fractures (2), <5 deg, slickensided, undulating, tight fit | x | 139.5-140.0' - 0.8 to 1.2 white/pink, clay clasts | SC-5 collected 130.7-131.7' At 132.0': R-Scale = R3 At 134.0': R-Scale = R3-R4 R26: 13:50-14:25 At 135.7': R-Scale = R3-R4 At 139.3': R-Scale = R3 R27: 14:30-15:05 First water level = 10.0' bgs taken 6/27/06 at 16:00; second water level = 9.0' bgs taken 6/28/06 at 15:10 R-Scale performed after drilling on stored samples |
| | | | 0 | | x | 140.0-145.0' - trace blue-green mottling along thin possible root structures | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 145 | 145.0 | 100 | 0 | 131.7 and 132.7' - Fractures (2), <5 deg, slickensided, undulating, tight fit | x | 144.6' - clay clasts | SC-5 collected 130.7-131.7' At 132.0': R-Scale = R3 At 134.0': R-Scale = R3-R4 R26: 13:50-14:25 At 135.7': R-Scale = R3-R4 At 139.3': R-Scale = R3 R27: 14:30-15:05 First water level = 10.0' bgs taken 6/27/06 at 16:00; second water level = 9.0' bgs taken 6/28/06 at 15:10 R-Scale performed after drilling on stored samples |
| | | | 0 | | x | Bottom of Boring at 145.0 ft bgs on 6/27/06 15:10 | |
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| 150 | 115.0 | | | | | | |



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| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-8</div> |
| SHEET 1 OF 9 | |
| <div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div> | |

| | |
|---|--|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (686839.1 N, 2012351.4 E) |
| ELEVATION : 267.4 ft MSL (NGVD 29) | DRILLING CONTRACTOR : L. Morrison, S&ME |
| DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer | ORIENTATION : Vertical |
| WATER LEVELS : 12.0 ft bgs | START : 6/27/06 16:13 END : 6/29/06 10:30 LOGGER : LH/EM |

| WATER LEVELS: 725.0 BGS | | START: 6/27/06 10:15 | | END: 6/27/06 6:00 | | LOGGERS: JENNY | |
|---------------------------------|---------------|----------------------|-----------------------------------|--|---|---|---|
| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
| | RECOVERY (in) | #TYPE | 6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | | |
| | | | | | | | |
| 267.4 | 0.0 | | | | Topsoil 0.0-0.2' |  | Soil sampling completed at 16:26 on 6/27/06 |
| | 13.2 | SS1SS | 1-50/5 (50/5") | Clay (CL) 0.2-1.1' - reddish brown, mottled reddish black and light greenish gray, dry, hard, laminated beds | | | |
| | 2.0 | | | | | | |
| | 2.5 | 3.0 | SS2SS | 50/3 (50/3") | Clay (CL) 2.5-2.8' - reddish brown, mottled reddish black and light greenish gray, dry, hard, laminated beds Begin Rock Coring at 2.8 ft bgs See the next sheet for the rock core log | | |
| | 2.8 | | | | | | |
| 5 | | | | | | | |
| 262.4 | | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-8

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

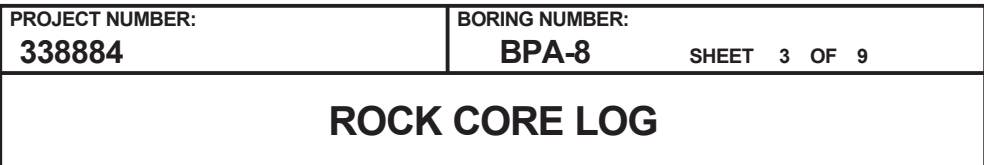
WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 5 262.4 | 2.8 R1NQ 1.4 ft 131% | 100 | 0 | 4.1' - Fractures (2), horizontal, rough, planar | x | | |



LOGGER : LH/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------------|--------------------|---|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 45 222.4 | 44.2 | R10NQ 5 ft 97% | 97 | 0 | 48.1' - Fracture, horizontal, rough, planar | x | 43.1-43.2' - trace white clasts | At 43.1': R-Scale = R3-R4 |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| 50 217.4 | 49.2 | R11NQ 5 ft 102% | 92 | 1 | 50.3' - Fracture, 45 deg, rough, undulating 50.4' - Fracture, horizontal, rough, planar 50.7' - Fracture, horizontal, rough, planar | x | 44.1-44.2' - trace white clasts 44.2-44.7' - laminated bedding 44.2-44.7' - very soft 44.2-45.6' - white clasts 46.4-46.5' - 20-30% very fine sand 46.9-47.0' - laminated bedding 47.1-47.2' - 20-30% very fine sand 47.4-47.6' - 20-30% very fine sand 47.7' - white clasts 48.0-50.4' - laminated bedding 48.0-50.3' - very soft 48.6' - white clasts 49.2-49.6' - white clasts 49.2-50.4' - laminated bedding 49.9-50.1' - clay seam, very soft, friable material 50.2-50.2' - 20-40% very fine to fine sand 51.8-52.5' - 20-40% very fine sand | R10: 10:14-10:23 At 45.5': R-Scale = R3-R4 At 47.4': R-Scale = R3-R4 At 48.0-49.2': R-Scale = R2 R11: 10:30-10:40 At 51.0': R-Scale = R3-R4 At 53.0': R-Scale = R3 |
| | | | | 4 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| 55 212.4 | 54.2 | R12NQ 5 ft 96% | 96 | 0 | 55.3' - Contact between siltstone and sandstone, horizontal, planar | x | 54.2-54.2' - 20-40% very fine to fine sand Sandstone 55.3-56.5' - dark greenish gray and white, mottled dark red, soft, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh Siltstone 56.5-56.7' - fresh, grades to siltstone lense and back to sandstone Sandstone 56.7-64.3' - dark greenish gray and white, mottled dark red, soft, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh, coarse (lighter) and fine (darker) grained bands | R12: 10:46-10:57 At 55.3': R-Scale = R3-R4 At 56.2': R-Scale = R3-R4 SC-2 collected 57.1-58.1' At 58.9': R-Scale = R5 R13: 11:07-11:18 At 59.7': R-Scale = R3-R4 At 61.6': R-Scale = R3-R4 |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| | | | | 0 | | x | | |
| 60 207.4 | 59.2 | R13NQ 5 ft 103% | 100 | 0 | | | | |
| | | | | 0 | | | | |
| | | | | 0 | | | | |
| | | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------------|---|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 65 202.4 | 64.2 | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 3 | 64.3' - Contact between siltstone and sandstone, 45 deg, smooth, planar, tightly healed | | 64.2-64.3' - mottled dark reddish brown | At 63.6': R-Scale = R3-R4 | |
| | | | 1 | 64.6' - Fracture, horizontal, smooth, planar | | Siltstone At 64.3' - dark reddish brown, mottled greenish gray and reddish black, soft | R14: 11:24-11:37 | |
| | | | 4 | 65.0' - Fracture, horizontal, smooth, planar | | | At 65.5': R-Scale = R3 | |
| | | R14NQ 5 ft 100% | 79 | 65.1' - Fracture, horizontal, smooth, undulating | | 65.5-65.9' - 0.1' thick greenish gray mottles | | |
| | | | 1 | 65.9' - Fracture, horizontal, smooth, undulating | | 66.7-67.2' - soft, laminated bedding | At 66.8-67.2': R-Scale = R0 | |
| | | | 0 | 66.2-66.4' - Fracture, 45 deg, slickensided, undulating | | 66.9-67.2' - clay seam, very soft, friable material | | |
| | | | 0 | 66.5' - Fracture, horizontal, smooth, planar | | 67.2-68.1' - white clasts | At 67.9': R-Scale = R3-R4 | |
| | | | 0 | 66.7' - Fracture, horizontal, smooth, undulating | | | | |
| | | 0 | 67.6' - Fracture, horizontal, rough, undulating | | | | | |
| 70 197.4 | 69.2 | | 0 | | | 68.9-69.3' - greenish gray mottles throughout width of core | R15: 11:46-11:55 | |
| | | | 0 | | | 69.8-69.9' - 0.05' thick greenish gray mottle | At 69.9': R-Scale = R3-R4 | |
| | | | 4 | 70.3-70.6' - Fracture zone, horizontal, rough, planar, clay seams, 0.01' thick | | 70.2-70.3' - 0.03' thick greenish gray mottle | | |
| | | R15NQ 5 ft 103% | 97 | | | 70.3-70.6' - soft, laminated bedding | | |
| | | | 0 | | | | | |
| | | | 0 | | | 72.2-72.5' - 0.02' thick greenish gray mottle, along fracture, tightly healed | At 72.1': R-Scale = R3-R4 | |
| | | | 0 | | | | At 73.2' PP: 1.5 tsf | |
| | | | 0 | | | 74.1-74.2' - 0.15' thick greenish gray mottle | R16: 13:18-13:30 | |
| | | | 0 | | | 74.2-83.1' - soft, 0-20% very fine sand | At 74.8': R-Scale = R3-R4 | |
| | | | 0 | | | | | |
| 75 192.4 | 74.2 | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | R16NQ 5 ft 88% | 88 | | | | At 76.9': R-Scale = R3-R4 | |
| | | | 0 | | | | | |
| | | | 0 | | | | At 78.2': R-Scale = R3-R4 | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| 80 187.4 | 79.2 | | 0 | | | | R17: 13:37-13:48 | |
| | | | 0 | | | | SC-3 collected 79.7-80.7' | |
| | | | 0 | | | | | |
| | | R17NQ 5 ft 102% | 100* | | | 81.5-83.1' - 0-30% fine to coarse sand, and gravel sized white clasts | At 82.0': R-Scale = R3-R4 | |
| | | | 0 | | | 81.5-87.4' - gravel sized white clasts | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 6 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 85 182.4 | 84.2 | | 0 | 83.9-84.2' - Fracture zone, horizontal, rough, planar, clay seams, very soft, 0.01' thick 84.2-84.8' - Fracture zone, rough, undulating | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-8

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | |
|--|------------------------------------|-----------------|--------------------|---|---|---|--|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 105 162.4 | 104.2 | | 0 | |  | 103.1-103.2' - 0.06' thick greenish gray mottle 103.6-104.0' - 0.01-0.03' thick greenish gray mottles 104.5-104.8' - 0.15' thick greenish gray mottle | At 103.4': R-Scale = R3 R22: 15:35-15:47 At 106.0': R-Scale = R3-R4 | | |
| | | 0 | | | | | | | |
| | R22NQ 5 ft 103% | 100 | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| 110 157.4 | 109.2 | | 0 | | | | 110.4-110.5' - 0.03' thick greenish gray mottle | At 108.6': R-Scale = R3-R4 R23: 15:58-16:11 At 109.8': R-Scale = R3-R4 SC-4 collected 110.4-111.6' | |
| | | 0 | | | | | | | |
| | | 1 | | | | | | | |
| | R23NQ 5 ft 100% | 68 | 3 | | | | | | |
| | | | 3 | | | | | | |
| | | 7 | | | | | | | |
| 115 152.4 | 114.2 | | 10+ | | | | | Siltstone At 111.6' - very dark greenish gray, olive, mottled greenish gray and dark reddish brown, very soft to soft, slightly weathered | At 112.1': R-Scale = R3 R24: 16:20-16:47 At 115.4': R-Scale = R3 At 117.2': R-Scale = R3-R4 |
| | | 3 | | | | | | | |
| | R24NQ 5 ft 95% | 67 | 4 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| 120 147.4 | 119.2 | | 0 | | Siltstone At 119.2' - dark reddish brown, mottled pale olive and olive yellow, soft, subangular, well sorted, slightly weathered, very fine to fine grained 119.3-119.4' - laminated bedding | | | R25: 07:59-08:15 on 06/29/06 At 119.6': R-Scale = R3-R4 At 121.5': R-Scale = R4 | |
| | | 2 | | | | | | | |
| | R25NQ 5 ft 99% | 91 | 2 | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-8

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | |
|--|------------------------------------|----------------------|--|--|---|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 125 142.4 | 124.2 | R26NQ 5 ft 90% | 90 | 0 | 122.1' - Fracture, horizontal, rough, undulating, 0.02' clay infilling | Sandstone 120.0-120.2' - dark greenish gray, mottled pale olive, olive yellow, and dark reddish brown, soft, very fine sand to fine sand, subangular, well sorted, slightly weathered Siltstone 120.2-120.3' - dark reddish brown, mottled pale olive and olive yellow, soft, slightly weathered Sandstone 120.3-120.9' - dark greenish gray, mottled pale olive, olive yellow, and dark reddish brown, soft, very fine sand to fine sand, subangular, well sorted, fresh Siltstone At 120.9' - dark reddish brown, mottled olive yellow, greenish gray, and reddish black, very soft to soft, fresh 121.9-121.9' - laminated bedding 121.9-122.2' - very soft, laminated bedding 122.2-124.2' - soft 122.4-122.6' - 0.02-0.05' thick greenish gray mottle 126.2-126.4' - laminated bedding 129.2-134.2' - reddish black and little greenish gray mottling, soft to hard | At 123.6': R-Scale = R3-R4 R26: 08:24-08:40 | | |
| | | | | 0 | 122.2' - Fractures (2), horizontal, rough, undulating, 0.02' clay infilling | | | | |
| | | | | 1 | 124.7' - Fracture, horizontal, rough, undulating | | | | |
| | | | | 0 | | | | | |
| | | | | 1 | 126.2' - Fracture, horizontal, rough, undulating | | | | |
| | 129.2 | 0 | | | | | | | |
| | | 0 | | | | | | | |
| | | | | | | | | | |
| | | 0 | | | | | | | |
| | | 0 | | | | | | | |
| 130 137.4 | R27NQ 5 ft 103% | 92 | 0 | | | At 125.8': R-Scale = R3-R4 At 128.1': R-Scale = R3-R4 R27: 08:53-09:10 At 130.7': R-Scale = R3 At 132.4': R-Scale = R4 | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 3 | 132.6' - Fracture, horizontal, rough, undulating 132.9' - Fracture, horizontal, rough, planar 133.2' - Fracture, horizontal, rough, undulating, clay seam, 0.05' thick, hard, friable material | | | | | |
| | | | 0 | | | | | | |
| | 134.2 | | | | | | | | |
| | | 1 | 134.4' - Fracture, horizontal, rough, undulating | | | | R28: 09:19-09:32 At 134.7': R-Scale = R3-R4 | | |
| | | 0 | | | | | | | |
| | | 0 | | | | | At 137.4': R-Scale = R3-R4 | | |
| | | 0 | | | | | | | |
| 135 132.4 | R28NQ 5 ft 104% | 100 | 0 | | Sandstone At 138.4' - dark reddish brown, very dark gray, light gray, soft to hard, very fine sand to fine sand, poorly sorted, fresh 138.4-139.2' - dark reddish brown, reddish black mottling, coarse sand, 40-50% coarse sand 139.2-141.7' - very dark gray, coarse grains scattered until 139.7' ~10% 139.7' - 10% coarse sand | R29: 09:54-10:07 At 139.6': R-Scale = R3-R4 SC-5 collected 141.3-142.5' | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | 139.2 | | | | | | | | |
| | | 0 | | | | | | | |
| | | 0 | | | | | | | |
| | | 0 | | | | | | | |
| | | 0 | 141.3' - Fracture, horizontal, rough, undulating | | | | | | |
| 140 127.4 | R29NQ 5 ft 100% | 100 | | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

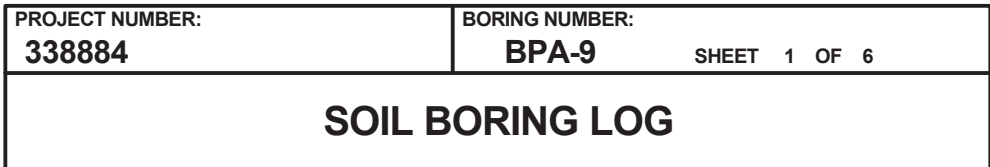
WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-------------------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 145 122.4 | 144.2 | R30NQ 3.3 ft 100% | 91 | 1 | 142.5-144.2' - Microfractures, partial clay infilling 143.0' - Fracture, 20 deg, smooth, undulating | x | |



LOGGER : EM/LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-9

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 5 261.8 | 3.3 R1NQ 1 ft 100% | 0 | 4 | 3.6' - Fracture, horizontal, rough, planar 3.7' - Fracture, 45 deg, rough, undulating 4.1' - Fracture, horizontal, rough, planar 4.3' - Fracture, horizontal, rough, planar | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-9

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|---|--|--|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 25 241.8 | 24.3 | | 0 | | | 23.7-24.3' - 10-30% fine sand | R6: 15:33-15:41 At 24.8': R-Scale = R3 |
| | R6NQ 5 ft 100% | 99 | 1 | 24.4' - Fracture, horizontal, smooth, undulating | | 24.3-26.0' - 10-30% fine sand | |
| | | 1 | | | | | |
| | | 0 | 26.1' - Fracture, horizontal, smooth, undulating | | Sandstone 26.0-26.3' - light greenish gray, soft, fine sand to medium sand, fresh | At 27.7': R-Scale = R3-R4 | |
| | | 1 | 26.9' - Contact between sandstones, sandstone contact | | Siltstone 26.3-26.6' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh | | |
| | | 0 | 28.1' - Fracture, horizontal, smooth, undulating, little black staining | | Sandstone 26.6-26.9' - light greenish gray, soft, fine sand to medium sand, fresh, gradational contact | | |
| 30 236.8 | 29.3 | | 1 | 29.4' - Fracture, horizontal, rough, undulating | | | R7: 15:48-15:56 |
| | R7NQ 5 ft 100% | 99 | 0 | | | Siltstone 26.9-28.9' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh | At 30.4': R-Scale = R3-R4 |
| | | 1 | 31.5' - Contact between siltstone and sandstone | | Sandstone 28.9-31.5' - light greenish gray and light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh, feldspar and quartz | At 32.0': R-Scale = R5 | |
| | | 1 | 31.6' - Fracture, 50 deg, rough, undulating | | Siltstone 31.5-33.0' - fresh, lens | | |
| | | 0 | 32.8' - Fracture, horizontal, smooth, undulating | | Sandstone 33.0-33.3' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh | R8: 16:02-16:11 At 34.8': R-Scale = R5 | |
| | | 0 | 32.8' - Fracture, 45 deg, smooth, undulating | | Siltstone 33.3-33.4' - fresh, lens | | |
| 35 231.8 | 34.3 | | 3 | 35.1-35.3' - Fractures (4), horizontal, smooth, undulating | | | At 36.4': R-Scale = R3 |
| | R8NQ 5 ft 92% | 78 | 1 | 35.3' - Contact between siltstone and sandstone, sharp | | Sandstone 33.4-33.6' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh | |
| | | 1 | 35.6' - Fracture, 10 deg, smooth, undulating | | Siltstone 33.6-33.7' - fresh, lens | At 38.4': R-Scale = R3 | |
| | | 0 | 37.0' - Fracture, horizontal, smooth, undulating | | Sandstone 33.7-34.6' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh | | |
| | | 0 | 37.3' - Fracture, horizontal, smooth, undulating | | Siltstone 34.6-34.7' - fresh, lens | R9: 16:18-16:26 | |
| | | 0 | | | Sandstone 34.7-35.3' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh | | |
| 40 226.8 | 39.3 | | 2 | 39.1' - Fracture, 85 deg, rough, undulating | | | At 41.5': R-Scale = R3-R4 |
| | R9NQ 5 ft 98% | 90 | 10+ | 39.8' - Fracture, horizontal, undulating | | Siltstone At 35.3' - dark reddish brown, mottled reddish black and greenish gray, soft | |
| | | 0 | 40.3' - Fracture zone, 85 deg, rough, undulating, heavily fractured, crumbled | | Sandstone 35.3-51.3' - fresh | | |
| | | 0 | 40.7' - Fracture, 50 deg, smooth, undulating | | Siltstone 35.7' - 0.2' thick mottles | | |
| | | 0 | | | Sandstone 36.1' - 0.2' thick mottles | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-9

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 65 201.8 | 64.3 | | 1 | 63.4' - Fracture, 60 deg, rough, undulating | X | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-9

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

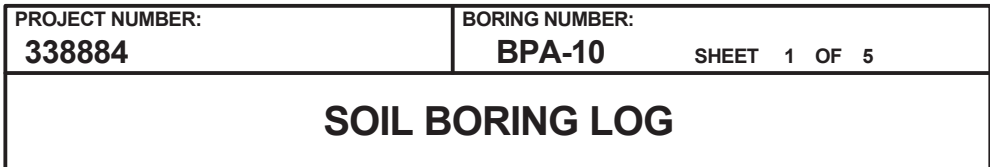
WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 85 181.8 | 84.3 | | 0 | <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> 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LOGGER : JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-10

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.4 N, 2012383.0 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME 550, NQ Double Barrel

ORIENTATION : Vertical

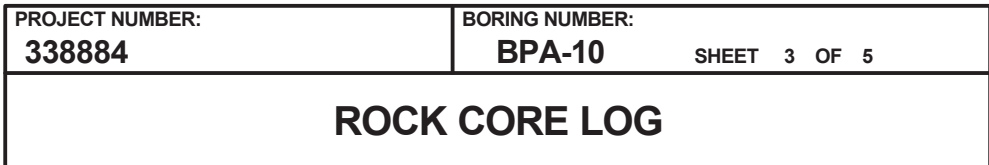
WATER LEVELS : 3.5 ft bgs

START : 6/27/06 17:00

END : 6/28/06 14:45

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---------------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 | 7.6 | | 0 | | | Sandstone 7.6-8.4' - dark reddish brown, soft, fine sand to medium sand, moderately weathered, 75% sand, 25% silt matrix | Rock coring began at 07:45 on 6/28/06 |
| | R1NQ 2.5 ft 95% | 44* | 2 | 8.2' - Fracture, <5 deg, rough, undulating, tight fit | | 8.0' - siltstone lens ~10 degree bedding | R1: 07:45-08:00 on 06/28/06 |
| | | | 2 | 8.4' - Fracture, <5 deg, rough, undulating, tight fit | | | At 8.5-9.0': R-Scale = R0 |
| | | | | 9.2' - Fracture, <5 deg, rough, undulating, tight fit | | | At 9.0-10.0': R-Scale = R1 |
| 10 | 10.0 | | 10+ | 9.7' - Fracture, <5 deg, rough, undulating, tight fit | | Siltstone At 8.4' - dark reddish brown, very soft, fine grained, soil-like characteristics | At 10.0-10.2': R-Scale = R0 |
| 255.9 | | | 10+ | 11.3-11.5' - Fracture zone, 70 deg, rough, undulating, tight fit | | 8.4-12.5' - moderately weathered | R2: 08:05-08:35 |
| | R2NQ 5 ft 97% | 71* | 3 | 11.5' - Fracture, <5 deg, rough, undulating, tight fit | | 9.0-11.1' - some very fine to fine sand (25%) | At 10.2-10.8': R-Scale = R1 |
| | | | 0 | | | 10.3-10.5' - clay seam | At 10.3-10.8': PP: 1.0 tsf |
| | | | 0 | | | 10.9' - clay seam | At 10.8-10.9': PP: 1.5tsf |
| | | | 0 | | | 11.1' - clay seam | At 10.9-11.0': PP: 1.0 tsf |
| | | | 0 | | | 11.1-12.0' - becoming more competent | At 10.95-11.1': PP: 0.5 tsf |
| | | | 0 | | | 12.0' - clay seam | SC-1 collected 10.5-10.8' |
| | | | 0 | | | 12.5' - clay seam | At 11.1-12.4': R-Scale = R2 |
| | | | 0 | | | 12.5-15.6' - fresh | At 12.0': PP: 1.0 tsf |
| | | | 0 | | | | At 12.5': PP: 0.5 tsf |
| | | | 0 | | | | At 13.7': R-Scale = R3-R4 |
| 15 | 15.0 | | 1 | 15.6' - Fracture, <5 deg, rough, undulating, some darker staining | | Sandstone 15.6-16.4' - dark reddish brown, trace mottling, soft, fine sand, angular, fresh | R3: 08:40-08:55 |
| 250.9 | | | 0 | | | Siltstone At 16.4' - dark reddish brown, trace blue-green mottling, very soft, fresh, pink clay clasts, mottling band at bottom | At 15.9': R-Scale = R3-R4 |
| | R3NQ 5 ft 100% | 100 | 1 | 17.8' - Fracture, <5 deg, rough, undulating | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 20 | 20.0 | | 0 | | | 20.0-23.6' - with fine sand | R4: 09:00-09:12 |
| 245.9 | | | 0 | | | | At 20.72': R-Scale = R3-R4 |
| | R4NQ 5 ft 100% | 100 | 0 | | | At 22.5' - sandstone lens, fine to medium grained, 0.05' thick blue-green mottling at top and bottom, bedding at 25 degrees | |
| | | | 0 | 23.5' - Contact between siltstone and sandstone | | Sandstone At 23.6' - reddish gray, fine to medium grained, soft to hard, angular, fresh | At 23.8': R-Scale = R3-R4 |
| | | | 0 | | | 24.2-24.7' - fine grained, soft, subangular | |
| | | | 0 | | | 24.7-25.0' - angular to subangular | |
| | | | 0 | | | At 25.0' - gray, fine to medium grained, soft to hard, subangular | |
| 25 | 25.0 | | 0 | | | 25.5' - trace siltstone lens | R5: 09:14-09:25 |
| 240.9 | | | 0 | | | 26.7' - trace siltstone lens | |
| | R5NQ | | | | | | |



LOCATION : (NAD 27) (686920.4 N, 2012383.0 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JF

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-10

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.4 N, 2012383.0 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME 550, NQ Double Barrel

ORIENTATION : Vertical

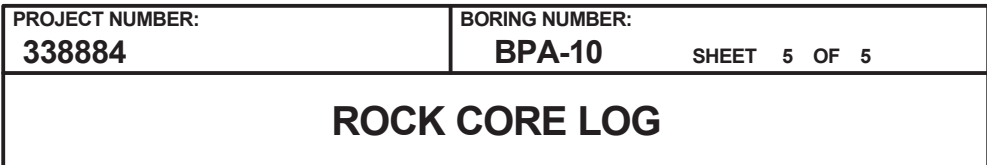
WATER LEVELS : 3.5 ft bgs

START : 6/27/06 17:00

END : 6/28/06 14:45

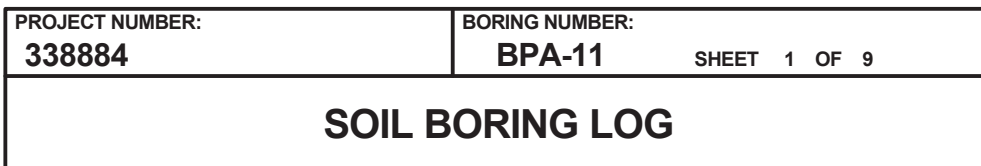
LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 50 215.9 | 5 ft 103% | 100 | 0 | 50.1' - Fracture, <5 deg, rough, undulating 50.2' - Fracture, <5 deg, rough, undulating 50.4' - Fracture, <5 deg, rough, undulating 50.5' - Fracture, <5 deg, rough, undulating 50.6' - Fracture, <5 deg, rough, undulating 52.2' - Fracture, <5 deg, rough, undulating | x | | | |



LOGGER : JF

Rev. 5



LOGGER : LH/MJ

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-11

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 7.7 | R1NQ 2 ft 105% | 0 | 3 | 8.1' - Fracture, horizontal, smooth, undulating, microfractures with greenish gray in fracture | x x x | Siltstone At 7.7' - dark reddish brown, mottled greenish gray, very soft, laminated bedding 7.7-17.0' - highly weathered 8.9-9.0' - fine sand to coarse sand, sandstone lense, some clay, very soft 9.5' - trace medium sand 9.7-11.1' - very soft to soft 12.4-13.6' - clay seam with very soft sandstone fragment, medium 14.0' - clay seam 14.6-14.7' - clay seam, medium 14.8-15.3' - clay seam, soft 17.0-22.0' - moderately weathered 17.9-18.4' - clay seam, hard 19.0-21.2' - dark reddish brown, soft 21.2-21.9' - clay seam with sandstone banded seams, very thin bedding 21.9-28.1' - dusky red, soft 22.0-28.5' - slightly weathered | Rock coring began at 15:37 on 6/5/06 R1: 15:37-15:49 on 06/05/06 At 7.7-16.3': R-Scale = R0 R2: 16:08-16:16 Driller's remark: Rod dropped 0.4-0.5' at 13.5' R3: 16:20-16:29 At 17.3': R-Scale = R2-R3 R4: 09:20-09:21 on 06/06/06 R5: 09:30-09:35 At 20.6-22.0': R-Scale = R0-R1 R6: 10:50-10:57 |
| 9.7 | | | 4 | 8.4' - Fracture, horizontal, smooth, undulating | x x x | | |
| 10 | | | | 8.5' - Fracture, horizontal, smooth, planar | x x x | | |
| 254.3 | | | | 8.9-9.2' - Fracture, horizontal and 45 deg, rough and smooth, undulating | x x x | | |
| | | | 2 | 9.6' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 2 | 9.7-11.1' - Fracture, horizontal, smooth, undulating, microfractures throughout | x x x | | |
| | | | 10+ | 11.1-11.9' - greenish gray in fractures | x x x | | |
| | | | 10+ | | x x x | | |
| | | | 1 | | x x x | | |
| 14.1 | | | 10+ | 14.1-14.8' - Fracture, horizontal, smooth, undulating | x x x | | |
| 15 | | | | | x x x | | |
| 249.3 | | | 10+ | 15.3-16.0' - Microfractures throughout with greenish gray infrastructure | x x x | | |
| | | | 1 | 16.0-17.9' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | 10+ | 16.3' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 10+ | 16.7' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 10+ | | x x x | | |
| | | | | 19.0-20.2' - Fracture, horizontal, smooth, undulating | x x x | | |
| 20 | | | 4 | | x x x | | |
| 244.3 | | | 6 | 21.0' - Fracture, horizontal and 45 deg, smooth, undulating | x x x | | |
| | | | 10+ | 21.9-25.0' - Fracture zone, horizontal, smooth, undulating, laminated | x x x | | |
| | | | 10+ | | x x x | | |
| 25 | | | | 25.0-28.1' - Fractures, horizontal, smooth, undulating | x x x | | |
| 239.3 | | | 7 | 25.1' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | 3 | 25.2' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | | 25.4' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | | 25.4' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | | 25.9' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | 2 | 25.9' - Fracture, horizontal, smooth, undulating | x x x | | |
| | | | | | x x x | | |
| | | | | | x x x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-11

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|----------------------|--------------------|--------------|--|--|---------------------------|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| 30 234.3 | 100% | | | | | | | |
| | | | 10+ | | 28.1-28.5' - clay seams | | | |
| | | | | | Sandstone 28.5-29.0' - weak red, soft, fine sand to coarse sand, slightly weathered, coarsens with depth | At 28.6': R-Scale = R3-R4 | | |
| | 29.6 | | 1 | | Conglomerate 29.0-30.8' - weak red, soft, coarse sand to fine gravel, slightly weathered | R7: No time recorded | | |
| | | | 3 | | Siltstone At 30.8' - dark reddish brown, greenish gray mottling, soft, laminated bedding | At 30.2-30.7': R-Scale = R0-R1 | | |
| | | | 3 | | 30.8-34.6' - bioturbations filled in with darker gray silt/clay | At 32.1-33.4': R-Scale = R0-R1 | | |
| | | R7NQ 5 ft 96% | 40 | 10+ | 30.8-34.9' - slightly weathered | | | |
| | | | 3 | | 32.2-32.5' - clay intrusion | | | |
| | | | 3 | | | | | |
| | | 34.6 | | XXXX | | | | |
| 35 229.3 | | | 7 | | 34.6-43.0' - black clast throughout | R8: 11:27-11:35 | | |
| | | | | | 34.9-46.6' - fresh | | | |
| | | | 1 | | | | | |
| | | | | | | | | |
| | | R8NQ 5 ft 100% | 92 | 1 | | At 36.5': R-Scale = R3 | | |
| | | | | | | SC-1 collected | | |
| | | | | 0 | | 37.5-38.5' | | |
| | | | | 1 | | | | |
| | | | | | | | | |
| | | 39.6 | | | | | At 39.2': R-Scale = R3-R4 | |
| 40 224.3 | | | 1 | | | R9: No time recorded | | |
| | | | | | | | | |
| | | | 2 | | 40.5-40.8' - Fracture zone, smooth, undulating | | | |
| | | | | | 40.8' - Fracture, vertical | | | |
| | | | | | 41.1' - Fracture, horizontal, rough, undulating | | | |
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| | | | 0 | | | | | |
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| 45 219.3 | | | 2 | | 43.0-44.0' - very soft, very thin bedding, banded layers of clay, <0.2' thick | | | |
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| | | | 2 | | | | | |
| | | 44.6 | | | | | At 44.1': R-Scale = R3 | |
| | | | | | | | R10: 13:45-13:56 | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-11

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 50 214.3 | 49.6 | 98 | 6 | 47.7' - Fracture, horizontal, rough, planar 47.8' - Fracture, horizontal, rough, planar 48.2' - Fracture, horizontal, rough, planar 48.2' - Fracture, horizontal, rough, planar, clay seam (0.03' thick) tightly healed 48.5-48.6' - Fracture, horizontal, rough, planar, clay seam spans entire interval | X | | |



PROJECT NUMBER:

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SHEET 5 OF 9

ROCK CORE LOG

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| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 70 194.3 | 69.6 | 100 | 10+ | 66.8' - Fracture, horizontal, rough, planar 67.4' - Fracture, horizontal, rough, planar 67.4' - Fracture, horizontal, rough, planar 67.6' - Fracture, horizontal, rough, undulating 67.7-67.8' - Fracture, horizontal, rough, undulating | x x x x x | 66.1-69.6' - slightly weathered to moderately weathered 67.4-68.3' - clay seam, very soft | At 67.4-68.0': R-Scale = R0 - R1 |
| | | | 10+ | 68.0' - Fracture, horizontal, rough, undulating 68.4-68.5' - Fracture, horizontal and 45 deg, rough, undulating 68.6' - Fracture, horizontal, rough, undulating 69.1' - Fracture, horizontal, smooth, planar, greenish gray infilling (mottling in bedrock) 69.2' - Fracture, horizontal, rough, undulating, greenish gray mottling in fracture 69.6-74.1' - Trace microfractures throughout greenish gray infilling tightly healed | x | | |



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SHEET 6 OF 9

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CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|-------------|---|--|--|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | |
| 90 174.3 | 89.1 | | 0 | | x | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-11

SHEET 7 OF 9

ROCK CORE LOG

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LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | | |
|--|---|-------------------------|---|--------------|--|--|---|--|---|--|----------------------------|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | | |
| | | | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 110 154.3 | 109.4 | R23NQ 5.2 ft 100% | 78* | 0 | | x x x | 107.5-107.8' - 0.06' thick greenish gray mottle | R23: 11:28-11:36 At 109.8': R-Scale = R3-R4 SC-4 collected 110.9-111.8' | | | | |
| | | | | 0 | | x x x | | | | | | |
| | | | | 1 | 110.3' - Fracture, horizontal, rough, undulating 110.7' - Fracture, horizontal, rough, undulating 110.9' - Fracture, horizontal, rough, undulating 110.9' - Fracture, horizontal, rough, undulating | x x x | 109.4-111.8' - grading to very fine to fine sandstone; trace <0.05 thick black clasts | | | | | |
| | | | | 3 | | x x x | | | | | | |
| | | | | 10+ | 111.8' - Fracture, horizontal, rough, undulating 111.9' - Fracture, horizontal, rough, undulating 112.4' - Fracture, horizontal, rough, planar 112.5' - Fracture, horizontal and vertical, rough, stepped | x x x | 111.4-111.5' - clay seam, 0.05' thick, very soft | | | | | |
| | | | | 3 | 113.5' - Fracture, horizontal, rough, planar 113.6-114.6' - Fracture zone, rough, planar, with clay seams (<0.1' thick) | x x x | Sandstone 111.8-114.6' - dark reddish brown and olive gray, very soft, laminated bedding, moderately weathered, alternating sandstone and siltstone with clay seams (0.6-0.01' thick) 112.6-112.7' - clay seam, (0.05' thick) soft | | | | | |
| | | | | 7 | | x x x | | | | | | |
| | | | | 10+ | 115.2-116.2' - Fracture zone, horizontal and vertical, rough, planar / undulating, clay seams (0.05' thick) | x x x | 112.9' - clay seam, (0.05' thick) soft | | | | | |
| | | | | 10+ | | x x x | Clay 114.6-115.2' - gray, very soft, laminated bedding, moderately weathered, clay seam | | | | | |
| | | | | 115 149.3 | 114.6 | R24NQ 5 ft 84% | 62* | | 2 | 116.8' - Fracture, 30 deg, rough, undulating | x x x | Siltstone 115.2-118.0' - olive gray, greenish gray, and white, soft, moderately weathered, laminated beds | R24: 11:50-12:13 |
| 3 | 117.4' - Fracture (2), horizontal, rough, undulating, no stains 117.7' - Fracture, horizontal, tightly healed 118.0' - Fracture, horizontal, tightly healed | x x x | 116.4' - clay seam, (0.01' thick) very soft | | | | | | | | | |
| 0 | 118.2' - Fracture, horizontal, rough, undulating | x x x | 117.2-117.2' - clay seam, (0.05' thick) laminated beds, very soft | | | | | | | | | |
| | | x x x | Sandstone 118.0-119.2' - dark reddish brown, very soft, medium bedding, grades to fine material at bottom 118.0-118.2' - moderately weathered 118.2-119.2' - slightly weathered | | | | | | | | | |
| 10+ | 119.6-120.0' - Fracture zone, horizontal, rough, undulating, clay seams (<0.02' thick) | x x x | Siltstone 119.2-121.9' - dark reddish brown and olive gray, greenish gray mottling, soft to hard, slightly weathered, gradational contact | | | | | | | | | |
| 0 | 121.2' - Fracture, horizontal, smooth, undulating 121.3' - Fracture, horizontal, smooth, undulating | x x x | | | | | | | | | | |
| 0 | | x x x | Sandstone 121.9-122.5' - gray and white, hard, thin bedding, very fine sand to fine sand, slightly weathered | | | | | | | | | |
| 10+ | 123.5' - Fracture, horizontal, rough, planar 123.9-124.3' - Fracture zone, horizontal, rough, undulating, with clay seams | x x x | Siltstone 122.5-127.7' - dark reddish brown, greenish gray mottling, soft to hard, gradational contact 122.5-124.3' - slightly weathered 124.3-127.7' - fresh | | | | | | | | | |
| 120 144.3 | 119.6 | R25NQ 4.7 ft 98% | 74 | 0 | | | | | x x x | | At 122.3': R-Scale = R3-R4 | |
| 0 | | | | | | | | x x x | | | | |
| 0 | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
| 10+ | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
| 125 139.3 | 124.3 | R26NQ 5.1 ft 100% | 100 | 0 | | x x x | | R26: 13:48-14:00 At 124.6': R-Scale = R3-R4 At 126.0': R-Scale = R3-R4 | | | | |
| 0 | | | | | x x x | | | | | | | |
| 0 | | | | | x x x | | | | | | | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-11

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

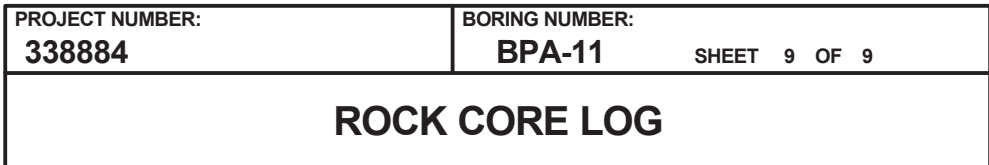
WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|-------|------------------------------------|-----------------|--------------------|--|---|---|--|--|
| | | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 130 134.3 | 129.4 | R27NQ 5.2 ft 99% | 89 | 0 | 129.5-129.6' - Fracture zone, horizontal and vertical, smooth, undulating, and 45 deg | | Sandstone At 127.7' - gray and white, hard to thin, medium bedding, very fine sand to fine sand, fresh | R27: 14:12-14:29 At 130.0': R-Scale = R3-R4 | |
| | | | | 0 | | | | | |
| | | | | 10+ | | | | | |
| | | | | 0 | | | | | |
| | | | | 3 | | | | | |
| | | | | 3 | | | | | |
| 135 129.3 | 134.6 | R28NQ 5.1 ft 100% | 100 | 0 | 132.8-133.0' - Fracture zone, horizontal and vertical, smooth, planar, clay seams (<0.01' thick) laminated beds | | 133.0-133.9' - reddish brown, becomes coarser with depth | At 132.8-133.1': R-Scale = R0-R1 | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| 140 124.3 | 139.7 | R29NQ 5 ft 100% | 78* | 0 | 136.1-137.7' - Contacts with sandstone and conglomerate and siltstone and conglomerate, sharp | | 133.9-136.1' - black and white, hard, very fine sand to coarse sand, angular to subrounded, trace fine gravel | R28: 14:34-14:44 At 135.2': R-Scale = R3-R4 | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| 145 119.3 | 144.7 | R30NQ 5 ft 98% | 54* | 0 | 139.7-144.7' - Microfractures throughout core, tightly healed | | 137.7-139.0' - dark reddish brown, mottled black, very soft to hard, fresh, trace to some medium sand, grades to sandstone | At 139.0': R-Scale = R3-R4 R29: 14:52-15:01 | |
| | | | | 2 | | | | | |
| | | | | 2 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 10+ | | | | | |
| 145 119.3 | 144.7 | R30NQ 5 ft 98% | 54* | 10+ | 142.4' - Fracture, horizontal, smooth, undulating 142.6' - Fracture, horizontal, smooth, undulating 142.7' - Fracture, horizontal, smooth, undulating 144.0-144.7' - Fracture zone, horizontal, rough, planar, clay seams (hard, <0.03' thick) 144.7-145.4' - Fracture zone, horizontal, rough, undulating, with clay seams, are 0.1' thick (3) 145.8-146.6' - Fracture zone, horizontal and vertical, slickensided / rough, undulating | | At 139.0' - dark reddish brown, black, greenish gray, and white, soft, fine sand to coarse sand, angular to subrounded, poorly sorted | At 141.9': R-Scale = R3-R4 | |
| | | | | 10+ | | | | | |
| | | | | 10+ | | | | | |
| | | | | 10+ | | | | | |
| | | | | 10+ | | | | | |
| | | | | 10+ | | | | | |



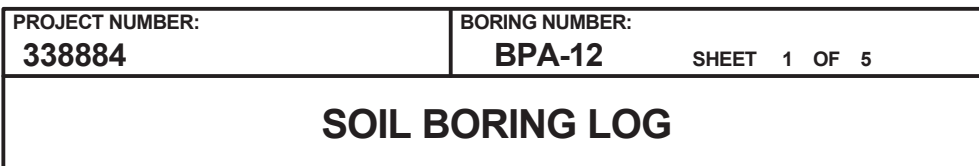
LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/MJ

Rev. 5



LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 12.7 | R1/R2NQ 9.3 ft 89% | 81* | 0 | 15.8-17.0' - Fracture zone, 20 deg, rough, undulating | x x x | Siltstone At 12.7' - grayish red, some greenish gray and light gray mottling more frequent in upper half foot, hard, fine grained 12.7-15.8' - fresh | Rock coring began at 08:10 on 4/13/06 R1: 08:18-08:49 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 15 | | | 0 | | x x x | | |
| 248.9 | | | 10+ | | x x x | | |
| | | | 10+ | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 20 | R3/R4NQ 10 ft 100% | 92 | 0 | 21.0' - Fracture, 20 deg, undulating | x x x | Sandstone 18.2-22.0' - grayish red, very fine sand to coarse sand, subrounded, poorly sorted, fresh, <50% silt, fining upward sequence | R2: 08:57-09:21 |
| 243.9 | | | 0 | | x x x | | |
| | | | 1 | | x x x | | |
| | | | 0 | | x x x | | |
| 22.0 | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 10+ | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 25 | R3/R4NQ 10 ft 100% | 92 | 0 | 23.4-24.0' - Fracture zone, undulating | x x x | Conglomerate 21.0-23.5' - grayish red, very fine sand to coarse gravel, subrounded, poorly sorted, fresh, <50% silt Sandstone At 23.5' - grayish red, fine sand to medium sand, poorly sorted, fresh, <50% silt, some rounded grains, thin to medium bedding 24.0-25.6' - lighter gray 26.0-30.4' - becomes coarser with depth, conglomerate for about a half a foot, grades to fine grained silty sandstone 26.7-30.4' - up to 40% light gray infilling in matrix | R3: 09:45-10:05 |
| 238.9 | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 30 | R3/R4NQ 10 ft 100% | 92 | 0 | 30.5-31.0' - Fracture zone, 30 deg, rough, undulating | x x x | Siltstone At 30.4' - grayish red, light gray mottling, hard, medium bedding, fresh, coarsens with depth to 33.5' | R4: 10:10-10:33 |
| 233.9 | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 32.0 | | | 1 | | x x x | | R5: 10:52-11:32 |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-12

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 228.9 | R5/R6NQ 10 ft 99% | 99 | 0 | 32.5-33.0' - Fractures, 20 deg, rough, undulating | XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX | 33.5' - sandstone lens, very fine to fine grained | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 40 223.9 | 42.0 | | 0 | 36.5-37.0' - Fracture, 45 deg | XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX | Sandstone 36.5-36.7' - light gray, very thin bedding, coarse sand, well sorted, fresh Siltstone 36.7-37.7' - grayish red, light gray mottling, hard, thin bedding, fresh Sandstone 37.7-37.8' - light gray, very thin bedding, coarse sand, well sorted, fresh, grayish red siltstone clasts caught up in sandstone filling Siltstone 37.8-38.0' - grayish red, light gray mottling, hard, thin bedding, fresh Sandstone At 38.0' - light gray, thin to medium bedding, very fine sand to coarse sand, well sorted, fresh, coarsening downward 39.0' - medium sand to coarse sand, 0.25 grayish red siltstone clasts 39.3' - becomes lighter with depth 39.7' - grades to finer grained grayish red silty sandstone 42.0-45.0' - fine sand to medium sand, subrounded, well sorted, few very thin layers of grayish red siltstone, up to 1 thick, coarsens with depth Siltstone 45.1-45.2' - grayish red, very thin bedding, fresh, irregularly bedded Sandstone 45.2-47.0' - light gray, very thin to medium bedding, medium sand to coarse gravel, subrounded to subangular, fresh, gravel is only 10% of volume 46.0' - grayish red, very thin bedding, irregularly bedded 46.5' - grayish red siltstone clasts in sandstone Conglomerate 47.0-48.3' - light gray, medium sand to coarse gravel 47.0-48.0' - fresh 48.0-48.3' - moderately weathered | R6: 11:34-12:04 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 45 218.9 | R7/R8NQ 10 ft 99% | 73* | 0 | 45.1' - Contact between siltstone and sandstone, sharp contact 45.2-45.7' - Fracture (2), 20 deg | XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX | | R7: 13:10-13:30 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 2 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | | | 10+ | | | | |
| | | | 3 | | | | |
| 50 213.9 | 52.0 | | 2 | 50.3-50.8' - Fracture zone, undulating, numerous joints/fractures | XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX | | R8: 13:33-14:10 |
| | | | 3 | 51.5-52.0' - Fractures, 15 deg, planar to undulating | | | |
| | | | 2 | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-12

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 55 208.9 | R9/R10NQ 10 ft 99% | 92 | | 52.5-53.0' - Fractures, 10 deg, undulating | XXXXXX | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

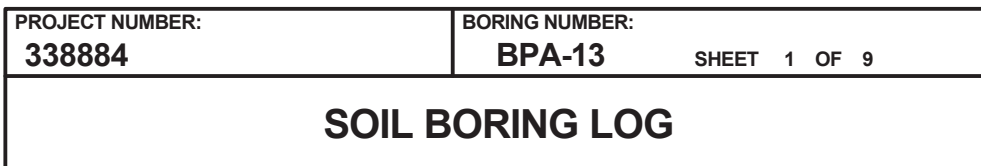
WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 75 188.9 | R13/R14NQ 10 ft 97% | 96 | 0 | 77.2-78.1' - Fractures, 70 deg, undulating | x | | |



LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-13

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | |
|--|------------------------------------|----------------------|--------------------|---|---|---|--|---|------------------------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | |
| | | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 15 248.7 | 10.8 | R1NQ 3.3 ft 0% | 0 | | | No Recovery 10.8-14.1' | | Rock coring began at 08:00 on 6/9/06 | | |
| | 14.1 | R2NQ 5 ft 100% | 0 | | | | | R1: 08:00-08:08 on 06/09/06 | | |
| | | | | 10+ | 14.2-14.3' - Clay seam, horizontal and vertical, rough, undulating, 0.01' thick, alternating with siltstone | R2: 08:54-09:04 | | | | |
| | | | | 10+ | 14.70' - Fracture, horizontal, rough, planar | At 14.1-19.1': R-scale = R0 (with some R1 and R2) | | | | |
| | | | | 10+ | 15.0' - Fracture, horizontal, rough, planar | At 15.6-16.0': R-scale = R2 | | | | |
| | | | | 10+ | 15.1' - Fracture, horizontal, rough, planar | | | | | |
| | 19.1 | R3NQ 5 ft 100% | 72 | 10+ | 15.6-16.1' - Fracture zone, horizontal and 45 deg, rough, undulating | | | | | |
| | | | | 10+ | 16.3' - Fracture, horizontal, rough, undulating | | | | | |
| | | | | 10+ | 16.7' - Fracture, horizontal, rough, undulating | | | | | |
| | | | | 10+ | 17.5-17.9' - Fracture zone, horizontal, rough, undulating | | | | | |
| 10+ | | | | 18.2' - Fracture, horizontal, rough, undulating | | | | | | |
| 20 243.7 | 24.1 | R4NQ 5 ft 98% | 98 | 3 | 18.7-18.9' - Fracture zone, horizontal, rough, undulating | 18.25-19.1' - <0.05' thick white clasts | | At 18.4-18.8': R-scale = R1 | | |
| | | | | 4 | 19.2' - Fracture, horizontal, rough, undulating | 19.1-23.3' - fresh | | R3: 09:18-09:30 | | |
| | | | | 3 | 19.5' - Fracture, horizontal, rough, undulating | 19.1-23.3' - very soft to soft | | At 19.8': R-Scale = R3-R4 | | |
| | | | | 3 | 19.9' - Fracture, horizontal, rough, undulating | 19.1-20.3' - white clasts | | At 21.1': R-Scale = R3-R4 | | |
| | | | | 3 | 20.0' - Fracture, horizontal, rough, undulating | | | | | |
| | 29.1 | | | | 10+ | 20.3' - Fracture, horizontal, rough, undulating | | | | |
| | | | | | 0 | 20.4' - Fracture, horizontal, rough, undulating | | | | |
| | | | | | 0 | 20.5' - Fracture, horizontal, rough, undulating | | | | |
| | | | | | 0 | 20.6' - Fracture, horizontal, rough, undulating | | | | |
| | | | | | 0 | 21.5-21.8' - Fracture zone, horizontal and vertical, rough, undulating | | | | |
| 25 238.7 | 24.1 | R4NQ 5 ft 98% | 98 | 10+ | 22.1-22.2' - Fracture zone, rough, undulating, clay seams (0.05' thick) | Sandstone | | At 23.0': R-Scale = R3 | | |
| | | | | 0 | 22.6' - Fracture, horizontal, rough, undulating | 23.3-26.5' - weak red, soft to hard, thin to medium bedding, very fine sand to fine sand, subangular to rounded, well sorted, fresh | | At 23.3-23.5': R-Scale = R0 | | |
| | | | | 0 | 23.6' - Contact between siltstone and sandstone, horizontal, rough, undulating | 23.3-23.5' - clay seam, very soft, friable | | R4: 09:38-09:47 | | |
| | | | | 0 | | 24.1-26.5' - white, reddish gray, greenish gray, and dark gray, greenish gray mottling | | At 25.3': R-Scale = R3-R4 | | |
| | | | | 0 | | Conglomerate | | | | |
| | 29.1 | | | | 0 | | Sandstone | | | |
| | | | | | 0 | | 26.5-26.6' - soft to hard, fresh | | | |
| | | | | | 0 | | 26.6-28.0' - white, reddish gray, greenish gray, and dark gray, greenish gray mottling, thin to bedding, subangular to subrounded, fresh | | At 28.5': R-Scale = R3 | |
| | | | | | 0 | | 27.1' - becomes coarser with depth | | R5: 09:53-10:07 | |
| | | | | | 0 | | 27.7-28.0' - dark reddish brown siltstone clasts | | | |
| 30 233.7 | | | | 0 | | | | At 30.5': R-Scale = R3-R4 | | |
| | | | | 0 | | | | | | |
| | | | | 0 | | | | | | |
| | | | | 0 | | | | | | |
| | | | | 0 | | | | | | |
| | | | | | 0 | | | | | |
| | | | | | 0 | | | | | |
| | | | | | 0 | | | | | |
| | | | | | 0 | | | | | |
| | | | | | 0 | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 35 228.7 | R5NQ 5 ft 103% | 100 | 0 | | x | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-13

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 208.7 | R9NQ 5 ft 98% | 88 | | 51.8-51.9' - Fractures (2), horizontal, rough, undulating, contact between siltstone and sandstone | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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| | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 75 188.7 | R13NQ 5 ft 98% | 86 | 0 | | x | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-13

SHEET 6 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

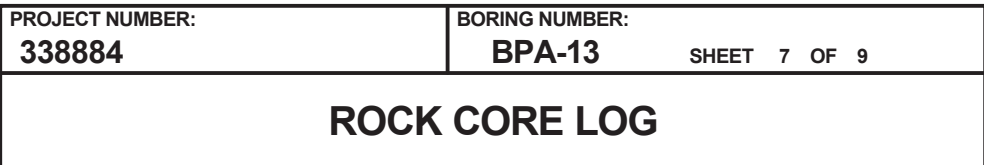
WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|---|----------|---|
| | | R Q D (%) | FRACTURES PER FOOT | | | | DESCRIPTION |
| | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |
| 95 168.7 | R17NQ 5 ft 98% | 84 | 0 | 89.4-89.5' - Fracture zone, rough, undulating, <0.01' thick clay infilling, clay between laminated siltstone beds, greenish gray mottling | x | | |



LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-13

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

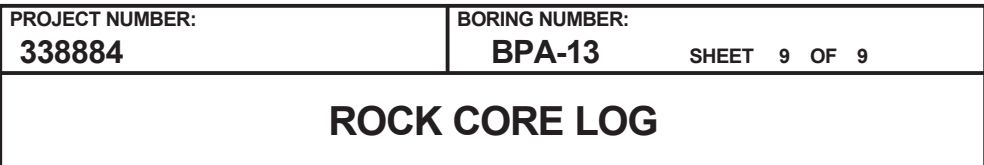
WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|----------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 135 128.7 | R25NQ 5 ft 104% | 99 | 0 | | x x x | 130.3-130.4' - 30-40% very fine to fine sand | At 132.6': R-Scale = R3-R4 |
| | | | 0 | | x x x | 131.0-131.2' - 0.05' thick, 0.3' long greenish gray mottle | |
| | | | 10+ | | x x x | 132.7-133.5' - dark and light sand layers | |
| | R26NQ 5 ft 94% | 32* | 3 | 133.5' - Fracture, horizontal, smooth, planar, top of (0.04' thick) clay seam | x x x | Siltstone | At 133.5': R-Scale = R0 |
| | | | 10+ | 133.7' - Fracture, horizontal, rough, planar | x x x | At 133.5' - olive gray, dark reddish brown, and greenish gray, mottled very dusky red, very soft | At 133.8': R-Scale = R0 |
| | | | 10+ | 134.2' - Fracture, horizontal, smooth, planar | x x x | 133.5-139.8' - moderately weathered | At 133.9': R-Scale = R3 |
| | | | 10+ | 134.5' - Fracture, horizontal, smooth, undulating | x x x | 133.8' - clay seam, 0.03' thick, very soft to soft | R26: 15:03-15:20 |
| | | | 10+ | 134.7-134.8' - Fracture (2), horizontal, smooth, planar | x x x | 135.7-136.0' - clay seam, very soft, friable material | At 134.5-138.0': R-Scale = R0-R1 |
| | | | 10+ | 135.1-135.7' - Fracture zone, horizontal and vertical, smooth, rough, planar | x x x | 136.5-136.8' - clay seam, very soft, friable material | At 134.8-135.2': R-Scale = R3 |
| | | | 1 | 136.0-136.5' - Fracture zone, horizontal, rough, smooth, planar/undulating | x x x | 137.5-137.9' - clay seam, soft, friable material | At 137.0-137.3': R-Scale = R3 |
| | | | 10+ | 136.9' - Fracture, horizontal, smooth, planar/stepped | x x x | | |
| | | | 10+ | 137.1-137.5' - Fracture zone, horizontal, rough, smooth, planar/undulating | x x x | | |
| | | | 10+ | 137.9-138.2' - Fracture, 45 deg and horizontal, rough, undulating | x x x | | |
| 140 123.7 | R27NQ 5 ft 98% | 76 | 10+ | 138.5' - Fracture, horizontal, smooth, undulating | x x x | 139.8-144.1' - trace medium grained sand | At 139.0': R-Scale = R4 |
| | | | 2 | 138.8' - Fracture, horizontal, rough, undulating | x x x | 139.8-145.0' - fresh | R27: 15:38-15:49 |
| | | | 3 | 139.0-139.1' - Fracture zone, horizontal and vertical, rough, undulating | x x x | 140.5' - clay seam, 0.03' thick, very soft, friable material | At 139.6-139.8': R-Scale = R0 |
| | | | 3 | 139.2' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 0 | 139.3' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 2 | 139.5' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 2 | 139.7' - Fracture, horizontal and 45 deg, rough, undulating | x x x | 142.0-144.1' - coarsens a little, 30-40% very fine sand | At 141.3': R-Scale = R3 |
| | R28NQ 5 ft 104% | 59* | 1 | 140.3' - Fractures (2), horizontal, rough, planar | x x x | | |
| | | | 10+ | 141.1' - Fracture, horizontal, smooth, planar | x x x | | |
| | | | 10+ | 142.0' - Fracture, horizontal, smooth, planar | x x x | | |
| 145 118.7 | R27NQ 5 ft 98% | 76 | 2 | 143.3' - Fracture, horizontal, smooth, planar | x x x | | |
| | | | 0 | 143.5' - Fracture, horizontal, smooth, planar | x x x | | |
| | | | 2 | 143.5' - Fracture, horizontal, smooth, planar | x x x | | |
| | | | 1 | 143.5' - Fracture, horizontal, tightly healed | x x x | | |
| | | | 10+ | 145.0' - Fracture, horizontal, smooth, undulating, very soft, friable material | x x x | 145.0-147.3' - moderately weathered | R28: 16:00-16:19 |
| | | | 10+ | 145.3' - Fracture, horizontal, rough, undulating | x x x | | At 144.7': R-Scale = R4 |
| | | | 10+ | 145.5' - Fracture, horizontal, rough, undulating | x x x | | At 145.5-146.3': R-Scale = R1 |
| | R28NQ 5 ft 104% | 59* | 10+ | 145.6' - Fracture, horizontal, rough, undulating, very soft, friable material | x x x | | At 146.3-146.6': R-Scale = R3-R4 |
| | | | 2 | 145.8-146.2' - Fracture zone, horizontal, rough, undulating | x x x | 147.3-149.1' - fresh | At 146.6-147.3': R-Scale = R1 |
| | | | 1 | 146.6-147.3' - Fracture zone, horizontal and vertical, rough, undulating, many angles | x x x | | |
| 150 113.7 | R28NQ 5 ft 104% | 59* | 1 | 147.9' - Fracture, horizontal and vertical, rough, undulating | x x x | | |
| | | | 0 | 148.0' - Fracture, horizontal and vertical, rough, undulating | x x x | Siltstone | R29: 08:46-09:00 on 06/15/06 |
| | | | 0 | 148.1' - Fracture, horizontal and vertical, rough, undulating | x x x | At 156.5' - dark reddish brown, mottled reddish black and greenish gray, very soft to soft, medium to laminated bedding, fresh, 30-40% very fine sand | |



LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 5



| | |
|--|---|
| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-14</div> <div style="text-align: right; font-weight: bold;">SHEET 1 OF 6</div> |
| <div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div> | |

| | |
|---|---|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (686783.7 N, 2012564.5 E) |
| ELEVATION : 263.9 ft MSL (NGVD 29) | DRILLING CONTRACTOR : L. Morrison, S&ME |
| DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer | ORIENTATION : Vertical |
| WATER LEVELS : 0.0 ft bgs | START : 7/6/06 17:20 END : 7/7/06 16:20 LOGGER : LH |

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | PP (TSF) | COMMENTS |
|---------------------------------|---------------|---------------|-----------------------------------|--|--------------|----------|---|
| | | RECOVERY (in) | | | | | |
| | | #TYPE | | | | | |
| | | | 6"-6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| 263.9 | 0.0 | | | Topsoil (CL) 0.0-0.2' - reddish brown, dry to moist, soft, trace gravel and organics | | 2.0 | |
| | 2.0 | 23.0 | SS1SS | 3-2-3-3 (5) | | | |
| | 2.5 | | | Clay (CL) 2.5-3.9' - reddish brown, mottled light greenish gray, moist, stiff | | 4.5 | Soil sampling completed at 17:45 on 7/6/06 |
| | 3.8 | 15.0 | SS2SS | 8-10-50/3 (60/9") | | | |
| 5 | | | | Begin Rock Coring at 3.9 ft bgs See the next sheet for the rock core log | | | |
| 258.9 | | | | | | | |
| 10 | | | | | | | |
| 253.9 | | | | | | | |
| 15 | | | | | | | |
| 248.9 | | | | | | | |
| 20 | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-14

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 5 258.9 | 3.9 R1NQ 1.1 ft 64% | 0 | 0 | 9.9-10.0' - Fracture zone, 45 deg, rough, undulating, tightly healed fractures associated are vertical to 60 deg 11.6-11.9' - Fracture zone, rough, undulating, very soft clay-like material 14.6' - Fracture, rough, undulating, parabolic shaped fracture | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 25 238.9 | 25.0 | | 3 | 24.2' - Fracture, horizontal, rough, undulating 24.5' - Fracture, 10 deg, rough, undulating 24.8' - Fracture, horizontal, rough, undulating | x | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-14

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 45 218.9 | 45.0 | | 0 | | x x x x | | |
| | | | 0 | | x x x x | 45.2-45.6' - gravel sized white clasts | R10: 11:28-11:33 |
| | | | 0 | | x x x x | | |
| | R10NQ 5 ft 100% | 100 | 0 | | x x x x | | At 47.3': R-Scale = R3 |
| | | | 0 | | x x x x | | |
| 50 213.9 | 50.0 | | 0 | | x x x x | | At 49.1': R-Scale = R3-R4 |
| | | | 0 | | x x x x | 50.3-50.3' - trace medium sand | R11: 12:58-13:10 |
| | | | 0 | | x x x x | 50.9-51.2' - sandstone lens | |
| | | | 0 | | x x x x | 51.5-51.7' - sandstone lens | |
| | R11NQ 5 ft 97% | 97 | 0 | | x x x x | Sandstone 52.1-58.5' - white and very dark greenish gray, soft, laminated to medium bedding, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh, coarsens with depth | At 52.1': R-Scale = R3-R4 |
| | | | 0 | | x x x x | | SC-2 collected 53.0-53.95' |
| 55 208.9 | 55.0 | | 0 | | x x x x | | R12: 13:15-13:28 |
| | | | 0 | | x x x x | | At 56.3': R-Scale = R3-R4 |
| | R12NQ 5 ft 104% | 94 | 0 | | x x x x | | |
| | | | 0 | | x x x x | | At 58.2': R-Scale = R3-R4 |
| 60 203.9 | 60.0 | | 4 | 59.3' - Contact between siltstone and sandstone, horizontal, smooth, planar | x x x x | Siltstone At 58.5' - dark reddish brown, mottled greenish gray and reddish black, very soft | |
| | | | 0 | 59.4' - Fracture, horizontal, rough, undulating | x x x x | 58.5-59.4' - fresh | R13: 13:33-13:44 |
| | | | 0 | 59.5' - Fracture, horizontal, smooth, planar | x x x x | 58.5-61.1' - gravel sized white clasts | |
| | | | 0 | 59.8' - Fracture, horizontal, rough, undulating | x x x x | 59.4-61.2' - slightly weathered | |
| | | | 8 | 59.9' - Fracture, horizontal, rough, undulating | x x x x | | At 61.2-62.4': R-Scale = R1 |
| | | | 0 | 61.1' - Fracture, horizontal, rough, undulating | x x x x | 61.2-62.4' - moderately weathered | |
| | | | 0 | 61.1' - Fracture, horizontal, rough, undulating | x x x x | | |
| | | | 0 | 61.4' - Fracture, horizontal, rough, undulating | x x x x | | |
| | R13NQ 5 ft 102% | 78 | 3 | 61.5' - Fracture, horizontal, rough, undulating | x x x x | 62.4-76.3' - fresh | |
| | | | 0 | 61.7' - Fracture, horizontal, rough, undulating | x x x x | 62.4-71.3' - soft | |
| | | | 0 | 61.7' - Fracture, horizontal, rough, undulating | x x x x | | |
| | | | 0 | 62.0' - Fracture, horizontal, rough, undulating | x x x x | | |
| | | | 0 | 62.1' - Fracture, horizontal, rough, undulating | x x x x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 65 198.9 | 65.0 | | 0 | 62.3' - Fracture, horizontal, rough, undulating 62.4' - Fracture, horizontal, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 85 178.9 | 85.0 | | 0 | | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-15

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| | | | | | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| 262.7 | 0.0 | 24.0 | SS1SS | 4-7-14-18 (21) | Clay (CL) 0.0-2.0' - reddish brown, mottled light greenish gray and black, dry, very stiff | | PT-1 collected 3.0-5.0' |
| | 2.0 | | | | | | |
| | 2.5 | 24.0 | SS2SS | 16-27-45-35 (72) | Clay (CL) 2.5-4.5' - reddish brown, mottled light greenish gray and black, dry, hard | | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 257.7 | 5.0 | 15.6 | SS3SS | 15-20-50 (70) | Clay (CL) 5.0-6.3' - reddish brown, mottled light greenish gray and black, moist, hard | | |
| | 7.0 | | | | | | |
| | 7.5 | 16.2 | SS4SS | 20-28-50/4 (78/10") | Clay (CL) 7.5-8.9' - reddish brown, mottled light greenish gray and black, moist, hard | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 252.7 | 10.0 | 9.0 | SS5SS | 24-50/3 (50/3") | Clay (CL) 10.0-10.9' - reddish brown, mottled light greenish gray and black, moist, hard | | |
| | 12.0 | | | | | | Soil sampling completed at 17:06 on 7/6/06 |
| | 12.5 | 3.0 | SS6SS | 50/3 (50/3") | Clay (CL) 12.5-12.8' - reddish brown, mottled light greenish gray and black, moist, hard Begin Rock Coring at 13.4 ft bgs See the next sheet for the rock core log | | Drillers Remark: Drilled through 12.65-13.4' with tricone bit. |
| | 12.8 | | | | | | |
| | 13.4 | | | | | | |
| 15 | | | | | | | |
| 247.7 | | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-15

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | |
| 15 247.7 | 13.4 R1NQ 0.9 ft 61% | 44 | 10+ | 13.4-13.5' - Fracture zone, rough, undulating 13.9' - Fracture, horizontal, rough, undulating | x | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-15

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 227.7 | 34.3 | | 0 | | | | |
| | | | 3 | 34.6' - Fracture, horizontal, rough, undulating | | 24.5-35.4' - very soft, laminated bedding | R6: 11:57-12:07 |
| | | | 0 | 35.1' - Fracture, horizontal, rough, undulating | | | SC-1 collected 35.3-36.2' |
| | | | 0 | 35.3' - Fracture, horizontal, rough, undulating | | | |
| | R6NQ 5 ft 102% | 94 | 1 | 37.1' - Fracture, horizontal, rough, planar | | | |
| | | | 0 | | | | At 38.0': R-Scale = R2-R3 |
| | | | 0 | | | | |
| 40 222.7 | 39.3 | | 0 | | | | R7: 13:06-13:13 |
| | | | 2 | 40.6' - Fracture, 45 deg, rough, undulating | | Sandstone 39.8-41.5' - dark reddish brown, very fine sand, angular to subrounded, poorly sorted, fresh, sandstone lens | |
| | R7NQ 5 ft 102% | 100 | 0 | 41.2' - Fracture, 45 deg, rough, undulating | | Siltstone At 41.5' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh | At 41.4': R-Scale = R2 |
| | | | 0 | | | | |
| | | | 0 | | | 43.9-44.0' - gravel size white clasts | R8: 13:22-13:27 |
| 45 217.7 | 44.3 | | 0 | | | | |
| | | | 0 | | | | |
| | R8NQ 5 ft 100% | 100 | 0 | | | 45.8-48.0' - 0-50% Very fine to fine sand | |
| | | | 0 | 47.3-48.0' - Contact between siltstone and sandstone, gradational contact | | | At 47.2': R-Scale = R4 |
| | | | 0 | | | | |
| 50 212.7 | 49.3 | | 0 | | | Sandstone 48.0-50.4' - dusky red to white, greenish gray, and dark reddish gray, mottled greenish gray and dark reddish gray, soft to hard, fresh, gradational contact with overlying siltstone; fines upward | R9: 13:33-13:44 |
| | | | 10+ | 50.4-50.6' - Fracture zone, <5 deg, rough, undulating, heavily fractured | | 49.5-49.8' - 0-20% gravel | SC-2 collected 49.3-50.4' |
| | R9NQ 5 ft 100% | 68 | 10+ | 50.7' - Fracture, <5 deg, rough, undulating | | Siltstone At 50.4' - dark reddish brown, mottled greenish gray and reddish black, soft | |
| | | | 1 | 50.8' - Fracture, <5 deg, rough, undulating | | 50.4-52.3' - moderately weathered | |
| | | | | 51.4' - Fracture, <5 deg, rough, undulating | | 50.6-52.6' - gravel sized white clasts | |
| | | | | 51.5' - Fracture, <5 deg, rough, undulating | | 52.3-82.3' - fresh | |
| | | | | 51.7-52.3' - Fracture zone, <5 deg, rough, undulating, 0.01' thick clay infilling, heavily fractured | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 55 207.7 | 54.3 | | 1 | 52.6' - Fracture, <5 deg, rough, undulating, 0.01' thick clay infilling 53.9' - Fracture, <5 deg, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

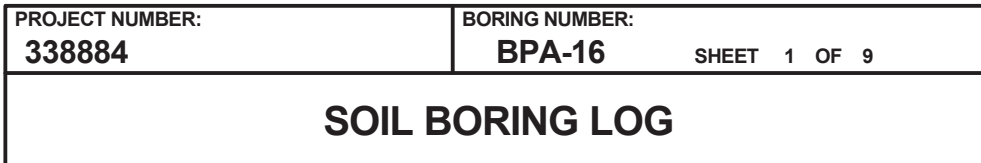
WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 75 187.7 | 74.3 | | 0 | | x x x x | | |
| | | | 1 | | x x x x | | R14: 08:15-08:24 |
| | | | 1 | 75.5' - Fracture, 45 deg, slickensided, undulating | x x x x | | |
| | R14NQ 5 ft 103% | 100 | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | 79.3 | | 0 | | x x x x | 78.5-79.3' - coarse sand sized white clasts | |
| 80 182.7 | | | 0 | | x x x x | 79.2' - mottled green | At 80.2': R-Scale = R3 R15: 08:33-08:43 First water level = 1.5' bgs taken 7/24/06 at 18:15; second water level = 2.2' bgs taken 7/25/06 at 16:00 |
| | R15NQ 3 ft 110% | 100 | 2 | 81.1' - Fracture, horizontal, rough, planar 81.2' - Fracture, horizontal, rough, planar | x x x x | 81.2-81.3' - trace coarse sand sized white clasts | |
| | | | 0 | | x x x x | | R-scale performed after drilling on stored samples |
| | 82.3 | | | | x x x x | | |
| | | | | | | Bottom of Boring at 82.3 ft bgs on 7/24/06 08:43 | |
| 85 177.7 | | | | | | | |
| 90 172.7 | | | | | | | |



LOGGER : LH/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 257.8 | 4.8 | 0 | 0 | | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 237.8 | R5NQ 5 ft 102% | 88 | 1 | | x x x | 24.3-27.6' - trace very fine to medium sand | At 26.5': R-Scale = R3-R4 |
| | | | 2 | 25.7' - Fracture, horizontal, rough, planar | x x x | 24.3-24.4' - clay seam, very soft, friable material | |
| | | | 1 | | x x x | 25.4-25.5' - clay seam, very soft, friable material | |
| | | | 1 | 27.4' - Fracture, horizontal, rough, planar 27.6' - Contact between siltstone and sandstone, horizontal, rough, planar | x x x | | |
| | | | 0 | | x x x | | |
| 29.3 | R6NQ 5 ft 99% | 86 | 0 | | . | Sandstone 27.6-33.0' - weak red, soft to hard, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh | R6: 15:33-15:41 Drillers remark: lost 40 gallons in last 2' of core run At 31.5': R-Scale = R3 |
| 30 | | | 0 | | . | 29.3-33.0' - bands of coarser and finer materials | |
| 232.8 | | | 3 | 30.6-30.8' - Fracture zone (3), horizontal and vertical, rough, undulating | . | | |
| | | | 0 | | . | | |
| | | | 1 | | . | | |
| | R7NQ 5 ft 100% | 94 | 1 | 33.3' - Fracture, 30 deg, rough, undulating, black and greenish gray stains 34.0' - Fracture, 30 deg, rough, undulating | x x x | Siltstone 33.0-34.3' - dusty red, soft, fresh, very fine to coarse grained sand, fine gravel (<5%), medium bed | R7: 15:46-15:56 At 35.0': R-Scale = R3-R4 At 37.7': R-Scale = R3-R4 |
| 34.3 | | | 0 | | x x x | Sandstone 34.3-36.5' - weak red, soft to hard, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh, bands of coarser and finer materials | |
| 35 | | | 2 | 35.5-35.6' - Fractures (2), horizontal, rough, planar, silt lense with breaks on top and bottom | x x x | | |
| 227.8 | | | 2 | 36.5' - Contact between siltstone and sandstone, horizontal, rough, planar 36.7' - Fracture, horizontal, rough, planar | x x x | Siltstone At 36.5' - dark reddish brown, mottled greenish gray, very soft, fresh 37.3-37.7' - very soft to soft, white clasts (0.02-0.04' thick) | |
| | | | 0 | | x x x | | |
| | R8NQ 5 ft 94% | 94 | 0 | | x x x | 39.8-40.2' - very fine sand (30%) | R8: 16:01-16:12 At 41.7': R-Scale = R3-R4 |
| 39.3 | | | 0 | | x x x | 40.4-43.1' - trace to some white clasts (0.02-0.1') | |
| 40 | | | 0 | | x x x | 41.4-41.9' - very fine to fine sand (30%) | |
| 222.8 | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | 44.3-49.3' - mottled greenish gray | R9: 16:17-16:31 |
| 44.3 | | | | | x x x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | |
|--|------------------------------------|-----------------|--------------------|---|---|--|---|--|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | |
| 217.8 | R9NQ 5 ft 103% | 100 | 0 | | x | 47.4-49.3' - soft, trace medium sand | At 48.3': R-Scale = R3 | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| 49.3 | | | 0 | | x | | | 49.3-50.4' - mottled greenish gray, soft, 0-30% very fine sand | R10: 08:06-08:12 on 6/21/2006 At 50.0': R-Scale = R3-R4 | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| 50 | R10NQ 5 ft 104% | 100 | 0 | 51.0' - Contact between siltstone and sandstone, mixed up; silt extends (in portions) into sandstone | Sandstone 50.4-57.9' - very dark gray and light reddish gray, soft, very thin to medium bedding, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh | R11: 08:17-08:24 | | | | |
| 212.8 | | | | | | | 0 | x | | |
| | | | | | | | 0 | x | | |
| | | | | | | | 0 | x | | |
| | | | | | | | 0 | x | | |
| | | | 0 | | | | x | 53.8-54.1' - beds on 30 degree angle | At 55.7': R-Scale = R3 SC-2 collected 56.2' - 57.2' | |
| 55 | R11NQ 5 ft 97% | 97 | 0 | | | | x | | | |
| 207.8 | | | | | | | 0 | | | x |
| | | | | | | | 0 | | | x |
| | | | | | | | 0 | | | x |
| | | | | 0 | x | | | | | |
| | | | 0 | x | Siltstone At 57.9' - dark reddish brown, mottled greenish gray, very soft, white clasts (0.02' - 0.04' thick) 57.9-97.7' - fresh 59.3-64.3' - mottled greenish gray and reddish black, very soft to soft 59.3-62.3' - white clasts (0.01-0.05' thick) | R12: 08:30-08:37 | | | | |
| 60 | R12NQ 5 ft 99% | 85 | 0 | x | | | | | | |
| 202.8 | | | | 0 | | | x | | | |
| | | | | 0 | | | x | | | |
| | | | | 0 | | | x | | | |
| | | | | 0 | | | x | | | |
| | | | 0 | x | | | 62.3' - Fracture, horizontal, rough, planar 62.4' - Fracture, horizontal, rough, planar 62.5' - Fracture, horizontal, rough, planar | At 61.7': R-Scale = R3-R4 | | |
| | | | 0 | x | | | | | | |
| | | | 0 | x | | | | | | |
| | | | 0 | x | | | | | | |
| | | | 0 | x | | | | | | |
| | | | 0 | x | | At 63.5': R-Scale = R3-R4 | | | | |
| | | | 0 | x | | R13: 08:42-08:48 | | | | |
| | | | 0 | x | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 197.8 | R13NQ 5 ft 100% | 100 | 0 | | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 6 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--------------|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 177.8 | R17NQ 5 ft 99% | 99 | 0 | | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | |
|--|------------------------------------|--|--|---|--|--|--|----------------------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | |
| 157.8 | R21NQ 5 ft 104% | 100 | 0 | 110.6-111.0' - Fracture, 60 deg, rough | x | 108.2-108.7' - trace very fine sand (<15%) | At 105.0': R-Scale = R3-R4 | | | |
| 0 | | | x | | | | | | | |
| 0 | | | x | | | | | | | |
| 0 | | | x | | | | | | | |
| 0 | | | x | | | | | | | |
| 109.3 | x | 109.7' - large white clasts (0.07' thick, 0.1 long) Sandstone 110.1-111.1' - dusky red, mottled dark reddish brown, soft, fresh, thin bed, 30 - 50% silt 110.3' - laminated silt layer Siltstone At 111.1' - dark reddish brown, soft to hard, medium bedding, fresh, fine to medium grained, white clasts 0.01-0.05' thick 112.3-113.8' - trace greenish gray and reddish black mottling, white clasts 0.01' - 0.03' thick 113.8-114.3' - trace greenish gray mottling 115.4' - begins to grade to sandstone, 0-30% very fine to medium sand Sandstone 116.3-124.0' - dusky red and light reddish gray, very fine to medium grained, soft, medium sand, subangular, poorly sorted, fresh, lighter and darker bands, darker had more silt content (up to 50%) | At 107.5': R-Scale = R3-R4 | | | | | | | |
| x | | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 1 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 114.3 | x | | At 111.5': R-Scale = R3-R4 | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 0 | x | | | | | | | | | |
| 115 | x | | At 113.7': R-Scale = R3-R4 | | | | | | | |
| 147.8 | x | R23: 11:35-12:02 | | | | | | | | |
| R23NQ 5 ft 106% | 100 | 0 | 115.8' - Fracture, horizontal, rough, planar 116.3-116.3' - Fractures (2), horizontal, rough, undulating, clay and 0.05' thick shale layer 117.6' - Fracture, horizontal, smooth, planar | x | 119.3-124.0' - very fine to coarse grained, soft to hard, very fine sand, subangular to subrounded, grayish green and dusky red siltstone lenses, laminated to medium beds on 15 and 20 degree orientation, well sorted to poorly sorted | At 117.9': R-Scale = R3-R4 | | | | |
| | | 1 | | x | | | | | | |
| | | 1 | | x | | | | | | |
| | | 1 | | x | | | | | | |
| | | 0 | | x | | | | | | |
| 119.3 | x | R24: 12:58-13:09 | | | | | | | | |
| R24NQ 5 ft 100% | 100 | 0 | | | | x | | At 120.0': R-Scale = R3-R4 | | |
| | | 0 | | | | x | | | | |
| | | 0 | | | | x | | | | |
| | | 0 | | | | x | | | | |
| | | 0 | | | | x | | | | |
| 124.3 | x | | | | | | | | | |
| | | | | | | | | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-16

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 137.8 < | | | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 117.8 | R29NQ 5 ft 101% | 73* | 10+ | 143.7-144.3' - Fracture zone, with clay seams, material is crumbled up, very soft rock and clay, very few pieces with horizontal breaks and bedding planes | x | 144.3-146.9' - dark greenish gray and greenish gray, mottled olive yellow and pale olive, very soft, laminated beds | SC-5 collected 145.7' - 146.5' |
| | | | 10+ | 144.5-144.9' - Fracture zone, with clay seams, crumbled up, undulating, rough, planar, smooth, clay seams are very soft, friable and > 0.1' thick | x | | |
| | | | 4 | 145.2' - Fracture, horizontal, smooth, planar | x | | |
| | | | 1 | 145.4' - Fracture, horizontal, smooth, planar | x | | |
| | | | 3 | 148.5' - Fracture, horizontal, smooth, planar | x | | |
| 149.3 | R30NQ 5 ft 99% | 97 | 3 | 148.9' - Fracture, horizontal, smooth, planar | x | 146.9-152.4' - mottled dark reddish brown and pale olive, soft, trace very fine sand 146.9-147.0' - clay seam, very soft (easily indented with fingernail), friable material 147.3-147.6' - clay seam, alternating with siltstone, very soft, friable material, laminated beds, <0.01' - 0.02' thick 147.6-152.4' - fresh | At 147.9': R-Scale = R3-R4 R30: 13:27-13:46 At 151.7': R-Scale = R3-R4 |
| 150 | | | 3 | 149.6' - Fractures (2), horizontal, smooth, planar | x | | |
| 112.8 | | | 1 | 150.0' - Fracture, horizontal, rough, undulating | x | | |
| | | | 0 | 150.4' - Fractures (2), horizontal, smooth, planar | x | | |
| | | | 3 | 152.7' - Fracture, horizontal, rough, planar | x | | |
| 154.3 | R31NQ 5 ft 96% | 96 | 0 | 152.8' - Fracture, horizontal, rough, planar | x | Siltstone 152.4-156.3' - dark reddish brown, mottled pale olive and greenish gray, fresh | R31: 13:55-14:09 At 156.2': R-Scale = R3-R4 |
| | | | 0 | 152.8' - Fracture, horizontal, rough, planar | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 159.3 | R32NQ 4 ft 108% | 100 | 0 | | x | Siltstone 156.3-163.3' - dark greenish gray and greenish gray, mottled olive yellow, very soft, fresh, laminated beds | R32: 14:16-14:36 At 160.7': R-Scale = R3-R4 First water level = 9.0' bgs taken 6/27/06 at 15:30; second water level = 5.4' bgs taken 6/28/06 at 18:05 |
| 160 | | | 0 | | x | | |
| 102.8 | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 2 | 162.7-162.9' - Fracture zone, horizontal and 45 deg, rough, undulating, with clay seam at bottom (0.02' thick) | x | | |
| 163.3 | | | | | x | Bottom of Boring at 163.3 ft bgs on 6/27/06 14:36 | R-scale performed after drilling on stored samples |



| | |
|--|---|
| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-17</div> |
| SHEET 1 OF 4 | |
| <div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div> | |

| | |
|---|---|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (686934.2 N, 2012635.6 E) |
| ELEVATION : 262.4 ft MSL (NGVD 29) | DRILLING CONTRACTOR : L. Morrison, S&ME |
| DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer | ORIENTATION : Vertical |
| WATER LEVELS : 5.3 ft bgs | START : 7/8/06 08:15 END : 7/8/06 11:26 LOGGER : LH |

| DEPTH BELOW EXISTING GRADE (ft) | | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION | | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|-----|---------------|-------|-----------------------------------|----------------|--|----------------------------|--------------|---|--|
| | | RECOVERY (in) | | | | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | |
| | | #TYPE | | 6"-6"-6"-6" (N) | | | | | | |
| 262.4 | 0.0 | | | | | | Topsoil 0.0-0.1' | | | |
| | | 20.4 | SS1SS | 3-7-11-11 (18) | | Clay (CL) 0.1-0.7' - yellowish red, mottled black and gray, dry, medium stiff | | | | |
| | 2.0 | | | | | Clay (CL) 0.7-1.7' - reddish brown, dry, very stiff | | | | |
| | 2.5 | | | | | Clay (CL) 2.5-4.1' - reddish brown, mottled dark reddish gray, weak red, and light greenish gray, dry, very stiff | | | | |
| | 4.5 | | 19.2 | SS2SS | 5-5-20-26 (25) | | | | Soil sampling completed at 08:41 on 7/13/06 | |
| 5 | | | | | | | | | | |
| 257.4 | 5.0 | 1.0 | SS3SS | | | Clay (CL) 5.0-5.1' - reddish brown, mottled dark reddish gray, weak red, and light greenish gray, dry, very stiff Begin Rock Coring at 5.2 ft bgs See the next sheet for the rock core log | | | | |
| | 5.1 | | | 50/1 (50/1") | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-17

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 08:15

END : 7/8/06 11:26

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|------------------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 252.4 | 5.2 | R1NQ 4.8 ft 100% | 0 | 6.2' - Fracture, horizontal and 30 deg, rough, undulating | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-17

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 08:15

END : 7/8/06 11:26

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | | | | | | |
| 30 232.4 | R5NQ 5 ft 98% | 61 | 10+ | 25..0-25.5' - Fracture zone, some clay | x | | | | |



| | | |
|----------------------------------|---------------------------------|--------------|
| PROJECT NUMBER: 338884 | BORING NUMBER: BPA-17 | SHEET 4 OF 4 |
| ROCK CORE LOG | | |

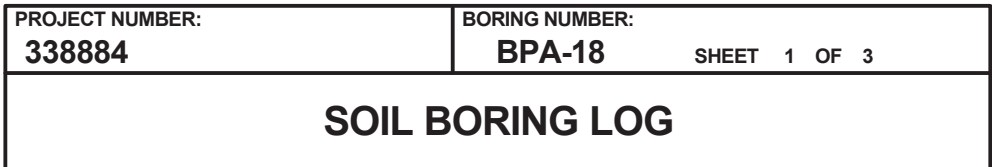
PROJECT : PEC COLA, New Hill, NC LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)

ELEVATION : 262.4 ft MSL (NGVD 29) DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs START : 7/8/06 08:15 END : 7/8/06 11:26 LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 50 212.4 | | | | 44.0' - Contact between siltstone and sandstone, horizontal, rough, undulating, hummocky, tightly healed | | Siltstone 44.0-45.0' - dark reddish brown, mottled reddish black and greenish gray, very soft to soft, fresh, laminated beds, 0-20% very fine to medium sand Bottom of Boring at 45.0 ft bgs on 7/8/06 11:26 | |
| 55 207.4 | | | | | | | |
| 60 202.4 | | | | | | | |
| 65 | | | | | | | |
| | | | | | | | |



LOGGER : JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-18

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687144.9 N, 2012671.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.5 ft bgs

START : 7/13/06 16:25

END : 7/14/06 13:18

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | |
|--|------------------------------------|------------------------|---|--|--------------|---|---|------------------------------------|-----------------|---|---------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | | |
| 15 246.9 | 10.3 | R1NQ 4.2 ft 101% | 53 | 10+ | | Siltstone At 10.3' - dark reddish brown, very soft to soft, fine grained 10.3-12.2' - highly weathered 12.2-14.5' - moderately weathered | Rock coring began at 08:20 on 7/14/06 R1: 08:20-09:20 on 07/14/06 At 10.3-11.9': R-Scale = R0-R1 Driller stopped rig as pressure (9K) rises some clay at top blocking off flow, went back down to finish run | | | | |
| | 10+ | | | | | | | | | | |
| | 10+ | | | | | | | | | | |
| | 1 | | | | | | | | | | |
| | 14.5 | | 0 | 12.9' - Fracture, 15 deg, rough, undulating, <0.0002' thick clay infilling 13.2' - Fracture, <5 deg, rough, undulating, <0.0002' thick clay infilling | | | | 14.5-19.5' - bluish green mottling | R2: 09:25-09:40 | | |
| | | 0 | 14.5-25.0' - highly weathered | | | | | SC-1 collected 15.0-15.8' | | | |
| | | 0 | 15.4-16.6' - soil-like | | | | | At 16.0-18.8': R-Scale = R0-R1 | | | |
| | | 1 | 16.6-20.0' - 30% very fine sand | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| 20 241.9 | 19.5 | R3NQ 5 ft 98% | 0 | XXXX | | 20.3-20.4' - clay seam 20.7-20.7' - clay seam 21.2-21.4' - clay seam 22.0-22.1' - clay seam 23.0-23.3' - clay seam | At 19.0': R-Scale = R2-R3 At 19.2-24.0': R-Scale = R0-R1 R3: 10:05-10:19 | | | | |
| | 1 | | | 20.3' - Fracture, <5 deg, rough, undulating, clay seam, breaks at clay seams, breaks at clay seams: 20.3, 21.2, 21.4, 21.95, 22.1 | | | | | | | |
| | 2 | | | | | | | | | | |
| | 3 | | | 21.8' - Fracture, <5 deg, rough, undulating | | | | | | | |
| | 1 | | | | | | | | | | |
| | 1 | | | 23.8' - Fracture, <5 deg, rough, undulating 24.0' - Fracture, <5 deg, rough, undulating | | | | | | | |
| | 24.5 | XXXX | | 24.5-29.5' - dark purple and trace bluish green mottling 25.0-29.5' - slightly weathered | | | | R4: 10:26-10:44 | | | |
| | 25 236.9 | | R4NQ 5 ft 102% | 98 | | | | 0 | | 27.1' - Fracture, <5 deg, rough, undulating 28.2-28.4' - clay seam | At 27.3': R-Scale = R3-R4 |
| | | 0 | | | | | | | | | |
| | | 1 | | | | | | | | | |
| 2 | | | | | | | | | | | |
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| 0 | | | | | | | | | | | |
| 29.5 | XXXX | | 29.5-39.5' - red, trace bluish green mottling 29.4' - very fine sand | At 29.2': R-Scale = R3-R4 R5: 10:50-11:15 | | | | | | | |
| 30 231.9 | | | 0 | | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-18

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687144.9 N, 2012671.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

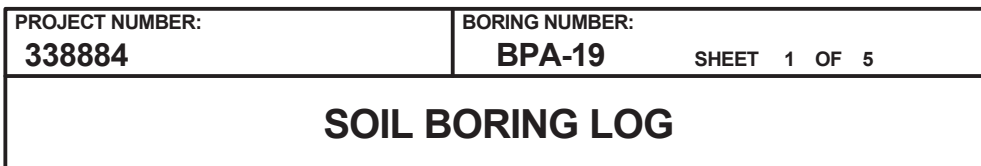
WATER LEVELS : 5.5 ft bgs

START : 7/13/06 16:25

END : 7/14/06 13:18

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 226.9 | | | | | | | |



LOGGER : LH/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-19

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

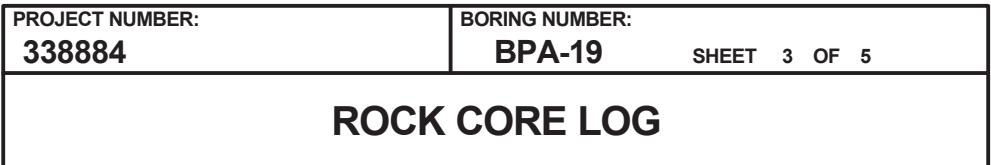
WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---------------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 13.0 | R1NQ 1.6 ft 88% | 0 | 2 | 13.5' - Fracture, horizontal, rough, planar | x x | Siltstone At 13.0' - dark reddish brown, reddish black and greenish gray, very soft, highly weathered, very soft | Rock coring began at 16:10 on 7/11/06 |
| 14.6 | | | 0 | 14.0' - Fracture, horizontal, rough, planar | x x | | R1: 16:10-16:15 |
| 15 | | | | | x x | 14.6-21.8' - laminated bedding | At 13.7": R-Scale = R4 |
| 246.4 | | | 0 | | x x | | R2: 16:32-16:41 |
| | R2NQ 5 ft 96% | 0 | 4 | 16.2' - Fracture, horizontal, rough, planar | x x | | |
| | | | 0 | 16.2' - Fracture, horizontal, rough, planar | x x | | At 16.9": R-Scale = R1 |
| | | | 0 | 16.5' - Fracture, horizontal, rough, planar | x x | | |
| | | | 1 | 16.6' - Fracture, horizontal, rough, planar | x x | 17.9-18.3' - soft | At 18.2": R-Scale = R3-R4 |
| | | | 0 | 18.4-18.8' - Fracture zone, 60 deg, rough, undulating | x x | | |
| 19.6 | | | | | x x | | |
| 20 | | | 10+ | 19.8' - Fracture, horizontal, rough, planar | x x | | R3: 08:18-08:27 on 7/12/2006 |
| 241.4 | | | 10+ | 19.9-20.2' - Fracture, horizontal, rough, planar | x x | | |
| | | | 10+ | 20.5-20.8' - Fracture, horizontal, rough, planar | x x | | |
| | R3NQ 5 ft 102% | 56* | 2 | 21.0-21.1' - Fracture zone, horizontal and vertical, rough, planar | x x | | At 21.4": R-Scale = R2 |
| | | | 2 | 21.8' - Fractures (2), horizontal, rough, planar | x x | Sandstone At 21.8' - dusky red and weak red, soft to hard, thin to medium bedding, very fine sand to fine sand, subangular to subrounded, well sorted | |
| | | | 2 | 21.8' - Contact between siltstone and sandstone | x x | 21.8-24.3' - fresh | At 23.4": R-Scale = R3-R4 |
| | | | 2 | 22.6' - Fracture, 60 deg, rough, undulating | x x | | |
| | | | 2 | 22.9' - Fracture, 40 deg, rough, undulating | x x | | |
| 24.6 | | | | 24.3' - Fracture, horizontal, rough, undulating | x x | 24.3-26.3' - moderately weathered | R4: 08:34-08:45 |
| 25 | | | 10+ | 24.5' - Fracture, horizontal, rough, undulating | x x | | SC-1 collected 24.8-25.6' |
| 236.4 | | | 2 | 24.7' - Fracture zone, rough, undulating | x x | | |
| | | | 2 | 25.8-26.2' - Fracture zone, vertical, rough, undulating | x x | 25.6-25.8' - clay-like siltstone lens | |
| | R4NQ 5 ft 104% | 100* | 2 | 26.6' - Fracture, horizontal, rough, planar | x x | 25.6-25.8' - clay seams, alternating siltstone, very soft to firm friable material | At 26.0": R-Scale = R5 |
| | | | 2 | | x x | | At 26.2-27.1": R-Scale = R2 |
| | | | 1 | 28.4-28.5' - Fracture zone, rough, undulating | x x | Siltstone 26.3-27.3' - dark reddish brown, mottled reddish black and greenish gray, very soft, moderately weathered | At 27.1-27.4": R-Scale = R0 |
| 29.6 | | | | 29.0' - Contact between siltstone and sandstone, horizontal, rough, undulating | x x | 27.1-27.3' - clay seam, very soft to stiff, very fine to fine sand (0 - 30%) in clay, friable material | |
| 30 | | | 1 | 30.1' - Fracture, horizontal, rough, undulating | x x | Sandstone 27.3-27.5' - dark reddish brown, mottled reddish black and greenish gray, soft, thin bedding, very fine sand to coarse sand, subangular, poorly sorted, moderately weathered | At 29.1-29.3": R-Scale = R0 |
| 231.4 | | | 3 | 30.6-31.1' - Clay seams (3), horizontal, rough, planar, alternating with siltstone, friable material, very soft | x x | | R5: 08:51-09:07 |
| | | | 10+ | 31.2-31.3' - Fracture zone, horizontal, rough, planar, 0.02' thick clay infilling | x x | | At 30.1-30.7": R-Scale = R2 |
| | R5NQ 5 ft 102% | 34* | | 31.4-33.3' - Clay seams, horizontal, rough, planar, up to 0.35' thick clay infilling | x x | Siltstone 27.5-28.1' - dark reddish brown, mottled reddish black and greenish gray, very soft, moderately weathered | At 30.7-32.7": R-Scale = R0 |



LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-19

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

LOGGER : LH/EM

| WATER LEVEL: 36.753 | | DISCONTINUITIES | | START: 17:15:37.438 | | END: 17:15:37.438 | | ECCENTRICITY | |
|--|------------------------------------|-----------------|--------------------|---|--|-------------------|--|--------------|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | | | | | | |
| 55 206.4 | 54.6 | | 1 | 51.1' - Fracture, horizontal, rough, undulating | | . | . | . | At 53.6': R-Scale = R4 |
| | | | 0 | | | | | | |
| | R10NQ 5 ft 103% | 92 | 2 | 55.4' - Contact between siltstone and sandstone, horizontal, rough, undulating, black and greenish gray stains | | | | | x |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-19

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

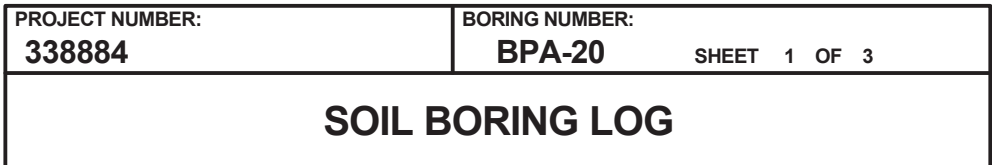
WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 75 186.4 | 74.6 | | 0 | <div>.....</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> 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LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-20

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686985.3 N, 2012742.1 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison/D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 13:42

END : 7/11/06 10:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---------------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 8.2 | R1NQ 1.4 ft 111% | 0 | 0 | 8.7' - Fracture, horizontal, rough, planar | x x | Siltstone At 8.2' - dark reddish brown, mottled reddish black and greenish gray, soft | Rock coring began at 17:05 on 7/10/06 |
| 9.6 | | | 2 | 9.3' - Fracture, horizontal, rough, planar | x x | 8.2-8.5' - clay seam, firm to stiff | R1: 17:10-17:16 on 07/10/06 |
| 10 | | | 10+ | 9.8' - Fracture, 15 deg, smooth, planar | x x | 8.2-13.2' - highly weathered | At 8.2'-8.4': PP: 2.0 tsf |
| 251.5 | | | | 10.0-10.1' - Fracture zone, horizontal, rough, planar | x x | 8.2-9.6' - very soft, laminated bedding | At 9.0': R-Scale = R1 |
| | | | 1 | 10.2' - Fracture, horizontal, smooth, planar | x x | | R2: 17:28-17:44 |
| | R2NQ 5 ft 100% | 49 | 2 | 10.3-10.4' - Fracture zone, horizontal, rough, planar | x x | | |
| | | | 0 | 10.4-10.5' - Fracture, 45 deg, rough, planar | x x | 12.2-12.3' - clay seam, soft, friable material | |
| | | | 0 | 10.7-10.8' - Fracture zone, horizontal, rough, planar | x x | 13.2-13.5' - very soft to soft | |
| | | | 0 | 11.9' - Fracture, horizontal, smooth, planar | x x | 13.2-17.0' - slightly weathered | At 13.5': R-Scale = R3-R4 |
| | | | 0 | 12.3' - Fracture, horizontal, rough, undulating, soft, friable material | x x | | |
| 14.6 | | | | | x x | | |
| 15 | | | 1 | 14.7' - Fracture, horizontal, smooth, planar | x x | 14.6-16.0' - soft | R3: 08:47-08:57 on 07/11/06 |
| 246.5 | | | 2 | 15.6' - Fracture, horizontal, rough, undulating | x x | | At 15.7': R-Scale = R2-R3 |
| | | | 0 | 16.45' - Fracture, horizontal, smooth, planar | x x | | |
| | R3NQ 5 ft 100% | 49 | 0 | | x x | 17.0-17.1' - light yellowish brown mottle | |
| | | | 0 | | x x | 17.0-21.0' - highly weathered | |
| | | | 0 | | x x | 17.1-19.6' - clay seam, stiff | SC-1 collected 18.4-19.0' |
| | | | 0 | | x x | | At 18.4': PP: 2.9 tsf |
| 19.6 | | | | | x x | | At 18.9': PP: 4.5 tsf |
| 20 | | | 0 | | x x | 19.6-21.0' - very soft, laminated bedding | R4: 09:03-09:12 and 09:20-09:23 |
| 241.5 | | | 3 | 21.0' - Fracture, horizontal, rough, planar | x x | 19.6-20.3' - clay seam, soft | At 19.8': PP: 3.0 tsf |
| | | | 0 | 21.4' - Fracture, horizontal, rough, planar | x x | 19.6-19.9' - trace medium sand | |
| | R4NQ 5 ft 101% | 71 | 0 | 21.5' - Fracture, horizontal, rough, planar | x x | 21.0-24.6' - fresh | |
| | | | 0 | | x x | | |
| | | | 0 | | x x | 23.1-24.0' - trace medium sand | At 23.6': R-Scale = R3-R4 |
| | | | 0 | | x x | | |
| 24.6 | | | 9 | 24.8-25.0' - Fractures (7), horizontal, rough, planar | x x | 24.2-24.6' - very soft, laminated bedding | R5: 09:27-09:40 |
| 25 | | | 3 | 25.1-25.2' - Fractures (2), horizontal, rough, planar | x x | 24.6-33.8' - slightly weathered | |
| 236.5 | | | 8 | 25.7' - Fracture, horizontal, rough, planar | x x | 24.8-25.2' - very soft, laminated bedding | |
| | | | | 25.8' - Fracture, horizontal, rough, planar | x x | 25.7-26.0' - very soft, laminated bedding | |
| | R5NQ 5 ft 102% | 65 | | 25.9' - Fracture, horizontal, rough, planar | x x | 26.6-27.1' - very soft, laminated bedding | At 26.3': R-Scale = R3-R4 |
| | | | | 26.7-26.9' - Fracture, horizontal, rough, planar | x x | | |
| | | | | 27.0' - Fracture, horizontal, rough, planar | x x | 27.4-28.1' - very soft, laminated bedding | |
| | | | | 27.1' - Fracture, 30 deg, rough, planar | x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-20

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686985.3 N, 2012742.1 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison/D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 13:42

END : 7/11/06 10:20

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 30 231.5 | R6NQ 5 ft 101% | 81 | 0 | 27.4-27.5' - Fracture (3), horizontal, rough, planar | x | 29.4-29.6' - very soft, laminated bedding | R6: 09:45-09:54 |
| | | | 2 | 29.0' - Fracture, 20 deg, rough, planar | x | | |
| | | | 1 | 29.5' - Fracture, rough, undulating, parabolic shaped | x | | |
| | | | | 29.8' - Fracture, horizontal, rough, planar | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 5 | 33.8-34.2' - Fracture (4), horizontal, rough, planar | x | | |
| | | | | 34.4' - Fracture, horizontal, rough | x | | |
| | | | | 34.7-35.0' - Fracture (6), horizontal, rough, planar | x | | |
| 35 226.5 | R7NQ 5 ft 100% | 76 | 10+ | 35.3' - Fracture, 30 deg, rough, undulating | x | 34.7-37.4' - very soft, laminated bedding | R7: 09:59-10:08 |
| | | | 3 | 35.5-35.6' - Fracture zone, horizontal, rough, undulating | x | | |
| | | | 0 | 35.7' - Fracture, 30 deg, rough, undulating | x | | |
| | | | | 35.8' - Fracture, 30 deg, rough, undulating | x | | |
| | | | | 36.3' - Fracture, horizontal, rough, planar | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| 40 221.5 | R8NQ 1.6 ft 97% | 0 | 2 | 40.0' - Fracture, horizontal, rough, undulating | x | 39.2-41.2' - very soft, laminated bedding | At 37.0': R-Scale = R3-R4 At 40.0': R-Scale = R2 At 40.3' PP: 0.75 tsf R8: 10:16-10:20 First water level = 5.25' bgs taken 7/11/06 at 13:58; second water level = 5.5' bgs taken 7/12/06 at 12:10 |
| | | | 0 | 40.2-40.4' - Clay seam, horizontal, rough, undulating, with fractures at top, very soft | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| 45 216.5 | | | | | x | 40.9-41.0' - clay seam, very soft, friable material Bottom of Boring at 41.2 ft bgs on 7/11/06 10:20 | R-scale performed after drilling on stored samples |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-21

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, 3-5/8 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

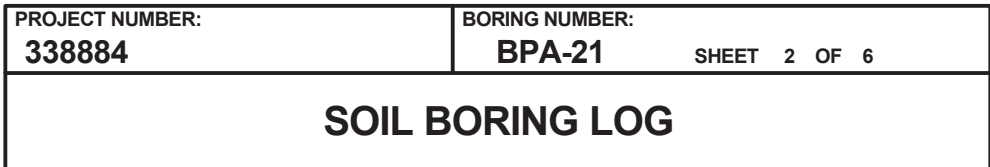
WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|--|--------------|--|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | PP (TSF) | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| | | | | | | | | |
| 261.5 | 0.0 | 11.0 | SS1SS | 3-3-3-4 (6) | Sandy Silt (ML) 0.0-0.9' - very dark brown to light brown, loose, grades from dark to light, black specks in light brown material at bottom | 1.5 | PT-1 collected 2.0-4.0' | |
| | 2.0 | | | | | | | |
| | 2.5 | 18.0 | SS2SS | 2-2-2-4 (4) | Sandy Silt (ML) 2.5-4.0' - light brown, very loose, black fine grains at 3.0', organic roots | 0.75 | PT-2 collected 5.0-7.0' | |
| | 4.5 | | | | | | | |
| 5 | | | | | | | PT-3 collected 9.0-11.0' Offset: 1.9' S41W of BPA-21 Lab Results USCS: CL | |
| 256.5 | 5.0 | 20.0 | SS3SS | 3-4-5-7 (9) | Sandy Silt (ML) 5.0-6.7' - light brown, loose, very fine to fine grained | 3.0 | | |
| | 7.0 | | | | | | | |
| | 7.5 | 17.0 | SS4SS | 6-7-13-33 (20) | Sandy Silt (ML) 7.5-8.9' - light brown, loose, very fine to fine grained Sandy Silt (ML) 8.0-8.5' - light and dark brown, medium stiff, fine grained Sandy Silt (ML) 8.5-9.2' - dark brown, medium stiff, fine grained | 1.5-3.5 | | |
| | 9.5 | | | | | | | |
| 10 | | | | | | | Soil sampling completed at 11:00 on 7/20/06 | |
| 251.5 | 10.0 | 8.5 | SS5SS | 41-50/2.5 (50/2.5") | Sandy Silt (ML) 10.0-10.8' - very dark brown, trace mottling, hard, fine to medium grained, mica fragments | 4.5 | | |
| | 12.0 | | | | | | | |
| | 12.5 | 4.0 | SS6SS | 50/4 (50/4") | Sandy Silt (ML) 12.5-12.8' - black and very dark brown, hard, mica fragments | 3.5 | | |
| | 14.5 | | | | | | | |
| 15 | | | | | | | | |
| 246.5 | 15.0 | 11.0 | SS7SS | 32-50/5 (50/5") | Sandy Silt (ML) 15.0-15.9' - very dark brown, trace mottling, hard, fine grained, mica fragments, black layers at 15.67' and 15.92' | 3.5 | | |
| | 17.0 | | | | | | | |
| | 17.5 | 8.0 | SS8SS | 12-20-50/2 (70/8") | Sandy Silt (ML) 17.5-18.3' - dark brown, trace mottling, hard, fine to medium grained, mica fragments | 1.5-3.0 | | |
| | 19.5 | | | | | | | |
| 20 | | | | | | | | |



LOGGER : MJ

Rev. 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

[illegible]

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-21

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

| WATER LEVEL: 7.6' RGS | | START: 7/20/06 | | END: 7/22/06 | | LOGGERS: MS | |
|--|------------------------------------|-----------------------|--------------------|---|--|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
| | | R Q D (%) | FRACTURES PER FOOT | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | DESCRIPTION | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 65 196.5 | R10NQ 5.4 ft 100% | 100 | 0 | 62.2' - Fracture, horizontal, smooth 62.8' - Fracture, horizontal and 40 deg, smooth, undulating 64.4' - Fracture, horizontal, smooth, undulating 66.3' - Fracture, horizontal, smooth, undulating | 58.9' - 0.03' thick rust clast 59.1' - very fine sand to fine sand, transitions to siltstone; white, pink, gray grains Siltstone 59.1-59.9' - dark reddish brown, fine sand 59.4-59.9' - mottling and gray clasts Sandstone At 59.9' - pinkish gray, fine sand to coarse sand, white, gray, pink, and rust colored grains 61.0-61.7' - rust specks are clustered 61.7-61.9' - white specks are clustered 62.5-64.3' - gray, pink, rust colored grains 64.3-66.1' - reddish brown, mottled throughout, sandstone with silt 66.1-66.3' - fine sand 66.3-67.5' - sandstone with silt; gray, pink, rust grains | At 61.6': R-Scale = R3-R4 R10: 09:25-09:40 | |
| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | 67.5 | R11NQ 5 ft 104% | 100 | 0 | 67.7' - 0.01' thick rust colored band, 140 degrees 68.6' - 0.05' greenish gray clast 69.1-69.2' - rust colored mottling clustered 70.2-70.5' - rust colored mottling clustered 70.7' - soft, grains become coarser 71.3' - white inclusion | R11: 09:50-10:05 | |
| | | | | 0 | | | |
| | | | | 0 | | | |
| | | | | 0 | | | |
| | | | | 0 | | | |
| | | | | 0 | | | |
| 70 191.5 | R12NQ 5 ft 96% | 100 | 0 | 72.1-76.1' - coarse sand, pink, white, gray, rust colored grains 72.4' - coarse grains, mostly pink, white, gray 73.0' - 0.01' thick inclusions 73.7' - 0.02' thick greenish gray mottling inclusion 73.9-74.4' - rust colored mottling | At 71.7': R-Scale = R4 R12: 10:10-10:30 | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 75 186.5 | R13NQ 5.2 ft | 95 | 0 | 78.2' - Fracture, rough, undulating 78.4' - Fracture, rough, undulating 79.0' - Fracture, 30 deg, smooth, undulating | Run R12NQ RQD of 100% includes extra recovery from previous run. | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 80 181.5 | | | 1 | | At 76.4': R-Scale = R3-R4 R13: 10:40-11:00 | | |
| | | | 2 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-21

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 82.7 | 100% | | 0 | | x x x x | Siltstone At 78.4' - dark reddish brown, soft, dark round mottling 78.7' - dark round mottling 78.9' - dark round mottling 79.2' - mottling 80.1' - dark mottling 80.4' - dark mottling 80.7' - mottling 81.2' - mottling 81.4' - mottling 82.3' - mottling Bottom of Boring at 82.7 ft bgs on 7/21/06 11:00 | SC-3 collected 80.9-82.0' R-scale performed after drilling on stored samples |
| | | 0 | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| | | | | x x x x | | | |
| 85 176.5 | | | | | | | |
| 90 171.5 | | | | | | | |
| 95 166.5 | | | | | | | |
| 100 161.5 | | | | | | | |
| | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION | SYMBOLIC LOG | PP (TSF) | COMMENTS |
|---------------------------------|---------------|-------|-----------------------------------|----------------------|--|--------------|----------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | | |
| | | | | | | | | |
| 262.1 | 0.0 | 12.0 | SS1SS | 3-2-4-5 (6) | Sandy Silt (ML) 0.0-0.4' - brown, moist, loose, low plasticity, 25% very fine to medium sand Clay (CL) 0.4-1.0' - red, moist, low plasticity, slow dilatancy, color increasing in intensity with depth | | | |
| | 2.0 | | | | | | | |
| | 2.5 | 14.0 | SS2SS | 3-7-16-21 (23) | Fat Clay (CH) 2.5-2.9' - reddish brown, mottled white, moist, stiff, medium to high plasticity, no dilatancy Lean Clay (CL) 2.9-3.7' - reddish brown, mottled purple, black, white, moist, very stiff, medium plasticity, slow dilatancy | | 2.5 | |
| 5 | | | | | | | | |
| 257.1 | 5.0 | 16.0 | SS3SS | 8-10-12-20 (22) | Lean Clay (CL) 5.0-6.3' - reddish brown, mottled purple, black, white, moist, very stiff, medium plasticity, slow to no dilatancy, similar to above, scattered black staining with white lenses (irregularly shaped) | | 4.0 | PT-1 collected 5.0-7.0' |
| | 7.0 | | | | | | | |
| | 7.5 | 22.0 | SS4SS | 24-26-42-50/4.5 (68) | Silt With Sand (ML) 7.5-8.7' - reddish brown, heavily mottled, low plasticity, rapid dilatancy, with white lenses, 0.5' thick, black staining, 15-20% very fine sand, micaceous, more sand with depth Sandy Silt (ML) 8.7-9.3' - light gray, mottled yellow and red, moist, dense, low plasticity, 30% very fine to fine sand, mica | | | |
| 10 | | | | | | | | |
| 252.1 | 10.0 | 21.0 | SS5SS | 20-28-36-50/5 (64) | Silt With Sand (ML) 10.0-11.8' - reddish brown, mottled white, moist, hard, low plasticity, slow to rapid dilatancy, similar to above, 15% very fine sand, mica particles | | | PT-2 collected 10.0-12.0' |
| | 12.0 | | | | | | | |
| | 12.5 | 13.0 | SS6SS | 12-21-30-27 (51) | Clay (CL) 12.5-13.6' - brown, mottled white, light red, moist, hard, low to medium plasticity, slow to rapid dilatancy, 15% very fine sand and scattered medium sand, abundant mica | | | |
| | 14.5 | | | | | | | |
| 15 | | | | | | | | |
| 247.1 | 15.0 | 5.0 | SS7SS | 50/5 (50/5") | Clay (CL) 15.0-15.3' - reddish brown, mottled white, moist, hard, low to medium plasticity, slow to rapid dilatancy, trace very fine to fine sand, abundant mica | | | |
| | 17.0 | | | | | | | |
| | 17.5 | 4.0 | SS8SS | 16-50/4 (50/4") | Clay (CL) 17.5-18.6' - reddish brown, mottled white, some yellow, black, moist, hard, low to medium plasticity, slow to rapid dilatancy, scattered medium sand, less mottled in last 2 | | | |
| | 19.5 | | | | | | | Soil sampling completed at 09:50 on 5/19/06 |
| 20 | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-22

SHEET 2 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

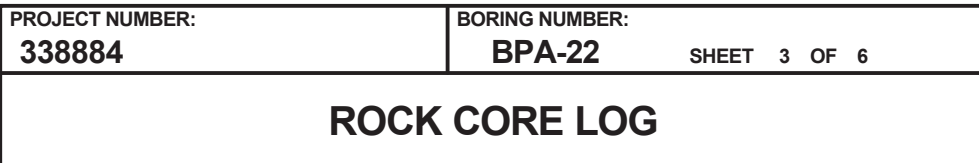
WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | | COMMENTS | |
|---------------------------------|---------------|---------------|-----------------------------------|------------------|---|--------------|----------|
| | 20.0 | RECOVERY (in) | | 6"-6"-6"-6" (N) | | SYMBOLIC LOG | PP (TSF) |
| | | #TYPE | | | | | |
| 242.1 | 20.0 | 1.5 | SS9SS | 50/1.5 (50/1.5") | Clay (CL) 20.0-20.2' - reddish brown, mottled white, some yellow, black, moist, hard, low to medium plasticity, slow to rapid dilatancy 20.0-20.3' - clay seam Begin Rock Coring at 20.3 ft bgs See the next sheet for the rock core log | | |
| 25 | 20.2 | | | | | | |
| 237.1 | | | | | | | |
| 30 | | | | | | | |
| 232.1 | | | | | | | |
| 35 | | | | | | | |
| 227.1 | | | | | | | |
| 40 | | | | | | | |



LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-22

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 45 217.1 | 45.0 R5NQ 5 ft 100% | 56 | 4 | 40.7-40.9' - Fracture zone, bedrock pieces | x x x | 41.8-42.3' - soft | R6: 14:05-14:25 |
| | | | 3 | 41.2' - Fracture, horizontal, rough, undulating | x x x | | |
| | | | 0 | 41.9' - Fracture, 10 deg, rough, undulating | x x x | | |
| | | | 6 | 43.1' - Fracture, horizontal, rough, stepped | x x x | | |
| | | | 10+ | 43.3-43.5' - Fracture zone, horizontal, smooth, undulating | x x x | | |
| 50 212.1 | 50.0 R6NQ 5 ft 94% | 88 | 10+ | 45.4' - Contact between siltstones, 60 deg, smooth, stepped | x x x | 43.6-45.0' - fewer green mottles 44.0-45.4' - highly weathered 44.3' - clay seam, 0.1' thick clay infilling 45.0-45.4' - fewer green mottles 45.0-45.4' - clay seam 45.4-47.9' - green mottling, fresh, abundant mica particles, coarsens with depth | R7: 14:50-15:04 |
| | | | 1 | 46.4' - Fracture, 30 deg, smooth, undulating | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 55 207.1 | 55.0 R7NQ 5 ft 99% | 99 | 0 | | | Sandstone At 47.9' - dark reddish brown to gray, trace greenish gray mottling, soft, laminated to medium bedding, very fine sand to fine sand, fresh, faint convoluted laminae in last 0.5' 50.0' - more convoluted laminae, scattered red brown silt inclusions in irregular shapes and bands, discontinuous bedding generally at 150 degrees, becomes lighter colored and more gray with depth 52.4-52.6' - reddish brown siltstone swirled in with sandstone 52.6-53.4' - gray, soft to hard, fine sand to medium sand, multicolored grains, mottling around some grains, 10-15% scattered coarse grains 53.4-53.7' - medium sand to coarse sand, mottling around grains 53.7-53.8' - dark gray, very fine sand to fine sand 53.8-54.2' - fine sand to medium sand, finer grained than 52.6-53.4' 54.2-54.3' - light gray, very fine sand to fine sand 54.3-55.0' - medium sand to coarse sand, mottling around grains 55.0' - soft to hard, 10% coarse grains scattered throughout, 5% scattered silt inclusions to coarse sands size 56.7-57.6' - mottled, several hairline silt seams, dark gray mottling 57.6-57.9' - mixed siltstone and sandstone | R8: No time recorded SC-2 collected 55.0-56.1' |
| | | | 0 |  | ..... |  |  |
| | | | 0 |  | ..... |  |  |
| | | | 0 | 52.6' - Contact between siltstone and sandstone, horizontal, smooth, stepped | ..... |  |  |
| | | | 0 |  | ..... |  |  |
| 60 202.1 | 60.0 R8NQ 5 ft 95% | 84 | 2 | 57.6' - Fracture, 10 deg, smooth, undulating | | | R9: 15:27-15:39 |
| | | | 1 | 57.9' - Fracture, 10 deg and 30 deg, rough, undulating, in silt lens | ..... |  |  |
| | | | 0 | 58.8' - Fracture, 80 deg, rough, undulating | ..... |  |  |

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|-------------|------------------------------------|-----------------------|--------------------|--------------|---|--|--|--|
| | | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 65 197.1 | 65.0 | R9NQ 5 ft 102% | 100 | 1 | | | Siltstone 57.9-58.0' - dark reddish brown, mottled greenish gray, soft, fresh Sandstone 58.0-60.8' - gray, soft to hard, very fine sand to fine sand, fresh, pink mottling 58.4' - 10% coarse grains scattered throughout, 5% scattered silt inclusions to coarse sands size 58.5' - rhomboidal shaped feature, yellow and red with white; hard 60.7' - light gray, medium sand to coarse sand Siltstone 60.8-60.9' - dark reddish brown, soft to hard, fresh Sandstone At 60.9' - light reddish brown, hard, fine sand to medium sand, fresh 60.9-64.7' - banded in finer and coarser grained beds, trace silt inclusions 64.7-65.0' - soft to hard 65.0-66.4' - pinkish gray 65.0-67.4' - fine to medium grained with some coarse sand grains 67.4-68.7' - medium grained with 25% coarse grained material in bands 67.8-69.2' - pinkish gray 68.7-69.2' - more coarse sized material, to 1/4 size, some silt inclusions Siltstone At 69.2' - dark reddish brown, mottled trace greenish gray, soft, fresh, fine grained 69.8-70.0' - trace very fine sand 70.5-71.0' - siltstone and sandstone beds alternating Sandstone 71.0-74.3' - very dark gray, mottled reddish with multicolored grains, soft to hard, medium sand, fresh, generally beds on 0-10 degrees, remainder on 20-30 degrees 71.0-71.6' - fine sand to medium sand 71.6-72.8' - fine grained, up to 20% medium grained, laminae siltstone lenses, some irregularly shaped 72.8' - becomes lighter colored, gray to dark gray with greenish tint 72.9-73.3' - medium to coarse grained, trace fine gravel 73.3-74.3' - fine grained, fine to medium grained, and medium grained, convoluted laminae to thin bedding | R10: 09:20-09:36 on 05/22/2006 | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | 70 192.1 | 70.0 | R10NQ 5 ft 100% | 98 | 0 | | | R11: 09:49-10:02 | |
| | | | | | 0 | | | | |
| | | | | | 0 | | | | |
| | | | | | 1 | | | | |
| | | | | | 0 | | | | |
| 75 187.1 | 75.0 | R11NQ 5 ft 100% | 98 | 0 | | | R12: 10:27-10:39 | | |
| | | | | 2 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | | | | 0 | | | | | |
| | 80 182.1 | 80.0 | R12NQ 5 ft 99% | 99 | 0 | | | SC-3 collected 76.3-77.2' | |
| | | | | | 1 | | | | |
| | | | | | 0 | | | | |
| | | | | | 0 | | | | |
| | | | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

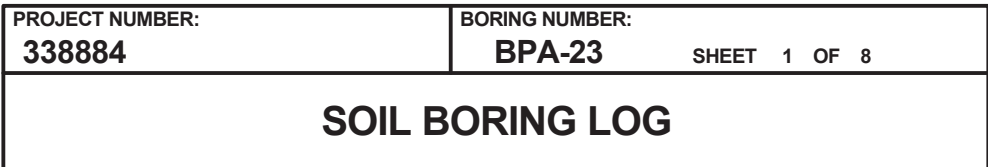
WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 85 177.1 | R13NQ 5 ft 101% | 100 | 0 | | | Conglomerate 74.3-75.8' - very dark gray, soft to hard, coarse sand to fine gravel, fresh 74.3-75.0' - grades from sandstone to conglomerate Sandstone 75.8-76.2' - very dark gray, soft to hard, fine sand, fresh, banded with light gray brown Siltstone 76.2-76.9' - black, mottled faint yellow and lighter gray, stained yellow-orange, very soft to soft, fresh, very fine sand lenses, light gray with mottling Sandstone At 76.9' - dark reddish gray, soft to hard, fine sand, fresh, faint red and light gray banding, black laminae beds, abundant mica particles 77.3-80.7' - reddish gray to pale red, heavy pink and red mottling, medium grained with some beds finer and other coarse, 10% fine grained sand, 30% coarse grained sand, laminated silt (dark gray) seams at bottom 0.65' 80.7-82.9' - dark gray, lighter and darker bands, beds on 20-30 degree angle, some yellow and red mottling 80.7-81.1' - fine to medium grained with black silt lenses 81.1-82.2' - fine to medium grained with lenses of medium to coarse grained sand, some laminated black silt lenses, laminae 82.2-82.9' - fine to medium grained, finer than previous, trace 1/8 silt inclusions Siltstone 82.9-85.0' - dark reddish brown, very soft to soft, fresh, fine grained Bottom of Boring at 85.0 ft bgs on 5/22/06 11:15 | First water level = 8.4' bgs taken 5/22/06 at 11:29; second water level = 7.6' bgs taken 5/23/06 at 18:00 R-scale not performed on rock core samples |
| 90 172.1 | | | | | | | |
| 95 167.1 | | | | | | | |
| 100 162.1 | | | | | | | |



LOGGER : MJ/JS/JF/DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 15 244.7 | 12.8 R1NQ 1.2 ft 107% | 0 | 1 | | x | Siltstone At 12.8' - reddish brown, mottled greenish gray in streaks, very soft to soft, fine grained 12.8' - clay seam, 0.05' thick 12.8-28.0' - highly weathered to completely weathered 14.0' - dark reddish brown, mottled purple and becomes yellow in clayey zones 15.0-15.6' - clay and rock 16.0-18.2' - clay and rock | Rock coring began at 08:15 on 6/15/06 R1: No time recorded on 06/15/06 R2: No time recorded | |
| | | | | x | | | | |
| | | | 0 | x | | | | |
| | | | 1 | x | | | At 12.8-21.1': R-Scale = R0-R1 | |
| | | | 0 | x | | | | |
| | | | 1 | x | | | SC-1 collected 16.0-17.1' | |
| | | | 4 | x | | | | |
| | | | | x | | | | |
| | | | | x | | | | |
| | | | | x | | | | |
| 20 239.7 | 19.0 | | | | x | 19.3-19.8' - very fine sand 20.8-20.9' - clay seam, bedrock 21.0-21.1' - clay seam 22.8-23.4' - very fine sand 25.0-25.5' - clay seam 25.6-27.0' - soft, harder than above, very fine sand 27.0-27.6' - very soft, clay seams, mixed with rock 27.6-29.0' - few green mottles, up to 35% fine sand 28.0-39.0' - slightly weathered | R3: 08:54-09:15 | |
| | | | 8 | x | | | | |
| | | | 10+ | x | | | | |
| | | | 10+ | x | | | SC-2 collected 21.8-23.0' At 21.1-23.0': R-Scale = R0-R1 | |
| | | | 0 | x | | | | |
| | | | 10+ | x | | | At 23.0-25.0': R-Scale = R0-R1 | |
| | | | | x | | | | |
| | | | | x | | | R4: Finished at 09:25 | |
| | | | | x | | | | |
| | | | | x | | | At 25.0-26.0': R-Scale = R2 | |
| 25 234.7 | 24.0 | | | | x | 25.3' - Fracture, 20 deg, smooth, undulating 25.6' - Fracture, 20 deg, smooth, undulating 28.3-28.7' - Fractures (3), horizontal, smooth, undulating, some black and yellow staining | | |
| | | | 1 | x | | | | |
| | | | 10+ | x | | | | |
| | | | 0 | x | | | | |
| | | | 10+ | x | | | | |
| | | | 3 | x | | | At 28.0': R-Scale = R2 | |
| | | | | x | | | | |
| | | | | x | | | R5: Finished at 10:10 | |
| | | | | x | | | | |
| | | | | x | | | | |
| 30 229.7 | 29.0 | | | | x | 30.0-30.5' - mottled greenish gray 30.5-32.1' - mottled greenish gray and purple, soft, up to 40% very fine sand 31.6-32.1' - clay seam 32.1-33.1' - very soft to soft, 5-15% very fine sand | | |
| | | | 0 | x | | | | |
| | | | 0 | x | | | At 30.5': R-Scale = R3-R4 | |
| | | | 10+ | x | | | Driller Remarks: Expect lost recovery in clayey seam, very fast drilling in this section | |
| | | | 0 | x | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-23

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|---|---|--|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 35 224.7 | 34.0 | |  | 2 | 33.1' - Fracture, 45 deg, smooth, undulating, black and orange staining 33.3' - Fracture, 45 deg, partly open to <0.5 mm 34.0-34.3' - Fracture zone, vertical, rough, undulating | X | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 55 204.7 | 54.0 | | <div>1</div> | 52.7-53.2' - Fracture, vertical, rough, undulating, 0.03' relief, very tight fit 53.3' - Fractures (2), horizontal, rough, undulating | <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> <div>x</div> 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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|---|--|---|------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 75 184.7 | 73.5 | | 0 | 85.4' - Contact between siltstone and sandstone, sharp | x | 73.5-74.5' - very fine to fine sand | R14: 11:20-11:40 | | |
| | R14NQ 5 ft 100% | 100 | 0 | | x | | | 74.5-76.4' - with thin light blue to purple mottles, gradational contact to sandstone | At 75.0': R-Scale = R4 |
| | | | 0 | | x | | | | |
| | | | 0 | | x | | | | |
| | | | 0 | | x | | | | |
| | | | 0 | | x | | | | |
| 78.5 | | 0 | 0 | | Sandstone At 76.4' - reddish gray, soft, fresh, very fine to fine, some rip up clasts 76.5-78.5' - interbedded siltstone lenses (4) 0.1 to 0.2' thick, dark reddish brown to blue-gray 78.5-82.8' - multicolored--black/white, pink/tan, blue/gray, hard, fine sand to coarse sand, trace rip up clasts, quartzitic | At 78.0': R-Scale = R4 R15: 12:00-12:30 | | | |
| R15NQ 5 ft 100% | 100 | 0 | 0 | | | | | | |
| | | 0 | 0 | | | | | | |
| | | 0 | 0 | | | | | | |
| | | 0 | 0 | | | | | | |
| | | 0 | 0 | | | | | | |
| 80 179.7 | 83.5 | | 0 | | 0 | 82.8-82.9' - laminated dark gray siltstone lens, 20 degree bedding 82.9-83.5' - fine sand to medium sand 83.5-84.7' - light reddish brown, soft to hard, medium sand to coarse sand, feldspathic, 20 degree bedding at bottom 84.7-85.4' - pinkish white, hard, medium sand to coarse sand, quartzitic | R16: 12:35-13:00 At 84.0': R-Scale = R3 | | |
| | R16NQ 4.3 ft 100% | 100 | 0 | | 0 | | | | |
| | | | 0 | | 0 | | | | |
| | | | 0 | | 0 | | | | |
| | | | 0 | | 0 | | | | |
| | | | 0 | | 0 | | | | |
| 85 174.7 | 87.8 | | 0 | 0 | Siltstone 85.4-97.5' - very dusky red to dark reddish brown, mottled blue-green, very soft to soft, fresh, fine grained 85.7-94.0' - mottled purple and green 85.7-86.2' - <0.007' light pink clasts | SC-4 collected 85.6-86.8' | | | |
| | R17NQ 5 ft 100% | 100 | 0 | 0 | | | | | |
| | | | 0 | 0 | | | | | |
| | | | 0 | 0 | | | | | |
| | | | 0 | 0 | | | | | |
| | | | 0 | 0 | | | | | |
| 90 169.7 | 92.8 | | | | | R17: 13:10-13:35 At 88.0': R-Scale = R3 | | | |
| | | | | | | | At 91.0': R-Scale = R3 | | |
| | | | | | | | | | |
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85.4' - Contact between siltstone and sandstone, sharp



PROJECT NUMBER:
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SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

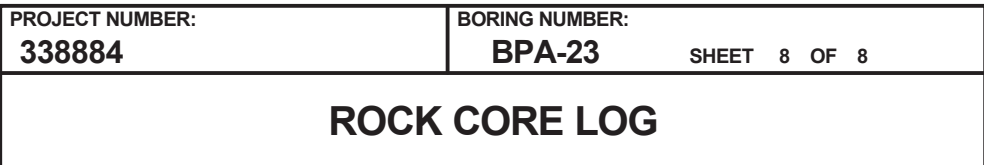
WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|-----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 94.0 | R18NQ 1.2 ft 100% | 100 | 0 | | x x x x | | R18: 13:40-13:55 At 93.0': R-Scale = R3 |
| 95 | | | 0 | | x x x x | | |
| 164.7 | | | 0 | | x x x x | | R19: 14:00-14:15 |
| | | | 0 | | x x x x | | |
| | R19NQ 5 ft 100% | 100 | 2 | | x x x x | | At 96.0': R-Scale = R4 |
| | | | 0 | | x x x x | | |
| | | | 0 | 97.4' - Fracture, 25 deg, smooth, planar, very tight slickensided surfaces on MB's (upper portion) | x x x x | | At 97.5': R-Scale = R5 |
| 99.0 | | | 0 | 97.5' - Fracture, 25 deg, smooth, planar, very tight | x x x x | | |
| | | | 0 | | x x x x | | |
| 100 | | | 0 | | x x x x | | R20: 14:20-14:45 |
| 159.7 | | | 0 | | x x x x | | At 99.5': R-Scale = R5 |
| | | | 0 | | x x x x | | |
| | R20NQ 5 ft 100% | 94 | 2 | | x x x x | | |
| | | | 1 | 101.9' - Contact between sandstones, sharp contact at 20 deg | x x x x | | |
| | | | 1 | 102.4' - Fracture, 20 deg, smooth, planar, in gray lens, thin clay coating over ~1/2 of surface | x x x x | | At 102.5': R-Scale = R4 |
| 104.0 | | | 1 | | x x x x | | |
| | | | 0 | 103.8' - Fracture, horizontal, rough, undulating | x x x x | | |
| 105 | | | 0 | 104.3' - Contact between sandstones, 20 deg, sharp | x x x x | | R21: 14:50-15:10 |
| 154.7 | | | 0 | 105.1' - Contact between sandstones, horizontal, sharp | x x x x | | At 104.5': R-Scale = R3-R4 |
| | | | 0 | | x x x x | | |
| | R21NQ 5 ft 98% | 94 | 0 | | x x x x | | SC-5 collected 106.4-107.4' |
| | | | 2 | | x x x x | | |
| | | | 0 | 108.3' - Fracture, horizontal, rough, undulating | x x x x | | |
| 109.0 | | | 0 | 108.4' - Fracture, horizontal, rough, undulating | x x x x | | |
| | | | 0 | | x x x x | | R22: 15:15-15:27 |
| 110 | | | 0 | | x x x x | | At 109.5': R-Scale = R5 |
| 149.7 | | | 0 | | x x x x | | SC-6 collected 112.15-113.15' |
| | R22NQ 5 ft 101% | 100 | 0 | | x x x x | | |
| | | | 0 | | x x x x | | At 112.0': R-Scale = R2 |
| | | | 0 | | x x x x | | |



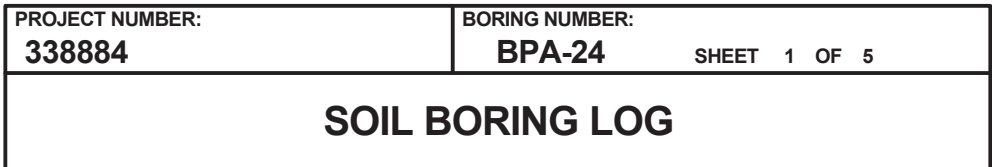
LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : MJ/JS/JF/DT

Rev. 5



LOGGER : JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-24

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

ELEVATION : 259.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel





ORIENTATION : Vertical

WATER LEVELS : 7.6 ft bgs

START : 6/7/06 09:30

END : 6/8/06 13:51

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|---|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 15 244.0 | 12.6 | 100 | 1 | 13.0' - Fracture, 30 deg, smooth, undulating |  | Sandstone At 12.6' - dark reddish brown, some mottling, very soft, laminated to medium bedding, fine sand to medium sand, slightly weathered | Rock coring began at 12:00 on 6/7/06 R1: 12:10-12:18 on 06/07/06 At 13.6': R-Scale = R3 R2: No time recorded At 15.9': R-Scale = R3 | |
| | R1NQ 2.3 ft 104% | | 1 | 14.4' - Fracture, 30 deg, rough, planar | | | | 14.9-16.3' - few black laminae siltstone lenses |
| | 14.9 | | 0 | 15.5' - Fracture, 20 deg, smooth, stepped, some black stains, 0.02' relief | | | | 15.9-16.3' - soft, 15-20% coarse sand |
| 20 239.0 | R2NQ 5 ft 98% | 95* | 1 | 16.9' - Fracture, horizontal, rough, undulating, <0.01' relief |  | 16.3-17.1' - brown, soft to hard, fine sand to coarse sand, subangular, poorly sorted, multi-colored clasts-white, black, pink, purple, and yellow 17.1-19.7' - brown, soft to hard, laminated to thin bedding, fine sand to coarse sand, well sorted, 0-20 degree bedding | At 19.65-23.6': R-Scale = R0-R1 R3: 14:02-14:13 | |
| | | | 1 | 17.8' - Fracture, horizontal, smooth, undulating | | | | 19.7-19.9' - moderately weathered, clay lens and bedrock pieces |
| | | | 0 | 19.8-19.9' - Fracture zone, bedrock pieces to gravel sized, clay | | | | Sandstone & Siltstone 19.9-20.8' - brown, very soft to soft, laminated to thin bedding, fine sand to coarse sand, moderately weathered, well sorted |
| | | | 10+ | 20.1-20.5' - Fracture zone, horizontal and 70 deg, smooth, undulating, little relief; 70 deg fracture has 0.03' white fat clay infilling | | | | Clay (CL) 20.8-22.4' - mottled, very soft |
| | | | 10+ | | | | | Siltstone At 22.4' - reddish brown, faintly mottled green and yellow, very soft, fine grained, very friable 22.4-40.5' - moderately weathered |
| | | | 0 | | | | | 24.9-51.0' - dark reddish brown, trace mottling 25.5-25.7' - clay and clay-like rock 25.7-26.0' - clay and clay-like rock |
| | | | 0 | | | | | 26.6-27.3' - very soft to soft, more coarse silt 27.5-27.9' - clay and clay-like rock |
| 25 234.0 | R3NQ 5 ft 100% | 52* | 2 | 24.9-25.2' - Fracture zone, clay, friable material |  | 28.3-28.6' - 1/2" thick clay/clay-like rock seams, 2 29.1-29.9' - trace green mottling, very soft to soft, very fine grained, 40% coarse silt or very fine sand, many hairline fractures | SC-1 collected 22.65-23.6' At 24.1': R-Scale = R2 R4: 14:22-14:36 At 24.9-26.7': R-Scale = R0-R1 | |
| | | | 0 | 26.6' - Fracture, horizontal, smooth, undulating, in 1/4-1/2 clay seam 27.3' - Fracture, horizontal, smooth, undulating, in 1/4-1/2 clay seam | | | | 26.6-27.3' - very soft to soft, more coarse silt |
| | | | 0 | | | | | 27.5-27.9' - clay and clay-like rock |
| | | | 10+ | 28.6-28.9' - Fractures (2), horizontal, coarse gravel sized bedrock pieces, some clay 29.0' - Fracture, horizontal, smooth to rough, undulating, <0.01 relief 29.2-30.0' - Fracture zone, 80 deg and horizontal, very tight fit, hairline fractures | | | | |
| 30 229.0 | R4NQ 5 ft 100% | 20* | 1 | 30.6' - Fracture, 70 deg, 0.0002' hard white infilling, tightly healed |  | 31.1-32.8' - rounded, 5-10% black coarse sand | At 27.5': PP: 2.5 tsf At 28.3-28.9': R-Scale = R0-R1 R5: 14:55-15:09 At 30.0': R-Scale = R3 | |
| | | | 10+ | | | | | |
| | | | 10+ | | | | | |
| | 29.9 | 92* | 1 | | | | | |
| | | | 0 | | | | | |
| | R5NQ 5 ft | | 2 | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-24

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

ELEVATION : 259.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

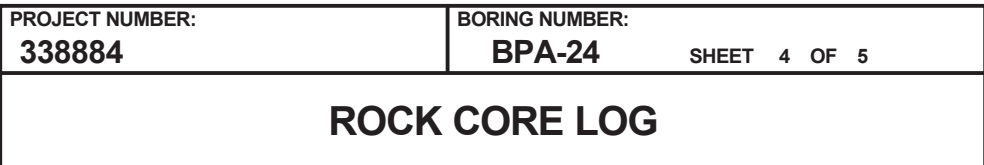
WATER LEVELS : 7.6 ft bgs

START : 6/7/06 09:30

END : 6/8/06 13:51

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 224.0 | 103% | | | 32.6' - Fracture, horizontal, rough, undulating, bedrock fragments, coarse sand sized | x | 32.8-32.9' - clay seam 33.1-33.2' - clay/clay-like rock seam 33.2-39.9' - faint white, brown and gray mottling, very soft to soft | At 32.5-33.0': R-Scale = R0-R1 |
| | | 1 | 32.9' - Fracture, horizontal, rough, stepped, 0.03' relief | x | | | |
| | | 0 | 33.2' - Fracture, 5 deg, smooth, undulating | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| 40 219.0 | 34.9 | | NA | 35.5' - Fracture, horizontal, smooth, stepped | x | 37.0-37.2' - clay seam and bedrock fragments 37.4-37.7' - clay and clay-like rock seam, friable 38.7-38.8' - clay and bedrock flakes 39.0-39.1' - clay and bedrock flakes | R6: 15:45-16:08 |
| | | NA | 35.8-36.0' - Fracture zone (2), horizontal, smooth, undulating | x | | | |
| | | NA | 36.4-36.7' - Fracture, horizontal, smooth, undulating | x | | | |
| | | NA | 36.8' - Fracture, 60 deg, undulating, <0.0002' white infilling, tightly healed | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| | | | | x | | | |
| 45 214.0 | 39.9 | | 10+ | 39.1-39.9' - Fracture zone, horizontal, few clay seams to 1/4-1/2 thick | x | 39.9-41.1' - heavy green, purple, and yellow mottling, very soft to soft, multiple clay seams 40.3-40.5' - likely site of breaks 40.5-53.0' - fresh 41.1' - fine to medium grained, becoming coarser with depth, coarser silt 42.8' - green and purple mottling, soft, 40-50% coarse silt and up to 20% fine to medium white sand grains throughout | At 39.1-39.6': R-Scale = R0-R1 |
| | | | 5 | 40.3-40.5' - Fractures (4), horizontal, smooth to rough, stepped to undulating, up to 0.03' relief, small bedrock fragments | x | | |
| | | | 0 | 41.0' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 42.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | | | x | | |
| | | | 0 | | x | | |
| | | | 1 | | x | | |
| | | | | 44.4' - Fracture, 70 deg, undulating, lift 0.0003' wide | x | | |
| | | | | 44.9-45.1' - Fracture, 60 deg, smooth, undulating | x | | |
| | | | | 45.3' - Fracture, 60 deg, smooth to rough, undulating, 0.01' relief | x | | |
| 50 209.0 | 44.9 | | 8 | | x | 44.9-46.5' - 30-40% coarse silt/very fine sand 46.5-46.9' - green mottling, soft | R8: 09:04-09:20 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 1 | | x | | |
| | | | | 49.3' - Fracture, horizontal, rough, undulating | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | | | | | x | | |
| | 49.9 | | 0 | | x | 51.0-53.0' - dark reddish gray, sand content varies in irregular bands, over several inches, 60% very fine to medium sand and 40% silt | R9: 09:27-09:44 |
| | | | 1 | | x | | |
| | | | 0 | 51.5' - Fracture, horizontal, smooth, undulating to stepped, 0.01' relief | x | | At 50.7': R-Scale = R3-R4 |
| | R9NQ 5 ft | 88 | 0 | | | | |



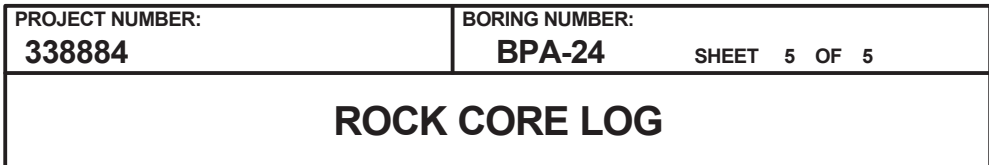
LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



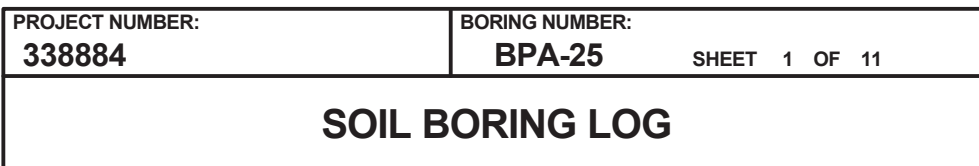
LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-25

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|------------------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 256.4 | R1HQ 8 ft 87% | 0 | 1 | 8.5' - Fracture, 50 deg, smooth, undulating | | Sandstone 8.0-13.3' - light gray, very soft, fine sand to medium sand, highly weathered to completely weathered, multicolored grains | Rock coring began at 15:30 on 4/28/06 R1: 15:30-15:55 |
| | | | 1 | 9.7' - Fracture, horizontal, smooth, planar | | | |
| | | | 0 | | | | |
| | | | 10+ | 11.0-11.2' - Fracture zone, horizontal and 70 deg, loose sand and clay | | | |
| | | | 2 | 11.8' - Fracture, horizontal, rough, undulating, loose sand and clay | | | |
| | | | 1 | 12.6 and 13.0' - Fractures (2), 0-10 deg, smooth, undulating, loose sand and clay | | | |
| | | | 1 | | | | |
| 15 251.4 | | | | | | GS-1 collected 13.3-13.7' | |
| | | | | | | | |
| 16.0 | | | | | | | R2: 16:07-16:45 |
| | | | | | | | |
| 20 246.4 | R2HQ 10 ft 100% | 0 | 1 | 16.2' - Contact between siltstone and sandstone, horizontal, smooth, undulating | | Claystone 13.3-16.0' - red, pink, greenish white, very soft, highly weathered to completely weathered, fine grained 13.3-13.7' - fat clay (CH), white and red brown, heavily mottled, highly plastic 14.2-14.4' - clay seam, highly plastic, laminated Siltstone 16.0-16.2' - dark reddish brown, very soft, highly weathered to completely weathered, with mica particles, fine grained Sandstone 16.2-17.9' - brown, mottled red, white, black, very soft, highly weathered to completely weathered, fine sand, abundant silt/clay Siltstone At 17.9' - brown to yellow brown, multicolored mottling, very soft to soft, highly weathered to completely weathered, fine grained, varying amounts of fine sand, some in bands | R2: 16:07-16:45 |
| | | | 1 | 17.0' - Fracture, 30 deg, smooth, stepped, tight fit, sand on joint | | | |
| | | | 1 | 18.5' - Fracture, horizontal, smooth, undulating, loose fit | | | |
| | | | 0 | | | | |
| | | | 10+ | 20.2' - Fracture, 60 deg, rough, planar, black stains, tight fit 20.8-20.9' - Fracture zone, horizontal and 50 deg, rough, undulating, loose fit, loose sand and clay | | | |
| | | | 0 | | | | |
| | | | 2 | 22.6' - Fracture, 60 deg, rough, stepped, tight fit | | | |
| | | | 0 | 22.9' - Fracture, 40 deg, smooth, undulating, orange stains, loose fit | | | |
| | | | 1 | 24.1' - Fracture, horizontal, smooth, undulating, loose fit | | | |
| | | | 0 | | | | |
| 25 241.4 | | | | | | SC-1 collected 24.4-25.3' | |
| | | | | | | | |
| 26.0 | | | 0 | | | | R3: 16:55-17:10 and 17:15-17:30 |
| | | | 10+ | | 26.6-28.9' - dusky red | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-25

SHEET 3 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

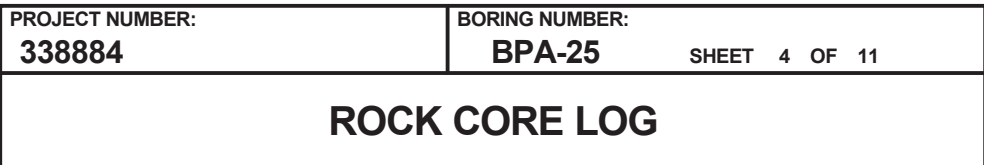
WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 30 236.4 | R3HQ 10 ft 97% | 75 | 10+ | 27.7-27.9' - Fracture zone, smooth, undulating, loose fit | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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| | | |



LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 196.4 | R7HQ 10 ft 97% | 84 | 0 | 70.2-70.7' - Fractures (4), horizontal, smooth, undulating, loose fit 71.0-71.4' - Fractures (2), horizontal and 10 deg, smooth, undulating, loose fit 73.2' - Fractures (2), horizontal and 5 deg, smooth, undulating, loose fit 73.6' - Fracture, horizontal, smooth, undulating, loose fit 74.2' - Fracture, horizontal, smooth, stepped, loose fit | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 6 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

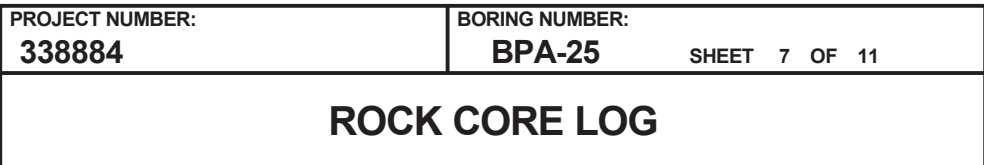
WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 90 176.4 | R9HQ 10 ft 99% | 99 | 0 | 90.6' - Fracture, horizontal, smooth, planar | x | 90.2-91.5' - scattered white medium sand | SC-3 collected 93.0-94.1' |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 95 171.4 | R10HQ 10 ft 100% | 100 | 0 | 98.0-99.0' - Horizontal joints, very soft 98.4' - Fracture, 10 deg, smooth, undulating, loose fit | x | 96.0-102.0' - mottled green, soft to very soft, scattered coarse sand | R10: 08:30-09:10 on 5/1/06 |
| | | | 0 | | x | | |
| | | | 1 | | x | | |
| | | | 0 | | x | | |
| | | | 1 | | x | | |
| | | | 1 | | x | | |
| | | | 2 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 100 166.4 | R10HQ 10 ft 100% | 100 | 0 | 100.0-102.0' - Horizontal joints, very soft 100.5' - Fracture, horizontal, smooth, undulating, loose fit | x | Sandstone At 102.0' - dark reddish gray, mottled red and green, hard, fine sand to medium sand, fresh, scattered white medium sand | R11: 09:33-09:48 and 09:51-10:10 |
| | | | 1 | | x | | |
| | | | 1 | | x | | |
| | | | 2 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 105 161.4 | R10HQ 10 ft 100% | 100 | 0 | 101.6' - Fracture, 10 deg, smooth, undulating, loose fit 102.3' - Fracture, horizontal, smooth, stepped 102.9' - Fracture, 20 deg, smooth, stepped | x | 106.0-107.8' - brown, mottled light/dark gray in beds, multicolored grains | |
| | | | 0 | | x | | |
| 106.0 | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |



LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-25

SHEET 8 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | | | |
|--|------------------------------------|-----------------|--------------------|---|--------------|---|--|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | | |
| 130 136.4 | R13HQ 10 ft 98% | 97.5 | 0 | | | 128.4' - grading to sandstone | Rig begins to chatter at 129.0' bgs | | | | |
| | | | 1 | 129.3' - Fracture, 30 deg, smooth, undulating | | | | | | | |
| | | | 2 | 130.3' - Fracture, 20 deg, smooth, undulating, loose fit | | 129.9' - grayer | | | | | |
| | | | 1 | 130.8' - Fracture, 10 deg, smooth, planar, loose fit | | | | | | | |
| | | | 1 | 131.2' - Fracture, 5 deg, smooth to rough, undulating, tight fit | | | | | | | |
| | | | 1 | 132.0' - Fracture, 20 deg, smooth, undulating, loose fit | | | | | | | |
| | | | 2 | 133.1' - Fracture, 10 deg, smooth, stepped, loose fit | | | | | | | |
| | | | 1 | 133.9' - Fracture, 10 deg, smooth to rough, stepped, loose fit | | | | | | | |
| | | | 1 | 134.6' - Fracture, 5 deg, rough, undulating, loose fit, in fine grained band | | | | | | | |
| | | | 1 | 135.4' - Fracture, 15 deg, rough, undulating, loose fit | | 135.4' - siltstone clasts | | | | | |
| | | | | | | | | | | | |
| 135 131.4 | R14HQ 5.1 ft 100% | 100 | 0 | | | 136.0-138.6' - reddish gray, hard to very hard, medium sand to coarse sand, multicolored grains, siltstone clasts | R14: 13:28-13:50 | | | | |
| | | | 0 | | | | | | | | |
| | | | 1 | 138.6' - Fracture, horizontal, smooth, undulating | | Siltstone 138.6-142.7' - dark reddish brown, mottled green, soft to hard, fresh, very fine to fine sand throughout | | | | | |
| | | | 0 | | | | | | | | |
| | | | 0 | | | | | | | | |
| | | | 140 126.4 | R15HQ 4.9 ft 100% | 96 | 0 | | | | 142.7' - Contact between siltstone and sandstone, 10 deg, rough, undulating, loose fit | Pull 5' core at 14:10 due to rig chatter |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |
| 145 121.4 | R16HQ 4.9 ft 100% | 96 | | | | 0 | | | Sandstone 142.7-144.5' - very dark gray, hard to very hard, medium sand to coarse sand, fresh, multicolored grains | SC-5 collected 141.4-142.4' | |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |
| | | | 146.0 | R17HQ 4.9 ft 100% | 96 | 0 | | | Siltstone At 144.5' - dark reddish brown, mottled green and dark gray, very soft to soft | | R16: 16:00-16:48 and 16:57-17:30 |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |
| 147.0 | R18HQ 4.9 ft 100% | 96 | | | | 0 | | | 146.0-149.0' - moderately weathered to highly weathered | | |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |
| | | | 148.0 | R19HQ 4.9 ft 100% | 96 | 0 | | | | | |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |
| 149.0 | R20HQ 4.9 ft 100% | 96 | | | | 0 | | | | | |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |
| | | | 150.0 | R21HQ 4.9 ft 100% | 96 | 0 | | | | | |
| | | | | | | 1 | | | | | |
| | | | | | | 0 | | | | | |
| | | | | | | 2 | | | | | |
| | | | | | | 0 | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 9 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 150 116.4 < | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 170 96.4 | R18HQ 10 ft 100% | 98 | 1 | 168.4' - Fracture, <5 deg, smooth, planar | . | 170.0-171.0' - multicolored fine to medium sand 171.0-172.0' - very dusky red, hard, fine sand 172.0-176.8' - hard, multicolored grains, medium to coarse sand | SC-6 collected 168.9-170.0' | |
| | | | 1 | | | | | |
| | | | 1 | 170.0-170.7' - Fractures (2), <5 deg, rough, undulating | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 1 | 173.2' - Fracture, <5 deg, rough, undulating | | | | |
| | | | 1 | 174.4' - Fracture, 15 deg, rough, undulating | | | | |
| | | | 2 | 175.3' - Fracture, <5 deg, rough, undulating 175.8' - Fracture, <5 deg, rough, undulating | | | | 175.5' - quartz grains, <0.1' |
| | | | 1 | 176.8' - Fracture, 30 deg, rough, undulating | | | | Siltstone At 176.8' - dark reddish brown, soft, fresh |
| | | | 2 | 177.6' - Fracture, <5 deg, rough, undulating 177.9-179.9' - Fractures (4), <5 deg, rough, undulating | | | | |
| 175 91.4 | 176.0 | | 1 | | x | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-25

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 190 76.4 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-26

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | SYMBOLIC LOG | PP (TSF) | COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
|---------------------------------|---------------|---------------|-----------------------------------|------------------|---|--------------|----------|---|
| | | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 252.3 | 0.0 | 19.0 | SS1SS | 2-1-1-1 (2) | Silty Sand (SM) 0.0-0.6' - brown, moist, very loose, very fine to medium grained, scattered organics and black staining Silty Sand (SM) 0.6-1.6' - brown, moist to wet, very loose, very fine to medium grained, low plasticity, very rapid dilatancy, scattered orange staining | | | |
| | 2.0 | | | | | | | |
| | 2.5 | 23.0 | SS2SS | 0-0-0-1 (0) | Fat Clay W/ Sand (CH) 2.5-4.4' - light yellowish brown, wet, very soft, high plasticity, no dilatancy, heavy orange staining, scattered organics, 20-25% very fine to medium sand, becomes finer with depth | | 0 | |
| 5 | 4.5 | | | | | | | |
| 247.3 | 5.0 | 17.0 | SS3SS | 3-3-4-4 (7) | Fat Clay W/ Sand (CH) 5.0-6.9' - light yellowish brown, moist, stiff, high plasticity, heavy orange staining (>50%), 10-15% very fine to medium sand | | 2.0-3.0 | ST-1 collected 5.0-7.0' |
| | 7.0 | | | | | | | |
| | 7.5 | 14.0 | SS4SS | 3-3-4-13 (7) | Fat Clay (CH) 7.5-7.9' - dark yellowish brown, moist, stiff, medium to high plasticity, slow to no dilatancy, 15% very fine to medium sand Clay (CL) 7.9-8.7' - dark reddish brown, moist, stiff, low to medium plasticity, slow to rapid dilatancy, trace very fine sand; 1/2 sand lens, black staining, stiffer with depth | | 1.25-1.5 | |
| 10 | 9.5 | | | | | | | |
| 242.3 | 10.0 | 11.0 | SS5SS | 13-16-21-26 (37) | Clay (CL) 10.0-10.9' - reddish brown, mottled black and light green, stiff, low to medium plasticity | | | PT-2 collected 9.0-11.0' Offset: 2.6' N50E of BPA-26 Lab Results USCS: CL w/Sand |
| | 12.0 | | | | | | | |
| | 12.5 | 9.0 | SS6SS | 35-50/3 (50/3") | Clay (CL) 12.5-13.4' - reddish brown, mottled black and light green, stiff, low to medium plasticity | | | |
| | 14.5 | | | | | | | |
| 15 | 15.0 | 2.0 | SS7SS | | Clay (CL) 15.0-15.3' - reddish brown, heavy white mottling, stiff, low to medium plasticity Begin Rock Coring at 15.3 ft bgs See the next sheet for the rock core log | | | Soil sampling completed at 14:50 on 6/1/06 |
| 237.3 | 15.3 | | | 50/3 (50/3") | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-26

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 15.3 | | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-26

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 40 212.3 | R5NQ 5 ft 100% | 85 | 5 | 35.6' - Fracture, horizontal, rough, undulating 35.7' - Fracture, 30 deg, smooth, planar, gravel sized fragments | x | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-26

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

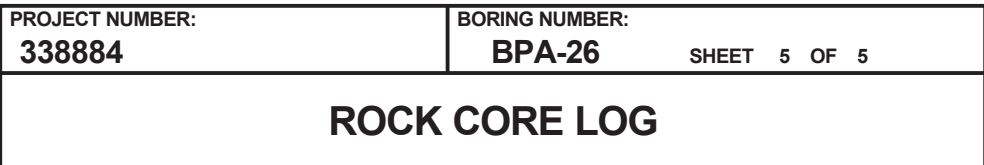
WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 60 192.3 | R9NQ 5 ft 100% | 100 | 0 | 59.6' - Fracture, horizontal, smooth, to rough, planar 60.6' - Fracture, 50 deg, smooth, undulating, 0.01' relief, hairline fractures 0.05' away 64.5' - Fracture, horizontal and 50 deg, compound fractures, 0.03' relief, small bedrock fragments 64.9' - Fracture, 40 deg, rough, undulating, 0.05' relief 65.2-65.3' - Fractures (2), horizontal and 10 deg, smooth, undulating 66.3-66.6' - Fracture zone, horizontal, rough, undulating, up to 0.02' relief, fine to coarse gravel sized bedrock fragments 68.7' - Fracture, horizontal, smooth, undulating, 0.01' relief 69.0' - Fracture, 15 deg, rough, planar, tight fit | x | 47.8-49.7' - medium sand to coarse sand, coarser with depth; last 0.3' has up to 50% coarse sand and fine gravel 49.7-50.0' - rust colored mottling, very fine sand to fine sand, contact at 150 degrees 50.0-51.1' - very fine sand to fine sand, fresh 50.5-50.8' - coarse sand to fine grained clasts; siltstone clasts of same size 50.9-51.0' Siltstone At 51.1' - dark reddish brown, mottled green and purple, soft, fresh, fine grained 53.1-54.5' - becomes coarser; contact over 0.1 to 0.2' with 10-20% fine to medium white sand, increases with depth up to 30% very fine sand/coarse silt Sandstone 54.5-54.8' - fresh, fine grained, greenish-gray, sandstone lens, irregular shaped and mixed with siltstone at top; undulating contact at bottom (0.03' relief) Siltstone At 54.8' - dark reddish brown, mottled green and purple, soft, fresh 55.0-60.0' - some bands of coarser silt 60.6-64.9' - trace green mottling 62.7-62.9' - 15% white coarse sand to fine gravel 64.9-65.0' - mottled trace green and purple, very soft to soft 65.0-70.0' - dusky red 65.1-65.2' - trace mottling, very soft to soft 65.2-68.1' - mottled trace green and purple, very soft to soft, fine grained, coarsens with depth 68.1-70.0' - mottled trace green, up to 50% very fine sand, coarsens with depth 70.0-71.9' - dark reddish brown, trace green mottling, soft, coarsens with depth 71.9-71.9' - sandstone lens at 20 degrees; gray, fine to medium grained 71.9-72.0' - siltstone lens at 20 degrees, trace sand | R9: 10:51-11:06 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 1 | | x | | |
| | 65 187.3 | R10NQ 5 ft 100% | 90 | | 1 | | x |
| | | | | | 0 | | x |
| | | | | | 0 | | x |
| | | | | | 0 | | x |
| | | | | | 2 | | x |
| 65 187.3 | R11NQ 5 ft 96% | 84 | 2 | x | | | |
| | | | 10+ | x | | | |
| | | | 0 | x | | | |
| | | | 2 | x | | | |
| | | | 0 | x | | | |
| 70 182.3 | R12NQ 5 ft 98% | 98 | 0 | x | | | |
| | | | 1 | x | | | |
| | | | 1 | x | | | |
| | | | 0 | x | | | |
| | | | 0 | x | | | |
| 75 177.3 | | | | x | | | |



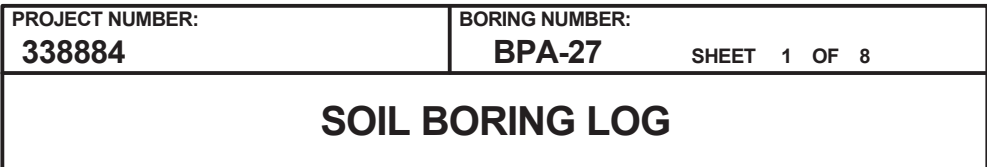
LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



LOGGER : JF/JS/MJ

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-27

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 15 243.3 | 12.8 RA1NQ 3.7 ft 85% | 0 | 2 | 12.8' - Fracture, 50 deg, smooth, undulating | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-27

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 33.0 | | | | | | | |
| 35 223.3 | R3NQ 5 ft 100% | 84 | 1 | 33.5' - Fracture, 45 deg, rough, undulating | x x x x | 30.5' - mottled greenish gray 32.3' - mottled greenish gray 33.0-38.0' - mottled greenish gray, soft | R3: 14:16-14:30 At 33.0-34.0': R-Scale = R3 At 34.0-36.0': R-Scale = R2 |
| | | | 2 | 34.6' - Fracture, horizontal, rough | x x x x | | |
| | | | 2 | 35.4' - Fracture, horizontal, rough | x x x x | 35.0-35.2' - clay with siltstone | |
| | | | 0 | | x x x x | | At 36.5': R-Scale = R4 |
| | | | 0 | | x x x x | | |
| 38.0 | | | | | x x x x | | |
| | | | 3 | 38.5' - Fracture, 30 deg, smooth, undulating | x x x x | 38.0-43.0' - light reddish brown, mottled greenish gray, soft to very soft, very thin bedding, fresh, angular bedding | R4: 14:45-15:15 |
| | | | 2 | 38.8' - Fracture, 30 deg, smooth, undulating | x x x x | | At 39.2-39.8': R-Scale = R2 |
| | | | | 38.9' - Fracture, horizontal, undulating | x x x x | | At 39.6': R-Scale = R3-R4 |
| | | | | 39.0' - Fracture, horizontal, undulating | x x x x | | At 40.0': R-Scale = R3-R4 |
| 40 218.3 | R4NQ 5 ft 100% | 66 | | 39.7' - Microfractures | x x x x | 39.7' - very soft | |
| | | | 0 | 39.9' - Fracture, horizontal, smooth, undulating | x x x x | | |
| | | | 2 | 41.3' - Fracture, horizontal, smooth, undulating | x x x x | | At 41.5-41.9': R-Scale = R0 |
| | | | | | x x x x | 41.5-41.9' - clay, greenish gray and brown, very soft, some siltstone fragments | At 41.9-42.3': R-Scale = R1 |
| | | | 2 | 42.2' - Fracture, horizontal, smooth, undulating | x x x x | 42.1-42.4' - very soft | At 42.5': R-Scale = R3-R4 |
| 43.0 | | | | | x x x x | 42.7-42.8' - clay, greenish gray and brown, very soft, some siltstone fragments | R5: 15:30-15:50 |
| | | | 1 | | x x x x | Sandstone | At 43.5': R-Scale = R4 |
| | | | 0 | | x x x x | 43.0-48.0' - light reddish brown, mottled greenish gray, soft, fine sand, fresh, fragile | At 44.5': R-Scale = R3-R4 |
| 45 213.3 | R5NQ 5 ft 100% | 96 | | | x x x x | | |
| | | | 0 | | x x x x | | |
| | | | 1 | | x x x x | | |
| | | | | 46.9' - Fracture, 60 deg, smooth, undulating | x x x x | 47.0-48.0' - grain size increase, white particles to the bottom | At 47.5': R-Scale = R3-R4 |
| | | | 0 | | x x x x | | R6: 16:43-17:10 |
| 48.0 | | | | | x x x x | Siltstone | At 49.0': R-Scale = R3-R4 |
| | | | 0 | | x x x x | 48.0-50.2' - light reddish brown, mottled greenish gray, soft, fresh | |
| | | | 1 | | x x x x | | |
| 50 208.3 | R6NQ 5 ft 94% | 94 | | | x x x x | Sandstone | |
| | | | 1 | | x x x x | 50.2-53.0' - light reddish brown, soft, fine sand, fresh | |
| | | | 0 | | x x x x | | At 52.0': R-Scale = R3 |
| | | | 0 | | x x x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-27

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 203.3 | R7NQ 4.5 ft 100% | 100 | XXX | 56.9' - Contact between siltstone and sandstone, smooth, undulating 57.5' - Fracture, horizontal, smooth, undulating 57.6' - Fracture, horizontal, smooth, undulating 57.7' - Fracture, horizontal, smooth, undulating 58.1' - Fracture, 30 deg, rough, undulating 58.2' - Fracture, 30 deg, rough, undulating | X | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 75 183.3 | R11NQ 5.5 ft 100% | 100 | 0 | | x | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-27

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

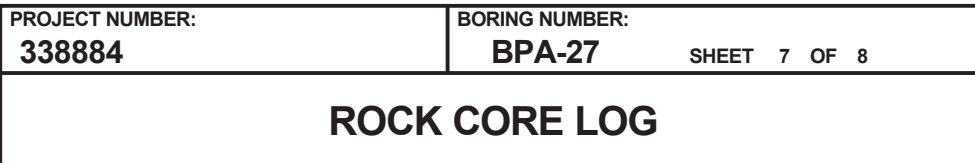
WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|---|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 95 163.3 | 93.4 | | 0 | 92.6' - Fracture, vertical, vertical inclusion, slight fracture of side of core | x | Siltstone 92.6-93.4' - fresh, greenish gray inclusions | At 93.2': R-Scale = R3-R4 R15: 15:12-15:30 | |
| | R15NQ 4.9 ft 96% | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| 100 158.3 | 98.3 | | 0 | 98.4' - Fracture, horizontal, smooth, undulating | x | 97.9-98.2' - rust colored 0.05-0.1' thick bands 98.3-103.3' - fine sand to medium sand 98.5' - rust colored mottling, coarse sand, siltstone inclusions 98.9' - rust color mottling, black band around core, white and gray grains 99.4-99.6' - rust colored bands at 20 degree angle 99.8-101.6' - greenish gray band at 10 degree angle 101.6' - rust colored band 101.6' - rust colored siltstone inclusion, 0.05' thick, fine grained, smooth around inclusion 102.3' - siltstone inclusions 102.8-103.5' - medium sand to coarse sand, white, black, light reddish brown, greenish gray grains are 0.05' thick | At 97.9': R-Scale = R3-R4 R16: 15:47-16:08 | |
| | R16NQ 5 ft 100% | | 1 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| 105 153.3 | 103.3 | | 0 | 106.0' - Fracture, smooth, undulating 106.9' - Fracture, 10 deg, fissure along core | x | 103.0' - mottled, rust band at 103' 103.3-108.4' - pinkish white, mottled, white, gray, black, pink fine to medium grains 106.0' - mottling through to end of core, very soft, sandstone/siltstone mixture 106.5-106.7' - gray, reddish brown, alternating bands 106.7' - clay seam, 0.01' thick 106.8' - clay seam, 0.01' thick 107.0' - very soft, very fine sand, clay seams, reddish brown 107.0-108.4' - dark mottling, larger grains observed 108.1-109.3' - dark mottling | R17: 08:36-08:55 on 06/07/06 At 104.4': R-Scale = R4 | |
| | R17NQ 5.1 ft 100% | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 1 | | x | | | |
| | | | 1 | | x | | | |
| | | | 0 | | x | | | |
| 110 148.3 | 108.4 | | 0 | | x | Siltstone At 108.4' - dusky red, mottled greenish gray, soft, fresh 109.0-109.7' - larger inclusions 110.0' - soft to hard, coarsens with depth 111.0' - 0.05' inclusion | SC-4 collected 106.0-106.5' At 107.4': R-Scale = R3-R4 R18: 09:15-09:40 At 111.6': R-Scale = R3-R4 | |
| | R18NQ 5.1 ft 100% | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |



LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

ORIENTATION : Vertical

LOGGER : JF/JS/MJ

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 135 123.3 | 133.4 | | 1 | 132.7' - Fracture, 30 deg, smooth, undulating | x x x | | |
| | | | 5 | 133.4-133.6' - Fractures (3), horizontal, smooth, stepped to undulating, up to 0.03' relief | x x x | 133.4-134.4' - heavily mottled yellow, black, purple, very soft to soft | R23: 10:20-10:45 |
| | | | 0 | 134.0-140.1' - Fractures (2), horizontal, smooth, stepped to undulating, up to 0.03' relief | x x x | 134.4-137.0' - soft to hard, sandy lenses, green and black mottling, fine grained sandy lenses have white, black, grains very fine up to fine grained, irregularly shaped, lenses from 2 to 6 in length, hard in sandy lenses, up to 50-60% sand in some lenses | At 135.1': R-Scale = R3 |
| | R23NQ 5.2 ft 100% | 87 | 0 | | x x x | 137.0-138.6' - mottled purple, very soft to soft | First water level = 7.4' bgs taken 6/13/06 at 17:13 |
| | | | 0 | | x x x | | At 136.6': R-Scale = R3-R4 |
| | | | 0 | | x x x | | SC-5 collected |
| | | | 0 | | x x x | | 137.3-138.2' |
| | | | | | x x x | | R-scale performed after drilling on stored samples |
| 140 118.3 | 138.6 | | | | | Bottom of Boring at 138.6 ft bgs on 6/12/06 10:45 | |
| 145 113.3 | | | | | | | |
| 150 108.3 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 1 OF 8

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, 3-5/8 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer









ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

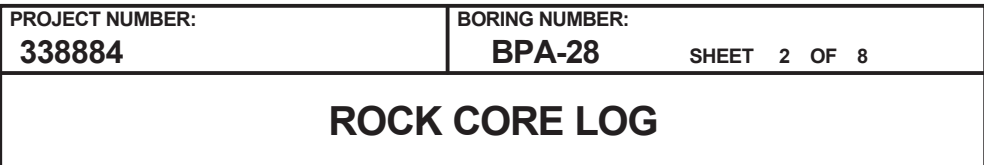
LOGGER : JF/JS

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|--|---|----------|--|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | PP (TSF) | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| | | | | | | | | |
| 272.7 | 0.0 | 8.0 | SS1SS | 3-3-4-5 (7) | Clayey Sand (SC) 0.0-0.3' - yellow brown, moist, medium dense, organics Clay (CL) 0.3-0.7' - yellow red, mottled, moist, medium stiff, organics |  | 3.0 | PT-1 collected 2.0-4.0' |
| | 2.0 | | | | | | | |
| | 2.5 | 13.0 | SS2SS | 5-7-12-14 (19) | Clay (CL) 2.5-3.6' - reddish brown, mottled, moist, medium stiff |  | 4.0 | |
| | 4.5 | | | | | | | |
| 5 | | | | | | | | |
| 267.7 | 5.0 | 17.0 | SS3SS | 8-12-28-25 (40) | Clay (CL) 5.0-6.4' - reddish brown, mottled, moist, medium stiff |  | 4.5 | PT-2 collected 10.0-11.5' Offset: 4.1' N49E of BPA-28 Lab Results USCS: CL w/Sand |
| | 7.0 | | | | | | | |
| | 7.5 | 12.0 | SS4SS | 22-27-50/4 (77/10") | Clay (CL) 7.5-8.5' - reddish brown, mottled, dry to moist, stiff |  | 4.5+ | |
| | 9.5 | | | | | | | |
| 10 | | | | | | | | |
| 262.7 | 10.0 | 3.0 | SS5SS | 50/3 (50/3") | Clay (CL) 10.0-10.3' - reddish brown, mottled, dry to moist, stiff to hard |  | 4.5+ | PT-2 collected 10.0-11.5' Offset: 4.1' N49E of BPA-28 Lab Results USCS: CL w/Sand |
| | 12.0 | | | | | | | |
| | 12.5 | 4.5 | SS6SS | 50/4.5 (50/4.5") | Clay (CL) 12.5-12.9' - reddish brown, mottled, dry to moist, stiff to hard |  | 4.5+ | |
| | 14.5 | | | | | | | |
| 15 | | | | | | | | |
| 257.7 | 15.0 | 4.5 | SS7SS | 50/4.5 (50/4.5") | Clay (CL) 15.0-15.4' - reddish brown, mottled, dry to moist, stiff to hard |  | | Soil sampling completed at 11:50 on 5/30/06 |
| | 17.0 | | | | | | | |
| | 17.5 | 3.0 | SS8SS | 50/3 (50/3") | Clay (CL) 17.0-17.8' - reddish brown, mottled, dry to moist, stiff to hard |  | | |
| | 17.8 | | | | Begin Rock Coring at 17.8 ft bgs See the next sheet for the rock core log | | | |
| 20 | | | | | | | | |

PT-1 collected 2.0-4.0'

PT-2 collected 10.0-11.5'
Offset: 4.1' N49E of BPA-28
Lab Results USCS: CL w/Sand

Soil sampling completed at 11:50 on 5/30/06



LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JF/JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

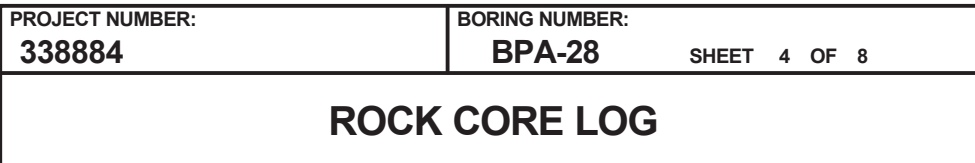
WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 40 232.7 | R4NQ 5 ft 100% | 94 | 1 | 38.0' - Fracture, 35 deg, rough, undulating | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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| | | |



LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JF/JS

Rev. 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

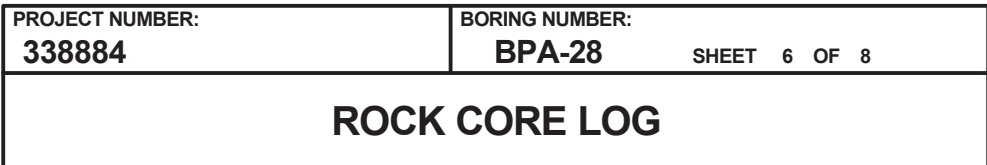
WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

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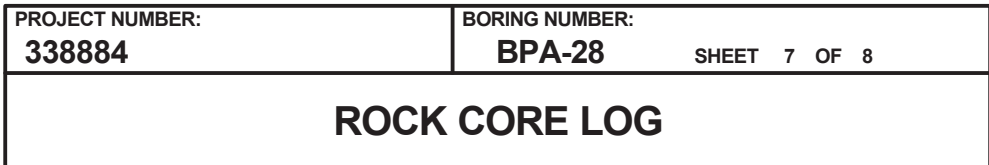
LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JF/JS

Rev. 5



LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JF/JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--------------|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 140 132.7 | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-29

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer, and Cathead


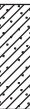






ORIENTATION : Vertical

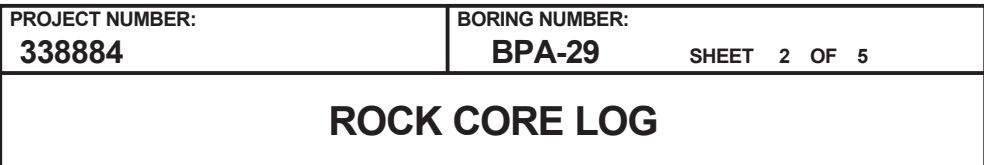
WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | #TYPE | STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N) | SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | SYMBOLIC LOG | COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | | | | | |
|---------------------------------|---------------|------|-------|--|--|---|---|--|--|--|--|--|
| | RECOVERY (in) | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 276.4 | 0.0 | 14.0 | SS1SS | 4-4-7-9 (11) | Lean Clay (CL) 0.0-1.2' - reddish yellow, moist, stiff, low plasticity, trace fine sand, trace organics |  | | | | | | |
| | 2.0 | | | | | | | | | | | |
| | 2.5 | 19.0 | SS2SS | 17-24-36-42 (60) | Clayey Sand (SC) 2.5-4.1' - very pale brown, moist, very dense, fine to coarse grained, subangular |  | | | | | | |
| | 4.5 | | | | | | | | | | | |
| | 5 | | | | | | | | | | | |
| 271.4 | 5.0 | 23.0 | SS3SS | 20-28-37-46 (65) | Sandy Silt (ML) 5.0-6.9' - pale yellow, moist, very dense, fine to coarse grained, subangular |  | | | | | | |
| | 7.0 | | | | | | | | | | | |
| | 7.5 | 11.0 | SS4SS | 37-50/5 (50/5") | Silty Sand (SM) 7.5-8.4' - pale yellow, moist, very dense, fine to coarse grained, subangular, some clay |  | | | | | | |
| | 9.5 | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 266.4 | 10.0 | 5.0 | SS5SS | 50/5 (50/5") | Silty Sand (SM) 10.0-10.4' - pale yellow, moist, very dense, fine to coarse grained, subangular, some clay |  | | | | | | |
| | 12.0 | | | | | | | | | | | |
| | 12.5 | 3.0 | SS6SS | 50/3 (50/3") | Silty Sand (SM) 12.5-12.8' - pale yellow, moist, very dense, fine to coarse grained, subangular, some clay |  | | | | | | |
| | 14.5 | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 261.4 | 15.0 | 12.0 | SS7SS | 30-38-50/3 (88/9") | Siltstone 15.0-16.0' - dark reddish brown, hard, platy, black oxidized zones |  | | | | | | |
| | 17.0 | | | | | | | | | | | |
| | 17.5 | 2.0 | SS8SS | 50/2 (50/2") | Siltstone 17.5-17.7' - reddish brown, hard, platy, black oxidized zones |  | | | | | | |
| | 17.7 | | | | Begin Rock Coring at 17.7 ft bgs See the next sheet for the rock core log | | | | | | | |
| 20 | | | | | | | | | | | | |



LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 40 236.4 | R3NQ 10 ft 100% | 77 | 0 | | x x x | 40.6-43.7' - slightly weathered | Coring rate slows |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 2 | 40.6' - Fracture, horizontal, smooth, planar, loose fit | x x x | | |
| | | | 2 | 41.2' - Fracture, 60 deg, smooth, planar, tight fit | x x x | | |
| | | | 2 | 41.7' - Fracture, 30 deg, smooth, planar, tight fit | x x x | | |
| | | | 2 | 42.1' - Fracture, 50 deg, rough, undulating, loose fit | x x x | | |
| | | | 2 | 42.7' - Fracture, 10 deg, smooth, planar, loose fit | x x x | Sandstone 43.7-47.9' - light gray, banded greenish gray and brownish gray, soft, fine sand to medium sand, fresh, larger grained beds are lighter, finer grained beds are darker, bedding is undulatory | R4: 15:00-15:15 and 15:17-15:31 |
| 45 231.4 | 45.5 | | 0 | 42.9' - Fracture, 50 deg, rough, undulating, tight fit | x x x | | |
| | | | 0 | 43.5' - Fracture, horizontal, rough, undulating, loose fit | x x x | | |
| | | | 2 | 43.7' - Fracture, smooth, planar, loose fit | x x x | Siltstone 47.9-48.8' - dark gray, soft, laminated bedding, fresh, flat lying, almost fissile and shale-like, upper surface eroded at contact with sandstone indicative of scour | |
| | | | 0 | 45.6' - Fracture, horizontal, rough, undulating, loose fit | x x x | | |
| | | | 0 | 45.7' - Fracture, 60 deg, rough, undulating, loose fit | x x x | | |
| | | | 2 | 47.9' - Fracture, horizontal, rough, undulating, loose fit | x x x | Sandstone 48.8-55.5' - light gray, soft, massive bedding, fine sand to medium sand, fresh | |
| | | | 1 | 48.1' - Fracture, horizontal, smooth, planar, tight fit | x x x | | |
| | | | 0 | 48.6' - Fracture, 10 deg, rough, undulating, loose fit | x x x | | |
| 50 226.4 | R4NQ 10 ft 95% | 89.5 | 0 | | x x x | Siltstone At 55.5' - grayish red, soft, laminated bedding, fresh, thin, coarser grained zones up to very fine sandstone (lighter colored-greenish gray and light gray), harder at bottom | R5: 15:35-16:00 and 16:02-16:30 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 55 221.4 | 55.5 | | 0 | 55.5-65.5' - Microfractures | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 60 216.4 | R5NQ 10 ft 98% | 90 | 0 | | x x x | 61.0-62.0' - bluish green silt inclusions | R6: 07:43-08:03 and 08:04-08:22 on 05/11/06 | | |
| | | | 0 | | x x x | | | | |
| | | | 1 | | x x x | | | | |
| | | | 2 | 60.6' - Fracture, horizontal, smooth, planar, loose fit | x x x | | | | |
| | | | 2 | 61.8' - Fracture, 20 deg, rough, undulating, tight fit | x x x | | | | |
| | | | 1 | 62.2' - Fracture, 45 deg, rough, undulating, tight fit | x x x | | | | |
| | | | 0 | 62.9' - Fracture, horizontal, smooth, undulating, loose fit | x x x | | | | |
| 65 211.4 | 65.5 | | 2 | 64.9' - Fracture, 60 deg, rough, undulating, tight fit | x x x | | | | |
| | R6NQ 10 ft 99% | 91 | x x x | 0 | 65.3' - Fracture, horizontal, smooth, undulating, loose fit | | | x x x | |
| | | | 1 | | x x x | | | | |
| | | | 0 | 67.5' - Fracture, 60 deg, rough, undulating, tight fit | x x x | | | | |
| | | | 0 | | x x x | | | | |
| 70 206.4 | | | 0 | | x x x | Siltstone 69.1-75.0' - dark bluish gray, soft, fresh, some laminated beds, some very fine sandstone, gradual change from reddish brown siltstone at 69.0' to 70.5', light olive brown and very dark red mottling | | | |
| | | | 2 | 71.0' - Fracture, 10 deg, rough, undulating, tight fit | x x x | | | | |
| | | | 1 | 71.3' - Fracture, 10 deg, smooth, undulating, loose fit | x x x | | | | |
| | | | 1 | 72.1' - Fracture, 10 deg, rough, undulating, loose fit | x x x | | | | |
| | | | 0 | 73.4' - Fracture, 50 deg, rough, undulating, tight fit | x x x | 73.8-74.1' - green mottling | | | |
| 75 201.4 | | | 75.5 | | 1 | | x x x | | |
| | | | x x x | 0 | 75.3' - Fracture, 10 deg, smooth, undulating, loose fit | x x x | R7: 08:32-08:50 and 08:52-09:12 | | |
| | | | 0 | | x x x | Sandstone 75.0-83.6' - light bluish gray, soft, fine sand, fresh, 1 to 3% medium grained sand in sandier beds, coarsens with depth | | | |
| | | | | | x x x | 75.0-80.0' - interbedded siltstone and sandstone, becomes sandstone at bottom | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

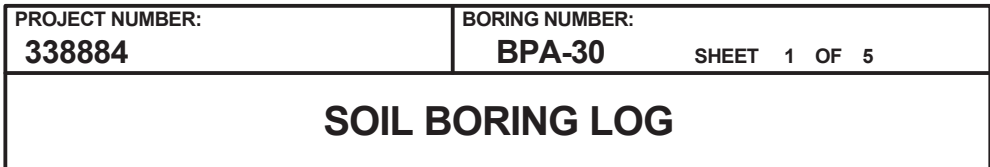
WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

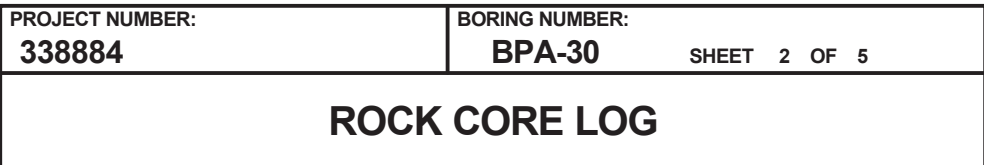
LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 80 196.4 | R7NQ 10 ft 99% | 93 | 1 | 77.9' - Fracture, 20 deg, smooth, undulating, tight fit | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | 81.0' - Fracture, 70 deg, rough, undulating, tight fit | | | |
| | | | 1 | 81.6' - Fracture, horizontal, rough, undulating, loose fit | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 85 191.4 | 85.5 | | 0 | | | | |
| | | | 2 | 85.6' - Fracture, horizontal, rough, undulating, loose fit | | Siltstone At 83.6' - grayish red to grayish green, mottled grayish green and grayish red and banded, soft, laminated to medium bedding, fresh, becomes redder with depth, grades to sandstone | R8: 09:20-09:41 and 09:45-10:03 |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 0 | 88.4' - Fracture, horizontal, smooth, undulating, loose fit | | | |
| 90 186.4 | R8NQ 10 ft 100% | 93 | 1 | | | 90.0-91.0' - interbedded with very fine sandstone stringers - light gray to grayish green | |
| | | | 2 | 90.6' - Fracture, 10 deg, smooth, undulating, loose fit | | | |
| | | | 0 | 91.0' - Fracture, horizontal, smooth, planar, loose fit | | Sandstone 91.0-95.1' - light gray, mottled grayish red, soft, medium to thick bedding, fine sand to medium sand, fresh, coarsens with depth | SC-2 collected 91.9-92.7' First water level = 19.1' bgs taken 5/11/06 at 17:38; second water level = 22.8' bgs taken 5/12/06 at 15:40 |
| | | | 1 | | | | |
| | | | 0 | 93.1' - Fracture, 10 deg, rough, stepped, tight fit | | | |
| | | | 2 | 94.9' - Fracture, horizontal, smooth, undulating, loose fit | | 94.3-95.1' - medium to coarse grained sand, rip-up clay clasts | R-scale not performed on rock core samples |
| 95 181.4 | 95.5 | | | 95.3' - Fracture, 25 deg, slickensided, undulating, loose fit | | Siltstone 95.1-95.5' - dark gray, very soft to soft, highly weathered, trace sand 95.2-95.3' - clay seam Bottom of Boring at 95.5 ft bgs on 5/11/06 10:10 | |



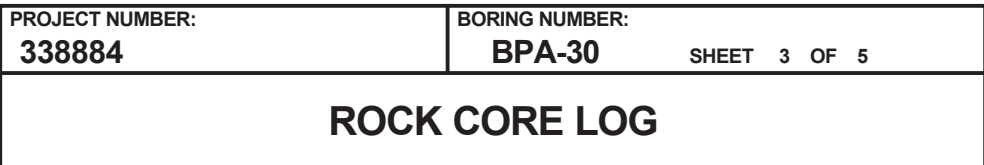
LOGGER : DT

Rev. 5



LOGGER : DT

Rev. 5



LOCATION : (NAD 27) (687781.4 N, 2011981.6 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-30

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687781.4 N, 2011981.6 E)

ELEVATION : 269.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

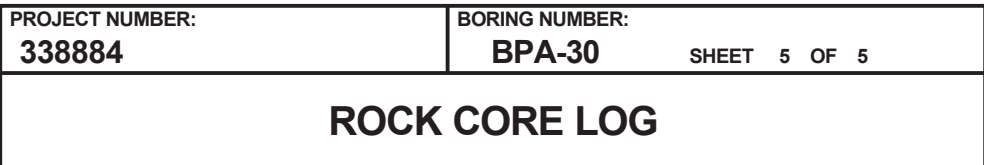
WATER LEVELS : 5.9 ft bgs

START : 5/8/06 09:30

END : 5/9/06 13:25

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 60 209.2 | R5NQ 10 ft 100% | 91 | 0 | 57.0' - Fracture, 30 deg, red stains | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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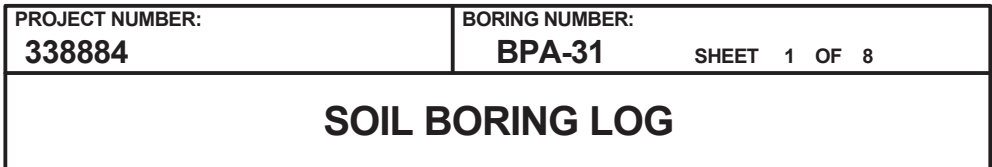
LOCATION : (NAD 27) (687781.4 N, 2011981.6 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 5



LOGGER : JS/DT/LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|------------------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 243.1 | 15.1 | R1NQ 4.9 ft 102% | 100* | 0 | | x | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-31

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 40 223.1 | R5NQ 5 ft 100% | 84 | 0 | 34.2' - Contact between siltstone and sandstone, sharp | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-31

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

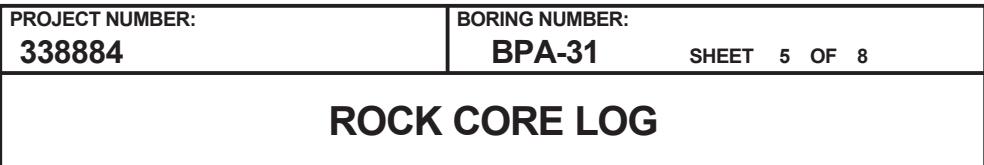
WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 60 203.1 | R9NQ 5 ft 100% | 68 | 0 | 54.2' - Fracture, 5 deg, rough, undulating, tightly healed | × | × | 53.5-54.8' - less than or equal to 0.2' vugs | R9: 12:55-13:11 At 55.4': R-Scale = R3 |
| | | | 10+ | 56.4' - Fracture, 30 deg, rough, undulating, clay-like material/siltstone, very soft 56.6' - Fracture, 5 deg, rough, undulating, clay-like material/siltstone, very soft 56.7' - Fracture, 40 deg, rough, undulating, clay, very soft 57.1-57.5' - Fracture zone, rough, undulating, vertical and horizontal fractures 57.8' - Fracture, horizontal, rough, undulating, horizontal 58.0' - Fracture, 10 deg, rough, stepped 58.0' - Fracture, horizontal, rough, undulating 58.5' - Fracture, 5 deg, rough, undulating 58.5' - Fracture, horizontal, rough, undulating 58.8' - Fracture, 60 deg, rough, undulating 59.6' - Fracture, 10 deg, rough, undulating 60.0' - Fracture, horizontal, rough, undulating 60.8' - Fracture, 10 deg, slickensided, undulating 60.9' - Fracture, 5 deg, rough, stepped 61.4' - Fracture, 30 deg, rough, planar 63.0' - Fracture, horizontal, smooth, undulating, 0.02' relief, bedrock fragments 63.6' - Fracture, horizontal, smooth, undulating, some bedrock fragments 63.6' - Fractures (2), horizontal and 5 deg, smooth, undulating, several breaks along bedding planes, tight fit 64.0' - Fracture, rough, undulating, bedrock pieces 65.4' - Fracture, smooth, undulating, small bedrock fragments 66.1' - Fracture, horizontal, smooth, stepped, thin white infilling 67.1' - Fracture, 20 deg, <0.5 mm white infilling 67.8' - Fracture, horizontal, smooth, undulating 69.0' - Fracture, horizontal, smooth, planar | × | × | 56.4-56.5' - moderately weathered 56.5-58.4' - very soft to soft, laminated bedding, moderately weathered 56.4-56.6' - clay-like material/siltstone, very soft 56.9-56.9' - clay seam, very soft, friable 57.1' - clay seam, soft 58.4-60.0' - soft, moderately weathered | At 56.4-58.2': R-Scale = R1 |
| | | | 10+ | | | | | |
| | | | 5 | | | | | |
| | | | 2 | | | | | |
| | R10NQ 5 ft 97% | 62 | 10+ | × | × | Siltstone At 60.0' - very dark gray, mottled green 60.0-60.6' - clay seam with bedrock fragments 60.0-60.6' - clay seam 60.6-61.6' - very dark gray to very dark greenish gray, very soft to soft, very fine grained 60.6-61.0' - moderately weathered 61.0-65.0' - fresh Siltstone At 62.5' - dark reddish brown, mottled faint yellow, very soft to soft, fresh, fine grained 62.95-63.1' - very soft |  |  | R10: 13:22-13:42 At 60.0-60.6': PP: 1.5 tsf and 1.25 tsf At 61.6': R-Scale = R3 |
| | | | 1 | | | | | |
| | | | 1 | | | | | |
| | | | 9 | | | | | |
| | | | 1 | | | | | |
| 65 198.1 | R11NQ 5 ft 94% | 85 | × | × | 68.7-70.0' - medium to coarse sand clasts, rounded | R11: Started at 14:00 At 65.6': R-Scale = R3 | | |
| | | | 1 | | | | | |
| | | | 1 | | | | | |
| | | | 1 | | | | | |
| | | | 4 | | | | | |
| | 0 | × | × | | | | | |
| | R12NQ 5 ft 100% | 79 | 10+ | × | × | 72.1-75.0' - soft, 50% coarse silt/very fine sand, 50% silt/clay | R12: No time recorded At 70.4': R-Scale = R3 SC-2 collected 72.0-73.0' | |
| | | | 6 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| 2 | | | | | | | | |
| 75 | 75.0 | | | | × | × | | At 74.5': R-Scale = R3 |



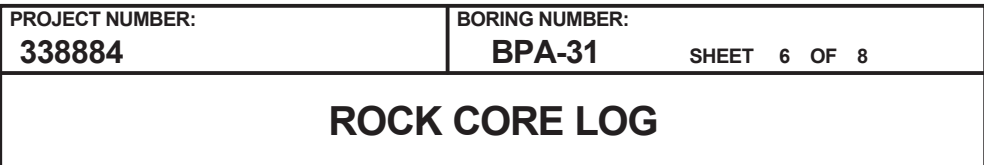
LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/DT/LH

Rev. 5



LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/DT/LH

2BB-204



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 7 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 120 143.1 | R21NQ 5 ft 104% | 100 | 0 | 117.0' - Fracture, evidence of microfractures throughout core, tightly healed | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-31

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

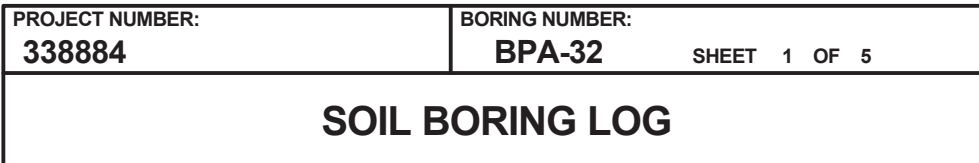
WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|--|-----------------|---|--------------|--|---|
| | | R Q D (%) | DESCRIPTION | | | |
| | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 140 123.1 | R25NQ 5 ft 99% | 99 | 1 135.9' - Fracture, rough, undulating 0 136.7' - Fracture, rough, undulating 0 0 0 | | 134.6-139.5' - gray to white, very fine sand to coarse sand | R25: 15:15-15:27 At 137.3': R-Scale = R3 SC-4 collected 139.0-140.0' |
| 145 118.1 | R26NQ 5 ft 100% | 100 | 0 0 0 0 0 | | 139.7-144.0' - gravel sized siltstone clasts in sandstone | R26: 15:35-15:52 At 141.6': R-Scale = R3 At 143.6': R-Scale = R3-R4 First water level = 16.8' bgs taken 5/31/06 at 16:55; second water level = 10.6' bgs taken 6/20/06 at 07:55 |
| 150 113.1 | | | | | 144.0-145.0' - becomes silty in layers | R-scale performed after drilling on stored samples |
| 155 | | | | | Bottom of Boring at 145.0 ft bgs on 5/31/06 15:52 | |



LOGGER : JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-32

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687832.2 N, 2012083.2 E)

ELEVATION : 268.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

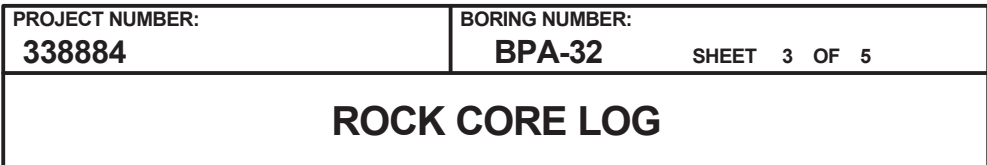
WATER LEVELS : 19.0 ft bgs

START : 5/8/06 11:00

END : 5/9/06 14:07

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 253.9 | 10.1 | 0 | 0 | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |



LOGGER : JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-32

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687832.2 N, 2012083.2 E)

ELEVATION : 268.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

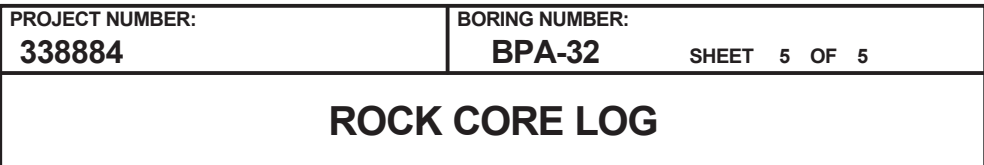
WATER LEVELS : 19.0 ft bgs

START : 5/8/06 11:00

END : 5/9/06 14:07

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 213.9 | R10NQ 5 ft 99% | 99 | 0 | | x | Siltstone At 48.8' - dark reddish brown, trace green mottling, very soft to soft, fresh, fine grained, scattered white and gray inclusions 50.0-55.0' - coarse sand to fine gravel sized | R10: 09:20-09:40 |
| | | | 0 | | x | | |
| | | | 0 | | x | | At 52.0': R-Scale = R3 |
| | | | 0 | | x | | |
| | | | 2 | 54.0' - Fracture, horizontal, smooth, undulating | x | | |
| | | | | 54.6' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 0 | | x | | R11: 09:50-10:06 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | At 58.4': R-Scale = R3 |
| | | | 0 | | x | | |
| 60 208.9 | R11NQ 5 ft 100% | 100 | 0 | | x | | R12: 10:20-10:36 |
| | | | 0 | | x | | At 60.9': R-Scale = R3-R4 |
| | | | 1 | 61.7' - Fracture, 70 deg, smooth, undulating | x | | |
| | | | 0 | | x | | |
| | | | 1 | 63.5' - Fracture, 70 deg, smooth, undulating | x | | |
| | | | 0 | | x | | R13: 10:43-11:00 |
| 65 203.9 | R12NQ 5 ft 96% | 96 | 0 | | x | | |
| | | | 0 | | x | | At 66.3': R-Scale = R3 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 70 | R13NQ 5 ft 98% | 98 | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |



LOGGER : JS

Rev. 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

| WATER LEVEL: 110.855 | | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|---|---|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 15 255.4 | 10.3 R1NQ 9.7 ft 101% | 0 | 0 | | | Sandstone 10.3-12.6' - light yellowish brown, soft, fine sand to medium sand, subangular, highly weathered Siltstone 12.6-18.9' - dark reddish brown, soft to very soft, highly weathered, some fine sand | Rock coring began at 14:16 on 5/12/06 R1: 14:16-14:35 and 14:40 - 14:56 on 5/12/06 |
| | | | 3 | 11.2' - Fracture, horizontal, rough, undulating, loose fit | | | |
| | | | 1 | 11.3' - Fracture, horizontal, rough, undulating, loose fit | | | |
| | | | 1 | 11.7' - Fracture, horizontal, rough, undulating, loose fit | | | |
| | | | 1 | 12.5' - Fracture, 25 deg, rough, undulating, loose fit | | | |
| | | | 1 | 13.1' - Fracture, horizontal, smooth, undulating, loose fit | | | |
| | | | 1 | 14.7' - Fracture, 10 deg, rough, stepped, tight fit | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | 17.8' - Fracture, horizontal, smooth, undulating, loose fit | | | |
| 20 250.4 | 20.0 R2NQ 5 ft 82% | 0 | 1 | 18.9' - Fracture, horizontal, rough, stepped, tight fit | | Sandstone At 18.9' - dark brown, soft, fine sand to coarse sand, subangular, highly weathered 20.0-21.8' - dark grayish brown 21.2-21.7' - mottled dark purple 21.8-25.8' - light yellowish brown 23.5-23.9' - heavy pink and red mottling through soil mass, very soft, poorly sorted, fine to coarse sand | Boring abandoned on 5/15/06 for geophysical work. R2: 09:10-09:15 on 5/22/06; moved about 2' S of original location and started at 20' At 20.0-22.4': R-Scale = R1-R2 At 23.2': R-Scale = R2 |
| | | | 2 | 19.6' - Fracture, 10 deg, rough, undulating, loose fit | | | |
| | | | 2 | 20.1' - Fracture, horizontal, rough, planar | | | |
| | | | 2 | 20.4' - Fracture, horizontal, rough, planar | | | |
| | | | 2 | 21.6' - Fracture, horizontal, rough, undulating, heavily stained | | | |
| | | | 2 | 21.8' - Fracture, horizontal, rough, undulating | | | |
| | | | 2 | 22.0' - Fracture, horizontal, smooth, undulating | | | |
| | | | 1 | 22.5' - Fracture, horizontal, smooth, undulating | | | |
| | | | 1 | 23.5' - Fractures (2), horizontal and 70 deg, smooth, undulating | | | |
| | | | 1 | 24.1' - Fracture, horizontal, smooth, undulating | | | |
| 25 245.4 | 25.0 R3NQ 5 ft 90% | 0 | 10+ | 25.0-25.8' - Fracture zone | | 25.8-26.8' - light brownish gray, mottled pink and red, clay in matrix 25.8-26.2' - very soft, very fine sand to fine sand, clay in matrix Clay Seam (CL) 26.8-28.3' - grayish brown, mottled greenish white, black, yellow, red, very stiff, highly weathered, fine grained Siltstone At 28.3' - reddish brown, mottled black, yellow, white and purple, highly weathered, fine grained | R3: 09:20-09:35 At 26.8-28.8': R-Scale = R0 At 26.8-28.3': PP: 3.5-4.5+ tsf |
| | | | 1 | 25.8' - Fracture, 30 deg, smooth, undulating | | | |
| | | | 2 | 26.8' - Fracture, horizontal, smooth, stepped | | | |
| | | | 2 | 27.0' - Fracture, horizontal, smooth, undulating, black stains | | | |
| | | | 2 | 27.2' - Fracture, horizontal, smooth, undulating, black stains | | | |
| | | | 10+ | 28.3-28.4' - Fracture zone, horizontal | | | |
| | | | 0 | 28.6' - Fracture, horizontal, smooth, undulating, black stains | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 30 240.4 | 30.0 | | | 30.0-30.6' - Fracture zone, numerous fractures | | | R4: 10:03-10:21 |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-33

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|---|-----------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 | R4NQ 5 ft 107% | 48 | 10+ | 30.6' - Fracture, horizontal and 10 deg, smooth, undulating | x x x | 28.3-28.5' - very soft, clay to weathered bedrock 28.5-30.0' - very soft to soft 30.0-32.6' - mottled greenish gray, purple and yellow, very soft, clay seams, clay-like Sandstone At 32.6' - very dark gray, mottled greenish gray and yellow, very soft, very fine sand, some silt, laminated to medium bedding 32.6-32.6' - highly weathered 32.6-35.0' - dark brown, trace greenish gray mottles, very soft to soft, very fine to fine grained, coarser than above 32.6-39.4' - slightly weathered 35.0-35.7' - very dark gray, mottled brown and black, very soft, very fine grained, some silt in matrix 35.7-38.7' - gray, mottled pink; white black, green, yellow, orange grains, soft to hard, fine sand to coarse sand, poorly sorted, coarsens with depth 38.7-39.5' - weak red, red, black, white, and gray grains, soft, medium sand to coarse sand, dark gray clay seams throughout, irregularly shaped, more abundant with depth 39.4-47.4' - fresh 39.5-39.6' - clay seam, joints on either side, undulating, dark gray with no bedding, firm 39.6-40.0' - light gray, soft to hard, fine sand to coarse sand, poorly sorted 40.0-43.3' - gray, multicolored grains, white, green, gray, some black, orange, soft to hard, fine sand to medium sand, coarsens with depth and then begins fining with depth at 42.2' 42.8-43.0' - mottled red 43.3-44.0' - light gray and pale red, mottled dark red, hard, fine sand 44.0-45.0' - mottled red, fine sand to coarse sand, poorly sorted, thin, discontinuous, black threadlike lenses, more abundant with depth, coarser in last 0.2' (30% coarse sand) 45.0-47.4' - light brownish gray, gray, white, yellow, and orange grains, soft, medium sand to coarse sand, poorly sorted, trace clay clasts, some finer zones 46.6-46.7' - fine grained zone | At 30.6-31.0': PP: 4.5+ tsf |
| 235.4 | | | 10+ | 30.8' - Fracture, horizontal and 10 deg, smooth, undulating | x x x | | At 31.5-31.9': PP: 1.5 tsf |
| | | | 2 | 31.5' - Fracture, horizontal, smooth, planar, contact with clay seam | x x x | | |
| | | | 1 | 33.2' - Fracture, horizontal and vertical, smooth, undulating, 0.15' clay infilling | x x x | | |
| | | | 0 | | x x x | | |
| 40 | R5NQ 5 ft 102% | 92 | 2 | 35.5' - Fracture, horizontal, smooth, undulating, brown and yellow stains | x x x | R5: 10:35-10:44 | |
| 230.4 | | | 0 | 35.7' - Fracture, 20 deg, smooth, undulating, brown and yellow stains | x x x | | |
| | | | 0 | | x x x | | |
| | | | 3 | 38.2-38.4' - Fractures (2), horizontal and 40 deg, rough, undulating, black stains | x x x | | At 37.5': R-Scale = R3-R4 |
| | | | 2 | 38.9' - Fracture, horizontal, rough, undulating | x x x | | |
| 45 | R6NQ 5 ft 100% | 100 | 0 | | x x x | R6: 10:53-11:00 | |
| 230.4 | | | 0 | | x x x | | SC-1 collected 40.0 - 41.1 |
| | | | 0 | | x x x | | |
| | | | 1 | 43.0' - Fracture, 65 deg, smooth, undulating, 0.01' relief | x x x | | |
| | | | 0 | | x x x | | At 44.3': R-Scale = R3-R4 |
| 45 | R7NQ 5 ft 100% | 70* | 0 | | x x x | R7: 11:05-11:23 | |
| 225.4 | | | 10+ | 46.3-46.6' - Fracture zone, horizontal and 80 deg, some orange and yellow stains | x x x | | |
| | | | 10+ | 47.3' - Fracture, horizontal, smooth, undulating, 0.01' relief | x x x | | |
| | | | 1 | 47.6' - Fracture, 5 deg, smooth, undulating, 0.01' relief | x x x | | |
| | | | 2 | 47.9' - Fracture, horizontal, smooth, undulating, 0.01' relief 48.3' - Fracture, horizontal, smooth, undulating, 0.01' relief | x x x | | At 48.8': R-Scale = R2 |
| 50 | | | | | x x x | | R8: 11:34-11:57 |
| 220.4 | | | | | x x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-33

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 215.4 | R8NQ 5 ft 93% | 88 | 10+ | 50.5-50.8' - Fracture zone, horizontal, smooth, undulating, 0.01' relief | x | | |

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 6 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--------------|--|--|------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 95 175.4 | R16NQ 5 ft 98% | 70 | 0 | | | Sandstone 87.5-91.7' - light gray, white, gray, and black, soft to hard, poorly sorted, fresh, fine to medium sand, becomes coarser and harder with depth, contact is sharp on 30 degree angle 87.8' - 1/4 claystone clast 88.2' - dark red stained beds 88.6' - dark red stained beds 89.3' - dark red stained beds 90.0-91.7' - medium sand to coarse sand, 10-20% several 1/8 to 1/4 gray siltstone rip up clasts Siltstone 91.7-105.1' - dark reddish brown, trace green and black mottling, soft, fresh, fine grained 94.7-96.3' - dark gray mottling 95.8-96.2' - very soft to soft 96.3-98.7' - dark purple mottling, 5-10% green mottling | At 90.5': R-Scale = R3 | |
| | | | 6 | 91.0-91.3' - Fracture zone, 70 deg, rough, undulating, 1 main fracture with several broken pieces | x | | R17: Finished at 11:10 | |
| | | | 0 | 91.7' - Contact between siltstone and sandstone, 30 deg, smooth, undulating, 0.02' thick discolored zone at contact in siltstone (gray), very soft | x | | | |
| | | | 1 | 91.7-105.1' - Microfractures throughout in capillary pattern | x | | | At 96.7': R-Scale = R3 |
| | | | 6 | 93.8' - Fracture, horizontal, smooth, undulating 94.1-94.4' - Fractures (5), horizontal, smooth, undulating | x | | | |
| | | | | 94.6' - Fracture, horizontal, smooth, undulating 95.0-100.0' - Microfractures | x | | | |
| 100 170.4 | R17NQ 5 ft 98% | 88 | 0 | | x | 98.7-100.0' - heavily mottled green, becomes coarser, coarse silt, 40% very fine sand 99.4-100.0' - trace to 10% green speckles to 0.0007' 100.3-100.7' - green and red mottling covering the core surface 100.7-101.1' - very soft to soft, broken up zone of siltstone; bedrock fragments 101.1-103.4' - heavily mottled dark red, gray, dark purple, and green, very soft to soft, very fine grained 103.4-105.1' - mottled light gray, tan, dark gray, green, soft to hard, coarser, 40% coarse silt and very fine sand | At 98.9': R-Scale = R3-R4 | |
| | | | 0 | | x | | | R18: 10:30-10:55 |
| | | | 0 | | x | | | |
| | | | 0 | | x | | At 103.7': R-Scale = R3-R4 | |
| | | | 1 | 99.4' - Fracture, 20 deg, smooth, undulating | x | | | |
| | | | | | x | | | |
| 105 165.4 | R18NQ 5 ft 100% | 86 | 10+ | 100.0-100.7' - Microfractures 100.3' - Fracture, horizontal, smooth, undulating, 0.01' relief 100.7-101.1' - Fracture zone, bedrock fragments | x | R19: 11:05-11:25 | | |
| | | | 10+ | | x | | | |
| | | | 1 | | x | | At 108.4': R-Scale = R3-R4 | |
| | | | 0 | 102.9' - Fracture, 10 deg, smooth, undulating, fossil bed organics 103.4' - Contact between siltstone and sandstone, horizontal, strong contact | x | | | |
| | | | 0 | | x | | | |
| | | | | | x | | | |
| 110 160.4 | R19NQ 5 ft 97% | 90 | 2 | | x | Siltstone 105.1-106.9' - very dark gray to very dark greenish gray, mottled brown, dark yellow, dark red, mottling in irregular bands and streaks, most at 150 degrees, very soft to soft, fresh, mottling/banding irregular, bedding on 150 degrees, very fine grained with very fine sandy zone 105.2-105.7' - irregular shaped zone 106.6-106.8' - dark red/purple lenses Siltstone 106.9-112.1' - dark reddish gray, mottled dark yellow, light gray, very soft to soft, fresh, horizontal bedding | At 108.4': R-Scale = R3-R4 | |
| | | | 10+ | 105.8' - Fracture, 30 deg, slickensided, undulating, gray contact 106.0' - Fractures (2), 20 deg, rough, undulating, gray material, 0.02' apart, lower surface, smooth, undulating, almost slickensided, possible fossilized organics 106.3-106.5' - Fracture zone, horizontal and 20 deg, smooth and slickensided 106.6' - Fracture, horizontal, smooth, undulating 106.9' - Contact between siltstones, horizontal, sharp 107.0' - Fracture, horizontal, smooth, undulating | x | | | |
| | | | 1 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | | | x | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-33

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel




ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|---|--|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 115 155.4 | R20NQ 5 ft 100% | 100 | 0 | 110.0-112.0' - Microfractures in fine zones |  | 107.3-110.0' - faint green, red, yellow mottling, soft to hard, up to 50% very fine to fine sand, fine grained 110.0-110.5' - mottled yellow and black, 50% very fine sand 110.5-112.1' - very dusky red, dark gray, purple, and dark yellow mottling, trace coarse silt/very fine sand, coarsens with depth, up to 30-35% | R20: Finished coring at 12:00 |
| | | | 0 | | | | At 111.4': R-Scale = R3 |
| | | | 0 | | | | |
| | | | 0 | | | | At 113.1': R-Scale = R3-R4 |
| | | | 0 | | | | |
| 120 150.4 | R21NQ 5 ft 107% | 100 | 0 | 116.6' - Contact between siltstone and sandstone, 10 deg, smooth, undulating | | 112.1-112.8' - very dark gray, faintly mottled dark red, fresh, some laminated beds of very fine gray siltstone, some very fine sand beds, interbedded | R21: No time recorded |
| | | | 1 | | | | At 115.8': R-Scale = R3-R4 |
| | | | 0 | | | | SC-3 collected 117.3-118.4' |
| | | | 0 | | | | |
| | | | 1 | | | | At 119.0': R-Scale = R3 |
| 125 145.4 | R22NQ 5 ft 103% | 100 |  | 120.0-122.8' - Microfractures | | Siltstone 116.6-117.7' - very dark gray, mottled black, soft, fresh | R22: Finished at 14:20 |
| | | | 1 | | | | |
| | | | 0 | 120.8' - Fracture, 40 deg, slickensided, planar, not entire surface is slickensided, partial fractures at same angle opening up below this fracture | | Siltstone At 117.7' - dark reddish gray, mottled red, soft, fresh 118.8' - white speckles, very fine grained, 30% very fine sand 120.0-122.8' - dusky red, dark red mottling 122.8-123.1' - grades to sandstone | At 122.2': R-Scale = R3 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 130 140.4 | R23NQ 5 ft 102% | 50 |  | 124.4' - Fracture, 20 deg, smooth, undulating, in gray seam | | At 123.1' - very dusky red, 10% black mottling, soft to hard, fine sand, well sorted, fresh, 0.05' thick medium grained zones, very thin claystone bedding, discontinuous 125.0-126.2' - dark brown, dark brownish-purple mottling in bands, very thin to thin bedding, fine sand to medium sand, angular | At 124.6': R-Scale = R3-R4 R23: 08:20-08:43 on 5/25/06 |
| | | | 6 | 125.5' - Fractures (2), 70 deg and 80 deg, rough, undulating, little brown-orange stains | | | |
| | | | 2 | 126.0' - Fracture, 50 deg, rough, undulating | | | SC-4 collected 126.4-127.3' |
| | | | 1 | 127.3' - Fracture, 20 deg, smooth, undulating | | Siltstone 126.2-129.3' - very dark gray, mottled dark red, light gray, black, soft, very fine grained, up to 50% very fine sand/coarse silt 126.2-129.0' - fresh 129.0-129.3' - highly weathered | At 129.3-130.0': R-Scale = R0 |
| | | | 10+ | 128.0' - Fracture, 20 deg, smooth to slickensided, undulating, tight fit 128.4-128.6' - Fracture zone, horizontal and 70 deg, smooth, planar to undulating, little brown staining on some surfaces, healed fracture about 1 long at 70 deg angle just above fractured zone, uneven whitish-yellow infilling | | | At 129.4': PP: 3.0 tsf |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

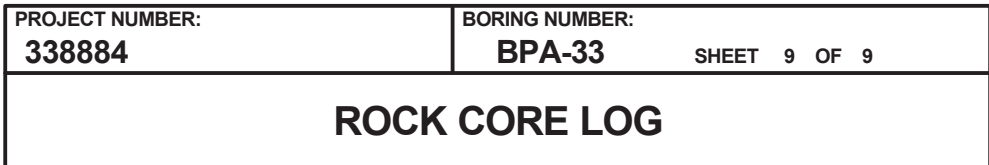
WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|----------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 135 | R24NQ 5 ft 100% | 80 | 6 | 128.7' - Fracture, 20 deg, slickensided, undulating, 90% of surfaces (both sides) irregularly shaped, very tight fit | x | Clay Seam (CL) 129.3-130.0' - very soft, highly weathered, coarse sand sized bedrock pieces are flakes and small blocks, most upper slickensided and shiny on surfaces Siltstone 130.0-130.4' - very dark gray, mottled red, gray, yellow, and black, fresh, gradually transitions to dark reddish brown siltstone Siltstone At 130.4' - dark reddish brown, mottled yellow and green, very soft to soft, fresh 133.5-135.0' - trace green mottling, fine grained, harder with depth, trace coarse sand in last 0.3' at 135.0' 135.0-138.0' - scattered green mottling | R24: 08:55-09:25 |
| 135.4 | | | 2 | 129.0-129.3' - Fractures (4), 20 deg, surface at 129.0 is slickensided and planar, remainder are shiny, some slickensided, bedrock flakes and small block-like pieces, gray clay seam between two surfaces | x | | |
| | | | 4 | 130.0-130.3' - Fractures (3), horizontal, smooth, undulating, 0.02' relief | x | | At 132.8': R-Scale = R3 |
| | | | 1 | 130.3' - Fracture, 40 deg, smooth to slickensided, undulating, 0.01' relief | x | | |
| | | | 0 | 130.7' - Fracture, horizontal, smooth, undulating, 0.02' relief | x | | |
| | | | | 131.7-132.1' - Fractures (5), horizontal, smooth, undulating | x | | R25: 09:30-09:52 |
| | | | 1 | 135.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 7 | | x | | At 136.8': R-Scale = R3-R4 |
| | | | 2 | 137.2-137.7' - Fractures (7), horizontal, smooth, undulating | x | | |
| | | | 2 | | x | | |
| 140 | R25NQ 5 ft 102% | 88 | 0 | 139.0' - Fractures (2), horizontal, smooth, undulating | x | 139.0-140.0' - heavy dark yellow mottling, 5-10% rounded coarse sand | |
| 130.4 | | | 6 | 140.0-140.6' - Fractures (6), horizontal, smooth to rough, undulating | x | 140.0-141.0' - green mottles with black thread like centers | R26: 10:08-10:30 |
| | | | 2 | 141.0' - Fracture, horizontal, smooth, undulating | x | 141.0-142.6' - green, black, purple and yellow mottling, soft, gray claystone clast at fracture at 141.7, coarsens with depth | At 141.9': R-Scale = R3-R4 |
| | R26NQ 5 ft 95% | 68 | 0 | 141.7' - Fracture, 60 deg, rough, undulating | x | 142.6-143.2' - little mottling, soft, 50% coarse silt, very fine sand, harder than above | |
| | | | 6 | 143.3-143.5' - Fractures (3), horizontal, smooth, undulating, small bedrock fragments | x | 143.2-143.6' - reddish brown, little mottling | |
| | | | 3 | 143.7' - Fracture, horizontal, smooth, undulating | x | 143.6-150.0' - heavy dark purple, green, dark yellow, and green mottles | |
| 145 | | | | 143.9' - Fracture, 5 deg, rough, undulating, bedrock fragments | x | | R27: 10:39-11:06 |
| 125.4 | | | 0 | 144.6-145.0' - Fractures (3), horizontal, smooth, undulating, some bedrock fragments | x | | |
| | | | 2 | | x | | At 146.5': R-Scale = R4 |
| | R27NQ 5 ft 88% | 75 | 10+ | 146.9' - Fracture, 20 deg, smooth, undulating | x | 147.6-147.8' - clay seam, gray with bedrock fragments | |
| | | | 4 | 147.5-147.6' - Fracture zone, horizontal, smooth and slickensided, undulating | x | 147.8-150.0' - less mottling, faint yellow, green, and black mottling, a few coarse sand grains, medium sand, very little coarse silt/fine sand | |
| | | | 0 | 147.8-148.1' - Fracture zone, horizontal and 50 deg, smooth, undulating, partially slickensided, bedrock fragments | x | | At 149.4': R-scale = R3 |
| | | | | 148.7' - Fracture, horizontal, smooth, undulating | x | | R28: 16:15-16:35 |
| 150 | | | | | x | | |
| 120.4 | | | | | x | | |



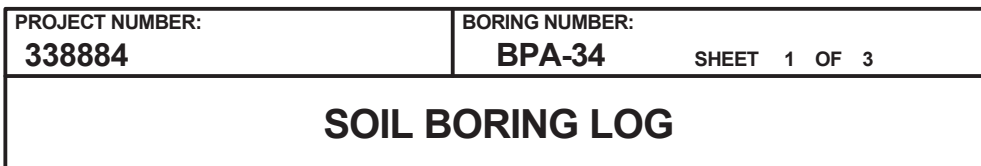
LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : DT/JS

Rev. 5



LOGGER : JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-34

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687640.2 N, 2012160.6 E)

ELEVATION : 267.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel




ORIENTATION : Vertical

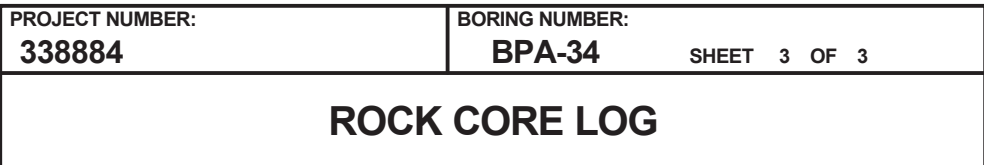
WATER LEVELS : 5.8 ft bgs

START : 5/11/06 11:20

END : 5/12/06 16:56

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | |
|--|------------------------------------|------------------------|---------------------|---|--|--|--|---|---|---|-----------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | | |
| 15 252.1 | 12.7 | R1NQ 2.8 ft 100% | 89 | 1 | 13.5' - Fracture, 10 deg, smooth, undulating, tight fit 13.8' - Fracture, 11 deg, smooth, undulating, tight fit |  | Siltstone At 12.7' - dark reddish brown, very soft, fine grained 12.7-26.1' - slightly weathered to moderately weathered 13.8-15.5' - mottled greenish gray, harder than above | Rock coring began at 13:00 on 5/11/06 R1: No time recorded on 05/11/06 | | | |
| | 1 | | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | 20 247.1 | 15.5 | R2NQ 5 ft 98% | 98 | | | | | 0 | 15.5-29.1' - very soft to soft, scattered fine sand | R2: 13:25-13:39 |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| 20.5 | R3NQ 5 ft 94% | 64 | 3 | 20.6' - Fracture, horizontal, smooth, undulating 20.8' - Fracture, 1 deg, smooth, undulating 21.5' - Fracture, 20 deg, smooth, planar, tight fit, green clay 21.8' - Fracture, 20 deg, smooth, stepped 21.9' - Fracture, horizontal, smooth, undulating 23.9-24.0' - Fracture, 70 deg, smooth to rough, undulating, black stains | 21.0-21.3' - clay seam | R3: 13:45-13:58 | | | | | |
| 3 | | | | | | | | | | | |
| 0 | | | | | | | | | | | |
| 1 | | | | | | | | | | | |
| 0 | | | | | | | | | | | |
| 25 242.1 | 25.5 | R4NQ 5 ft 100% | 12 | 2 | 26.1' - Fractures (2), horizontal and 70 deg, smooth, undulating 26.5-28.5' - Fracture zone, horizontal, smooth, undulating, clay seams 26.9' - Fracture, horizontal, smooth, undulating 27.7' - Fracture, horizontal, smooth, undulating 27.8' - Fracture, horizontal, smooth, undulating 27.9' - Fracture, horizontal, smooth, undulating 28.2' - Fracture, horizontal, smooth, undulating 28.5' - Fracture, horizontal, smooth, undulating 28.7' - Fracture, 70 deg, smooth, undulating 29.1' - Fracture, horizontal, smooth, undulating 30.0' - Fracture, 30 deg, smooth, undulating 30.3-30.5' - Fracture zone | 26.1-29.1' - highly weathered 26.7-28.5' - clay seams, abundant green and white mottling | R4: 14:10-14:28 | | | | |
| | 2 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 10+ | | | | | | | | | | |
| | 10+ | | | | | | | | | | |
| | 30 237.1 | 30.5 | | | 0 |  Clay (CL) 29.1-30.3' - highly weathered | SC-1 collected 29.1-30.0' | | | | |
| | | 0 | | |  Sandstone At 30.3' - dark reddish brown, mottled greenish gray, soft to hard, medium to thick bedding, very fine sand to fine sand 30.3-30.5' - highly weathered 30.5-38.1' - fresh | | | R5: 15:44-16:02 | | | |
| | | 0 | | | | | | | | | |



LOCATION : (NAD 27) (687640.2 N, 2012160.6 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-35

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|----------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | PP (TSF) | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| | | | | | | | | |
| 267.6 | 0.0 | 12.0 | SS1SS | 2-3-4-5 (7) | Fat Clay (CH) 0.0-1.0' - yellowish-red, moist, medium stiff, medium to high plasticity, trace root material | | 0.75 | Recirculating drilling mud |
| | 2.0 | | | | | | | |
| | 2.5 | 13.0 | SS2SS | 4-4-6-8 (10) | Fat Clay (CH) 2.5-2.8' - dark reddish brown, mottled orange, moist, medium stiff, fine to medium grained, medium to high plasticity Silty Sand (SM) 2.8-3.6' - strong brown, mottled orange, moist, medium stiff, fine to medium grained | | 0.5 | |
| 5 | | | | | | | | |
| 262.6 | 5.0 | | | | Silty Sand (SM) 5.0-5.3' - strong brown, medium stiff, loose, saturated | | | PT-1 collected 6.0-8.0' Offset: 3.3' S43W of BPA-35 Lab Results USCS: CL |
| | | 15.0 | SS3SS | 6-10-17-28 (27) | Fat Clay (CH) 5.3-6.3' - light greenish gray, mottled red brown, moist, medium stiff | | 2.5 | |
| | 7.0 | | | | | | | |
| | 7.5 | | | | Fat Clay (CH) 7.5-8.2' - light greenish gray, mottled red brown, moist, medium stiff | | | 4.0 |
| | | 12.0 | SS4SS | 18-50 (50") | Silt (ML) 8.2-8.5' - brown, mottled greenish gray, dry to moist, medium dense | | | |
| | 9.5 | | | | | | | |
| 10 | | | | | | | | |
| 257.6 | 10.0 | | | | Silt (ML) 10.0-10.7' - brown, mottled greenish gray, dry to moist, medium dense | | | PT-2 collected 11.0-13.0' |
| | | 16.0 | SS5SS | 9-11-20-31 (31) | Fat Clay (CH) 10.7-11.3' - light greenish-gray, mottled dark orange and black, moist, stiff, high plasticity, trace of very fine sand | | 4.0 | |
| | 12.0 | | | | | | | |
| | 12.5 | | | | Sandy-Silt (ML) 12.5-13.0' - dark reddish brown, moist, hard, fine grained, low to non plasticity, platy, micaceous, some black staining along surfaces | | | |
| | | 4.0 | SS6SS | 50/4 (50/4") | | | | |
| | 14.5 | | | | | | | |
| 15 | | | | | | | | |
| 252.6 | 15.0 | | | | Sandy-Silt (ML) 15.0-15.5' - dark reddish brown, mottled light green gray, moist, hard, fine grained, low to non plasticity, micaceous, some black staining along surfaces | | | |
| | | 6.0 | SS7SS | 35-50/5 (50/5") | | | | |
| | 17.0 | | | | | | | |
| | 17.5 | 2.0 | SS8SS | 50/2 (50/2") | Sandy-Silt (ML) 17.5-17.7' - dark reddish brown, moist, hard, fine to medium grained, low to non plasticity, platy, micaceous, some black staining along surfaces | | | Soil sampling completed at 15:25 on 5/22/06 |
| | 17.7 | | | | | | | |
| | | | | | | | | |
| 20 | | | | | Begin Rock Coring at 20.0 ft bgs See the next sheet for the rock core log | | | |

PT-1 collected
6.0-8.0'
Offset: 3.3' S43W of BPA-35
Lab Results USCS: CL

PT-2 collected
11.0-13.0'

Soil sampling completed at 15:25 on 5/22/06

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

[illegible]



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-35

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|--|--|--|---------------------------------------|---|--|------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 227.6 | R3NQ 10 ft 100% | 93 | | | x x | Siltstone 39.1-41.4' - very dark gray to black, very soft, slightly weathered, bedding 20-25 degrees alternating very dark gray to black 41.2' - some fine grained sand Sandstone 41.4-41.5' - gray, soft, fine sand to medium sand, fresh, small black oxidation cracks (<0.03') | At 40.8': R-Scale = R1 | |
| 1 | | | 40.4' - Fracture, <5 deg, rough, undulating | x x | | | | |
| 0 | | | 41.4' - Contact between siltstone and sandstone, 25 deg, rough, undulating | x x | | | | |
| 0 | | | | x x | | | | |
| 0 | | | | x x | | | | |
| 45 | | | 1 | 44.6' - Fracture, 25 deg, rough, undulating | x x | Siltstone 44.5-45.2' - gray, very soft, fresh, trace to little fine sand Sandstone At 45.2' - gray, soft, thin to medium bedding, fine sand to coarse sand, fresh, small black oxidation cracks (<0.03') | At 45.1': R-Scale = R1 | |
| | | | 44.8' - Fracture, 25 deg, rough, undulating | x x | | | | |
| 2 | | | 45.0' - Fracture, <5 deg, rough, undulating | | | | | |
| | | | 45.3' - Fracture, 10 deg, rough, undulating | | | | | |
| 0 | | | | | | | | |
| 48.2 | | | 0 | | | 48.0-49.0' - medium sand to coarse sand | R4: 08:50-09:30 | |
| | | | 0 | | 49.0-50.8' - fine sand to medium sand | | | |
| 50 | | | | | | | | |
| 217.6 | | | 1 | 51.0' - Fracture, 60 deg, rough, undulating | | 50.3-51.2' - gray, oxidized cracks (relic) 50.8-53.0' - medium sand to coarse sand | | At 51.9': R-Scale = R4 |
| | | | 0 | | | | | |
| | 0 | | | | | | | |
| | 1 | 53.0' - Contact between siltstone and sandstone, 40 deg, rough, undulating | x x | Siltstone At 53.0' - dark reddish brown, very soft, fresh, very fine to fine grained 53.5-54.9' - mottled blue-green, small purple inclusions | | | | |
| 55 | | | 1 | 54.9' - Fracture, <5 deg, rough, undulating | x x | 54.9-57.5' - trace blue-green mottling, gravel sized pink inclusions | At 56.1': R-Scale = R3-R4 | |
| 212.6 | | | | 0 | | x x | | |
| | | | | 0 | | x x | | |
| | | | | 0 | | x x | | |
| | | | | 0 | | x x | | |
| 57.5 | | | 1 | | x x | 57.5-67.5' - mottled blue-green | R5: 09:55-10:55 | |
| | | | | 0 | | x x | At 59.0': R-Scale = R2-R3 | |
| | | | | | | x x | | |
| | | | | | | x x | | |
| | | | | | | x x | | |
| 60 | | | | | x x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-35

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 207.6 | R5NQ 10 ft 100% | 100 | 0 | | x x x | 60.4-61.4' - some fine sand (micaceous) 61.5-61.9' - small (0.02') hard, white-pink rip up inclusions | At 61.0': R-Scale = R3-R4 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 65 202.6 | | | 0 | | x x x | 65.0-67.5' - 0.03-0.06' hard, white-pink rip up inclusions | At 66.5': R-Scale = R3-R4 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 67.5 | | | 0 | | x x x | 67.5-68.0' - mottled blue-green, soft, some micaceous very fine sand | R6: 11:20-12:15 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 70 197.6 | R6NQ 10 ft 100% | 100 | 0 | | x x x | | At 71.3': R-Scale = R3 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 75 192.6 | | | 1 | 74.7' - Fracture, <5 deg, smooth to rough, undulating | x x x | | At 76.1': R-Scale = R3 |
| | | | 1 | 75.8' - Fracture, 60 deg, rough, undulating | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 77.5 | | | 0 | | x x x | 77.5-87.5' - soft | R7: 13:00-13:55 |
| | | | 1 | | x x x | | |
| | | | | | x x x | | |
| | | | | | x x x | | |
| | | | | | x x x | | |
| 80 | | | | 79.3' - Fracture, 60 deg, rough, undulating | x x x | At 79.3' - begins to coarsen with depth | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-35

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 187.6 | R7NQ 10 ft 100% | 81 | 0 | | x x | 79.8-80.1' - small rip up clasts | At 79.8': R-Scale = R3-R4 |
| | | | 0 | | x x | | |
| | | | 0 | | x x | 81.4-81.6' - blue-green mottling | |
| | | | 0 | | x x | | At 82.0': R-Scale = R2-R3 |
| | | | 0 | | x x | | First water level = 4.5' bgs |
| | | | 0 | | x x | | taken 5/23/06 at 18:00; |
| | | | 0 | | x x | | second water level = 18.9' |
| | | | 0 | | x x | | bgs taken 5/24/06 at 08:30 |
| 85 182.6 | | | 0 | | x x | | SC-2 collected |
| | | | 0 | | x x | | 84.6-85.6' |
| | | | 0 | | x x | | R-scale performed after |
| | | | 0 | | x x | | drilling on stored samples |
| 87.5 | | | 0 | | x x | Bottom of Boring at 87.5 ft bgs on | |
| | | | | | | 5/23/06 13:55 | |
| 90 177.6 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 95 172.6 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 100 | | | | | | | |
| | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-36

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687881.0 N, 2012189.2 E)

ELEVATION : 269.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

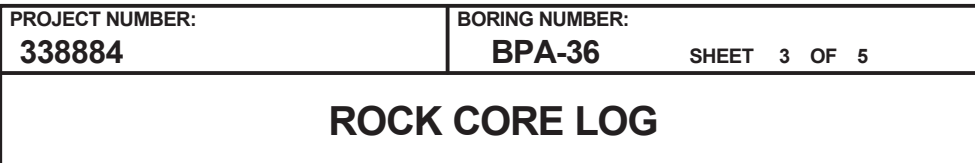
WATER LEVELS : 13.9 ft bgs

START : 6/19/06 15:55

END : 6/21/06 10:33

LOGGER : JV/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 249.8 | R1NQ 5 ft 56% | 0 | - | 19.7' - Fracture, 60 deg, smooth, undulating, 1/16" clay infilling, black stains | . | No Recovery 16.0-18.0' | Rock coring began at 09:40 on 6/20/06 R1:09:40-09:48 on 06/20/06 16.0-18.0' Blown out of the hole; Not recovered. At 17.1': R-Scale = R1 |
| | | | - | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| 25 244.8 | R2NQ 5 ft 54% | 0 | 0 | 21.9' - Fracture, 40 deg, smooth, planar, black stains 22.3' - Fracture, 40 deg, smooth, planar, black stains 22.6' - Fracture, horizontal and 5 deg, smooth, undulating 23.1' - Fracture, 30 deg, smooth, undulating | . | 19.7' - clay infilling, highly plastic, not enough for PP 19.9-20.3' - heavy staining | SC-1 collected 20.2-20.9' R2: 10:05-10:19 At 22.5': R-Scale = R0-R1 |
| | | | 1 | | | 21.0-26.0' - black mottling, silty, poorly indurated, very friable | |
| | | | 2 | | | 22.4-22.5' - black band at 30 degrees | |
| | | | 1 | | | | |
| 30 239.8 | R3NQ 5 ft 100% | 0 | 3 | 26.1' - Fracture, horizontal, smooth 26.8' - Fracture, horizontal, smooth, black stains 26.9' - Fracture, 15 deg, smooth, undulating, black stains 27.9' - Fracture, <5 deg, slickensided, planar, black stains 28.1' - Fracture, horizontal, smooth, undulating, 1/16" clay infilling 28.7' - Fracture, 5 deg, smooth, planar, 1/16" clay infilling 29.1-29.4' - Fracture zone, clay and rock fragments | . | 26.0-26.8' - brown, green and dark reddish brown mottling, very fine sand to fine sand, trace medium sand, silty, staining 26.4-26.5' - pink stained band at 30 degrees | R3: 10:45-11:04 At 27.1': R-Scale = R1 |
| | | | 1 | | | Siltstone At 26.8' - dark reddish brown, heavily mottled green with staining, highly weathered, trace very fine sand, micaceous 28.5-28.7' - banded 0.03' red banding 29.1-29.3' - red brown fat clay infilling | |
| | | | 2 | | | Sandstone 30.1-31.0' - dark greenish gray, hard, very fine sand, highly weathered 30.5' - fine sand, fine sand with some medium sand, light greenish gray, bedding at 30 degrees, staining | |
| | | | 10+ | | | Siltstone At 31.0' - reddish brown, mottled greenish gray and black in bands, very soft, fine grained, 30 degree bedding 31.0-34.7' - highly weathered 32.6-34.8' - fat clay, greenish gray, rock fragments 34.7-40.9' - fresh | |
| 35 234.8 | R4NQ 5 ft 98% | 26 | 10+ | 32.3' - Fracture, horizontal, smooth, undulating 32.5' - Fracture, horizontal, smooth, undulating 35.2' - Fracture, horizontal and 65 deg, smooth, undulating | . | | R4: 11:20-11:40 At 32.3-33.9': R-Scale = R0 At 32.6-34.8': PP: 4.0 tsf SC-2 collected 33.9-34.4' |
| | | | 2 | | | | |
| | | | 4 | | | | |
| | | | 10+ | | | | |
| 36.0 | | | 1 | | . | | At 35.35': R-Scale = R3-R4 |



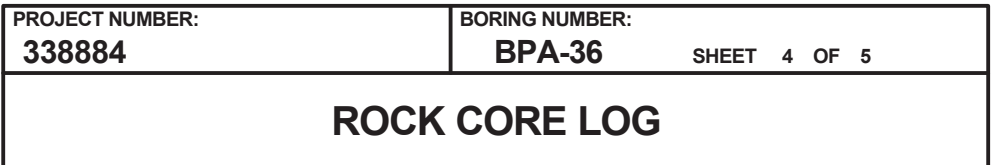
LOCATION : (NAD 27) (687881.0 N, 2012189.2 E)

DRILLING CONTRACTOR : K. Canuel, S&ME

ORIENTATION : Vertical

LOGGER : JV/JS

Rev. 5



LOGGER : JV/JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-36

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687881.0 N, 2012189.2 E)

ELEVATION : 269.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

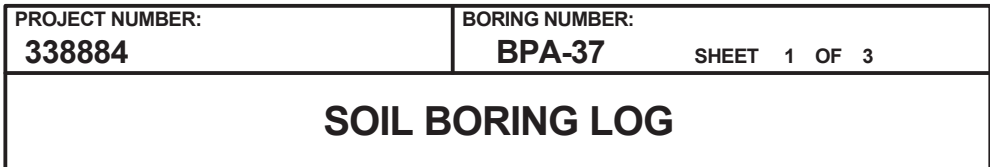
WATER LEVELS : 13.9 ft bgs

START : 6/19/06 15:55

END : 6/21/06 10:33

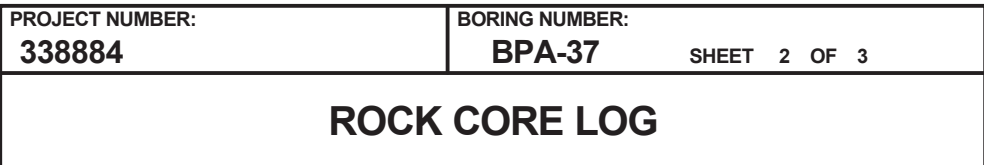
LOGGER : JV/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 80 189.8 | R13NQ 5 ft 102% | 100 | 0 | | x x x | 69.6-69.8' - grades from sandstone and siltstone, irregular contact, interbedded, siltstone is very dark gray | R13: 09:10-09:30 |
| | | | 0 | | x x x | Siltstone | |
| | | | 0 | | x x x | At 69.8' - dark reddish brown, heavy green mottling, very soft to soft, fresh, fine grained | |
| | | | 0 | | x x x | 70.6' - irregular sandstone lens, fine to medium sand | |
| | | | 0 | | x x x | 71.0-76.0' - very fine sand | At 79.2': R-Scale = R4 |
| | | | 0 | | x x x | 72.1' - mottling decreases | |
| 81.0 | | | 0 | | x x x | 72.8' - increased very fine sand content, <0.0003' white feldspar grains abundant, black mottling | |
| | | | 0 | | x x x | 73.9' - greenish gray and black mottling, staining, feldspar sandy zone | R14: 09:40-10:02 |
| | | | 0 | | x x x | 75.8-76.0' - green mottled zone | |
| | | | 0 | | x x x | 76.0-77.5' - trace very fine white feldspar grains | |
| | | | 0 | | x x x | 77.5' - increase in very fine sand, decrease to trace green mottling | |
| | | | 0 | | x x x | 77.9-78.2' - very fine to fine sand sized feldspar clasts abundant | At 83.5': R-Scale = R5 |
| | | | 0 | | x x x | 78.2-78.5' - greenish gray mottled zone | |
| | | | 0 | | x x x | 78.6-78.9' - very fine sand | |
| 85 184.8 | R14NQ 5 ft 96% | 96 | 0 | | x x x | 79.5-70.8' - very fine sandy zone, white and pink | |
| | | | 0 | | x x x | 80.2-80.4' - very fine feldspar sand zone, less sand than 79.5-79.8' | |
| | | | 0 | | x x x | 80.5-80.9' - sandy zone, very fine feldspar white, pink, graded zone | R15: 10:10-10:33 |
| | | | 0 | | x x x | 81.0-86.0' - very soft to soft, stained, very fine sand and siltstone clasts | |
| | | | 0 | | x x x | 82.6' - pitted where siltstone clasts were ripped out, decreased mottling | At 87.7': R-Scale = R3 |
| | | | 0 | | x x x | 84.7' - increase in staining and black mottling, becomes soft | SC-5 collected |
| | | | 0 | | x x x | 86.0-91.0' - very soft, fine grained | 89.8-90.6' |
| | | | 0 | | x x x | 86.5-86.6' - clay seam | First water level = 13.9' bgs taken 6/21/06 at 19:00; |
| | | | 0 | | x x x | 86.9-87.9' - greenish gray and black mottling | second water level = 15.6' bgs taken 6/22/06 at 16:30 |
| 90 179.8 | R15NQ 5 ft 96% | 96 | 0 | | x x x | 87.4' - soft, trace very fine sand | |
| | | | 0 | | x x x | 89.4-90.3' - 20-30% very fine white and pink feldspathic sand, soft | R-scale performed after drilling on stored samples |
| | | | 0 | | x x x | 89.7-90.4' - greenish gray mottling | |
| | | | 0 | | x x x | Bottom of Boring at 91.0 ft bgs on 6/21/06 10:33 | |
| 95 174.8 | | | | | | | |



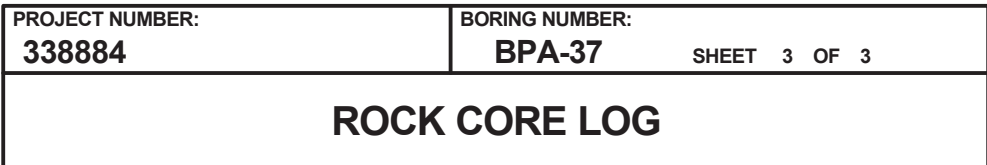
LOGGER : JS

Rev. 5



LOGGER : JS

Rev. 5



LOCATION : (NAD 27) (687795.2 N, 2012225.3 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-38

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688010.8 N, 2012267.8 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead








ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

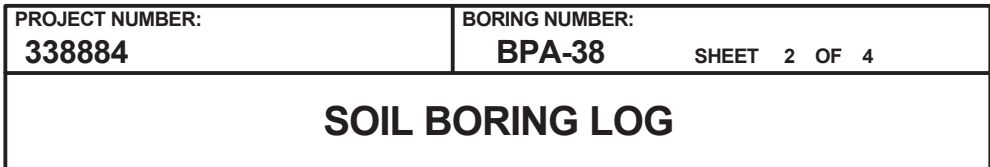
START : 5/19/06 08:40

END : 5/19/06 14:20

LOGGER : DT/JF

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|---------------|-----------------|-----------------|---|---|---|--|---|
| | | RECOVERY (in) | #TYPE | | | | | |
| | | 6"-6"-6"-6" (N) | | | | | | |
| 264.5 | 0.0 | | | | Fat Clay (CH) 0.0-1.6' - yellowish red, mottled, moist, medium stiff, medium to high plasticity, organics (roots) |  | | |
| | | 19.0 | SS1SS | 2-3-4-7 (7) | | | | |
| | 2.0 | | | | | | | |
| | 2.5 | | | | | | | |
| | | 9.0 | SS2SS | 5-8-9-12 (17) | | | | |
| 5 | 4.5 | | | | | | | |
| | 5.0 | | | | Fat Clay (CH) 5.0-6.3' - dark reddish brown, some mottling, moist, very stiff, medium to high plasticity, micaceous |  | | |
| | | 17.0 | SS3SS | 10-12-50/5 (62/11") | | | | |
| | 6.5 | | | | Clay (CL) 6.3-6.4' - dark reddish brown, moist, hard, medium to high plasticity, micaceous | | | |
| | 7.5 | 5.0 | SS4SS | 50/5 (50/5") | Clay (CL) 7.5-8.0' - dark reddish brown, moist, hard, low to medium plasticity, platy | | |  |
| 8.0 | | | | | | | | |
| 10 | | | | | | | PT-1 collected 8.0-9.5' Offset: 0.2' S38W to BPA-38 Lab Results USCS: CL w/Sand | |
| | 254.5 | 10.0 | 4.5 | SS5SS | 50/4.5 (50/4.5") |  | | |
| | 10.5 | | | | | | | |
| | 12.5 | | | | | | | |
| | 13.5 | 10.0 | SS6SS | 28-50/4 (50/4") | Clay (CL) 12.5-13.4' - dark reddish brown, mottled, moist, hard, medium plasticity, micaceous | | |  |
| | | | | | | | | |
| 15 | | | | | | | | |
| | 249.5 | 15.0 | 4.0 | SS7SS | 50/4 (50/4") |  | | |
| | 15.5 | | | | | | | Sandy Silt (ML) 15.0-15.5' - dark reddish brown, moist, hard, micaceous, some clay, platy, fine grained, some black staining along platy surfaces |
| | | | | | | | | |
| | 17.5 | | | | | | | |
| 18.5 | 9.0 | SS8SS | 33-50/3 (50/3") | Clay (CL) 17.5-18.3' - dark reddish brown, mottled, moist, hard, low plasticity, platy, micaceous, some black staining along platy surfaces |  | | | |
| | | | | | | | | |
| 20 | | | | | | | | |

PT-1 collected
8.0-9.5'
Offset: 0.2' S38W to BPA-38
Lab Results USCS: CL w/Sand



LOGGER : DT/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-38

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688010.8 N, 2012267.8 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

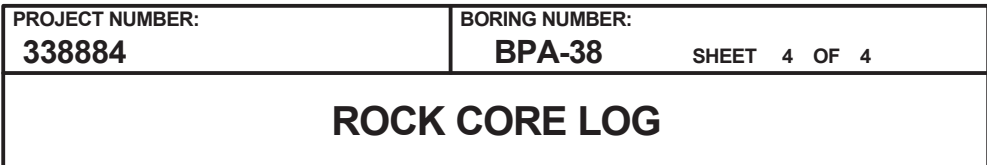
WATER LEVELS : 5.2 ft bgs

START : 5/19/06 08:40

END : 5/19/06 14:20

LOGGER : DT/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|-----------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 25 239.5 | 22.6 R1NQ 2.9 ft 97% | 90 | 0 | | x x | Siltstone 22.6-25.5' - dark reddish brown, very soft to soft, some fine sand 22.6-23.0' - highly weathered 23.0-25.5' - fresh 24.2-25.5' - interbedded siltstone and sandstone, light brownish gray, very soft | Rock coring began at 12:20 on 5/19/06 R1: 12:20-12:35 on 05/19/06 |
| | 25.5 | | 1 | 25.0' - Fracture, <5 deg, rough, undulating | x x | | |
| | | | 0 | | . | Sandstone At 25.5' - light brownish gray, soft, very thin to medium bedding, fine sand, fresh, micaceous 26.0-26.3' - medium sand to coarse sand 26.3-26.7' - fine sand to medium sand 26.7-27.5' - medium sand to coarse sand 27.5-28.8' - fine sand to coarse sand | R2: 12:45-13:30 |
| | | | 0 | | . | | |
| | | | 0 | | . | | |
| | | | 4 | 28.5-28.8' - Fracture, <5 deg, rough and undulating to smooth and planar | x x | | |
| 30 234.5 | R2NQ 10 ft 99% | 94 | 0 | | x x | Siltstone At 28.8' - dark reddish brown, very soft, fresh, micaceous, trace blue-green mottling, laminated to very thin bedding | SC-1 collected 26.1-27.2' |
| | | | 0 | | x x | | |
| | | | 0 | | x x | | |
| | | | 2 | 33.1' - Fracture, 45 deg, rough, undulating, parallel to 33.35' | x x | 33.0-33.2' - fine sand lens | |
| | | | 0 | 33.4' - Fracture, 45 deg, rough, undulating, parallel to 33.1' | x x | | |
| 35 229.5 | 35.5 | | 1 | 35.4' - Fracture, <5 deg, rough, undulating | x x | 34.7-34.9' - fine sand lens | |
| | | | 0 | | x x | 35.5-38.4' - fine gravel, thinly laminated and fine grained sand lenses | R3: 13:40-14:20 |
| | | | 4 | 36.8' - Fracture, 10 deg, rough, undulating 36.8' - Fracture, <5 deg, rough, undulating 37.2' - Fracture, 30 deg, smooth, undulating | x x | | |
| | | | 0 | | x x | | |
| | | | 0 | | . | Sandstone 38.4-40.0' - light gray, soft, fine sand to medium sand, fresh, quartzitic | |
| 40 224.5 | R3NQ 10 ft 100% | 87 | 1 | 40.0' - Fracture, <5 deg, rough, undulating | x x | | |
| | | | 1 | 41.4' - Fracture, <5 deg, rough, undulating 41.8' - Fracture, <5 deg, rough, undulating 41.8' - Fracture, <5 deg, rough, undulating | x x | Siltstone 40.0-41.4' - dark reddish brown/blue green, very soft, fresh, fine grained, fine sand at bottom | |
| | | | 10+ | | x x | | |



LOGGER : DT/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-39

SHEET 1 OF 8

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

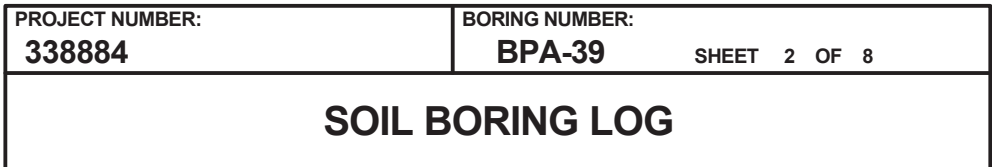
WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|------|-------|-----------------------------------|--|--------------|--|
| | RECOVERY (in) | # | TYPE | | | | |
| | | | | | | | |
| 265.8 | 0.0 | 15.0 | SS1SS | 2-2-4-5 (6) | Silty Sand (SM) 0.0-0.6' - brown, moist, loose, fine to medium grained, low plasticity, rootlets, 25% fines Lean Clay (CL) 0.6-1.3' - yellowish red, heavily mottled orange, moist, medium stiff, medium plasticity, no dilatancy, 15% fine to medium sand | | Drilling from 0-2.5' water bubbling up around rig due to sand at surface |
| | 2.0 | | | | | | |
| | 2.5 | 17.0 | SS2SS | 3-5-7-16 (12) | Lean Clay (CL) 2.5-3.1' - reddish yellow, with orange-yellow mottling, moist, medium stiff, medium plasticity, no dilatancy, 15% fine to medium sand Fat Clay (CH) 3.1-3.7' - white, dark brown, and dark yellowish red, moist, stiff, medium to high plasticity, laminated bedding, mica particles, some fine sand | | |
| 5 | 4.5 | | | | | | |
| 260.8 | 5.0 | 19.0 | SS3SS | 17-19-35-50/4 (54) | Silty Sand (SM) 3.7-3.9' - brown, moist, medium dense, low plasticity, 25% very fine to medium sand Silty Sand (SM) 5.0-5.8' - reddish yellow, moist, high, fine to medium grained, low plasticity, 25% fines Sandy Clay (CL) 5.8-6.1' - brown, some mottling, moist, very stiff, low plasticity, 35% fine to medium sand Fat Clay (CH) 6.2-6.5' - greenish gray, moist, stiff, very fine to fine grained, high plasticity, no dilatancy, 10% fine sand | | Similar to sandstone in BPA-25 near surface |
| | 7.0 | | | | | | |
| | 7.5 | 5.0 | SS4SS | 50/5.5 (50/5.5") | Silty Sand (SM) 6.5-6.7' - pale red, moist, very dense, low plasticity, 15-20% fine to medium grained sand Silty Sand (SM) 7.5-8.0' - light gray, moist, very dense, fine to course grained, low plasticity Silty Sand (SM) 10.0-10.4' - light gray, moist, very dense, fine to course grained, low plasticity | | |
| 10 | 9.5 | | | | | | |
| 255.8 | 10.0 | 5.0 | SS5SS | 50/5.5 (50/5.5") | | | |
| | 12.0 | | | | | | |
| | 12.5 | 7.0 | SS6SS | 25-50/5.5 (50/5.5") | Clayey Sand (SC) 12.5-13.1' - light gray, moist, very dense, fine to medium grained, low to medium plasticity, black, yellow, and red pockets, scattered coarse sand | | |
| | 14.5 | | | | | | |
| 15 | 15.0 | 17.0 | SS7SS | 38-37-26-42 (63) | Clayey Sand (SC) 15.0-16.4' - light gray, moist, very dense, fine to medium grained, low to medium plasticity, black, yellow, and red pockets, scattered coarse sand | | |
| 250.8 | 17.0 | | | | | | |
| | 17.5 | 5.0 | SS8SS | 50/5 (50/5") | Lean Clay (CL) 17.5-17.9' - reddish brown, moist, hard, low to medium plasticity, slow dilatancy | | |
| | 19.5 | | | | | | |
| 20 | | | | | | | |



LOGGER : JS/JF

Rev. 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

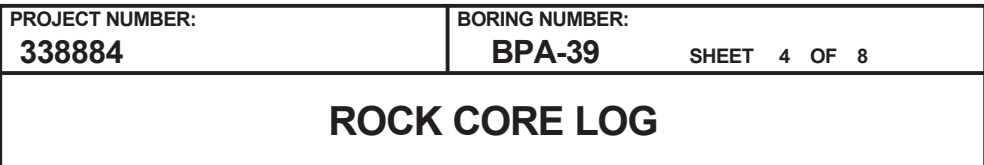
WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

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LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-39

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 65 200.8 | R9HQ 5 ft 100% | 83 | 0 | 62.3' - Fracture, <5 deg, rough to smooth, undulating 62.5-68.2' - Microfractures | | Sandstone At 62.5' - very dusky red, blue green mottling, soft, laminated to thick bedding, fine sand, fresh | R10: 10:00-10:30 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | 66.0-68.2' - dark reddish brown, soft, fine sand | R11: 10:35-10:55 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 70 195.8 | R10HQ 5 ft 100% | 100 | 0 | | | 68.2-69.0' - reddish brown, fine sand to medium sand | R12: 11:00-11:20 |
| | | | 0 | | | 69.0-70.5' - gray, medium sand to coarse sand | |
| | | | 0 | | | | |
| | | | 0 | | | 70.6-73.4' - pinkish gray, soft to hard, medium sand | R13: 11:20-12:05 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 75 190.8 | R11HQ 5 ft 100% | 100 | 1 | 73.4' - Fracture, 50 deg, rough, undulating | | 73.0' - black-oxidized band at contact between medium and coarse grain size 73.4-75.6' - pinkish gray, soft to hard, medium sand to coarse sand | R12: 11:00-11:20 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | 75.6-77.4' - pinkish gray, soft to hard, medium sand to coarse sand | R13: 11:20-12:05 |
| | | | 1 | 76.9' - Fracture, 60 deg, rough, undulating, tight fit | | | |
| | | | 1 | | | 77.4-80.6' - dark gray, soft to hard, medium sand to coarse sand | |
| | | | 0 | | | | R13: 11:20-12:05 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 80 185.8 | R12HQ 5 ft 100% | 100 | 1 | 81.0' - Fracture, <5 deg, rough and undulating to smooth and planar | | 80.6-81.2' - dark blue gray, fine sand | R13: 11:20-12:05 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | Siltstone 81.2-82.0' - dark blue gray, fresh, fine grained | R13: 11:20-12:05 |
| | | | 0 | | | | |
| | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-39

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

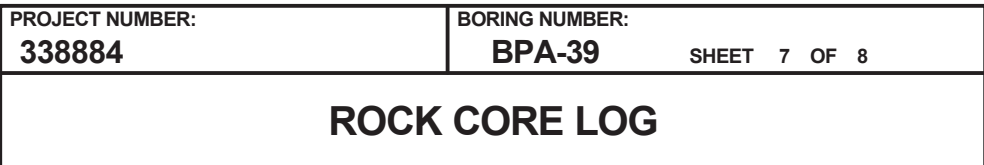
WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 85 180.8 | R13HQ 5 ft 100% | 100 | 0 | | | Sandstone At 82.0' - light blue gray, thin to massive bedding, fine sand, fresh 82.4-84.2' - multicolored, fine sand 84.2-85.6' - dark reddish brown, fine sand | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | 85.6-90.6' - dark reddish brown, blue green mottling, soft to hard, fine sand | R14: 12:45-13:20 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | R14HQ 5 ft 100% | 100 | 0 | | | | Had some water loss while coring |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 90 175.8 | | | 0 | | | | |
| | | | 0 | | | 90.5-95.6' - bluish-gray, soft to hard, medium sand, coarsens with depth to 98.0' | R15: 13:30-13:50 |
| | | | 0 | | | | |
| | | | 2 | 91.6-92.0' - Fracture | | | |
| | | | 0 | 92.1-92.7' - Fracture, 70 deg and 75 deg, rough, undulating | | | |
| | | | 0 | | | | |
| | R15HQ 5 ft 100% | 100 | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 95 170.8 | | | 0 | | | | SC-3 collected 94.6-95.6' R16: 13:55-14:10 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | 97.7-98.0' - Fracture, 60 deg and 65 deg, rough, undulating | | 98.0-100.6' - bluish-gray, soft to hard, medium sand, finer with depth to 100.6' | JAS Amended on 5/5/06: lost water at ~98-118' bgs. |
| | | | 1 | 98.8-99.2' - Fracture, 60 deg and 65 deg, rough and undulating to rough and planar | | | |
| | | | 0 | | | | |
| 100 165.8 | | | 0 | | | 100.6-109.0' - bluish-gray, soft to hard, medium sand to coarse sand | R17: 14:15-14:30 |
| | | | 0 | | | | |
| | | | 0 | | | | |



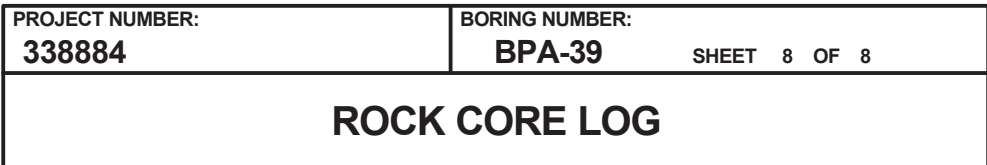
LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

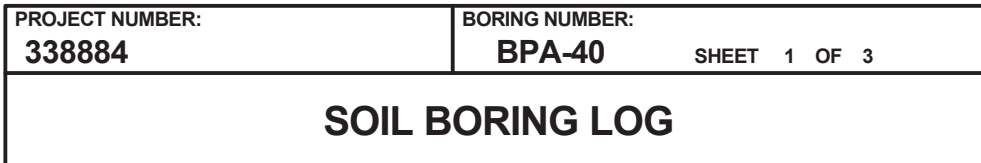
LOGGER : JS/JF

Rev. 5



LOGGER : JS/JF

Rev. 5



LOGGER : LH/EM/DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-40

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687842.4 N, 2012342.8 E)

ELEVATION : 259.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.9 ft bgs

START : 6/26/06 16:20

END : 6/27/06 14:10

LOGGER : LH/EM/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 10 249.2 | 7.7 R1NQ 3.7 ft 100% | 95 | 0 | 9.2' - Fracture, 5 deg, smooth, undulating, stained, loose fit | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-40

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687842.4 N, 2012342.8 E)

ELEVATION : 259.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.9 ft bgs

START : 6/26/06 16:20

END : 6/27/06 14:10

LOGGER : LH/EM/DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 30 229.2 | R5NQ 4.6 ft 100% | 83 | 1 | 27.8' - Fracture, 25 deg, rough, stepped, tight fit | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 1 OF 9

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | STANDARD PENETRATION TEST RESULTS | | | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|-----------------------------------|---------------|-------|------------------|---|---|
| | INTERVAL (ft) | RECOVERY (in) | #TYPE | | | |
| | | | | | | |
| 264.6 | 0.0 | | | | Top Soil 0.0-0.5' | |
| | | 24.0 | SS1SS | 2-3-4-5 (7) | Clay & Fine Sand (CL&SP-SM) 0.5-1.4' - reddish brown and light brown, moist, medium stiff, loose, trace roots, fill | |
| | 2.0 | | | | Fine Sand (SP-SM) 1.4-2.0' - light brown, moist, loose, fill | |
| | 2.5 | | | | Clay (CL) 2.5-4.0' - reddish brown, greenish gray mottling, moist, hard, laminated bedding, friable | |
| | 4.5 | 18.0 | SS2SS | 28-50/5 (50/5") | | |
| 5 | | | | | | |
| 259.6 | 5.0 | 3.0 | SS3SS | 50/3 (50/3") | Clay (CL) 5.0-5.3' - greenish gray mottling, moist, hard, laminated bedding, friable | Soil sampling completed at 13:20 on 6/15/06 |
| | 5.3 | | | | Begin Rock Coring at 5.7 ft bgs | |
| | 5.7 | | | | See the next sheet for the rock core log | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-41

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

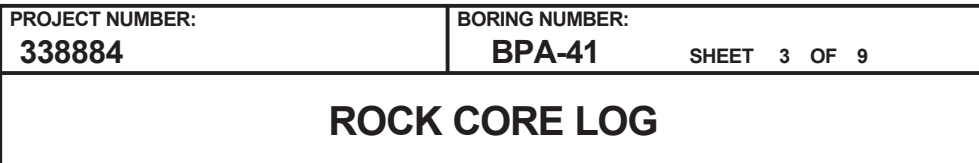
WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--|--|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 254.6 | 5.7 R1NQ 3.5 ft 97% | 77* | 3 | | | Sandstone 5.7-14.2' - reddish brown, white, and dark reddish gray, reddish black mottling, soft to hard, laminated to medium bedding, very fine sand to coarse sand, angular to subrounded, moderately weathered, becomes coarser with depth to 7.9' then gets finer and becomes coarser with depth to 9.2', well to poorly sorted 6.2' - clay seams, 0.05' thick, laminated beds, very soft, siltstone beds alternating with clay throughout, fracture at bottom 6.5-6.7' - clay seams, 0.15' thick, laminated beds, very soft, siltstone beds alternating with clay throughout, fracture in middle 9.2-12.0' - coarsens with depth 12.0-14.2' - mottled reddish black, olive, greenish gray, soft to hard, bedding, coarse sand, angular to subrounded, poorly sorted, banded lighter & darker 13.5-13.7' - clay seam, very soft, friable material | Rock coring began at 08:30 on 6/16/06 R1: 08:30-08:40 on 06/16/06 At 5.7-6.5': R-Scale = R1 At 6.2-6.7': R-Scale = R0 At 6.7-8.3': R-Scale = R1 At 8.7': R-Scale = R3 R2: 08:44-08:52 At 11.1': R-Scale = R4 At 12.0-12.4': R-Scale = R1 At 13.3': R-Scale = R3-R4 R3: 08:56-09:08 SC-1 collected 14.2-14.8' At 15.4': R-Scale = R3-R4 At 18.1': R-Scale = R3-R4 R4: 09:13-09:34 At 19.5': R-Scale = R3-R4 At 22.0': R-Scale = R3 R5: 09:39-09:48 At 24.8': R-Scale = R3-R4 |
| | | | 3 | | | | |
| | | | 2 | 6.8' - Fracture, horizontal, rough, planar 7.2' - Fracture, horizontal, rough, planar 7.6' - Fracture, horizontal, rough, planar | | | |
| | | | 0 | 8.2' - Fracture, horizontal, rough, planar 8.3' - Fracture, horizontal, rough, planar | | | |
| | 9.2 | 82* | | 9.4' - Fracture, horizontal, rough, undulating | | | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | | | 1 | 12.0' - Fracture, horizontal, rough, undulating 12.5' - Fracture, 45 deg, rough, undulating 12.7-12.9' - Fracture, horizontal, rough, undulating, fracture (top) and clay seam, laminated beds | | | |
| | | | 2 | | | | |
| | | | 1 | | | | |
| 14.2 | 100* | | | | | | |
| | | 1 | 14.8' - Fracture, horizontal, smooth, planar 15.2' - Fracture, horizontal, smooth, planar | | | | |
| | | 1 | 16.1' - Fracture, horizontal, rough, stepped, top of clay seam, soft, friable material | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
| 19.2 | 100 | | | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
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| 24.2 | | | | | | | |
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| | | 0 | | | | | |
| 25 239.6 | | | 0 | | | | |
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LOGGER : LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

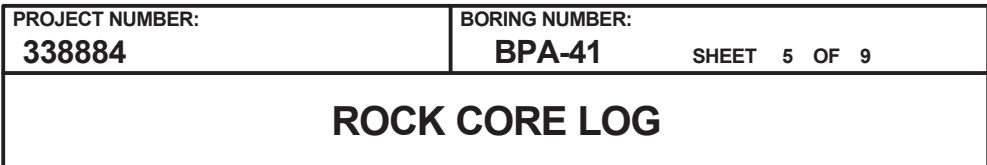
WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--------------|--|--|----------|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 50 214.6 | R9NQ 5 ft 94% | 94 | 0 | | X | | | |



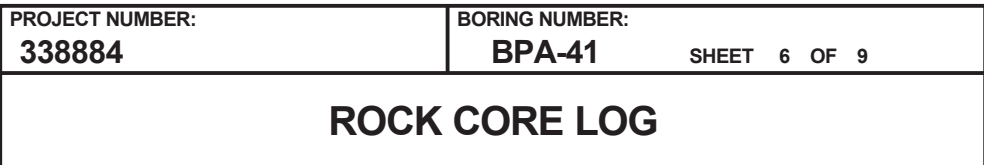
LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 5



LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-41

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 110 154.6 | R21NQ 5 ft 98% | 64 | 3 | 105.7' - Fracture, horizontal, rough, planar 105.8' - Fracture, horizontal, rough, planar 106.1' - Fracture, horizontal, rough, planar 106.3' - Fracture, horizontal, rough, undulating 106.5' - Fracture, 30 deg, smooth, undulating 106.6' - Fracture, 40 deg, smooth, undulating 107.2' - Fracture, horizontal, rough, planar | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-41

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 130 134.6 | R25NQ 5 ft 98% | 72 | 10+ | 125.4-126.0' - Fracture zone, horizontal, rough, planar, clay seams (0.01-0.02' thick), very soft, undulating | x x x | 122.1-122.2' - clayey /silt (alternating) seam unbroken | At 127.8': R-Scale = R3 |
| | | | 1 | 126.4' - Fracture, horizontal, rough, undulating | x x x | 122.2-122.9' - clayey/silt (alternating) seam unbroken, has more silt layers at bottom than at top | |
| | | | 0 | | x x x | 123.0-123.3' - clayey /silt (alternating) seam broken | |
| | | | 5 | 128.2-128.6' - Fracture zone, horizontal, smooth, planar, clay seams (0.01-0.03' thick), very soft | x x x | 123.7-123.9' - clayey /silt (alternating) seam broken | |
| | | | 0 | | x x x | Siltstone At 124.2' - olive and dark reddish brown, dark greenish gray mottling, soft, laminated bedding, slightly weathered | |
| 135 129.6 | R26NQ 5 ft 104% | 96 | 0 | | x x x | 125.4-126.0' - very soft | At 130.0': R-Scale = R3-R4 |
| | | | 0 | | x x x | | |
| | | | 2 | 131.4-131.8' - Fracture zone, horizontal, rough, undulating, clay seams (0.01-0.02' thick), very soft with very soft siltstone alternating in laminated beds | x x x | 131.4-131.8' - very soft | At 132.4': R-Scale = R3-R4 |
| | | | 1 | 132.9' - Fracture, horizontal, rough, undulating | x x x | | At 133.5': R-Scale = R3-R4 |
| | | | 1 | | x x x | 133.9-134.0' - very soft | R27: 11:30-11:42 |
| 140 124.6 | R27NQ 5 ft 100% | 100 | 0 | 133.9-134.0' - Fracture, horizontal, smooth, planar, clay seams (0.01-0.02' thick), very soft with very soft siltstone alternating in laminated beds | x x x | Sandstone 134.2-137.5' - olive gray and dark greenish gray, mottled dark reddish brown and greenish gray, soft, laminated to medium bedding, very fine sand to fine sand, subrounded to subangular, poorly sorted, fresh, very silty (30-45%) | At 136.4': R-Scale = R3-R4 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | Siltstone 137.5-139.2' - olive gray and dark greenish gray, mottled dark reddish brown and greenish gray, soft, fresh | |
| | | | 0 | | x x x | | |
| | | | 1 | 139.9' - Fracture, horizontal, rough, planar | x x x | Siltstone 139.2-143.8' - dark reddish brown, reddish black mottling, very soft to soft, laminated bedding, fresh | |
| 145 119.6 | R28NQ 5 ft 100% | 96 | 1 | 140.8' - Fracture, horizontal, rough, planar | x x x | 139.2-139.6' - greenish gray mottling | R28: 11:48-12:01 |
| | | | 3 | 141.5' - Fracture, horizontal, rough, planar | x x x | | SC-5 collected 139.9-140.8' |
| | | | 0 | 141.6' - Fracture, horizontal, rough, undulating | x x x | | At 141.2': R-Scale = R4 |
| | | | 0 | 141.7' - Fracture, horizontal, rough, undulating | x x x | | At 142.5': R-Scale = R3 |
| | | | 1 | | x x x | | |
| 145 119.6 | | | 0 | 143.8' - Contact between siltstone and sandstone, 30 deg, sharp contact | x x x | Sandstone At 143.8' - dark reddish gray and light reddish gray, soft to hard, laminated to medium bedding, fine sand, subangular, well sorted, fresh | R29: 13:00-13:20 |
| | | | 0 | | x x x | | At 145.0': R-Scale = R3-R4 |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-41

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

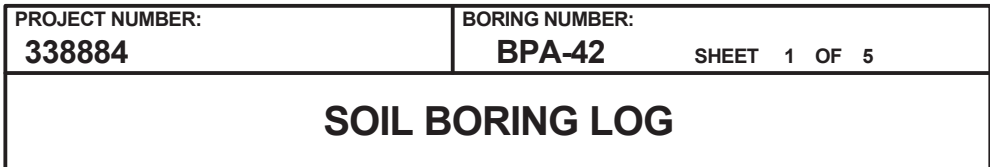
WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------------|--------------------|---|---|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | | | | DESCRIPTION |
| | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |
| 150 114.6 | R29NQ 5 ft 96% | 96 | 0 | 152.7' - Contact between siltstone and sandstone, horizontal, rough, undulating 152.9' - Fracture, horizontal, rough, undulating 153.2-153.3' - Fracture zone, horizontal, rough, planar, clay seams (0.01-0.02' thick), very soft 154.9-155.1' - Fracture zone, horizontal and 30 deg, smooth, planar, planar 158.1' - Fracture, horizontal, rough, planar 158.2' - Contact between siltstone and sandstone, horizontal, planar, partially convoluted | 144.2-149.2' - reddish black and greenish gray mottling, very fine sand to medium sand, subangular to subrounded, poorly sorted to well sorted Conglomerate 145.0-145.3' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, very thin bedding, subangular to subrounded, fresh, poorly sorted to well sorted Sandstone 145.3-146.2' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, soft to hard, laminated to medium bedding, very fine sand to medium sand, subangular to subrounded, well sorted, fresh Conglomerate 146.2-146.6' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, very thin bedding, subangular to subrounded, fresh, poorly sorted to well sorted Sandstone 146.6-152.7' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, soft to hard, laminated to medium bedding, very fine sand to medium sand, subangular to subrounded, well sorted, fresh 149.2-152.7' - light reddish brown, dark reddish brown, and very dark greenish gray, reddish black mottling, laminated to medium bedding, very fine sand to coarse sand, subangular to subrounded, poorly sorted, bands of coarser and finer material 150.7-151.5' - Conglomeratic material Siltstone At 152.7' - dark reddish brown, reddish black mottling, very soft to soft, laminated bedding, fresh At 154.2' - soft 155.9-156.9' - 30-50% very fine sand coarsens with depth 156.9' - fines with depth Sandstone 158.2-164.2' - weak red and dark reddish brown, dark reddish brown mottling, soft, very fine sand to medium sand, subangular to subrounded, well sorted, fresh 159.2-164.2' - trace greenish gray mottling | At 147.0': R-Scale = R4 | |
| | | | 0 | | | | R30: 13:35-13:53 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | 1 | | | | | | |
| | 0 | | | | | | |
| | 0 | | | | | | |
| | 155 109.6 | R30NQ 5 ft 103% | 94 | | 0 | At 151.0': R-Scale = R4 | |
| | | | | | 3 | | |
| | | | | | 0 | | |
| 0 | | | | | | | |
| R31NQ 5 ft 102% | | 100 | 4 | At 153.0': R-Scale = R4 | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| R32NQ 5 ft 98% | | 98 | 0 | | At 155.5': R-Scale = R3-R4 | | |
| | | | 0 | | | | |
| | 0 | | | | | | |
| | 0 | | | | | | |
| 160 104.6 | R31NQ 5 ft 102% | 100 | 0 | | | At 158.0': R-Scale = R4 | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | R32NQ 5 ft 98% | 98 | 0 | R32: 14:29-14:46 | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | 165 99.6 | R32NQ 5 ft 98% | 98 | | 0 | | At 162.5': R-Scale = R3-R4 |
| | | | | | 0 | | |
| 0 | | | | | | | |
| 0 | | | | | | | |
| R32NQ 5 ft 98% | | 98 | 0 | | First water level = 26.4' bgs taken 6/17/06 at 15:38; second water level = 6.7' bgs taken 6/18/06 at 16:20 | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| R32NQ 5 ft 98% | | 98 | 0 | R-Scale performed after drilling on stored samples | | | |
| | | | 0 | | | | |
| | 0 | | | | | | |
| | 0 | | | | | | |
| 165 99.6 | R32NQ 5 ft 98% | 98 | 0 | | | Bottom of Boring at 164.2 ft bgs on 6/17/06 14:46 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | R32NQ 5 ft 98% | 98 | 0 | | Bottom of Boring at 164.2 ft bgs on 6/17/06 14:46 | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | R32NQ 5 ft 98% | 98 | 0 | Bottom of Boring at 164.2 ft bgs on 6/17/06 14:46 | | | |
| | | | 0 | | | | |
| 0 | | | | | | | |
| 0 | | | | | | | |



LOGGER : JS/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-42

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

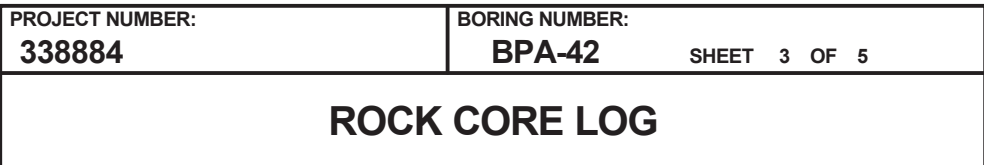
WATER LEVELS : 9.1 ft bgs

START : 7/10/06 08:30

END : 7/11/06 09:52

LOGGER : JS/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 254.3 | 7.6 R1NQ 2.4 ft 96% | 0 | 0 | 10.7' - Fracture zone, crumbled rock zone 11.2' - Fracture, <5 deg, rough, undulating 11.7' - Fracture, <5 deg, rough, undulating 12.3' - Fracture, <5 deg, rough, undulating | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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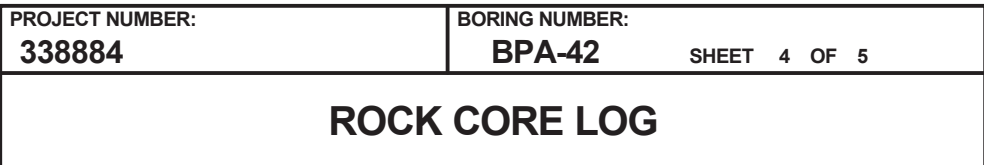
LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5



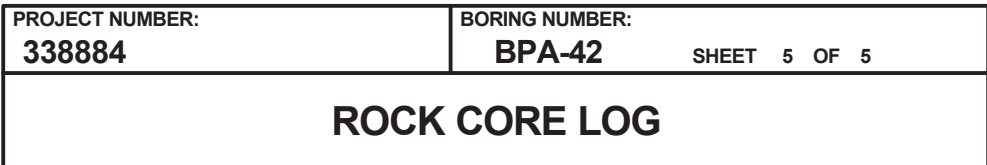
LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5



LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

[illegible]



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-43

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

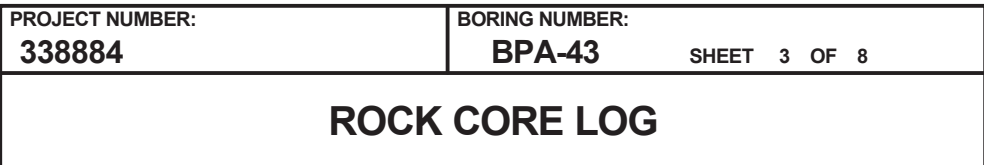
WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | |
|--|------------------------------------|------------------------|----------------------|--|---|---|---|---|------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 20 249.7 | 15.3 | R1NQ 4.7 ft 111% | 0 | 1 | 15.6' - Fracture, 25 deg, smooth, undulating 15.9-16.5' - Fracture, 15 deg, staining, healed | Siltstone At 15.3' - dark reddish brown, mottled greenish-gray, very soft, some very fine to fine sand 15.3-26.9' - highly weathered to completely weathered 16.5-20.0' - mottled greenish-gray and black, black grains visible 19.5-20.0' - less sand | Rock coring began at 13:50 on 6/13/06 R1: 14:30-14:46 on 06/13/06 At 15.5-18.5': R-Scale = R0-R1 SC-1 collected 16.3-17.2' At 19.0': R-Scale = R1-R2 R2: 15:00-15:18 | | |
| | 1 | | | 16.7' - Fracture, <10 deg, smooth, undulating | | | | | |
| | 0 | | | 17.8' - Fracture, <10 deg, black stains, tightly healed 17.9' - Fracture, <10 deg, black stains, tightly healed | | | | | |
| | 0 | | | 19.0' - Fracture, <10 deg, smooth, undulating, stains | | | | | |
| | 3 | | | 19.8' - Fracture, 25 deg, smooth, undulating, black stains 19.9' - Fracture, horizontal, smooth, undulating | | | | | |
| | 20.0 | R2NQ 5 ft 96% | 0 | 0 | | | | | |
| | | | | 1 | | | | | |
| | | | | 4 | 22.0' - Fracture, <10 deg, smooth, undulating 22.2' - Fracture, 35 deg, smooth, undulating 22.7' - Fracture, horizontal, smooth, undulating, black stains 22.9' - Fracture, 80 deg, smooth, undulating, black stains 23.9' - Fracture, <5 deg, smooth, undulating | | | 22.1-22.2' - clay seam, medium to low plasticity, 0.05' thick 23.4' - clay seam, 0.05' thick 23.5' - black staining 24.0' - pitted, possible solution cavities | At 21.5': R-Scale = R2 |
| | | | | 2 | | | | | |
| | | | | 0 | | | | | |
| 25 244.7 | 25.0 | R3NQ 5 ft 100% | 62 | 0 | | | At 24.5': R-Scale = R2 R3: 15:36-16:00 | | |
| | 4 | | | 25.1' - Fracture, horizontal, smooth, undulating 25.5' - Fracture, 20 deg, smooth, undulating 25.6' - Fracture, 5 deg, smooth, undulating, black stains 25.7' - Fracture, 5 deg, smooth, undulating, black stains 26.4' - Fracture, 40 deg, smooth, undulating, black stains 26.6' - Fracture, horizontal, smooth, planar, black stains 27.3' - Fracture, 60 deg, smooth, undulating, black stains 28.2' - Fracture, 65 deg, smooth, undulating | 25.0' - green mottling, pitted 26.1-26.4' - clay and rock fragments, 0.35' thick, rock fragments 26.9-28.3' - cavities (0.3'), sandy clasts, pinkish, harder 26.9-62.3' - fresh 28.3-30.0' - green mottling, soft, some medium to coarse sand, rounded to subangular, no cavities | At 25.5-27.0': R-Scale = R0-R1 At 27.5': R-Scale = R2 | | | |
| | 3 | | | | | | | | |
| | 1 | | | | | | | | |
| | 1 | | | | | | | | |
| | 30 239.7 | 30.0 | R4NQ 5 ft 102% | 96 | 0 | | | At 29.0': R-Scale = R3 | |
| | | | | | 0 | | | | |
| | | | | | 0 | | 31.0-31.1' - fine sandy lens 31.4-31.5' - sandy lens 31.6-31.7' - sandy lens 31.8-32.7' - dark reddish brown, soft, 50-60% very fine to fine sand, siltstone clasts (0.02' diameter) | R4: 16:07-16:25 At 30.5': R-Scale = R3 | |
| | | | | | 1 | 33.6' - Fracture, 40 deg, smooth, undulating | | At 33.5': R-Scale = R3-R4 | |
| | | | | | 1 | | | | |
| 35 234.7 | 35.0 | | | | | | | | |



LOGGER : JV

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-43

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|-------------------|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | | | | |
| 60 209.7 | R9NQ 5 ft 94% | 90 | 0 | 54.8' - Fracture, 5 deg, smooth, planar | <div>XXXXXX</div> | 54.6' - greenish-gray, sand stringer at 80 degrees, very fine silty sand | R9: 10:55-11:15 | |
| | | | 0 | | | 55.0-60.0' - fine grained | | |
| | | | 0 | | | 56.6-57.0' - soft, greenish-gray, very fine sandy zone | | |
| | | | 0 | | | 57.6-60.0' - soft, interbedded greenish-gray, very fine sandy silt at 0-30 degrees | | |
| | | | 1 | | | 58.5-60.0' - rounded, clasts, 0.01' long | | |
| | R10NQ 5 ft 103% | 92 | <div>XXXX</div> 0 | 59.6' - Fracture, 5 deg and 50 deg, smooth, undulating, clay infilling | <div>XXXXXX</div> | 59.7-60.0' - clay and rock fragments; medium plasticity | R10: No time recorded | |
| | | | 0 | | | 60.0-62.3' - trace green mottling, fine grained, some very fine sand, increase sand from previous run, sandstone clasts up to 0.5' long, interbedded silty sand stringers | | |
| | | | 0 | | | Sandstone 62.3-64.0' - dark gray, medium bedding, very fine sand, fresh, silty, 35 degree bedding angle 63.2-64.0' - green and red iron oxide banding | | |
| | | | 2 | | | | | 63.0' - Fracture, 70 deg, smooth, undulating |
| | | | 1 | | | | | 63.8' - iron oxide band, 0.05' thick along bedding plane |
| 65 204.7 | R11NQ 5 ft 102% | 100 | <div>XXXX</div> 0 | 64.5' - Fracture, horizontal and 5 deg, smooth, slickensides, undulating | <div>XXXXXX</div> | Siltstone 64.0-65.5' - green and reddish brown mottling, very fine sand, fresh, fines, fissile zones of fines, interbedded with sandy zones, laminated, iron oxide banding, 0.5' thick | R11: 13:05-13:27 | |
| | | | 1 | | | | | 65.5' - Contact between siltstone and sandstone, sharp, distinct |
| | | | 0 | | | | | 66.8' - Fracture, 60 deg, smooth, undulating |
| | | | 0 | | | | | Sandstone 65.5-74.5' - greenish gray, reddish brown mottling, soft, very fine sand, fresh, silty, iron staining, banded 66.7' - reddish brown siltstone clast 66.8' - 0.05' thick yellowish brown band, <5 degrees 69.0' - black mottling 69.6' - black mottling |
| | | | 0 |  |  |  |  |  | 70.0' - banded, coarsens with depth, increased feldspar sand |
| | R12NQ 5 ft 88% | 88 | 0 | 72.4' - Contact between sandstones, sharp 72.7' - Fracture, 75 deg, smooth, undulating | <div>XXXXXX</div> | 71.4' - iron oxide staining, fine to medium sand bands 0.05' thick at 0-5 degrees | R12: No time recorded | |
| | | | 1 | | | 72.4-74.5' - gray, fine sand to medium sand, moderate induration | | |
| | | | 0 | | | 72.9-73.3' - fine grained dark greenish gray band, 0-5 degrees | | |
| | | | 1 | | | 74.2' - Fracture, 65 deg, undulating, partially tightly healed | | |
| | | | <div>XXXX</div> | | | | | At 74.0': R-Scale = R3-R4 |
| | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-43

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel









ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|---|---|---|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |  |  | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 80 189.7 | R13NQ 5 ft 106% | 100 | 0 | 76.4' - Fracture, 65 deg, smooth, undulating, cemented, silty |  | Siltstone 74.5-77.3' - very dark greenish gray, reddish brown mottling, very soft, fresh, 20% very fine sand 75.6-75.9' - pitted <1/4 | R13: 08:25-08:43 |
| | | | 1 | | | Siltstone 77.3-77.9' - dark reddish brown, greenish gray mottling, very soft to soft, laminated to very thin bedding, fresh, fine grained with very fine sand, bedding on 30 degree angle | At 76.0': R-Scale = R3 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| 85 184.7 | R14NQ 5 ft 98% | 98 |  | 79.0' - Fracture, 55 deg, smooth, undulating |  | Sandstone At 77.9' - very dark gray, mottled green and black, soft to hard, laminated to medium bedding, fresh, silty, very fine sand, bedding on 30 degree angle 80.0-85.7' - dark reddish brown, black mottling, soft to hard, very fine sand to fine sand, silty 81.5-84.2' - darker reddish brown stained clasts 1/4 to 1/2 long | R14: 08:54-09:13 |
| | | | 0 | | | At 78.5': R-Scale = R3-R4 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 85 184.7 | R15NQ 5 ft 102% | 60 |  | 85.7' - Contact between siltstone and sandstone, sharp 85.9' - Fracture, 40 deg, slickensided, planar, smooth 87.0' - Contact between siltstone and sandstone, 20 deg, slickensided, planar, smooth, sharp 87.2' - Fracture, 20 deg, slickensided, undulating, smooth 87.3' - Fracture, 5 deg, slickensided, undulating, smooth 87.4' - Fracture, 5 deg, slickensided, undulating, smooth 87.8' - Fracture, 30 deg, slickensided, undulating, smooth 88.2' - Fracture, 50 deg, slickensided, undulating, smooth 89.0-89.1' - Fracture zone, 30 deg and 80 deg, slickensided, undulating, smooth 89.2' - Fracture, 20 deg, smooth, undulating |  | 84.2' - banding at 30 degrees, 1/4 to 3/4 84.3' - very soft, fissile lithified clay, 1/8 thick 84.3-85.2' - greenish gray, banded along bedding, laminated at 30 degrees starting at 84.65', trace black clasts <1/4 85.1-85.2' - fine sand to medium sand, laminated | R15: 09:20-09:50 |
| | | | 1 | | | At 85.5': R-Scale = R3-R4 | |
| | | | 0 | | | | |
| | | | 5 | | | | |
| | | | 3 | | | | |
| 90 179.7 | R16NQ 5 ft 94% | 94 | 1 | |  | Siltstone 85.7-86.0' - greenish gray and dark reddish brown, very soft, fresh, fine grained, banded, 0.05 wide bands, fissile, 30 degree bedding | At 87.5': R-Scale = R3 |
| | | | 0 | | | SC-4 collected 88.2-88.9' | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 95 174.7 | | |  | | | Sandstone 86.0-87.0' - very dark gray, mottled greenish gray, white, and black, hard to thin, bedding, medium sand, fresh | R16: 10:21-10:48 |
| | | |  | | | Siltstone At 87.0' - greenish gray and reddish pink, very soft, banded, very fine grained, laminated 0.05' thick at 30 degrees 87.0-88.2' - fresh 88.2-89.0' - highly weathered 88.2-89.0' - clay and rock fragments 88.2' - dark gray, clay rock fragment seam 89.0-89.8' - fresh, some very fine sand | At 91.0': R-Scale = R3-R4 At 92.5': R-Scale = R4 |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-43

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 100 169.7 | R17NQ 5 ft 103% | 100 | 1 | 95.5' - Fracture, 5 deg, smooth, undulating | <div><div>Sandstone 89.8-90.0' - greenish gray, reddish brown mottling, hard, very thin bedding, very fine sand, fresh, gradational contact</div><div>Siltstone At 90.0' - dark reddish brown, green mottling, very soft, fresh, some very fine sand 90.2-90.7' - siltstone clasts, 1/8 to 1/4 diameter, angular 90.5-91.0' - green mottling 93.5-94.1' - heavy green mottling</div><div>Sandstone 94.1-94.3' - greenish gray, fresh, very fine sand, gradational contact</div><div>Siltstone At 94.3' - dark reddish brown, green mottling, very soft, fresh 95.5' - black clasts, very soft, 1/8 diameter 97.5-97.7' - Lighter brown zone with abundant dark red brown to black clasts 99.0-99.4' - heavy green mottling 99.4-99.6' - green, very fine sandy silt band, very soft, 30 degree bedding 99.6-99.7' - black band, very soft, 30 degree bedding 101.6-102.1' - increased very fine sand in sand stringers 0.05' thick 102.1' - laminated alternating siltstone and sandy siltstone, 30 degree bedding</div><div>Siltstone At 102.7' - fresh, greenish gray silt band 103.1-103.7' - reddish brown and greenish gray, very soft, laminated bedding, banded 104.7' - sand lense, gradational contact, greenish gray, mottled reddish brown, soft</div><div>Sandstone 105.0-105.4' - gray, mottled black and reddish brown, soft to hard, very fine sand, fresh, minor staining</div><div>Siltstone 105.4-116.3' - dark reddish brown, very soft, fresh, with green banding, little sand, banding along bedding at 30 degrees 106.3' - green mottling, banding disappears, trace very fine sand 108.8' - heavy green mottling, laminated banding 110.0-115.0' - dark reddish brown, soft, 20-30% very fine sand 110.9-111.5' - black mottling</div></div> | R17: 11:10-11:31 | |
| | | | 1 | 96.6' - Fracture, 15 deg, smooth, planar, pink encrusting, thin | | At 96.0': R-Scale = R3-R4 | |
| | | | 0 | | | At 98.0': R-Scale = R3-R4 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 105 164.7 | R18NQ 5 ft 106% | 90 | 1 | 100.2' - Fracture, 5 deg, smooth, undulating | | R18: 12:10-12:30 | |
| | | | 1 | 101.4' - Fracture, 65 deg, smooth, undulating | | At 102.0': R-Scale = R3-R4 | |
| | | | 0 | | | | |
| | | | 1 | 103.9' - Fracture, 70 deg, smooth, undulating | | At 104.0': R-Scale = R3-R4 | |
| | | | 0 | | | | |
| 110 159.7 | R19NQ 5 ft 92% | 86 | 0 | | | R19: 12:29-13:10 | |
| | | | 2 | 106.1' - Fracture, horizontal, slickensided, planar, smooth 106.2' - Fracture, 30 deg, slickensided, planar, smooth | | At 106.0': R-Scale = R3-R4 | |
| | | | 0 | | | | |
| | | | 0 | | | At 108.5': R-Scale = R3 | |
| | | | 0 | | | | |
| 115 154.7 | R20NQ 5 ft 108% | 100 | 0 | | | R20: 13:30-13:50 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | At 113.5': R-Scale = R4 | |
| | | | 0 | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-43

SHEET 7 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|-----------|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 120 149.7 | R21NQ 5 ft 98% | 98 | 0 | 118.4' - Contact between siltstone and sandstone, 30 deg, sharp 119.2' - Contact between siltstone and sandstone, sharp | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 140 | R25NQ 5 ft 94% | 94 | 1 | 135.9' - Contact between siltstone and sandstone, 30 deg, sharp | ... | 135.1' - becomes finer with depth | R25: 09:08-09:23 |
| 129.7 | | | 0 | | x | Siltstone At 135.9' - dark reddish brown, mottled greenish gray and black, very soft, fresh, trace very fine sand, contact at 30 degrees | At 136.0': R-Scale = R4 |
| | | | 0 | | x | 138.3-138.9' - small (1/8) white clasts | |
| | | | 0 | | x | 139.0' - sandy lens, red brown silt, medium grained gradational contact with siltstone | |
| | | | 0 | | x | 140.0-145.0' - dusky red, mottled green and black, fine grained | R26: 09:34-10:04 |
| 145 | R26NQ 5 ft 105% | 100 | 0 | | x | 140.5-140.6' - mottled greenish gray | |
| 124.7 | | | 0 | | x | 142.0-142.4' - heavily mottled green | At 143.0': R-Scale = R4 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 145 | R27NQ 5 ft 103% | 100 | 0 | | x | 144.8' - greenish gray linear feature 0.6' long at a 55 degree angle | R27: 12:35-13:18 |
| 124.7 | | | 0 | | x | 145.0-150.0' - weak red, trace very fine sand | |
| | | | 0 | | x | 145.3-145.4' - some staining | |
| | | | 0 | | x | 146.2' - 0.15' long horizontal green stringer with some very fine sand and silt (<1/8' wide) | At 147.3': R-Scale = R4 |
| | | | 0 | | x | 146.5' - heavy green mottling | SC-6 collected |
| | | | 0 | | x | 147.5-148.8' - 1/16 diameter black clasts | 148.7-150.0' |
| 150 | | | 0 | | x | | First water level = 18.6' bgs taken 6/20/06 at 08:52; |
| 119.7 | | | 0 | | x | 149.6-150.0' - white fine to medium grained | second water level = 19.0' bgs taken 6/21/06 at 07:50 |
| | | | 0 | | x | Bottom of Boring at 150.0 ft bgs on 6/19/06 13:10 | R-Scale performed after drilling on stored samples |
| 155 | | | | | | | |
| 114.7 | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-44

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer









ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|--|---|--|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 266.3 | 0.0 | 18.0 | SS1SS | 2-2-2-3 (4) | Topsoil 0.0-0.1' - Topsoil, grass |  | PT-1 collected 3.0-5.0' |
| | 2.0 | | | | Silty Sand (SM) 0.1-0.7' - brown, moist, very loose, low to medium plasticity, 30-40% fines, fine to medium sand, more fines with depth |  | |
| | 2.5 | | | | Fat Clay (CH) 0.7-1.5' - yellow, moist, high plasticity, none dilatancy, firmer with depth, 20-25% fine sand with depth |  | |
| | | 19.0 | SS2SS | 5-9-11-13 (20) | Clay With Sand (CL) 2.5-2.9' - reddish brown, some whitish mottling (1 zone), moist, stiff, low to medium plasticity, slow to rapid dilatancy, 25% very fine to fine sand, micaceous |  | |
| 5 | 5.0 | | | | Sandy Lean Clay (CL) 2.9-4.1' - reddish brown, orange mottling, moist, very stiff, medium plasticity, slow dilatancy, grayer in sandy lens at 3.17-3.33', medium dark, 30% clayey sand, 70% clay, up to 30% very fine to fine sand in clay; interfingered, gradational |  | |
| 261.3 | | 8.0 | SS3SS | 7-50/5.5 (50/5.5") | Clay (CL) 5.0-5.7' - reddish brown, thready greenish-white mottling, moist, stiff, low to medium plasticity, slow to rapid dilatancy, very hard in last 1, 15% very fine sand |  | |
| | 7.0 | | | | | | |
| | 7.5 | | | | Clay (CL) 7.5-7.9' - reddish brown, thready greenish-white mottling, moist, hard, low to medium plasticity, slow to rapid dilatancy, 15% very fine sand |  | |
| | | 5.0 | SS4SS | 50/3.5 (50/3.5") | | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | Drillers Remark: Drilled to 11.0' bgs before beginning rock coring |
| 256.3 | 10.0 | 3.0 | SS5SS | 50/2 (50/2") | Clay (CL) 10.0-10.2' - reddish brown, thready greenish-white mottling, moist, hard, low to medium plasticity, slow to rapid dilatancy, 15% very fine sand |  | Soil sampling completed at 10:00 on 6/20/06 |
| | 10.2 | | | | Begin Rock Coring at 11.0 ft bgs | | |
| | 11.0 | | | | See the next sheet for the rock core log | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BPA-44

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|---|--------------|--|--|
| | | R Q D (%) | DESCRIPTION | | | |
| | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 11.0 | R1NQ 5 ft 100% | 86 | 0 | x x | Siltstone 11.0-15.8' - dark reddish brown, mottled green, purple, black, very soft, moderately weathered, fine grained with up to 30% very fine sand, more sand with depth | Rock coring began at 10:30 on 6/28/06 R1: Began at 10:30 on 6/28/06 At 12.5': R-Scale = R2 |
| | | | 0 | x x | | |
| | | | 1 | x x | | |
| | | | 1 | x x | | |
| 15 251.3 | | | 10+ | x x | | |
| 16.0 | R2NQ 5 ft 100% | 92 | 1 | x x | 15.4-15.5' - clay seam | At 14.9': R-Scale = R1-R2 R2: 11:03-11:19 At 17.0': R-Scale = R2 |
| | | | 0 | x x | 15.7-15.8' - clay seam, very soft, friable | |
| | | | 0 | x x | Sandstone At 15.8' - light gray to very pale brown, mottled white, black, red, yellow, poorly sorted, fine sand to coarse sand | |
| | | | 0 | x x | 15.8-16.0' - moderately weathered | |
| | | | 10+ | x x | 16.0-19.1' - light reddish brown, mottled white, black, red, pink, clear | |
| 20 246.3 | R3NQ 5 ft 104% | 54 | 0 | x x | 16.0-19.2' - slightly weathered | At 19.5': R-Scale = R2 R3: 11:32-11:47 SC-2 collected 21.5-22.5' |
| | | | 10+ | x x | 16.4' - gray-brown silty lens | |
| | | | 0 | x x | 16.7' - very soft to soft, becomes finer grained, fine to medium grained sand; medium grained, 10% silt | |
| | | | 0 | x x | 17.9' - becomes heavily mottled with gray and brown; grayish brown, very soft, very fine to fine sand, 25% silt | |
| | | | 10+ | x x | 18.7' - soft, medium to coarse grained | |
| 25 241.3 | R4NQ 5 ft 100% | 96 | 10+ | x x | Siltstone At 19.2' - dark reddish brown, mottled green, purple, fine grained with little to no sand | At 23.3': R-Scale = R2-R3 SC-1 collected 24.4-24.7' R4: 12:22-12:44 At 26.0-26.3' R-Scale = R0-R1 At 26.6': R-Scale = R3-R4 At 30.0' R-Scale = R3-R4 |
| | | | 0 | x x | 19.2-21.0' - slightly weathered | |
| | | | 0 | x x | 21.0-23.9' - mottled purple and green, moderately weathered, very fine to fine grained, picks up to 15% very fine sand/coarse silt in last 1 | |
| | | | 10+ | x x | 21.4-21.5' - clay seam, very soft | |
| | | | 10+ | x x | 23.9-25.0' - reddish gray, heavily mottled green, yellow, and purple, moderately weathered, clay-like rock - very soft; would be very stiff on clay consistency table | |
| 26.0 | | | 4 | x x | 23.9-25.0' - clay seam | |
| | | | 0 | x x | 25.0-26.0' - mottled purple and green, slightly weathered, 30% very fine sand/coarse silt, still very soft, but harder than 21.0-23.85 | |
| | | | 0 | x x | 26.0-27.0' - mottled green, purple, yellow, and black, very soft to soft, slightly weathered, very fine to fine grained, harder with depth | |
| | | | 0 | x x | 27.0-31.0' - mottled purple, green, and black, slightly weathered | |
| 30 236.3 | | | 0 | x x | | |
| 31.0 | | | | x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-44

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 231.3 | R5NQ 5 ft 98% | 98 | 0 | | x x x x | 31.0-41.0' - less mottling, soft, very fine to fine grained with up to 25% very fine sand | R5: 12:58-13:16 |
| | | | 0 | | x x x x | 31.0-46.0' - fresh | |
| | | | 0 | | x x x x | | At 32.9': R-Scale = R3 |
| | | | 0 | | x x x x | | SC-3 collected 34.2-35.3' |
| | | | 2 | | x x x x | 35.3-35.6' - fine to medium grained sand | |
| 36.0 | | | 2 | 36.1' - Fracture, horizontal, undulating, tightly healed | x x x x | | R6: 13:30-13:50 |
| | | | 1 | 36.3' - Fracture, 50 deg, undulating, tightly healed | x x x x | | |
| | | | 0 | 37.2' - Fracture, horizontal, undulating, long, tightly healed | x x x x | 37.3-41.0' - very fine grained with no to very little sand | At 38.1': R-Scale = R3 |
| | | | 0 | 37.5-41.0' - Fractures, capillary microfractures | x x x x | | |
| 40 226.3 | R6NQ 5 ft 100% | 100 | 0 | | x x x x | 39.7-41.0' - scattered medium sand-sized clasts, rounded, dark purple; 5%; harder than matrix | |
| | | | 0 | | x x x x | | R7: 14:01-14:17 |
| | | | 0 | | x x x x | | At 42.0': R-Scale = R3-R4 |
| | | | 10+ | 42.3' - Fracture, 50 deg, undulating, partial fracture, ~0.0002' wide | x x x x | 42.1' - mottled purple, dark yellow, and green, very soft, very fine grained with little sand | |
| | | | 3 | 42.4-42.8' - Fracture zone, rough, stepped, some very hard white infilling, green and purple staining | x x x x | | |
| | | | 1 | 42.8-43.1' - Fracture zone (3), 60 deg and 80 deg, rough, undulating, some very hard white infilling, green and purple staining | x x x x | | |
| 45 221.3 | R7NQ 5 ft 100% | 80 | 3 | 43.4' - Fracture, 70 deg | x x x x | 45.2-45.3' - clay seam, softer rock lens | |
| | | | 3 | 44.8' - Fracture, 40 deg, smooth, undulating, some white infilling, green and purple staining | x x x x | | |
| | | | 10+ | 45.4' - Fracture, horizontal, smooth, undulating, 0.03' relief, partially slickensided (~50% of surface); bedrock fragments | x x x x | Siltstone | R8: 14:40-15:01 |
| | | | 0 | 46.0-46.9' - Fracture zone, horizontal, smooth, undulating, some slickensided surfaces, 0.1' thick gray clay seam | x x x x | 46.0-46.9' - dark gray, fresh, very fine grained, lighter and darker laminations | |
| | | | 0 | | x x x x | Siltstone | At 47.5': R-Scale = R3-R4 |
| | | | 1 | | x x x x | At 46.9' - dark reddish brown, soft, fresh, 30% very fine sand, coarse silt | |
| | | | 1 | | x x x x | 47.3-48.8' - mottled green and black, fine grained, 25% very fine sand | |
| 50 216.3 | R8NQ 5 ft 96% | 80 | 1 | | x x x x | | At 49.6': R-Scale = R3-R4 |
| | | | 1 | | x x x x | 49.9-50.3' - green mottling, fine grained | |
| 51.0 | | | 1 | | x x x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-44

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel




ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | |
|--|------------------------------------|-----------------|---|---|---|---|--|--|---------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 55 211.3 | R9NQ 5 ft 100% | 100 | 0 | 50.4' - Fracture, horizontal, smooth, undulating, 0.02' relief |  | Sandstone 50.3-51.6' - dark reddish gray, some green mottling, soft to hard, very fine sand to fine sand, fresh, 35% silt 51.1-51.6' - very dark gray, rust, white, gray, black mottling, interbedded contact over ~0.1'; fine grained to 0.0002' | R9: 15:13-15:21 | | |
| | | | 0 | | | | At 52.1': R-Scale = R3-R4 | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | At 54.5': R-Scale = R3-R4 | | |
| | | | 1 | | | 55.2' - Contact between sandstones, smooth to rough, undulating | | | |
| 56.0 | 100 | 0 | 51.8-55.2' - gray, rust mottling, soft to hard, poorly sorted, fresh, abrupt contact at 20 degrees; multi-colored grains, 60% silica, 40% feldspar, fine to coarse grains | R10: 15:37-15:50 | | | | | |
| | | 0 | | | | | | | |
| | | 0 | | | At 57.7': R-Scale = R3-R4 | | | | |
| | | 0 | | | At 59.2': R-Scale = R3-R4 | | | | |
| | | 1 | | 60.3' - Contact between siltstone and sandstone, horizontal, rough, undulating | | | | | |
| 60 206.3 | R11NQ 1 ft 100% | 50 | 2 | 61.5' - Fracture, horizontal, smooth, stepped, 0.03' relief 61.9' - Fracture, horizontal, smooth, stepped, 0.02' relief 62.3' - Fracture, horizontal, smooth, undulating, 0.05' clay infilling |  | 60.3-74.0' - very dark gray to dark brown, mottled dark green and yellow, soft, fresh, very fine grained with trace to 10% medium sand grains, angular 61.0' - last 0.5' gray 62.0' - very dark gray, some yellow mottling, very soft to soft, banded, laminated in swirled patterns, very fine to medium grained with sandy lenses at 62.45-65.55' | R11: 08:08-08:29 on 06/29/06 | | |
| | | | 1 | | | | | | |
| | | | 0 | | | | | | At 63.6': R-Scale = R3-R4 |
| | | | 0 | | | | | | SC-4 collected 64.7-65.9' |
| | | | 0 | | | | | | |
| 65 201.3 | R12NQ 4 ft 98% | 90 | 10+ | 66.2' - Fracture, horizontal, smooth, undulating 66.5-66.6' - Fracture zone, horizontal and 20 deg, rough, undulating, bedrock fragments 67.3' - Fracture, horizontal, smooth, undulating 67.6' - Fracture, horizontal, smooth, undulating |  | 66.0-67.6' - dark yellow and faint green mottling, soft 67.6' - reddish brown, mottled green, purple and yellow, 25% very fine sand 69.2-69.8' - trace to no sand 69.8-71.0' - Trace medium white sand grains | R13: 08:44-09:05 | | |
| | | | 2 | | | | | | |
| | | | 0 | | | | | | At 68.3': R-Scale = R3-R4 |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| 70 196.3 | R13NQ 5 ft 100% | 84 | 0 | | | | | | |
| | | | 0 | | | | | | |
| 71.0 | | | | | | | | | |

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-45

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|--|--------------|--|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 265.9 | 0.0 | 10.0 | SS1SS | 7-12-12-50/4 (24) | Grass And Gravel 0.0-0.2' - fine to coarse gravel, angular | | Very friable Drillers Remark: Moved over 4' North and began rock boring Soil sampling completed at 13:30 on 8/3/06 |
| 2.0 | | | | | Sandy Lean Clay (CL) 0.2-0.7' - reddish brown, dry, very stiff, low to medium plasticity, slow dilatancy, 25-30% very fine to medium sand, reworked native | | |
| 2.5 | 3.0 | SS2SS | | | Lean Clay (CL) 0.7-0.8' - red, dry, hard, low to medium plasticity, slow dilatancy, 10-15% very fine to fine sand | | |
| 2.8 | | | | 50/3 (50/3") | Lean Clay (CL) 2.5-2.8' - red, dry, hard, low to medium plasticity, slow dilatancy, 10-15% very fine to fine sand Begin Rock Coring at 2.8 ft bgs See the next sheet for the rock core log | | |
| 5 | | | | | | | |
| 260.9 | | | | | | | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-45

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 2.8 | R1NQ 2.5 ft 100% | 93* | 2 | 2.8' - Fracture, 10 deg, smooth, undulating, 0.01 relief | x x | Siltstone At 2.8' - dark reddish brown, 20% green mottling, soft, 30% white inclusions | Rock coring began on 8/3/06 R1: No time recorded At 3.0': R-Scale = R2 At 4.1': R-Scale = R1 |
| 5 | | | 0 | | x x | 2.8-3.9' - moderately weathered | |
| 260.9 | 5.3 | | 0 | | x x | 3.9-5.3' - heavy green and purple mottling, moderately weathered, fine grained with 10-15% very fine to fine sand, | |
| | | | 5 | 5.4' - Fracture, horizontal, smooth, stepped | x x | 5.3-10.3' - black mottling, very fine grained, 5-10 % very fine sand, soft, trace white inclusions, in first 0.3' | R2: 14:35-14:44 |
| | | | 0 | 5.6' - Fracture, 50 deg, smooth, undulating, 15% black stains | x x | 5.3-16.4' - fresh | |
| | | | 0 | 5.8' - Fracture, 5 deg, smooth, undulating, 40% black stains | x x | | At 6.2': R-Scale = R1-R2 |
| | | | 2 | 5.9' - Fracture, 10 deg, smooth, undulating, 30-40% black stains | x x | | |
| | R2NQ 5 ft 98% | 94 | 0 | 7.8-7.9' - Fractures (2), smooth, undulating, 25% black and gold stains | x x | | At 8.6': R-Scale = R1-R2 |
| | | | 0 | | x x | | |
| 10 | 10.3 | | 0 | | x x | | R3: Began at 14:50 |
| 255.9 | | | 10+ | 10.7' - Fracture, 10 deg, smooth, undulating, <0.21' thick clay infilling | x x | 10.3-12.2' - trace black mottling, less red with depth, very soft with clay seams | |
| | | | 10+ | | x x | 10.8-11.0' - clay seam, same color as bedrock | At 11.5': R-Scale = R1-R2 |
| | | | 2 | 12.2' - Fracture, horizontal, smooth, undulating, 0.25 thick clay infilling | x x | 11.8-11.9' - clay seam | |
| | | | 2 | 12.5' - Fracture, 20 deg, smooth, undulating, 0.02' relief | x x | 12.0-12.1' - clay seam, 0.05' thick | |
| | | | 2 | 12.8' - Fracture, 20 deg, rough, undulating, black stains, 0.01' relief, break in lense with up to 20% medium sand | x x | 12.8-15.3' - sand lenses, 10-30% very fine to medium sand, subangular to subrounded | At 13.5': R-Scale = R2 At 14.0': R-Scale = R2 |
| 15 | 15.3 | | 0 | 14.3-14.4' - Fractures, horizontal, hairline partial fractures with white, green and black mottling about 1-2 long | x x | 14.3-15.1' - black and green mottling, very fine to fine grained, ~12.5-15.3' | |
| 250.9 | | | 0 | | x x | 5-10% very fine sand/ coarse silt | R4:15:25-15:33 |
| | | | 0 | | x x | 15.3-15.4' - alternating beds, grades to sandstone lens | |
| | | | 0 | | x x | 15.4-15.6' - 50% fine to medium to coarse sand | At 16.2': R-Scale = R2-R3 |
| | | | 0 | | x x | 15.4-16.4' - 0-45% very fine to medium sand, subangular to subrounded | |
| | R4NQ 5 ft 99% | 98 | 0 | | x x | 15.6-16.0' - 20% black mottling, siltstone | At 17.9': R-Scale = R2-R3 |
| | | | 1 | 18.7' - Fracture, 70 deg, rough, undulating, 0.02' relief | x x | Sandstone 16.4-17.0' - multi-colored, soft to hard, fine sand to coarse sand, subangular to subrounded, fresh, well graded, gradational contact, 2 siltstone lenses | At 19.5': R-Scale = R2-R3 |
| 20 | 20.3 | | 0 | | x x | Siltstone 17.0-17.2' - dark reddish brown, green mottling, soft, fresh, 20% thready green mottling, 30% white inclusions | R5: 15:38-15:45 |
| 245.9 | | | 1 | 20.4' - Fracture, horizontal, rough, undulating | x x | | |
| | | | 1 | 21.1-21.8' - Fracture, 70 deg, rough, undulating, yellow-orange stains in first 0.1', then 95% black stains | x x | | At 22.2': R-Scale = R2-R4 |
| | R5NQ | | | | x x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-45

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 25 240.9 | 5 ft 102% 25.3 | 100 | 0 | | | Sandstone At 17.2' - brown to dark reddish brown, soft to hard, laminated to medium bedding, fine sand to coarse sand, fresh, trace to 10% fine gravel, poorly to well sorted At 21.2' - interbedded siltstone, sandstone, and conglomerate lenses, fine to coarse grained sand, fine gravel, subrounded to subangular | At 23.4': R-Scale = R2-R4 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 10+ | 25.3-25.8' - Fracture zone, horizontal, smooth, undulating, dry | | | At 25.0': R-Scale = R2-R4 R6: 16:20-16:30 |
| | | | 0 | | | Siltstone At 25.8' - dark reddish brown, 15% purple, green, and white mottling, fresh, very fine to fine grained, trace to 15% very fine sand to coarse silt, soft | At 26.5': R-Scale = R2 |
| | R6NQ 5 ft 96% | 92 | 2 | 27.3' - Fracture, horizontal, rough, undulating | | | |
| | | | 0 | 28.0' - Fracture, horizontal, smooth, planar | | | |
| | | | 0 | | | | At 28.9': R-Scale = R2 |
| 30 235.9 | 30.3 | | 0 | | | | |
| | | | 2 | 30.5' - Fracture, horizontal, smooth, planar 30.6' - Fracture, horizontal, smooth, planar | | 30.3-46.1' - mottled greenish gray and reddish black, soft | R7: 08:08-08:17 on 08/04/06 |
| | | | 0 | | | | |
| | R7NQ 5 ft 98% | 91 | 0 | | | | At 31.5': R-Scale = R2 |
| | | | 0 | | | 33.3-39.4' - trace medium sand to gravel sized white clasts | |
| | | | 0 | | | | |
| 35 230.9 | 35.3 | | 0 | | | | R8: 08:23-08:32 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | R8NQ 5 ft 99% | 99 | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | 39.4-40.3' - highly mottled, very soft | |
| 40 225.9 | 40.3 | | 0 | | | 40.3-41.5' - mottled olive | R9: 08:38-08:46 |
| | | | 0 | | | | |
| | | | 2 | 41.5' - Fracture, horizontal, rough, planar 41.8' - Fracture, horizontal, rough, undulating, black stains | | 41.5-51.8' - laminated bedding, laminated bedding 41.6-41.7' - clay seam, very soft, friable, some siltstone in it | |
| | R9NQ | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-45

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

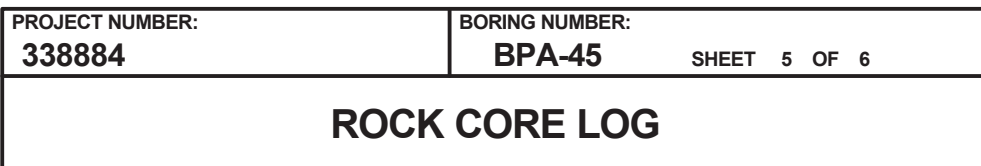
WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 45 220.9 | 5 ft 100% | 94 | 0 | | x | | | |



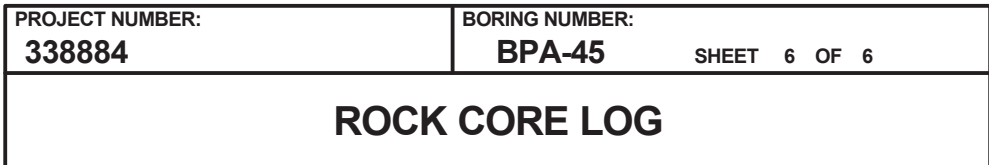
LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

LOGGER : JS/LH

Rev. 5



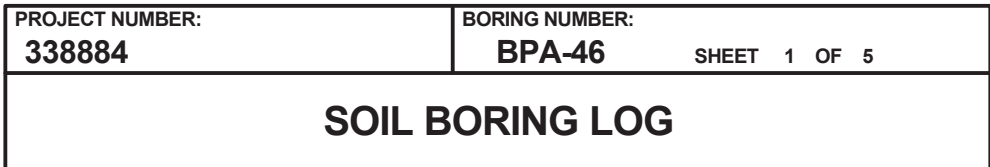
LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

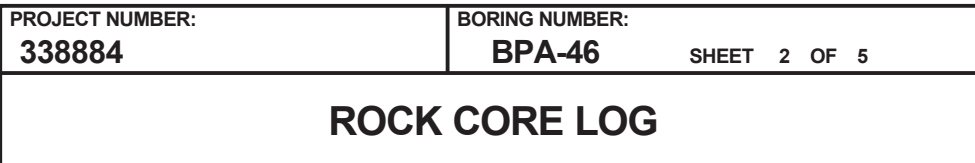
LOGGER : JS/LH

Rev. 5



LOGGER : AT/EM/LH

Rev. 5



LOGGER : AT/EM/LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-46

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.6 N, 2011923.3 E)

ELEVATION : 268.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.8 ft bgs

START : 8/7/06 08:58

END : 8/8/06 16:24

LOGGER : AT/EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 40 228.0 | R5NQ 5 ft 101% | 99 | 0 | 36.8' - Contact between siltstone and sandstone, 30 deg, rough, undulating | | 35.0-36.8' - very dark gray, soft, fresh, 0-40% very fine to medium sand, coarsens with depth, banded | R5: 09:49-09:58 |
| | | | 1 | | | Sandstone 36.8-41.4' - very dark gray, white, and pink, soft to hard, very fine sand to medium sand, angular to subrounded, well sorted, fresh, coarsens with depth 36.8-38.4' - 0-30% silt | At 38.6': R-Scale = R2 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 |  |  |  |  | 39.2-39.4' - Fracture, 60 deg, rough, undulating, brown stains |
| 45 223.0 | R6NQ 5 ft 102% | 96 | 0 | 41.4' - Contact between siltstone and sandstone, 20 deg, rough, undulating, black stains 41.5' - Fracture, 20 deg, smooth, planar 41.9-42.3' - Fractures (4), rough, undulating, light brown stains and silt, (2) horizontal, (1) 70 deg, (1) 60 deg | | 40.0-41.4' - beds on 20 degree angle | R6: 10:12-10:23 |
| | | | 2 | | | 41.0' - laminated, black, shale bed 41.1' - laminated, black, shale bed Shale 41.4-41.6' - greenish gray, very soft, laminated bedding, fresh, 20 degree bedding Siltstone 41.6-45.3' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh 42.3-45.0' - 0-10% very fine to fine sand | At 43.8': R-Scale = R3 |
| | | | 3 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 50 218.0 | R7NQ 5 ft 99% | 99 | 0 | 48.1' - Fracture, 10 deg, smooth, planar | | Sandstone 45.3-52.0' - dark greenish gray and white, soft to hard, laminated to medium bedding, very fine sand to coarse sand, angular to subrounded, fresh, poorly sorted to well sorted 45.3-45.8' - stained dark reddish brown 47.6-48.1' - beds on 20 degree angle; 0-10% fine gravel 48.1-48.2' - siltstone lens (0.07' thick) 48.7-50.0' - stained dark reddish brown 49.4-49.9' - trace gravel 49.5' - gravel sized siltstone clast that is red and black 50.0' - becomes finer with depth | R7: 10:35-10:47 |
| | | | 0 | | | At 46.2': R-Scale = R3 | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 0 | | | | SC-1 collected 48.1-49.2' |
| 55 55.0 | R8NQ 5 ft 91% | 56 | 1 | 52.0-52.1' - Contact between siltstone and sandstone, horizontal, rough, undulating, clay is very soft, friable, 0.05' thick 52.5' - Fracture, 20 deg, smooth, undulating 52.7' - Fracture, 20 deg, smooth, undulating 53.0' - Fracture, 20 deg, slickensided, undulating 53.6-53.9' - Fracture (2), vertical and 20 deg, smooth, undulating, vertical is tightly healed | | Siltstone 52.0-54.2' - dark greenish gray, very dark gray and gray, soft, laminated bedding 52.0-53.1' - fresh 53.1-54.2' - highly weathered 53.1-53.6' - clay seam, siltstone alternating, very soft, friable, 0.5' thick | At 52.3': R-Scale = R3-R3.5 |
| | | | 2 | | | | |
| | | | 4 | | | | |
| | | | 2 | | | | |
| | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-46

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.6 N, 2011923.3 E)

ELEVATION : 268.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

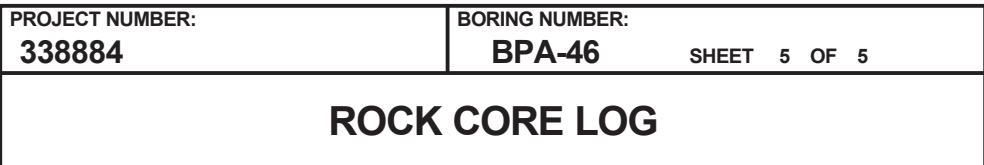
WATER LEVELS : 19.8 ft bgs

START : 8/7/06 08:58

END : 8/8/06 16:24

LOGGER : AT/EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 60 | 60.0 | R9NQ 5 ft 99% | 89 | 3 | 54.2' - Contact between siltstones, 30 deg, rough, undulating | Siltstone At 54.2' - dark reddish brown, soft, fresh 54.2-55.5' - mottled olive | R9: 12:55-13:10 |
| | | | | 0 | 55.2' - Fracture, horizontal, smooth, planar | | |
| | | | | 0 | 55.5' - Fractures (2), horizontal, smooth, planar | | |
| | | | | 0 | | | |
| | | | | 0 | | 58.4-60.0' - mottled greenish gray, long (0.08') white clasts (0.01' thick) | At 58.2': R-Scale = R2 |
| 60 | 208.0 | R10NQ 5 ft 101% | 100 | 0 | 60.0-60.2' - Fracture, 60 deg, rough, undulating, tightly healed | 60.0-81.0' - mottled greenish gray and reddish black, very soft to soft, very fine grained with high clay sized particle content, shaley 60.0-60.5' - very fine to fine sand seam 62.3-62.9' - fine gravel to coarse sand sized reddish black clasts 62.9-65.0' - laminated bedding | R10: 13:22-13:43 |
| | | | | 0 | | | |
| | | | | 0 | | | At 62.6': R-Scale = R1 |
| | | | | 0 | | | |
| 65 | 203.0 | R11NQ 5 ft 97% | 95 | 1 | 65.4-65.7' - Fracture, 60 deg, smooth, undulating, greenish gray and black stains | 67.4-70.0' - mottled olive | R11: 13:57-14:23 |
| | | | | 0 | | | At 66.7': R-Scale = R2-R3 |
| | | | | 0 | | | |
| | | | | 2 | | | |
| | | | | 2 | 68.8' - Fractures (2), horizontal and 45 deg, smooth, planar | 70.0-71.0' - laminated bedding 71.0-71.1' - clay seam, very soft, 0.05' thick | R12: 14:33-14:53 |
| | | | | 2 | 69.3' - Fracture, horizontal, rough, planar | | Driller's remark - lost about 5-8 gallons per foot |
| | | | | 2 | 69.8' - Fracture, 20 deg, rough, undulating | | |
| | | | | 1 | | | |
| | | R12NQ 5 ft 95% | 90 | 10+ | 71.0' - Fracture, horizontal, rough, undulating | | |
| | | | | 0 | 71.1-71.2' - Fracture zone, smooth, undulating, black stains | | |
| | | | | 0 | | | |
| | | | | 0 | | | At 73.6': R-Scale = R3 SC-2 collected 70.0-71.0' |
| 75 | 75.0 | | | 0 | | | |



LOGGER : AT/EM/LH

Rev. 5



| | |
|--|---|
| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-47</div> |
| SHEET 1 OF 12 | |
| <div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div> | |

| | |
|---|--|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (687003.1 N, 2012367.5 E) |
| ELEVATION : 264.5 ft MSL (NGVD 29) | DRILLING CONTRACTOR : Duggan, Trigon Engineering |
| DRILLING EQUIPMENT AND METHOD : B-57, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer | ORIENTATION : Vertical |

| | | | |
|--------------------|-----------------------|----------------------|----------------|
| WATER LEVELS : --- | START : 12/8/06 08:20 | END : 12/14/06 10:03 | LOGGER : EM/JS |
|--------------------|-----------------------|----------------------|----------------|

| WATER LEVELS: | | START: 12/08/06 10:25 | | END: 12/14/06 10:00 | | LOGGERS: EM/SC | | |
|---------------------------------|---------------|-----------------------|-----------------------------------|---------------------|--|----------------|---|--|
| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | | SYMBOLIC LOG | COMMENTS | |
| | RECOVERY (in) | #TYPE | | 6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | |
| | | | | | | | | |
| 264.5 | | | | | | | | |
| 5 259.5 | 3.8 | | | | Sandy Silt (ML) 3.8-4.2' - reddish brown, greenish gray mottling, dry to moist, hard, low to medium plasticity | | | |
| | 4.0 | SS1SS | 50/4 (50/4") | | | | | |
| | 5.8 | | | | | | | |
| | 6.3 6.5 | 3.0 | SS2SS | 50/3 (50/3") | Sandy Silt (ML) 6.3-6.5' - reddish brown, greenish gray mottling, dry to moist, very hard, low to medium plasticity Begin Rock Coring at 6.5 ft bgs See the next sheet for the rock core log | | Soil sampling completed at 09:45 on 12/8/06 | |
| 10 254.5 | | | | | | | | |
| 15 249.5 | | | | | | | | |
| 20 | | | | | | | | |

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| WATER LEVEL: | | DISCONTINUITIES | | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--------------|--|----------|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 10 254.5 < | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 3 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|---|----------------------|--|--|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 30 234.5 | 27.0 | R6HQ 5 ft 95% | 76* | 5 | 24.8' - Fracture, horizontal, smooth, stepped, <0.02' thick clay infilling, 0.05' relief (likely with in weak zone) | Siltstone 24.4-25.1' - dark reddish brown, very soft to soft, slightly weathered, very fine to fine grained, one fine to medium irregular sandstone lens 1 thick 24.8-25.1' - clayey lenses Sandstone 25.1-26.7' - dusky red, hard, slightly weathered, very fine to fine grained, 10-20% silt Siltstone At 26.7' - dark reddish brown, very soft to soft, very fine to fine grained 26.7-27.0' - slightly weathered 27.0-29.4' - green mottling, moderately weathered, harder with depth, 0-15% very fine sand Conglomerate 29.4-29.6' - soft, subrounded to rounded, moderately weathered, multicolored grains, siltstone matrix; 20-25% fine to coarse sand Siltstone At 29.6' - dark reddish brown, green mottling, very soft to soft, very fine to fine grained; trace very fine sand 29.6-30.4' - moderately weathered 29.6-31.8' - trace white clasts to 1/2 29.7-29.9' - large clast 30.4-51.0' - fresh 32.0-37.0' - soft, fine sand increase to 10-15% in last 2' 37.0-42.0' - dark reddish brown, trace purple and green mottling, soft, darker with depth; very fine sand increases with depth from 5-10% to 20%; scattered white irregular clasts to 3/8 with 5-10%, most in the last 2' | R6: 14:08-14:45 SC-1 collected 27.5-28.4' At 28.4': R-Scale = R3 At 28.5': R-Scale = R2 | | |
| | 5 | | | 25.1' - Fracture, horizontal, smooth, stepped, <0.01' thick clay infilling, bedrock fragments to 1/2 in size | | | | | |
| | 0 | | | 25.3' - Fracture, 80 deg, rough, undulating, black stains, 0.0007 relief | | | | | |
| | 2 | | | 25.9' - Fracture, horizontal, smooth, undulating, <0.0001' thick clay infilling, loose fit | | | | | |
| | 2 | | | 26.6' - Fractures, 50 deg, smooth, undulating 26.7-26.9' - Fractures (3), horizontal, smooth, undulating, little relief | | | | | |
| | 0 | | | 27.5' - Fractures, horizontal, smooth, undulating | | | | | |
| | 35 229.5 | 32.0 | R7HQ 5 ft 106% | 92 | 0 | | | 29.4' - Fracture, horizontal and 5 deg, loose fit 30.0' - Fracture, horizontal, rough, undulating, 0.0009' relief, loose 30.1' - Fracture, 10 deg, smooth, undulating, loose fit 30.4' - Fracture, horizontal, smooth, planar | At 31.1': R-Scale = R2 At 31.3': R-Scale = R2 R7: No time recorded At 32.9': R-Scale = R2 At 33.9': R-Scale = R3 |
| | | 0 | | | 34.7-34.9' - Fractures (3), horizontal and 5 deg, middle break at 5 deg. and has clay coating, <0.0002' thick, loose | | | | |
| | | 4 | | | 36.5' - Fracture, 70 deg, rough, undulating, tight fit | | | | |
| | | 1 | | | 36.7' - Fracture, horizontal and 5 deg, rough, undulating, tight fit | | | | |
| 1 | | 37.0' - Fracture, horizontal and 5 deg, rough, undulating | | | | | | | |
| 0 | | 37.2' - Fracture, horizontal and 5 deg, rough, undulating | | | | | | | |
| 40 224.5 | | 37.0 | R8HQ 5 ft 100% | 100 | 0 | 37.8' - Fracture, horizontal, smooth, undulating 38.8' - Fracture, horizontal and 5 deg, rough, undulating, tight fit | R8: 08:24-08:51 on 12/9/2006 At 41.0': R-Scale = R3 At 41.5': R-Scale = R3 R9: 09:13-09:48 At 42.7': R-Scale = R2-R3 Driller Remark: bit plugging up, mostly in last 2-3' At 43.0': R-Scale = R2-R3 | | |
| | | 0 | | | | | | | |
| | | 0 | | | | | | | |
| | | 0 | | | | | | | |
| | 0 | | | | | | | | |
| | 0 | | | | | | | | |
| | 45 219.5 | 42.0 | R9HQ 5 ft 100% | 70 | 0 | 43.4-43.4' - Fractures, horizontal, smooth, undulating | | SC-2 collected 44.5-45.3' | |
| | | 4 | | | 43.7' - Fracture, horizontal, smooth, planar | | | | |
| | | 3 | | | 43.9' - Fracture, horizontal, smooth, undulating, slickensided, over 60% of surfaces | | | | |
| | | 3 | | | 44.1' - Fracture, horizontal, smooth, undulating, slickensided over 10% of surface | | | | |
| | | 44.3' - Fracture, horizontal, smooth, undulating | | | | | | | |
| | | 44.5' - Fracture, horizontal, smooth, undulating | | | | | | | |
| | | 46.0-47.0' - 20% very fine sand | | | | | | | |

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| WATER LEVEL | | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 50 214.5 | 47.0 | 93 | 1 | 45.3' - Fracture, horizontal, rough, undulating, 0.0002-0.0003' relief | XXXXXX | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 5 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

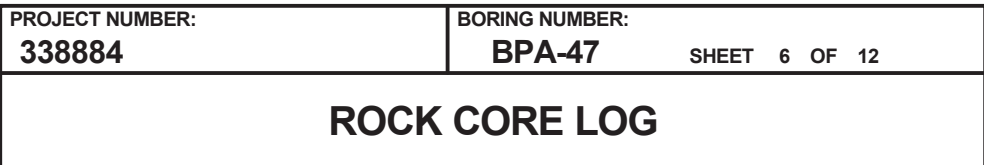
WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | |
|--|--|---|---|---|--|--|--|--|------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 70 194.5 | 67.0 | | XXXX | | X X X X X X X X X X X X | 60.8-61.2' - filled with red-brown siltstone | At 66.6': R-Scale = R2-R3 | | |
| | R14HQ 5 ft 100% | 0 | 62.0-67.0' - trace purple and green mottling, some with white centers, very fine to fine grained; trace very fine sand; trace white clasts harder than matrix | | | R14: 13:03-13:27 | | | |
| | | 0 | | | | At 68.0': R-Scale = R2-R3 | | | |
| | | 0 | | | | | | | |
| | | 0 | | | | At 69.2': R-Scale = R3-R4 | | | |
| | | 0 | | | | | | | |
| | 72.0 | | 0 | | | | X X X X X X X X X X X X | 72.0-77.0' - soft to hard, fine grained, 15-20% very fine sand | R15: 08:43-09:03 on 12/11/06 |
| | R15HQ 5 ft 100% | 0 | | | | | | Drillers Remark: last 1.5' drilled very fast, soft. SC-4 collected | |
| | | 0 | | | | | | 72.5-73.2' | |
| | | 0 | | | | | | At 73.8': R-Scale = R3 | |
| | | 2 | | | | | | At 74.4': R-Scale = R3 | |
| | | 77.0 | | | | | | 2 |  | X X X X X X X X X X X X | 75.7-76.6' - Fracture zone, horizontal and 80 deg, rough, undulating, 0.0003' thick clay infilling, 0.0002' relief, hard white coating ~0.0002' thick on both surfaces,(100% coverage) |
| R16HQ 5 ft 101% | 1 | 76.8-77.3' - Fracture, 80 deg, rough, undulating, 0.0002' relief | R16: 09:16-09:43 | | | | | | |
| | 3 | | At 78.1': R-Scale = R3 | | | | | | |
| | 3 | 78.9-79.0' - Fractures, horizontal, along possible bedding | | | | | | | |
| | 0 | 79.2' - Fracture, horizontal, rough, undulating, <0.0002' thick clay infilling, 1/2 relief <0.0002' | At 79.9': R-Scale = R2-R3 | | | | | | |
| | 0 | 79.5' - Fracture, horizontal, smooth, undulating, shiny appearance - mica rich | SC-5 collected | | | | | | |
| 82.0 | | 1 | | X X X X X X X X X X X X | 80.1-81.2' | | | At 80.1': R-Scale = R2 | |
| R17HQ 5 ft 98% | 81.2' - Fracture, horizontal, smooth, undulating | | | | | | | | |
| | 0 | | | | R17: 10:00-10:23 | | | | |
| | 0 | | | | At 82.9': R-Scale = R3 | | | | |
| | 0 | | | | At 83.5': R-Scale = R3 | | | | |
| | 0 | | | | | | | | |
| 85 179.5 | | | | | | X X X X X X X X X X X X | 84.5-90.5' - 20-25% very fine sand and trace to 10% white fine to medium sand (scattered) | | |



LOGGER : EM/JS

Rev. 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57. HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|---|----------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| | 107.0 | | 0 | | | | At 106.4': R-Scale = R3 |
| | | | 0 | | | | R22: 14:57-15:32 |
| | | | 1 | | | | At 107.7': R-Scale = R3 |
| | | | 2 | | | | At 108.2': R-Scale = R3 |
| 110 154.5 | R22HQ 5 ft 100% | 81 | 2 | 108.7' - Fracture, horizontal and 50 deg, slickensided, undulating, 40% slickensided | | 108.7-110.2' - gray and green mottling, soft, very fine to fine grained with trace very fine sand | |
| | | | 2 | 109.6' - Fracture, 50 deg, slickensided, 50% slickensided | | | |
| | | | 2 | 109.8' - Fracture, horizontal, smooth, undulating | | | |
| | | | 5 | 110.1' - Fractures (2), horizontal, slickensided, very smooth to slickensided | | | |
| | 112.0 | | | 111.2' - Fracture, 30 deg, slickensided, slickensided may be fossilized organics | | | SC-7 collected 110.1-111.2' |
| | | | 10+ | 111.7' - Fracture, 20 deg, smooth, shiny appearance, looks like fossilized leaves | | | |
| | | | 1 | 111.8-112.0' - Fractures (3), horizontal and 10 deg, <0.0001' thick, gray clay infilling, smooth, rough, slickensided | | | R23: No time recorded |
| | | | 1 | 112.2-112.5' - Fractures, horizontal and 10 deg, bedrock fragments, coarse sand to fine gravel sized; 1/4 gray clay seam mixed in some slickensided pieces | | | At 112.4': R-Scale = R3 |
| | | | 1 | 112.8-112.9' - Fractures, horizontal and 5 deg, slickensided | | | At 112.5': R-Scale = R3 |
| 115 149.5 | R23HQ 4.2 ft 95% | 64* | | 113.9' - Fracture, 40 deg, smooth, undulating, ~20% slickensided | | | |
| | | | 0 | 114.8' - Fracture, 40 deg, slickensided, undulating, ~60% slickensided | | | SC-8 collected 113.9-114.8' |
| | 116.2 | | | 115.1' - Fracture, horizontal and 5 deg, smooth, undulating | | | |
| | R23AHQ 0.8 ft 81% | 81 | | | | | At 115.6': R-Scale = R3 |
| | 117.0 | | | | | | R23A: Began at 08:47 on 12/12/06 |
| | | | 0 | | | | At 116.7': R-Scale = R2-R3 |
| | | | 0 | | | | R24: 09:12-09:46 |
| | | | 2 | | | | At 117.7' R-Scale = R4 |
| 120 144.5 | R24HQ 5 ft 101% | 99 | | | | | At 119.0': R-Scale = R3 |
| | | | 0 | | | | |
| | | | 0 | 120.8' - Fracture, horizontal, smooth, undulating, 1/2 relief, tight fit | | | |
| | 122.0 | | | 120.9' - Fracture, horizontal, smooth, undulating | | | At 121.6': R-Scale = R3 |
| | | | 0 | | | | R25: 10:05-10:30 |
| | | | 0 | | | | At 123.0': R-Scale = R3 |
| 125 139.5 | R25HQ 5 ft 103% | 100 | 0 | | | | At 125.0': R-Scale = R3 |
| | | | 1 | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 8 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 130 134.5 | R26HQ 5 ft 99% | 91 | 0 | 125.8' - Fracture, 55 deg, slickensided, planar, <0.5mm gap, very thin, very soft on rock scale | x x | Siltstone 127.0-128.9' - very dark gray to very dark greenish gray, soft, very fine to fine grained with up to 20% very fine sand; faint banding at 0 degrees Sandstone At 128.9' - dark reddish gray, soft to hard, fresh, fine sand, laminated to medium bedding | At 126.4': R-Scale = R2-R3 |
| | | | 0 | | x x | | R26: 10:49-11:14 |
| | | | 2 | 128.7' - Fracture, 10 deg, smooth, undulating | x x | | At 127.3': R-Scale = R3 |
| | | | 0 | 128.9' - Fracture, horizontal, smooth, undulating, tight fit | x x | | At 128.3': R-Scale = R3 |
| | | | 1 | 130.6' - Fracture, 20 deg, smooth, undulating | x x | | |
| | | | 0 | | x x | | At 130.7': R-Scale = R3 |
| 135 129.5 | R27HQ 5 ft 99% | 99 | 0 | | . | 131.6-131.6' - gray siltstone lens; abrupt contacts at 20 degrees 131.6-136.3' - fine to medium grained 132.0-136.3' - with lenses of 5-20% coarse grained material (up to several millimeters) 135.1-136.3' - medium sand to medium gravel, subrounded to subangular; some elongated pieces | R27: 11:33-11:53 |
| | | | 0 | | . | | SC-9 collected |
| | | | 0 | | . | | 132.0-133.1' |
| | | | 0 | | . | | At 133.1': R-Scale = R3 |
| | | | 0 | | . | | At 134.0': R-Scale = R5 |
| | | | 0 | | . | | |
| 140 124.5 | R28HQ 5 ft 100% | 90 | 0 | | x x | Siltstone 136.3-137.0' - weak red, soft to hard, fresh, fine grained; 40% very fine to fine sand 136.9-137.0' - siltstone clasts and medium to coarse sand Sandstone 137.0-141.1' - dusky red to pale red, soft to hard, fresh, 70% very fine to fine sand, 30% medium to coarse sand; gradual increases to up to 60% medium to coarse sand with some grains up to 0.1'; begins gradual transition to siltstone at 140.7 | R28: 13:00-13:26 |
| | | | 0 | | . | | |
| | | | 0 | | . | | |
| | | | 0 | 140.7-141.1' - Contact between siltstone and sandstone | . | | At 140.3': R-Scale = R3 |
| | | | 0 | | . | | At 140.8': R-Scale = R5 |
| | | | 5 | | x x | | |
| 145 119.5 | R29HQ 5 ft 99% | 92 | 5 | 141.6' - Fracture, 10 deg, smooth, undulating | x x | Siltstone At 141.1' - dark reddish brown, very soft to soft, fresh, very fine grained; trace of very fine sand; banded and laminated, horizontal bedding 142.0-147.0' - black and greenish gray mottling, up to 15% fine sand | R29: 14:00-14:37 |
| | | | 5 | 141.7' - Fracture, horizontal, rough, undulating | x x | | Driller's Remark: For 1st 5 min. did not go down |
| | | | 0 | 141.8' - Fracture, 10 deg, smooth, undulating | x x | | |
| | | | 0 | 141.9' - Fracture, horizontal, rough, undulating | x x | | |
| | | | 0 | 142.1' - Fracture, 30 deg, slickensided | x x | | |
| | | | 0 | 142.2' - Fracture, horizontal, rough, undulating | x x | | |
| | | | 0 | 142.2' - Fracture, horizontal, rough, undulating | x x | | At 144.0': R-Scale = R4 |
| | | | 0 | 142.4' - horizontal, small cracks | x x | | At 144.5': R-Scale = R5 |
| | | | 0 | 142.4' - Fracture, horizontal, smooth, undulating | x x | | |
| | | | 0 | 142.7' - Fracture, horizontal, smooth, undulating | x x | | |
| | | | 0 | | x x | | |
| | | | 0 | | x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 9 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

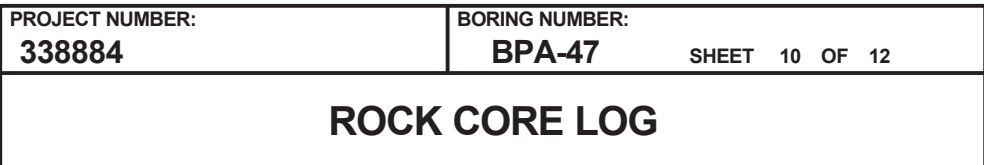
WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|---|--|-----------------------|-----------------------|--|----------------------|--|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 150 114.5 | 147.0 | | 0 | 150.0' - Fracture, horizontal, rough, undulating 150.1' - Fracture, horizontal, rough, undulating 150.3' - Fracture, horizontal, rough, undulating 150.3' - Fracture, horizontal, rough, undulating 150.5' - Fracture, horizontal, rough, undulating 150.8' - Fracture, horizontal, rough, undulating 150.9' - Fracture, horizontal, rough, undulating | x | 147.0-152.0' - black and greenish gray mottling, fine grained sand contact gradually decreases from 25% to trace after 149.6' | R30: 14:56-15:31 At 148.0': R-Scale = R5 | |
| | R30HQ 5 ft 104% | 86 | 0 | | x | | | |
| | | 0 | x | | | | | |
| | | 0 | x | | | | | |
| | | 0 | x | | | | | |
| | | 7 | x | | | | | |
| | 152.0 | 0 | x | | x | | | x |
| | | | x | | x | | | x |
| | | | x | | x | | | x |
| | | | x | | x | | | x |
| | | | x | | x | | | x |
| | 155 109.5 | R31HQ 5 ft 96% | 96 | | 0 | | | x | 152.0-157.0' - black and greenish gray mottling, soft, 15% fine grained sand; little to no mottling | At 151.5': R-Scale = R3-R4 R31: 15:54-16:22 |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 0 | | | x | | | | | |
| 157.0 | | 0 | x | x | x | 153.6-154.3' - up to 25% fine sand | At 154.0': R-Scale = R5 | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| 160 104.5 | | R32HQ 5 ft 102% | 100 | 0 | x | 157.0-162.0' - dusky red, soft to hard, little to no sand | R32: 07:48-08:09 on 12/13/06 | |
| | | | 0 | x | | | | |
| | 0 | | x | | | | | |
| | 0 | | x | | | | | |
| | 0 | | x | | | | | |
| | 162.0 | 0 | x | x | x | 158.4-159.3' - gradually increase in sand content with up to 10% sand | At 159.0': R-Scale = R5 | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | 165 99.5 | R33HQ 5 ft 90% | 70 | 1 | x | 159.3-162.0' - fine sand increases to 25% | At 163.0': R-Scale = R5 | |
| | | | 0 | x | | | | |
| 0 | | | x | | | | | |
| 3 | | | x | | | | | |
| 1 | | | x | | | | | |
| 164.2' - Contact between siltstone and sandstone, fairly sharp, 25 deg 164.9' - Fracture, horizontal, smooth, undulating 165.2' - Fracture, horizontal, smooth, undulating | | 0 | x | x | x | 161.5-161.6' - decrease in sand (10%) and band at 15 degrees 161.8-161.9' - 20% coarse sand with siltstone matrix | R33: 08:30-08:55 | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| | | | x | x | x | | | |
| 164.2' - Contact between siltstone and sandstone, fairly sharp, 25 deg 164.9' - Fracture, horizontal, smooth, undulating 165.2' - Fracture, horizontal, smooth, undulating | | 0 | x | x | x | 162.6-164.2' - dusky red, hard, fresh, gradual increase in fine to medium grained sand up to 70% with 5-10% coarse grained sand | At 164.0': R-Scale = R3 SC-10 collected 164.1-164.9' | |
| | | | x | x | x | | | |
| | x | | x | x | | | | |
| | x | | x | x | | | | |
| | x | | x | x | | | | |
| 164.2' - Contact between siltstone and sandstone, fairly sharp, 25 deg 164.9' - Fracture, horizontal, smooth, undulating 165.2' - Fracture, horizontal, smooth, undulating | 0 | x | x | x | 164.2-170.5' - fresh | | | |
| | | x | x | x | | | | |
| | | x | x | x | | | | |
| | | x | x | x | | | | |
| | | x | x | x | | | | |



LOGGER : EM/JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 11 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 187.0 | | | 0 | | | 183.3-185.1' - fine gravel, shaley/siltstone lenses up to 0.04' thick throughout | R38: 16:00-16:26 |
| | | | 0 | | | 184.8-185.1' - shale clasts | |
| | | | 0 | | | 185.1-186.8' - gradual change to more siltstone; faint banding of sand and silt bands ~0.02' thick; 50% sand at 185.1 to ~20% at 186.3 | At 188.0': R-Scale = R5 |
| | | | 0 | | | 186.8-187.0' - small pebbles up to 0.02'; ~10% coarse sand/pebbles, 35% fine to medium, silty matrix thin lenses ~0.01' thick of very fine sand and siltstone/claystone; subangular grains | At 189.0': R-Scale = R3 |
| 190 74.5 | R38HQ 5 ft 102% | 100 | 0 | | | 187.0-188.7' - gradual change from 70% fine to medium sand to ~25% fine sand | |
| | | | 0 | | | 188.1-188.7' - faint banding | |
| | | | 0 | | | 188.7-189.9' - silty matrix with 60% coarse grained sand | R39: 07:38-08:04 on 12/14/06 |
| | | | 0 | | | 188.7' - large shaley siltstone clasts | |
| | | | 0 | | | 189.1' - large shaley siltstone clasts | |
| | | | 0 | | | 189.7' - large shaley siltstone clasts | |
| | | | 0 | | | 189.8' - large shaley siltstone clasts | |
| 195 69.5 | R39HQ 5 ft 100% | 87 | 3 | 194.2-194.3' - Fractures, horizontal, smooth, undulating | | Siltstone | |
| | | | 0 | 194.6' - Fracture, 10 deg, smooth, undulating | | At 189.9' - dusky red, fresh, very fine to fine grained | |
| | | | 10+ | | | 189.9-192.0' - trace black mottling, soft to hard, ~10% very fine to fine sand; convoluted laminations of greater sand contact (up to 15%) | |
| | | | 4 | 196.4-196.6' - Fracture, horizontal and 10 deg, highly fractured, crumbled | | 192.0-197.0' - hard, laminae of black, olive, and dark gray, ~15% fine sand with lighter colored bands having up to 25% | SC-11 collected 196.6-196.8' |
| | | | 0 | 196.5' - Fracture, 45 deg, slickensided, perpendicular to 196.8' | | 194.3-195.9' - increase in sand up to 35% | R40: 08:25-09:07 |
| | | | 0 | 197.1' - Fracture, 45 deg and horizontal, smooth, undulating, partially slickensided | | 195.0-197.0' - very soft | |
| | | | 2 | 197.3' - Fracture, horizontal, rough, planar | | 195.9' - 0.01' thick sandstone lense with 75% fine to coarse sand and fine to medium gravel | |
| 200 64.5 | R40HQ 5 ft 99% | 87 | 2 | 197.4' - Fracture, horizontal, rough, planar | | 196.0' - very fine; little to no sand, laminated | |
| | | | 0 | | | 196.4' - dark gray, very fine possible shale-crumbles, fissile | |
| | | | 2 | 199.9' - Fracture, horizontal, rough, undulating, weak and fractioned in between | | 196.7' - becomes multi-colored breaking into sheets around fractures | R41: 09:30-10:03 |
| | | | 0 | 199.9' - Fracture, horizontal, rough, undulating, weak and fractioned in between | | 197.0-202.0' - olive, gray, dusky red, trace black mottling, very soft to soft, gradual increase in sand contact from 5-15% | |
| | | | 0 | 201.2' - Fracture, horizontal, rough, undulating | | 202.0-205.3' - soft to hard, gradual increase in sand to ~35%; at 205.3' to up to 75% fine sand | At 203.9': R-Scale = R3 |
| | | | 0 | 201.3' - Fracture, horizontal, rough, undulating | | 203.5-205.3' - black, gray, and dusky red laminae | At 204.5': R-Scale = R3 |
| 205 59.5 | R41HQ 5 ft 101% | 100 | 0 | | | | At 205.5': R-Scale = R3 |
| | | | 0 | 205.3' - Contact between siltstone and sandstone, sharp contact | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 12 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

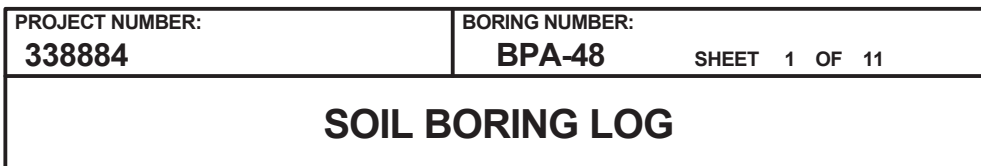
WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|--|-----------------|-----------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 207.0 | | | 0 | | | Sandstone 205.3-207.0' - dark gray, hard, fresh, fine to coarse grained; dusky red mottling; subangular grains, mostly feldspar, laminated bedding Bottom of Boring at 207.0 ft bgs on 12/14/06 10:03 | R-Scale performed during rock core logging |
| 210 54.5 | | | | | | | |
| 215 49.5 | | | | | | | |
| 220 44.5 | | | | | | | |
| 225 39.5 | | | | | | | |
| | | | | | | | |



LOGGER : RG/JS/EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-48

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

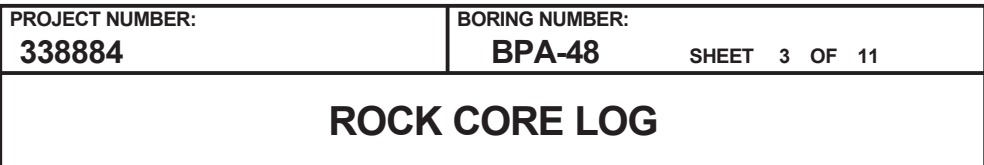
WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10.4 | R1HQ 1.6 ft 88% | 70 | 0 | | x x | Siltstone 10.4-36.6' - red, some black mottling (1/16-3/16"), fresh, fine grained, silts with some clays, 0.2 to 1.3 rock clasts over 5-10% core | Rock coring began at 09:46 on 11/29/06 |
| 12.0 | | | 0 | | x x | 12.0-17.0' - at 14.4' very fine sand (5-10%) matrix increasing to coarse sands at base (20-35%); laminated bedding | R1: 09:46-10:13 on 11/29/06 |
| | | | 1 | 12.3' - Fracture, natural break along laminated bedding | x x | | At 10.4-11.4': R-Scale = R3 |
| | | | 3 | 13.3' - Fracture, horizontal | x x | | R2: 10:45-11:27 |
| | | | 1 | 13.9' - Fracture, 1 deg and 2 deg, smooth, undulating | x x | | |
| 15 249.8 | R2HQ 5 ft 100% | 90 | 2 | 14.4' - Fracture, 5 deg, smooth, planar | x x | | |
| | | | 2 | 15.1' - Fracture, 5 deg, smooth, planar | x x | | |
| | | | 2 | 15.7' - Fracture, 5 deg, smooth, undulating | x x | | |
| | | | 2 | 16.3' - Fracture, 10 deg, smooth, planar | x x | | |
| | | | | 16.5' - Fracture, horizontal, smooth, planar | x x | | |
| | | | 2 | 17.5-17.6' - Fracture, horizontal, smooth, planar, along laminated bedding | x x | | R3: 12:11-12:52 |
| | | | 0 | | x x | | |
| | | | 2 | 19.2' - Fracture, horizontal, smooth, planar, along laminated bedding | x x | 18.5-19.1' - light gray, increased sand matrix | |
| 20 244.8 | R3HQ 5 ft 92% | 80 | 2 | 19.5' - Fracture, horizontal, smooth, planar, along laminated bedding | x x | | |
| | | | 2 | 20.1' - Fracture, horizontal, smooth, planar, along laminated bedding | x x | 20.1-20.7' - light gray, increased sand matrix | |
| | | | 0 | 20.3' - Fracture, horizontal, smooth, planar, along laminated bedding | x x | | |
| | | | | | x x | | |
| | | | 1 | 22.3' - Fracture, rough, stepped, ~0.002' relief | x x | | R4: 13:36-14:27 |
| | | | 0 | | x x | 23.0-23.6' - 10-20% gravel sized clastics (rock pieces) | |
| | | | 1 | 24.6' - Fracture, horizontal, rough, planar | x x | | |
| 25 239.8 | R4HQ 5 ft 100% | 100 | 2 | 25.3' - Fracture, 60 deg, rough, planar | x x | 25.4-26.2' - 15-20% medium to coarse grain sand matrix | SC-2 collected 23.6-24.7' |
| | | | 1 | 25.8' - Fracture, horizontal, rough, planar | x x | | |
| | | | | 26.4' - Fracture, horizontal, rough, planar | x x | | |
| | | | 0 | | x x | 27.0-36.6' - dusky red | R5: 15:18-16:06 |
| | | | 0 | | x x | | |
| | | | 1 | 29.3' - Fracture, rough, stepped, ~0.0003-0.001' relief | x x | | |
| 30 234.8 | R5HQ 5 ft 100% | 100 | | | x x | | |



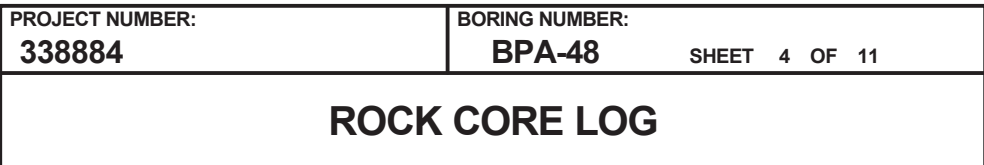
LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/JS/EM

Rev. 5



LOGGER : RG/JS/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 75 189.8 | R14HQ 5 ft 96% | 88 | 0 | 74.0' - Fracture, horizontal, rough, planar, break along laminated sand and fine bedding 75.3' - Fracture, horizontal, rough, planar 76.2' - Fracture, horizontal, rough, planar | 72.0-72.4' - 30-40% sandy matrix, gradational contact Sandstone 72.4-77.0' - very fine sand to coarse sand, poorly sorted, fresh, interbedded siltstone | R14: 16:50-17:25 At 72.4-77.0': R-Scale = R3-R4 SC-5 collected 74.0-74.8' | |
| | | | 2 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 1 | | | | |
| 80 184.8 | R15HQ 5 ft 96% | 80 | 1 | 77.2' - Fracture, horizontal, rough, undulating 77.4' - Fracture, horizontal, rough, undulating 77.6' - Fracture, horizontal, rough, undulating 79.5' - Fracture, horizontal, rough, stepped 80.0' - Fracture, horizontal, smooth, planar, breaks along areas contains rock clasts 80.4' - Fracture, horizontal, rough, stepped 81.4' - Fracture, horizontal, smooth, planar, break along siltstone laminations | Siltstone At 77.0' - gray mottling, undulating laminations 77.0-127.0' - fresh 77.7-78.3' - undulating laminations 78.8' - gray mottling 79.2-80.5' - 15-25% fine to coarse gravel sized clasts 80.5-82.0' - few pockets of gray mottling 82.0-93.3' - dusky red, undulating laminations | R15: 10:13-10:54 on 12/1/06 At 77.0-82.0': R-Scale = R3 | |
| | | | 3 | | | | |
| | | | 0 | | | | |
| | | | 2 | | | | |
| | | | 1 | | | | |
| | | | 1 | | | | |
| 85 179.8 | R16HQ 5 ft 100% | 100 | 1 | | | R16: 11:25-12:10 At 82.0-87.0': R-Scale = R3 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 90 174.8 | R17HQ 5 ft 100% | 100 | 0 | | | R17: 14:00-14:30 At 87.0-92.0': R-Scale = R3 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 6 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

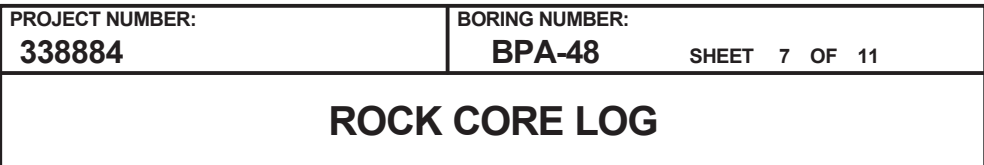
WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | |
|--|------------------------------------|-----------------|--------------------|--|--|--|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | |
| 95 169.8 | R18HQ 5 ft 100% | 95 | 0 | 93.2' - Fracture, horizontal, rough, planar, breaks along laminated bedding 94.0' - Fracture, horizontal, rough, planar, breaks along laminated bedding | x | 93.3-94.0' - 20-30% well sorted sands 94.0-95.0' - 5-10% clasts, 0.2 to 0.3 in size 95.0-97.0' - 0-5% clasts | R18: 15:45-16:28 | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| | | | 2 | | x | | | | | |
| | | | 0 | | x | | | | | |
| | | | 0 | | x | | | | | |
| 100 164.8 | R19HQ 5 ft 100% | 100 | 1 | | 102.0-103.0' - Fracture, microfractures filled with greenish gray infilling with mottling around | | | x | 97.0-102.0' - dark reddish brown, 10-20% greenish gray mottling 97.9-98.1' - slightly coarse grained 98.0-98.2' - soft, whitish pink clasts 98.9-99.0' - fine grained | R19: 09:00-09:10 At 97.9': R-Scale = R3 |
| | | | 0 | | | | | x | | |
| | | | 0 | | | | | x | | |
| | | | 0 | | | | | x | | |
| | | | 0 | | | | | x | | |
| | | | 0 | | | | | x | | |
| 105 159.8 | R20HQ 5 ft 100% | 100 | 0 | 107.4' - Fracture, <5 deg, rough, undulating, 0.01' thick | | x | 102.0-107.0' - dark reddish brown, fine grained, 0-35% medium grained sand, coarsens with depth 102.0-103.0' - greenish gray mottling 106.0-112.0' - soft to hard | At 101.5': R-Scale = R3 R20: 09:40-10:29 At 105.1': R-Scale = R3 At 105.9': R-Scale = R3 | | |
| | | | 0 | | | x | | | | |
| | | | 0 | | | x | | | | |
| | | | 0 | | | x | | | | |
| | | | 0 | | | x | | | | |
| | | | 0 | | | x | | | | |
| 110 154.8 | R21HQ 5 ft 98% | 98 | 1 | | 109.0' - up to 15% coarse grained sand 109.3' - very fine grained thin convoluted laminations | x | | | R21: 10:50-11:44 | |
| | | | 0 | | | x | | | | |
| | | | 0 | | | x | | | | |
| | | | 0 | | | x | | | | |



LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/JS/EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-48

SHEET 8 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|-------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 132.0 | | | 2 | 127.4-127.7' - Fracture zone, horizontal and 5 deg, stepped-laminated beds, but surfaces are smooth to slickensided and undulating, more fractures | x x x x | 130.3-131.5' - 30% very fine to fine sand | At 131.0': R-Scale = R3 |
| | | | 0 | | x x x x | 130.4-156.0' - fresh | |
| | | | | 127.8' - Fracture, horizontal, smooth, undulating | x x x x | | |
| | | | 0 | | x x x x | 132.0-136.5' - very fine to fine sand content varies from 5-10% to 30-35%, gradational contact with underlying siltstone | R26: 15:36-16:30 |
| | | | 0 | | x x x x | | |
| 135 | R26HQ 5 ft 90% | 90 | 0 | | x x x x | | At 133.7': R-Scale = R3-R4 |
| 129.8 | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | | | | 136.5-136.9' - Fracture zone, highly fractured crumbled held together with clay infilling up to 0.01' thick fracture surface | x x x x | Siltstone | R27: 10:24-11:00 |
| | | | 1 | | x x x x | At 136.5' - dark reddish brown, soft, very fine to fine grained, black mottling up to 15% throughout core 0.02' thick | |
| | | | 0 | | x x x x | 136.5-137.4' - some greenish gray mottling | |
| | | | 0 | | x x x x | | |
| 140 | R27HQ 5 ft 106% | 96 | 0 | | x x x x | | At 140.2': R-Scale = R3 |
| 124.8 | | | 0 | | x x x x | | |
| | | | 1 | 141.5' - Fracture, 10 deg, smooth, undulating | x x x x | | At 141.0': R-Scale = R3 |
| | | | | | x x x x | 142.0-147.0' - reddish brown, mottled dark reddish black and greenish gray, soft, very fine to fine grained | R28: 11:50-12:22 |
| | | | 0 | | x x x x | | At 142.2': R-Scale = R5 |
| | | | 0 | | x x x x | | |
| 145 | R28HQ 5 ft 102% | 100 | 0 | | x x x x | | At 144.4': R-Scale = R3 |
| 119.8 | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | | | | | x x x x | 147.0-147.6' - soft | R29: 28 minutes |
| | | | 0 | | x x x x | 147.6-152.0' - dark reddish brown, trace purple (to 1/4) and green mottling with a black thready center, soft, sand content varies; 20% very fine to fine sand with lenses of medium grained sand ~1 thick | At 147.6-152.0': R-Scale = R3 |
| | | | 0 | | x x x x | | |
| 150 | R29HQ 5 ft 99% | 92 | 0 | | x x x x | | At 148.9': R-Scale = R3 |
| 114.8 | | | | | x x x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-48

SHEET 9 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|-------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 152.0 | | | 0 | 150.3-150.9' - Fracture, 75 deg and vertical, hairline fractures through part of core | x x x x | | At 150.7': R-Scale = R3 |
| | | | 2 | 151.1-151.3' - Fracture | x x x x | 151.1-151.6' - soft to hard, 0.5 thick sand lens, up to 20% very fine to fine sand in matrix | R30: 29 minutes |
| | | | 0 | 151.6' - Fracture, horizontal, rough, planar, 0.0003' relief, tight fit | x x x x | 152.0-154.4' - soft to hard, up to 20-25% very fine to fine sand varies in matrix, 10% medium sand with several irregular lenses of medium sand to 30%, 1 thick | At 153.0': R-Scale = R3-R4 |
| | | | 0 | 151.9' - Fracture, 1 deg, rough, planar, 0.0003' relief, tight fit, trace dark orange spots to 1mm | x x x x | | |
| 155 109.8 | R30HQ 5 ft 99% | 99 | 0 | | x x x x | 154.4' - soft to hard, irregular shape; remainder of core is dark reddish gray, very fine to fine grained with 20% fines, red mottling to over 30%, material is irregularly banded with lighter and darker gray, grades to sandstone | At 156.3': R-Scale = R3 |
| | | | 0 | | x x x x | 155.0-155.2' - trace red mottling in a sandier zone | R31: 14:34-15:18 |
| 157.0 | | | 2 | 156.8' - Contact between siltstone and sandstone, horizontal, tightly healed | x x x x | Sandstone | At 157.3': R-Scale = R2 |
| | | | 0 | | x x x x | 156.0-156.8' - reddish gray, soft to hard, fine sand to medium sand, fresh, brownish gray lenses and many coarser grains are light gray, thin bedding | At 158.3': R-Scale = R2 |
| 160 104.8 | R31HQ 5 ft 100% | 96 | 0 | | x x x x | Siltstone | At 158.9': R-Scale = R2-R3 |
| | | | 1 | | x x x x | 156.8-157.0' - dark gray, very soft, fresh, very fine grained, laminated | |
| | | | 0 | | x x x x | Siltstone | At 161.1': R-Scale = R3 |
| | | | 0 | | x x x x | At 157.0' - dark reddish brown, green mottling, very soft to soft, fresh, very fine to fine grained | R32: 15:52-16:28 |
| | | | 0 | | x x x x | 157.9-159.3' - trace green mottles, soft, becomes more competent, 5-10% black mottling to 1/4 | At 162.7': R-Scale = R2 |
| | | | 0 | | x x x x | 159.3-160.0' - green mottling, very fine to fine grained | At 164.1': R-Scale = R2-R3 |
| 165 99.8 | R32HQ 5 ft 100% | 100 | 0 | | x x x x | 162.0-167.0' - trace green mottles to 1/4, soft to hard, very fine to fine grained | |
| | | | 0 | | x x x x | 162.5-164.5' - soft, 10-15% very fine to fine sand with irregular 1 lenses of 20-25% sand | At 165.6-165.9': R-Scale = R2 |
| | | | 1 | | x x x x | 165.0-167.0' - very soft to soft | R33: Finished at 16:40 |
| | | | 0 | | x x x x | 165.2-165.3' - patches of white clasts, to 1/4 in length, irregularly shaped | At 168.7': R-Scale = R2 |
| 167.0 | | | 1 | 166.5' - Fracture, horizontal, rough, undulating, 0.001' relief | x x x x | 165.6-166.5' - white clasts increase to 15% | At 169.3': R-Scale = R3 |
| | | | 0 | | x x x x | 166.5-167.0' - white clasts increase to 50% of area, harder than matrix | |
| | | | 0 | | x x x x | 167.0-167.3' - trace to 10% greenish white inclusions or mottles, soft, very fine to fine grained, trace very fine to fine sand | |
| 170 94.8 | R33HQ 5 ft 102% | 98 | 0 | | x x x x | 167.9-168.9' - trace to 10% greenish white inclusions or mottles | |

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57. HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| WATER LEVEL: 11 | | DISCONTINUITIES | | SYMBOLIC LOG | | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|-----------|--|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 175 89.8 | R34HQ 5 ft 100% | 100 | 0 | | | x | 172.0-174.3' - scattered green mottling, soft to hard, very fine to fine grained, trace very fine to fine sand | R34: 07:50-08:17 | |
| | | | 1 | 171.5-172.1' - Fracture, long | | x | | At 172.8': R-Scale = R3 | |
| | | | | 171.9' - Fracture, 80 deg, rough, undulating | | x | | | |
| | | | 0 | | | x | | | |
| | | | 0 | 173.0' - Little to few (<10%) microfractures with greenish gray mottling | | x | | | |
| | | | 0 | | | x | | | |
| | | | 0 | | | x | | | |
| | | | 0 | | | x | | | |
| | | | 0 | | | x | | | |
| | | | 0 | | | x | | | |
| 0 | | | x | | | | | | |
| 180 84.8 | R35HQ 5 ft 98% | 83 | 0 | | | . | 174.3-175.6' - very fine to fine sand lenses up to 85% | At 174.1': R-Scale = R2-R3 | |
| | | | | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| | | | 0 | | | . | | | |
| 185 79.8 | R36HQ 5 ft 100% | 60 | 6 | | | . | Sandstone At 175.6' - very dark gray, soft to hard, up to 50% fine sand 177.0-179.4' - gradual increase in grain size, with coarse grain sand (10%) 178.2-178.4' - gradual decrease in grain size 179.4-179.9' - greater increase in grain size with 10% coarse sand and small pebbles and up to 40% fine to medium sand Siltstone At 179.9' - dark reddish gray, very soft to soft, very fine to fine grained, laminated 180.2-181.0' - ~10% greenish gray, black mottling 182.0-187.0' - greenish gray mottling, very soft to soft, very fine to fine grained, little to no sand, slight fissile laminations | R35: 08:40-09:09 | |
| | | | 9 | 180.0' - Fracture, 50 deg, rough, undulating, over 50% whitish infilling | | . | | At 177.8': R-Scale = R3 | |
| | | | 0 | 181.2' - Fracture, horizontal, smooth, undulating | | . | | | |
| | | | 0 | 181.4-181.7' - Fractures (3), horizontal, rough, undulating, up to 0.01' thick clay infilling, easily crumbles, fissile | | . | | | |
| | | | 0 | 182.1' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 182.5' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 182.7-187.0' - Microfractures with greenish gray infilling | | . | | | |
| | | | 0 | 182.8' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 182.9' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 2 | 183.0' - Fracture, 60 deg, slickensided | | . | | | |
| 190 74.8 | R37HQ 5 ft 102% | 97 | 0 | 183.0' - Fracture, <5 deg, rough, undulating | | . | 187.0-192.0' - soft | R36: 09:30-10:45 | |
| | | | 0 | 183.0' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.2' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.3' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.4' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.5' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.6' - Fractures (2), <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.6' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.7' - Fracture, <5 deg, rough, undulating | | . | | | |
| | | | 0 | 183.9' - Fracture, 50 deg, slickensided | | . | | | |
| | | | 0 | 186.6' - Fracture, horizontal, rough, undulating, rounded, slickensided | | . | R37: 11:00-11:37 | | |
| | | | 0 | 186.7' - Fracture, horizontal, smooth, undulating to planar | | . | | | |
| | | | 0 | 187.3' - Fracture, horizontal, smooth, undulating | | . | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

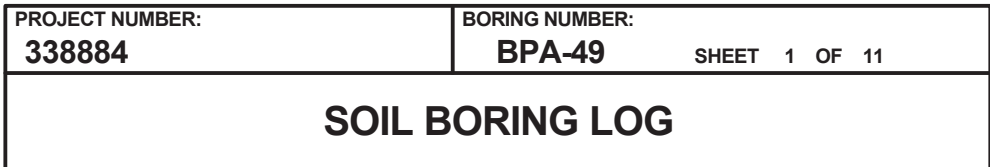
WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | 0 | | x | | At 190.5': R-Scale = R3 |
| | | | 0 | | x | | At 191.5': R-Scale = R3-R4 |
| 192.0 | | | | | x | | R38: 13:02-13:25 |
| | | | 0 | | x | 192.0-197.0' - dusky red, black mottling, soft to hard, gradual increase in grain size (sand content) | At 193.0': R-Scale = R3 |
| | | | 0 | | x | 192.0-193.0' - 10% sand | At 194.0': R-Scale = R3 |
| 195.8 | R38HQ 5 ft 100% | 100 | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | 196.0-197.0' - 50% sand | |
| 197.0 | | | 0 | | x | | |
| | | | 0 | | x | 197.0-202.0' - gradually becomes finer grained | R39: 13:40-13:59 |
| | | | 0 | | x | 197.0' - 50% fine to medium sand | |
| 200.8 | R39HQ 5 ft 96% | 96 | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 2 | 201.1' - Fracture, 65 deg, tight fit | x | | |
| 202.0 | | | | 201.2' - Fracture, 65 deg, rough, undulating | x | | |
| | | | | 201.3' - Fracture, horizontal, rough, undulating | x | | |
| | | | 0 | | x | 202.0-203.8' - soft to hard, 10% fine sand, 0.05' thick beds of finer gravel material | R40: 14:24-14:43 |
| | | | 0 | | x | 202.0-203.0' - dark reddish gray, mottled black and faint dark purple, soft to hard, 10-20% very fine sand/coarse silt, faint bedding <.04 to .1 thick, trace medium grained white sand, more in last 0.2' | At 202.9': R-Scale = R3 |
| 205.8 | R40HQ 3.7 ft 105% | 100 | 0 | | x | | At 204.5': R-Scale = R3 |
| | | | 1 | | x | | R-Scale performed during rock core logging. |
| 205.7 | | | | 205.4' - Fracture, horizontal, rough, undulating, 0.0003' relief, tight fit | x | | |
| | | | | | x | Sandstone 203.8-205.7' - dark reddish gray, mottled white, gray, and green, hard, medium sand to coarse sand, fresh, siltstone interbeds and clasts - dark reddish brown, irregular, up to 15 thick, cover ~40% area, fine grained, soft | |
| | | | | | x | Bottom of Boring at 205.7 ft bgs on 12/7/06 14:50 | |
| 210.8 | | | | | x | | |



LOGGER : RG/EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-49

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel






ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | |
|--|------------------------------------|---|---|---|---|--|--|--|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | |
| 20 241.9 | R1NQ 1.9 ft 95% | 83* | 1 | 19.6' - Contact between siltstone and sandstone |  | Siltstone 19.1-19.6' - dark red, soft, moderately weathered | Rock coring began at 14:04 on 12/7/06 R1: 14:04-14:10 At 19.0-19.6': R-Scale = R3-R4 At 19.6': R-Scale = R0-R1 At 20.3': R-Scale = R3-R4 R2: 14:40-14:52 At 23.1': R-Scale = R3-R4 | | | |
| | | | 0 | 19.6' - Fracture, smooth, undulating, 0.002' clay infilling, at siltstone-sandstone contract | | | | Sandstone 19.6-25.7' - white to pink, very soft, laminated bedding, fine sand to medium sand, moderately weathered, well sorted, moderately cemented, 30-40 degree laminations | | |
| | 21.0 | 98* | 2 | 26.0' - Fractures (5), rough, stepped | |  | | | | |
| | | | 0 | | | | | | | |
| | | | 0 | | | | | | | |
| | | | 0 | | | | | | | |
| | | | 0 | | | | | | | |
| | | | 0 | | | | | | | |
| | 25 236.9 | R2NQ 5 ft 100% | 58* | 4 | | 27.1' - Fracture, horizontal, smooth, planar, 0.1' clay infilling | |  | Shale 25.7-26.0' - dark bluish gray, very soft, moderately weathered, fissile, micaceous, weak cementation | At 25.7-26.0': R-Scale = R2 R3: 15:02-15:17 SC-3 collected 27.1-27.2' At 29.0-29.5': R-Scale = R1-R2 SC-1 collected 30.0-30.5' R4: 15:34-15:46 |
| | | | | 5 | | 27.4' - Fracture, rough, stepped, 0.05' clay infilling |  |  |  |  | Siltstone 26.0-28.5' - laminated bedding, moderately weathered, bedding on 20-30 degree angle |
| 3 | | 28.4' - Fracture, rough, stepped | Clay (CL) 28.5-29.0' - light to dark gray, moderately weathered | | | | | | | |
| 0 | | 28.9' - Fracture, 30 deg, rough, planar | | Siltstone 29.0-29.5' - dusky red, moderately weathered | | | | | | |
| 2 | | 29.0' - Fracture, horizontal, rough, planar, <0.002' clay infilling | Sandstone 29.5-32.2' - light bluish gray, fine sand to medium sand, moderately weathered, well sorted | | | | | | | |
| 31.0 | | 38* | | 1 | 31.0' - Fracture |  | Siltstone 32.2-36.3' - dusky red, 30-40% very fine to fine sand, well sorted 32.2-36.0' - moderately weathered | | | |
| | | | 5 | | | | | | | |
| | | | 1 | | | | | | | |
| | | | 4 | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 35 226.9 | R4NQ 5 ft 66% | 88 | 1 | 36.0' - Fracture, rough, stepped |  | 36.0-36.3' - slightly weathered | R5: 15:55-16:15 At 36.3-37.3': R-Scale = R1 At 37.3-41.0': R-Scale = R3-R4 | | | |
| | | | 2 | Siltstone 36.3-37.3' - gray, very soft, slightly weathered | | | | | | |
| | R5NQ 5 ft 100% | 0 | 0 | Siltstone 37.3-49.4' - dusky red, 30-40% very fine to fine sand, well sorted 37.3-49.1' - slightly weathered | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 3 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 40 221.9 | | | 1 | 39.0' - Fracture, rough, stepped, <0.002' clay infilling | x | | |
| | | | 0 | | x | | |
| 41.0 | | | 1 | | x | | |
| | | | 2 | | x | | |
| | R6NQ 5 ft 100% | 80 | 5 | 43.0' - Fracture, rough, stepped, <0.002' clay infilling | x | | |
| | | | 3 | 44.4-44.7' - Fractures (2) | x | | |
| 45 216.9 | | | 1 | | x | | |
| 46.0 | | | 3 | 45.9' - Fracture, rough, stepped, <3 mm relief 46.1-46.5' - Fractures (3), rough, undulating | x | 46.0-49.4' - dark dusky red, 25-30 degree laminations | R6: 16:30-16:43 SC-2 collected 41.0-41.6' |
| | | | 1 | | x | | |
| | R7NQ 5 ft 100% | 62 | 2 | 47.8' - Fracture, 30 deg, rough, planar, along laminations 48.0' - Fractures (2), 31 deg, rough, planar | x | | |
| | | | 10+ | 49.2' - Fracture, 30 deg, smooth, planar, along laminations 49.4-51.0' - Fractures, along laminations | x | 49.1-49.4' - highly weathered Clay (CL) 49.4-50.2' - dark brown, highly weathered | |
| 50 211.9 | | | 10+ | | x | Siltstone At 50.2' - dusky red, soft 50.2-51.0' - highly weathered 51.0-69.7' - slightly weathered | SC-4 collected 49.9-50.2' |
| | | | 1 | 51.8' - Fracture, smooth, planar | x | | R7: 08:41-08:58 At 46.0-49.4: R-scale = R3-R4 |
| | | | 0 | | x | | |
| | R8NQ 5 ft 100% | 59 | 10+ | 53.0-54.3' - Fractures | x | | |
| | | | 4 | 54.3-54.9' - Fractures (3), horizontal, rough, planar, <0.001' clay infilling, along laminations | x | | |
| 55 206.9 | | | 4 | 55.1-55.9' - Fractures (5), along laminations | x | | |
| 56.0 | | | 3 | | x | | |
| | | | 1 | 56.7-56.9' - Fractures (3), horizontal, rough, planar, <0.001' clay infilling, along laminations 57.0-57.3' - Fractures (2), 1 deg, rough, planar, along laminations | x | 56.7-56.9' - very soft 57.0-57.3' - very soft | R8: 09:21-09:41 At 51.0-56.0': R-scale = R3-R4 SC-5 collected 52.3-54.2' |
| | R9NQ 5 ft 100% | 67 | 5 | 58.3-59.5' - Fractures (8), horizontal, rough, planar, <0.002' clay infilling, along laminations | x | 58.3-58.9' - very soft | R9: 10:00-10:28 At 56.0-61.0': R-scale = R3-R4 At 56.7-56.9': R-Scale = R2 At 57.0-57.3': R-Scale = R2 At 58.3-58.9': R-Scale = R2 |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 4 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

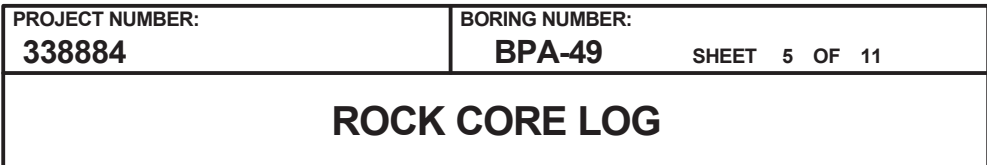
WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 60 201.9 | | | 4 | | x x x x | 59.3-59.5' - very soft, friable areas | At 59.3-59.5': R-Scale = R2 |
| | | | 0 | | x x x x | | At 60.3': R-Scale = R3-R4 |
| 61.0 | | | 1 | 61.2' - Fracture, smooth to rough, planar, <0.0007' clay infilling | x x x x | | R10: 10:48-11:05 |
| | | | 1 | 62.1' - Fracture, smooth, planar | x x x x | | |
| | R10NQ 5 ft 96% | 90 | 1 | 63.1' - Fracture, smooth, planar | x x x x | | |
| | | | 0 | | x x x x | | |
| 65 196.9 | | | 2 | 65.0' - Fracture, smooth, undulating, 9 mm relief | x x x x | | |
| 66.0 | | | x x x | 65.5' - Fracture, rough, planar | x x x x | | R11: 11:39-11:54 |
| | | | 0 | | x x x x | | |
| | | | 1 | | x x x x | | |
| | R11NQ 5 ft 100% | 82 | 1 | 67.8' - Fracture, rough, undulating 68.1' - Fracture | x x x x | 69.7-82.5' - fresh | At 66.0-76.0': R-scale = R3-R4 |
| | | | 9 | 69.2-69.7' - Fractures (9), rough, planar, along laminations | x x x x | | |
| 70 191.9 | | | 0 | | x x x x | | |
| 71.0 | | | 0 | | x x x x | | R12: 12:11-12:25 SC-6 collected 71.0-72.0' |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | R12NQ 5 ft 100% | 100 | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| 75 186.9 | | | 0 | | x x x x | | |
| 76.0 | | | 0 | | x x x x | | R13: 12:42-12:54 |
| | | | 0 | | x x x x | 76.0-82.5' - reddish gray to weak red, 20-30% very fine to fine sand, well sorted | |
| | | | 0 | | x x x x | | |
| | R13NQ 5 ft 100% | 100 | 0 | | x x x x | | |



LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 6 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

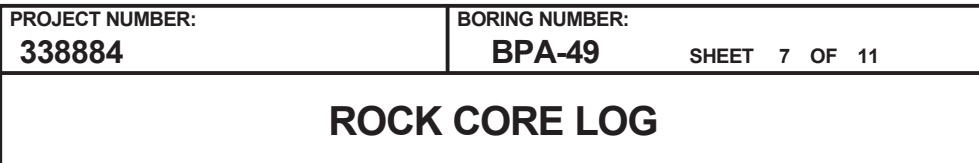
WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 100 161.9 | | | 2 | 99.6-99.8' - Fracture zone (3), rough, planar, <0.003' clay infilling, fractured siltstone | x | Siltstone At 99.6' - dusky red, soft, fresh | At 99.8-100.8': R-Scale = R3-R4 At 96.0-106.0': R-Scale = R3-R4 R18: 15:42-15:57 |
| | | | 1 | 100.1' - Fracture, rough, planar, <0.001' clay infilling | x | | |
| | 101.0 | | | | x | 101.8-102.4' - 10-20% medium grained sand, well sorted | SC-9 collected 103.0-104.0' |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | R18NQ 5 ft 100% | 100 | 0 | | x | | |
| | | | 0 | | x | | |
| 105 156.9 | | | 0 | | x | | |
| | | | 0 | | x | | |
| | 106.0 | | | | x | 106.0-111.0' - dusky red, soft, 20 degree laminations | R19: 08:38-08:52 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | R19NQ 5 ft 100% | 100 | 0 | | x | | At 106.0-111.0': R-scale = R3-R4 |
| | | | 0 | | x | | |
| 110 151.9 | | | 0 | | x | | |
| | | | 0 | | x | | |
| | 111.0 | | | | x | | R20: 09:13-09:32 |
| | | | 2 | 111.1' - Fracture, rough, stepped, ~5-10 mm relief | x | | |
| | | | 2 | | x | 113.0-116.0' - 10-15% very fine | At 112.9': R-Scale = R2 At 113.4': R-Scale = R3-R4 |
| | | | 2 | 112.8' - Fracture, rough, planar, <0.003' clay infilling | x | | |
| | R20NQ 5 ft 100% | 90 | 0 | | x | | |
| | | | 0 | | x | | |
| 115 146.9 | | | 1 | | x | 116.0-121.0' - dusky red to weak red, soft | R21: 09:44-10:04 |
| | | | 0 | 115.7' - Fracture, 15 deg, smooth, planar, break along bedding plane | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | R21NQ 5 ft 100% | 100 | 0 | | x | 117.6-118.2' - 20-30% fine to coarse grained sand | |
| | | | 0 | | x | | |



LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 8 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|----------------------------|---|--------------|---|--|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | |
| 140 | | | 0 | 149.4' - Fracture, 30 deg, rough, undulating 150.2' - Contact between siltstone and sandstone, 10 deg, sharp contact | . | Sandstone At 138.8' - soft, fine sand to medium sand, fresh, poorly to well sorted, laminated to medium bedding, laminae are soft to hard and discontinuous 139.6-139.7' - siltstone lens 140.0-140.1' - siltstone lens 141.0-143.7' - very fine sand to fine sand, well sorted 143.7-146.0' - fine to medium sand, well sorted to poorly sorted, 5-15% <0.002' rock clasts 146.0-150.2' - light to dark gray 146.1-146.2' - dark gray, fine sand and silt 146.2-146.9' - very coarse sand to fine gravel 146.9-150.2' - coarse sand | | At 139.4': R-Scale = R3-R4 | |
| 121.9 | | 0 | At 140.4': R-Scale = R3-R4 | | | | | | |
| | 141.0 | | 0 | | | | | R26: 12:58-13:10 | |
| | | | 0 | | | | | | |
| | R26NQ 5 ft 100% | 100 | 0 | | | | | At 143.0': R-Scale = R3-R4 | |
| | | | 0 | | | | | At 143.7': R-Scale = R3-R4 | |
| 145 | | | 0 | | | | | | |
| 116.9 | 146.0 | | 0 | | | | | | |
| | | | 0 | | | | | R27: Finished at 08:40 | |
| | | | 0 | | | | | At 146.9': R-Scale = R3 | |
| | R27NQ 5 ft 100% | 100 | 0 | | | | | At 148.2': R-Scale = R3 | |
| | | | 1 | | | | | SC-7 collected | |
| 150 | | | 0 | | | | | 149.5-150.2' | |
| 111.9 | 151.0 | | 0 | | | | | R28: 09:00-09:26 | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | R28NQ 5 ft 98% | 98 | 0 | | | | | | |
| | | | 0 | | | | | | |
| 155 | | | 0 | | | | | | |
| 106.9 | 156.0 | | 0 | | | | | R29: 09:43-10:04 | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | R29NQ 5 ft 98% | 88 | 0 | 158.0' - pale olive green, very soft to soft | | | | | |
| | | | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 9 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 160 101.9 | | | 10+ | 159.7' - Fracture, 10 deg, rough, undulating 160.1' - Fracture, 10 deg, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

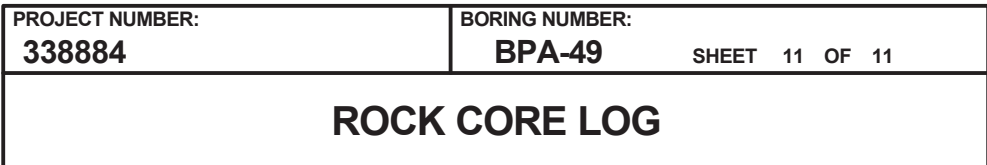
WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|---|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 180 81.9 | 181.0 R34NQ 5 ft 98% | 98 | 0 | 180.6' - Fracture, 25 deg, smooth, undulating | x x . | | |



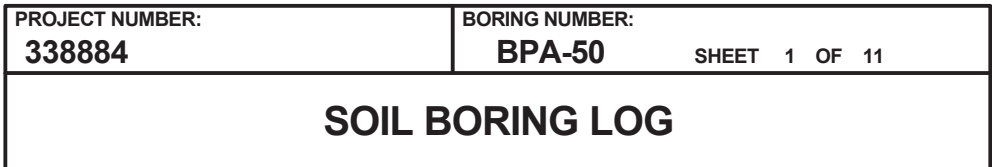
LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/EM

Rev. 5



LOGGER : RM/RG

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-50

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|----------------------|--------------------|---|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 20 253.0 | 15.2 R1HQ 1.4 ft 111% | 0 | 10+ | 15.2' - Fracture zone, rough, undulating | | At 15.2' - pale brown to brown, fine sand to medium sand, highly weathered, angular to subrounded, weakly cemented, micaceous, laminated to thick bedding | Rock coring began on 11/29/06 R1: 5 min 26 sec Cutting in 3rd gear At 15.2-16.5': R-Scale = R1 R2: 10 min 40 sec | |
| | 16.5 | | 0 | 16.5-21.5' - Fracture zone, rough, planar 17.0-17.3' - Fracture, 60 deg, rough, planar, black stains | | | | |
| | | | 10+ | | | | | |
| | | | 10+ | | | | | |
| | | R2HQ 5 ft 100% | 0 | 10+ | | | | |
| | | | 10+ | | | | | |
| | | | 10+ | | | | | |
| | 21.5 | | | | | | | 20.5-21.5' - light reddish brown, highly weathered |
| | | | | | | | | 21.5-25.4' - very pale to pale brown, soft, fine sand to medium sand, moderately weathered, moderately to poorly sorted, subangular to subrounded, laminated bedding |
| | | | | | | | | |
| 25 248.0 | | | 0 | | | | R3: 15 min 10 sec | |
| | | | 0 | | | | | |
| | | R3HQ 5 ft 100% | 97* | 1 | 24.4' - Fracture, horizontal, rough, undulating | | | |
| | | | 3 | 25.0' - Fracture, rough, undulating 25.2' - Fracture, horizontal and 45 deg, rough, planar 25.5' - Fracture, horizontal, smooth, planar, 0.0003' greenish gray clay infilling | | At 24.8': R-Scale = R2 | | |
| | | | 3 | | | At 25.4-26.2': R-Scale = R1-R2 | | |
| | 26.5 | | 1 | | 26.2-26.5' - dark reddish brown, moderately weathered, soft, laminated | At 26.3-26.5': R-Scale = R0 At 26.5-27.4': R-Scale = R1 R4: 17 min 10 sec | | |
| | | | 10+ | | 26.5-27.4' - brown, moderately weathered | At 27.4-29.2': R-Scale = R2 | | |
| | | R4HQ 5 ft 100% | 71* | 1 | 28.2' - Fracture, <30 deg, smooth, planar, slickensided over 30-40% | At 28.6': R-Scale = R2 | | |
| | | | 1 | 29.2' - Fracture, horizontal, smooth, undulating | | At 29.2-29.9': R-scale = R0 At 29.3' PP: 1.0 tsf SC-11 collected 29.3-29.8' | | |
| | | | 0 | | 31.3' - Fracture, horizontal, smooth, stepped, loose fit 31.4' - Fracture, 1 deg, smooth, stepped, loose fit 32.1' - Fracture, horizontal, smooth, stepped, loose fit 32.5' - Fracture, 30 deg, smooth, stepped, loose fit 33.3' - Fracture, <20 deg, smooth, planar, weakly slickensided, tight fit | At 29.9-31.5': R-Scale = R2 At 30.4': R-Scale = R2 At 31.1': R-Scale = R2 R5: 21 min. 0 sec At 31.5-32.2': R-scale = R2/R3 At 31.9': R-Scale = R1 At 32.2-32.5': R-Scale = R0 At 32.3': R-Scale = R0 At 32.5-34.3': R-Scale = R2-R3 SC-12 collected 32.5-33.0' | | |
| 30 243.0 | | | 2 | | | | At 32.9': R-Scale = R2-R3 | |
| | | | 2 | | | | | |
| 35 | | | 1 | | | | | |
| | | R5HQ 5 ft 99% | 80 | 3 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 4 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 56.5 | | | 0 | | x x x x | Sandstone 53.8-54.1' - light reddish brown to pale red, fresh, very fine grained, laminae siltstone, interbedded convoluted bedding, laminated bedding | SC-2 collected 55.9-56.5' |
| | | | 0 | | x x x x | Siltstone 54.1-58.6' - dark reddish brown, mottled dark red and reddish gray, soft, laminated bedding, fresh, convoluted bedding | At 55.9': R-scale = R3 R10: 18 min 18 sec At 57.4': R-Scale = R3 |
| | R10HQ 5 ft 100% | 100 | 0 | | x x x x | Sandstone 58.6-61.5' - light reddish gray to dark reddish gray, soft, medium bedding, fine sand, subangular to subrounded, fresh, moderately sorted, 20 degree dip in bedding | |
| 60 213.0 | | | 0 | | x x x x | 59.5-61.5' - interbedded with siltstone | |
| 61.5 | | | 0 | | x x x x | | At 60.8': R-Scale = R2-R3 At 61.1': R-Scale = R2-R3 |
| | | | 1 | 61.9' - Fracture, horizontal, rough, stepped, tight fit | x x x x | Shale 61.5-61.6' - black to very dark gray, mottled white, laminated bedding, fresh, some grains are visible | R11: 13 min 56 sec At 61.6-68.3': R-Scale = R2 SC-3 collected 61.5-61.9' |
| | | | 0 | | x x x x | Sandstone At 61.6' - light gray, soft, laminated to medium bedding, fine sand, subangular to subrounded, fresh, cross-bedded in areas, poorly to moderately sorted, occasional coarse sand intervals | At 62.6': R-Scale = R2 At 63.2': R-Scale = R2 SC-13 collected 63.1-63.9' |
| 65 208.0 | R11HQ 5 ft 99% | 100 | 0 | | x x x x | | At 64.0': R-Scale = R2 |
| 66.5 | | | 0 | | x x x x | | At 65.6': R-Scale = R2 |
| | | | 0 | | x x x x | | R12: 17 min 38 sec |
| | | | 1 | | x x x x | | At 67.1': R-Scale = R2-R3 SC-5 collected 67.1-67.7' |
| | R12HQ 5 ft 98% | 97.8 | 0 | 68.3' - Contact between siltstone and sandstone, horizontal, rough, undulating, <0.0004" clay infilling, greenish gray stains | x x x x | Siltstone At 68.3' - dark reddish brown to weak red, soft, fresh | At 68.3-71.5': R-Scale = R3 At 68.9': R-Scale = R3 |
| 70 203.0 | | | 1 | 69.9' - Fracture, 70 deg, rough, stepped | x x x x | | |
| | | | 0 | | x x x x | | At 70.7': R-Scale = R3 |
| 71.5 | | | 2 | 71.5' - Fracture, 30 deg, rough, planar, inclined | x x x x | | R13: 27 min 47 sec |
| | | | 4 | 72.2' - Fracture, horizontal, smooth, planar, loose fit 72.7' - Fracture, horizontal, smooth, planar, loose fit | x x x x | | |
| | | | 0 | 72.8' - Fracture, horizontal, smooth, stepped, loose fit | x x x x | | |
| | R13HQ 5 ft 103% | 96 | 0 | 72.9' - Fracture, horizontal, smooth, planar | x x x x | | At 74.0': R-Scale = R3 |
| 75 | | | 0 | 73.0' - Fracture, horizontal, smooth, planar, tight fit | x x x x | | At 74.9': R-Scale = R3 |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-50

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 76.5 | | | 0 | | x | | At 76.1': R-Scale = R3 |
| | | | 0 | | x | 76.5-81.5' - dusky red to very dusky red, mottled greenish gray, soft | R14: 25 min 34 sec |
| | | | 0 | | x | | At 76.5-81.5': R-scale = R2-R3 |
| | | | 0 | | x | | At 77.1': R-Scale = R2-R3 |
| | | | 0 | | x | | At 78.2': R-Scale = R3 |
| 80 | R14HQ 5 ft 100% | 86 | 0 | 79.0' - Fracture, horizontal, smooth, stepped, tight fit | x | 79.2' - clay seam, reddish brown, soft | |
| 193.0 | | | 3 | 79.1' - Fracture, horizontal, smooth, planar, trace clay infilling, tight fit | x | | |
| | | | 0 | | x | | SC-4 collected |
| 81.5 | | | 2 | 81.2' - Fracture, horizontal, rough, stepped, loose fit | x | 81.5-84.0' - dusky red, mottled greenish gray, laminated bedding, irregular bedding on 20 degree angle | 80.7-81.2' |
| | | | 0 | 81.5' - Fracture, horizontal, rough, stepped, tight fit | x | | At 80.7': R-scale = R2-R3 |
| | | | 0 | 82.5' - Fracture, horizontal, rough, stepped, tight fit | x | | R15: 24 min 19 sec |
| | | | 1 | | x | | At 82.1': R-Scale = R2-R3 |
| | | | 10+ | | x | | At 82.4': R-Scale = R2-R3 |
| 85 | R15HQ 5 ft 100% | 93 | 1 | 84.0' - Fracture, 15 deg, rough, stepped, inclined, tight fit | x | 84.0-86.5' - mottled greenish gray to dusky red, soft, laminated bedding, grades to fine grained sand | At 83.2': R-Scale = R2-R3 |
| 188.0 | | | 0 | 84.5-84.9' - Fracture zone (3), smooth, stepped, <0.0004" clay infilling, weakly slickensided | x | 84.5-84.9' - very soft | At 84.0-86.5': R-scale = R2-R3 |
| | | | 0 | | x | | At 84.5-84.9': R-Scale = R0 |
| | | | 1 | 86.6' - Fracture, horizontal, rough, undulating | x | Siltstone | At 85.4': R-Scale = R2-R3 |
| | | | 0 | | x | 86.5-95.8' - very dark greenish gray, soft, fresh | At 85.8': R-Scale = R2-R3 |
| | | | 0 | | x | | R16: 18 min 50 sec |
| | | | 0 | | x | | At 86.5-91.5': R-Scale = R2-R3 |
| | | | 0 | | x | | At 87.1': R-Scale = R2-R3 |
| | | | 0 | | x | | At 88.1': R-Scale = R2-R3 |
| | | | 0 | | x | | At 88.7-88.9': R-Scale = R2 |
| 90 | R16HQ 5 ft 100% | 98 | 0 | | x | 89.5-95.8' - reddish brown laminae alternating with dark greenish gray laminae | At 90.0': R-Scale = R2-R3 |
| 183.0 | | | 0 | | x | | |
| | | | 0 | | x | | At 91.1': R-Scale = R2-R3 |
| | | | 0 | | x | 91.5-95.8' - mottled reddish brown | R17: 18min 24 sec |
| | | | 0 | | x | | |
| | | | 0 | | x | | At 92.8': R-Scale = R3 |
| | | | 1 | 93.7' - Fracture, horizontal, smooth, planar, tight fit | x | | At 93.3': R-Scale = R3 |
| 95 | R17HQ 5 ft 96% | 94 | 1 | | x | | |
| | | | 1 | | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-50

SHEET 6 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |  |  | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 100 173.0 | 96.5 | 100 | 1 | 94.6' - Fracture, 50 deg and 60 deg, rough, stepped, loose fit | <div><div><div>Sandstone</div><div>95.8-96.0' - dark greenish gray, soft, fine sand, subangular to subrounded, fresh, moderately to poorly sorted</div><div>Shale</div><div>96.0-96.5' - dark greenish gray, soft, fresh</div><div>Siltstone</div><div>96.5-101.5' - very dark greenish gray, soft, fresh</div></div><div>101.0-101.5' - slightly coarser</div></div> | At 95.2': R-Scale = R3 | |
| | | | 1 | 96.2' - Fracture, horizontal, smooth, planar, loose fit | | R18: 16 min | |
| | | | 0 | | | At 97.3': R-Scale = R2 | |
| | | | 0 | 98.6' - Fracture, 20 deg, smooth, stepped, tight fit | | At 98.1': R-Scale = R2 | |
| | | | 1 | | | | |
| | 101.5 | 76 | 1 | 100.4' - Fracture, 20 deg and 80 deg, smooth, undulating, tight fit 100.9' - Fracture, 60 deg, rough, stepped | | | At 101.4': R-Scale = R3 R19: 14 min 15 sec At 102.2': R-Scale = R3 |
| | | | 0 | | | | |
| | | | 1 | 103.3' - Fracture, 50 deg and vertical, rough, stepped, ~1.1' long fracture | | | |
| | | | 2 | 104.5' - Fracture, 60 deg and 60 deg, rough, undulating, tight fit 104.9' - Contact between siltstone and sandstone, sharp, undulating | | | |
| | | | 2 | 106.0' - Fracture, <10 deg and 20 deg, smooth, planar, weakly slickensided, grayish clay on 10-15% surface, loose fit 106.0' - Fracture, 60 deg and 20 deg, rough, planar, trace white infilling 107.4' - Fracture, horizontal, rough, stepped, 0.0003' clay infilling, reddish brown stains 107.7' - Fracture zone, 45 deg and 60 deg, rough, stepped, horizontal to inclined, tight fit 108.4' - Fracture, horizontal, rough, stepped 108.9' - Fracture, horizontal, rough, stepped | | | |
| 105 168.0 | 62* | 1 | | <div><div><div>Siltstone</div><div>104.9-106.0' - dusky red, mottled reddish gray, soft, fresh</div><div>Shale</div><div>106.0-106.3' - greenish black, soft, laminated bedding, fresh</div><div>Siltstone</div><div>106.3-108.0' - dark reddish gray, soft, reddish brown laminae</div><div>106.3-107.1' - fresh</div><div>107.1-108.0' - slightly weathered to moderately weathered</div><div>Gravelly Clay (CL)</div><div>108.0-108.9' - dark reddish brown to reddish gray, soft, slightly weathered to moderately weathered, abundant rock fragments</div><div>Siltstone</div><div>At 108.9' - dark reddish brown to reddish gray, soft</div><div>108.9-111.5' - slightly weathered to moderately weathered</div><div>111.5-116.5' - very thin bedding, fresh</div></div></div> | SC-6 collected 106.0-106.3' At 105.5': R-Scale = R3 At 106.0-106.3': R-Scale = R0 At 106.4': R-Scale = R3 R20: 24 min 33 sec | | |
| | | 2 | | | | | |
| | | 1 | | | SC-7 collected 108.0-108.9' At 108.3-108.6' PP: 1.0 tsf | | |
| | | 0 | | | | | |
| | | 5 | | | | | |
| 110 163.0 | 111.5 | 86 | 3 | 110.7' - Fracture, horizontal, smooth, planar, <0.0002" clay infilling 110.8' - Fracture, 60 deg and 50 deg, rough, stepped, horizontal to inclined, loose fit 110.8' - Fracture, horizontal, rough, stepped 111.0' - Fracture, 1 deg, rough, stepped 111.1' - Fracture zone, rough, stepped 111.1' - Fracture, horizontal, smooth, stepped, loose fit | | R21: 23 min 15 sec At 112.3': R-Scale = R3 | |
| | | | 0 | | | | |
| | | | 1 | | At 113.4': R-Scale = R3 | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 115 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 7 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

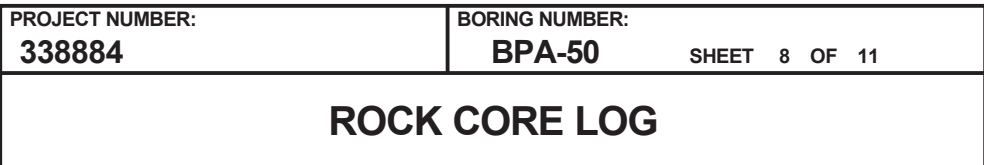
WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---------------------------------|--|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 120 153.0 | 116.5 | | 1 | 116.3' - Fracture, horizontal, rough, stepped | x x x x x x x | 116.5-136.5' - brownish red, fresh | At 115.5': R-Scale = R3 | |
| | R22HQ 5 ft 98% | 82 | 0 | | x x x x x x x | | 117.7-117.9' - mottled gray | R22: 08:30-08:55 At 116.5-121.5': R-scale = R1-R2 At 117.3': R-Scale = R1-R2 At 117.8': R-Scale = R3 |
| | | | 2 | | x x x x x x x | | | |
| | | | 5 | 118.4' - Fracture, horizontal and 3 deg, rough, stepped, 0.001-0.003' relief 118.6' - Fracture, horizontal and 3 deg, rough, stepped 119.0' - Fracture, horizontal and 2 deg, rough, planar, (medium -hard), 0.07' thick laminated layering | x x x x x x x | At 118.6-119.0': R-Scale = R0-R1 | | |
| | | | 2 | | x x x x x x x | | | |
| | | | 0 | | x x x x x x x | | | |
| | 121.5 | | | | x x x x x x x | | | |
| 125 148.0 | R23HQ 5 ft 92% | 68 | 4 | 122.0' - Fracture, 60 deg, rough, planar 122.1' - Fracture, horizontal, rough, planar, laminated, platy bedding 122.3' - Fracture, 1 deg, rough, planar, laminated, platy bedding 122.4' - Fracture, 2 deg, rough, planar, laminated, platy bedding 122.5' - Fracture, 3 deg, rough, planar 123.5' - Fracture, 4 deg, rough, planar 124.5' - Fracture, horizontal, smooth, planar | x x x x x x x | R23: 09:18-09:44 | | |
| | | | 2 | | x x x x x x x | | | |
| | | | 1 | | x x x x x x x | | | |
| | | | 1 | | x x x x x x x | | | |
| | | | 3 | | x x x x x x x | | | |
| | 126.5 | | | 125.7' - Fracture, 60 deg, smooth, planar, slickensided 126.1' - Fracture, 20 deg, slickensided, planar | x x x x x x x | | | |
| | R24HQ 5 ft 100% | 92 | 2 | 127.3' - Fracture, horizontal, rough, planar | x x x x x x x | R24: 10:18-10:35 At 126.5-131.5': R-scale = R3 SC-9 collected 126.5' | | |
| 1 | | | | x x x x x x x | | | | |
| 0 | | | | x x x x x x x | | | | |
| 0 | | | | x x x x x x x | | | | |
| 0 | | | | x x x x x x x | | | | |
| 131.5 | | | | x x x x x x x | | | | |
| 135 | R25HQ 5 ft 100% | 100 | 0 | | x x x x x x x | R25: 10:59-11:18 SC-8 collected 132.4-133.2' | | |
| | | | 0 | | x x x x x x x | | | |
| | | | 0 | | x x x x x x x | | | |
| | | | 0 | | x x x x x x x | | | |
| | | | 0 | | x x x x x x x | | | |



LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RM/RG

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 9 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 156.5 | | | 0 | | x x x x | Siltstone 155.4-156.9' - dark reddish brown, fresh | R30: 10:40-10:52 |
| | | | 0 | | x x x x | 156.3-156.5' - soft, 20-30% medium to coarse sand | |
| | | | 0 | | x x x x | Sandstone 156.9-165.5' - light gray, soft, medium sand to coarse sand, fresh, poorly to well sorted | |
| 160 113.0 | R30HQ 5 ft 100% | 100 | 0 | | | | At 157.3': R-Scale = R3.5 |
| | | | 0 | | | | |
| 161.5 | | | 0 | | | | At 160.8': R-Scale = R3.5 |
| | | | 0 | | | | R31: 11:13-11:52 |
| | | | 0 | | | | |
| | | | 1 | | | 162.5-164.5' - becomes coarser grained | |
| 165 108.0 | R31HQ 5 ft 100% | 100 | 1 | 164.5' - Contact between siltstone and sandstone, 30 deg, smooth, planar | | 164.5-165.5' - interbedded siltstone laminae until contact | |
| | | | 0 | 165.5' - Fracture, 40 deg, smooth, planar, broke at contact of siltstone and sandstone interbed | | | |
| 166.5 | | | 0 | | x x x x | Siltstone 165.5-171.5' - dark reddish brown, fresh, well sorted, 10-20% very fine to fine sand | R32: 12:16-12:40 |
| | | | 0 | | x x x x | 166.9-167.4' - 5-10% dark pinkish clasts, soft | |
| | | | 0 | | x x x x | 167.8-169.4' - 5-10% dark pinkish clasts (0.0003-0.004' in size), soft | |
| 170 103.0 | R32HQ 5 ft 100% | 100 | 0 | | | | At 169.7': R-Scale = R3.5 |
| | | | 0 | | | | |
| | | | 1 | | | | |
| 171.5 | | | 0 | | | Sandstone 171.5-174.0' - very dark gray, soft, fresh, very fine grained to cryptocrystalline quartz matrix with fine to medium quartz grains dispersed throughout, muscovite mica grains | R33: 13:35-13:54 |
| | | | 0 | | | | At 172.5': R-Scale = R3-R3.5 |
| | | | 0 | | | | At 173.3': R-Scale = R3-R3.5 |
| | | | 0 | | | Sandstone At 174.0' - bluish gray, soft, fine sand to medium sand, fresh, well sorted | At 173.5': R-Scale = R3-R3.5 |
| 175 | R33HQ 5 ft 100% | 100 | 0 | | | | |
| | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 176.5 | | | 0 | | | | At 174.0-176.5': R-Scale = R3.5 |
| | | | 0 | | | 176.5-181.5' - dark reddish gray, soft, very fine sand, well sorted | At 174.5': R-Scale = R3-R3.5 |
| | | | 0 | | | | R34: 14:14-14:32 |
| | R34HQ 5 ft 100% | 100 | 0 | | | | At 177.9': R-Scale = R3.5 |
| 180 93.0 | | | 0 | | | | |
| | | | 0 | | | | At 180.4': R-Scale = R3.5 |
| 181.5 | | | 0 | | | 181.0-181.5' - laminated bedding, fine sand to medium sand, 0.0003-0.0006' siltstone laminae, 40-50 degree bedding | R35: 15:03-15:23 |
| | | | 0 | | | 181.5-186.5' - light bluish gray, laminated bedding, fine sand to medium sand, well sorted | |
| | R35HQ 5 ft 100% | 100 | 0 | | | 181.5-182.5' - laminae on 15 degree angle | |
| 185 88.0 | | | 0 | | | 183.7-184.9' - laminae on 25 degree angle | |
| | | | 0 | | | | |
| 186.5 | | | 3 | 186.8' - Fracture, horizontal, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations | | Siltstone | R36:15:43-16:07 |
| | | | 0 | 186.9' - Fracture, 1 deg, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations | | 186.5-198.7' - dusky red, soft, laminated bedding, fresh, 5-10% gravel sized clasts | At 186.5-191.5': R-scale = R3.5 |
| | R36HQ 5 ft 100% | 91 | 1 | 187.2' - Fracture, 2 deg, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations | | | |
| 190 83.0 | | | 1 | 189.3' - Fracture | | | |
| | | | 0 | 190.4' - Fracture | | | |
| 191.5 | | | 0 | | | | R37: 16:28-16:51 |
| | | | 0 | | | | At 192.4': R-Scale = R4 |
| | R37HQ 5 ft 97% | 93 | 0 | | | | |
| 195 | | | 0 | | | | At 194.3': R-Scale = R4 |



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| | | | 0 | | x x x x | | SC-10 collected 195.5-196.2' |
| 196.5 | | | x x x x | | x x x x | 196.5-198.7' - very dusky red | At 195.5': R-scale = R4 |
| | | | 0 | | x x x x | | R38: 08:57-09:11 |
| | | | 0 | | x x x x | | |
| | R38HQ 5 ft 100% | 100 | 0 | | x x x x | 198.0-198.7' - 30-40% very fine to fine sand, well sorted | |
| 200 | | | 0 | | x x x x | Sandstone | At 198.8': R-Scale = R3.5 |
| 73.0 | | | 0 | | x x x x | 198.7-203.8' - fine sand to coarse sand, fresh, 0.0003-0.004' fine sediment layers (10-20%), poorly sorted, 20-25 degree bedding | |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | 201.5-203.8' - dark gray, very fine sand to coarse sand, 35 degree bedding | R39: 11:46-12:02 |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | R39HQ 5 ft 100% | 100 | 0 | | x x x x | Sandstone | At 203.4': R-Scale = R3.5 |
| 205 | | | 0 | | x x x x | 203.8-205.1' - very dark bluish gray, soft, fresh, 50% fines and sands (fine to medium grained, well sorted) | At 203.8-205.1': R-Scale = R3.5 |
| 68.0 | | | 0 | | x x x x | Sandstone | At 204.3': R-Scale = R3.5 |
| | | | 0 | | x x x x | At 205.1' - white and pink, laminated to medium bedding, fine sand, fresh, well sorted | At 205.1': R-Scale = R3.5 |
| | | | 0 | | x x x x | 205.5-107.5' - 5-10% <0.001' clasts | |
| | | | 0 | | x x x x | 207.5-209.3' - dark bluish gray, black laminae | R40: 12:29-12:46 |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| | R40HQ 5 ft 100% | 100 | 0 | | x x x x | | |
| 210 | | | 0 | 209.3' - Fracture, 20 deg, smooth, planar, break along lamination | x x x x | 209.3-211.2' - pinks, soft, fine sand to medium sand, well sorted | At 207.3': R-Scale = R3.5 |
| 63.0 | | | 0 | | x x x x | | At 207.5-209.3': R-Scale = R3.5 |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | 211.2-212.5' - very dark bluish gray, soft, 10-20% fines | R41: 13:11-13:17 |
| | | | 0 | | x x x x | | At 211.9': R-Scale = R3.5 |
| | R41HQ 1.7 ft 100% | 87 | 0 | | x x x x | 212.5-213.3' - white, pink, red, soft, fine sand to coarse sand, poorly sorted | R-Scale performed during rock core logging. |
| | | | 0 | | x x x x | | |
| | | | | | x x x x | Bottom of Boring at 213.3 ft bgs on 12/6/06 13:17 | |
| 215 | | | | | x x x x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-1

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686595.5 N, 2012465.3 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely/A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

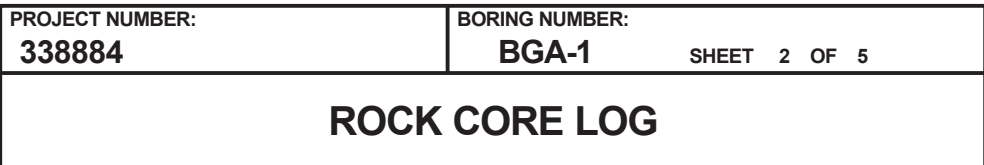
WATER LEVELS : 7.1 ft bgs

START : 4/21/06 13:30

END : 4/24/06 15:45

LOGGER : JS/DT/JF

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|--------------|-----------------------------------|---|--------------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6" (N) | | | | |
| | | | | | | | |
| 263.9 | 0.0 | 8.0 | SS1SS | 8-5-6-8 (11) | Clay (CL) 0.0-0.7' - reddish brown, mottled yellow and white, medium stiff, soft, trace very fine sand, scattered coarse sand, tip has medium sand, fill or reworked native material | | Soil sampling completed at 14:10 on 4/21/06 |
| | 2.0 | | | | | | |
| | 2.5 | 14.0 | SS2SS | 4-5-5-50/5 (10) | Lean Clay (CL) 2.5-3.7' - reddish brown, moist, stiff, medium plasticity, no dilatancy, yellow mottling, scattered bedrock pieces to coarse sand sized | | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 258.9 | 5.0 | 1.0 | SS3SS | 50/1 (50/1") | Lean Clay (CL) 5.0-5.1' - reddish brown, moist, stiff, medium plasticity, no dilatancy, yellow staining, scattered bedrock pieces to coarse sand sized Begin Rock Coring at 5.6 ft bgs See the next sheet for the rock core log | | |
| | 5.1 | | | | | | |
| | 5.6 | | | | | | |
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LOGGER : JS/DT/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-1

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686595.5 N, 2012465.3 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely/A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.1 ft bgs

START : 4/21/06 13:30

END : 4/24/06 15:45

LOGGER : JS/DT/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 30 233.9 | R3NQ 9.5 ft 100% | 92 | 2 | 26.3' - Fracture, <5 deg, slickensided, undulating | x x x | Sandstone At 31.2' - light gray to white, dark reddish brown in matrix, very fine sand to coarse sand, poorly sorted, fresh, 20% coarse sand 32.0-32.6' - reddish brown, fresh 32.6-34.5' - pinkish brown, coarse to very coarse grained sand, moderately to well sorted 32.6-34.2' - fresh 34.2-34.5' - highly weathered | R3: 08:45-09:25 on 4/24/06 |
| | | | 4 | 26.4' - Fracture, 30 deg, rough, undulating | x x x | | |
| | | | | 26.8' - Fractures (2), <5 deg, rough, undulating | x x x | | |
| | | | 1 | 26.8' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | | 26.9' - Fracture, 60 deg, rough, undulating | x x x | | |
| | | | 0 | 28.8' - Fracture, 20 deg, rough, undulating | x x x | | |
| | | | | 29.0-29.5' - Fracture, near vertical fracture | x x x | | |
| | | | 1 | 30.0-30.5' - Fracture, rough, undulating, near vertical fracture (on edge of core and through it) | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| 35 228.9 | 35.0 | | 1 | 34.5-35.0' - Fracture, capillary fracturing | x x x | Siltstone 34.5-35.0' - reddish brown, highly weathered Sandstone 35.0-37.8' - white, gray, and black, medium sand to coarse sand, poorly sorted, fresh | R4: 09:42-10:15 |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 1 | 37.8' - Fracture, 30 deg, rough, undulating | x x x | | |
| | | | 0 | | x x x | | |
| 40 223.9 | R4NQ 10 ft 100% | 94 | 1 | 39.8' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | 0 | | x x x | | |
| | | | 2 | 41.8' - Fracture, rough, undulating | x x x | | |
| | | | 10+ | 42.0' - Fracture, rough, undulating | x x x | | |
| | | | | 42.1-42.3' - Fracture zone, fractured/broken fragments | x x x | | |
| | | | 0 | | x x x | 41.9-42.5' - highly weathered 42.5-60.8' - fresh | |
| 45 218.9 | 45.0 | | 0 | | x x x | | |
| | | | | 45.0' - Fractures, small (0.05') disc fractures | x x x | | R5: 10:35-11:25 |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-1

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686595.5 N, 2012465.3 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely/A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

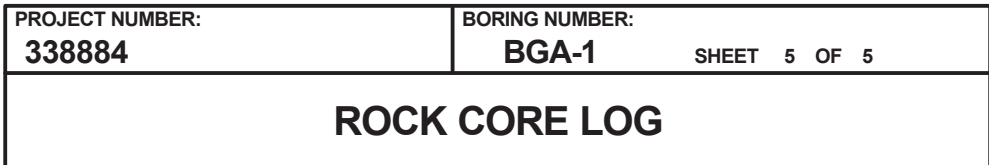
WATER LEVELS : 7.1 ft bgs

START : 4/21/06 13:30

END : 4/24/06 15:45

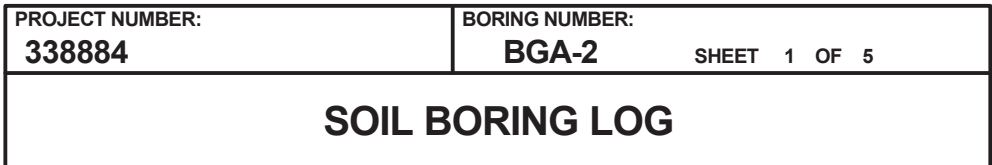
LOGGER : JS/DT/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 50 213.9 | R5NQ 10 ft 100% | 100 | 0 | | x x x | 45.0-55.0' - reddish brown to dark reddish brown, mottled blue-green along relic fractures, soft | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
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| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 1 | 53.0' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | 0 | | x x x | | |
| 55 208.9 | 55.0 | | 1 | | x x x | 55.0-65.0' - weak red to very dusky red, mottled blue-green along relic fractures, soft | R6: 11:35-13:45 |
| | | | 5 | 56.3' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | | 56.5' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | | 56.5' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | 3 | 56.7' - Fracture, 10 deg, rough, undulating | x x x | | |
| | | | | 56.9' - Fracture, <5 deg, rough, undulating | x x x | 57.5-58.0' - white-gray inclusions | |
| | | | 2 | 57.1-57.2' - Fracture, horizontal/parallel, rough, undulating | x x x | | |
| | | | | 58.2' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | 1 | | x x x | | |
| 60 203.9 | R6NQ 10 ft 100% | 91 | 1 | 59.9' - Fracture, 10 deg, rough, undulating | x x x | | |
| | | | 1 | 60.0-62.0' - Fractures, horizontal and vertical, hairline fractures | x x x | | |
| | | | 1 | | x x x | Sandstone | |
| | | | 1 | 62.0' - Fracture, >80 deg, rough, undulating | x x x | 60.8-65.0' - weak red, gray-green mottling, hard, fresh, coarsens to 60.8'; fining upward sequence below | |
| | | | 1 | 62.0-63.0' - Fracture, vertical, white calcitic infilling, hairline fracture | x x x | | |
| | | | 1 | | x x x | | |
| 65 198.9 | 65.0 | | | | x x x | | R7: 13:54-14:40 |
| | | | | | x x x | | |



LOGGER : JS/DT/JF

Rev. 5



LOGGER : LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-2

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


ORIENTATION : Vertical

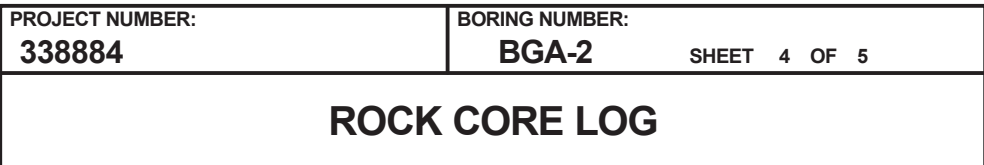
WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 10 252.4 | 5.5 | | 10+ | 5.5-6.5' - Fracture zone |  | Silty Gravel (GM) 5.5-6.5' - light gray and very dark gray, hard, highly weathered | Rock coring began at 15:25 on 6/1/06 R1: 15:25-15:32 on 06/01/06 | |
| | | | | | | Sandstone At 6.5' - light gray, soft to hard, thin to massive bedding, fine sand to coarse sand | | |
| | 8.8 | | | | | 6.5-10.0' - highly weathered | At 8.0' bgs coring water turned from red to purple At 8.8-10.0': R-Scale = R1 R2: 16:03-16:16 | |
| | | | | | | 10.0-17.3' - moderately weathered | R3: 16:22-16:30 | |
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LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-2

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

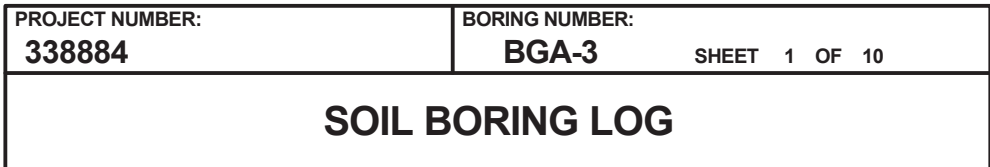
WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | | | |
|--|------------------------------------|-----------------|--------------------|---|--|---|--|--|--|---|------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | | | |
| 70 192.4 | R14NQ 5 ft 100% | 84 | 2 | 65.3' - Fracture, horizontal, smooth, planar, 0.001' clay infilling, black stains, tight fitted 66.8' - Fracture, 45 deg, smooth, undulating, 0.005' clay infilling, tight fitted 68.5-68.7' - Fracture, 45 deg, hard white infilling 68.8' - Fracture, horizontal, rough, undulating 69.1' - Fracture, 30 deg, hard white infilling, tightly healed | x x x x x x x x x x x x | 65.0-70.0' - greenish gray mottling, very soft to soft, trace very fine sand throughout 66.0-67.3' - 40% very fine sand 66.5-68.8' - beds seem to be on 45 degree angle 70.0-70.4' - greenish gray mottling, very soft to soft, trace very fine sand throughout; becomes coarser with depth | At 67.1': R-Scale = R3-R4 | | | | |
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| | | | 0 | | | | | | | | |
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| | | | 0 | | | | | | | | |
| 75 187.4 | R15NQ 5 ft 100% | 100 | 0 | | | | | | x x x x x x x x x x x x | Sandstone 70.4-73.8' - dark reddish gray to dusky red, soft, very fine sand to fine sand, fresh, no clear contacts; grades from siltstone to sandstone and back | At 72.0': R-Scale = R3 |
| | | | 0 | | | | | | | | |
| | | | 0 | | | | | | | | |
| | | | 0 | | | | | | | | |
| | | | 0 | | | | | | | | |
| 80 182.4 | R16NQ 5 ft 100% | 88 | 0 | 78.1-78.4' - Fracture (2), 45 deg, rough, undulating, overlying a horizontal fracture with same characteristics 78.6' - Fracture, horizontal, smooth, undulating 78.7' - Fracture, horizontal, smooth, undulating 79.0-79.4' - Fracture, 45 deg, tightly healed 79.5-79.6' - Fracture 79.9-80.0' - Fractures (2), horizontal and vertical, horizontal are rough, planar and vertical are slickensided 80.1-80.9' - Fracture zone, 60 deg and vertical, slickensided, undulating, very soft/smooth to the touch (rock is hard), cuts through laminated beds 82.6' - Fracture, 10 deg, tightly healed 83.5' - Fracture, horizontal 84.5' - Fracture, horizontal, rough, planar 84.8' - Fracture, horizontal, rough, undulating 85.0' - Fracture, horizontal, rough, undulating | x x x x x x x x x x x x | 73.8-82.3' - dark reddish brown, greenish gray mottling, very soft to soft, trace very fine sand throughout 73.8-78.0' - fresh 75.0-80.0' - trace greenish gray mottling 75.0-77.6' - soft, laminated beds 77.6-80.0' - very soft, trace medium grained sand 78.0-82.3' - slightly weathered | R16: 13:57-14:06 At 76.3': R-Scale = R3-R4 SC-2 collected 75.0 - 76.0' | | | | |
| | | | 0 | | | | | | | | |
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| 3 | | | | | | | | | | | |
| | | | | | | | | | | Bottom of Boring at 85.0 ft bgs on 6/2/06 14:24 | |



LOGGER : JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-3

SHEET 2 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 15 244.9 | 10.1 R1HQ 5.4 ft 85% | 83 | 1 | 10.5' - Fracture, 70 deg, rough, undulating, loose fit | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 3 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 224.9 < | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 4 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 51.5 | | | 3 | | | | |
| | | | 1 | 50.6' - Fracture, horizontal, smooth, undulating, loose fit | | 50.5-51.5' - soft to hard, mostly white sand pebbles; fine grained with ~40% fine to medium sand | |
| | | | 0 | | | 51.5-53.5' - green mottling, soft to hard, with fine to medium sand, mostly white sand, irregular throughout | R6: 11:40-12:25 |
| | | | 0 | | | | |
| | | | 0 | | | 53.5-55.4' - Siltstone/Sandstone gradational contact | |
| 55 | | | 0 | | | | |
| 204.9 | | | 0 | | | | |
| | R6HQ 10 ft 97% | 97 | 0 | | | Sandstone | |
| | | | 0 | | | 55.4-62.6' - light gray to dark gray, hard, fresh, fine to medium grained at top becoming generally coarser with depth; coarse grained at bottom; white, pink, and green grains | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 60 | | | 0 | | | | |
| 199.9 | | | 0 | | | | |
| | | | 0 | | | | |
| 61.5 | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | 62.6-65.5' - Microfractures, capillary pattern | | 62.45' - becomes fine grained sand | |
| | | | 0 | 62.6' - Fracture, 10 deg, smooth, planar, loose | | Siltstone | |
| | | | 0 | | | 62.6-65.5' - dark reddish brown, mottled green, purple, and dark gray, soft, fresh, fine grained, scattered fine sand | |
| 65 | | | 1 | | | | |
| 194.9 | | | 0 | 65.5' - Fracture, 10 deg, smooth, stepped, loose | | Siltstone | |
| | | | 0 | | | At 65.5' - very dark gray, mottled white and reddish brown, soft, fresh, fine grained; occasional beds of fine to medium sand grains | |
| | R7HQ 10 ft 100% | 98 | 2 | | | | |
| | | | 0 | 68.3' - Fracture, horizontal, smooth to rough, stepped, loose | | | |
| | | | 0 | 68.4' - Fracture, horizontal, smooth to rough, stepped, loose | | | |
| 70 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 5 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | | |
| | | | DESCRIPTION | | | |
| | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | 0 | x | | |
| | | | 1 | x | | |
| 71.5 | | | 70.5' - Fracture, horizontal, rough, stepped, loose | x | | |
| | | | 2 | x | 71.5-72.8' - some yellow inclusions | R8: 14:40-15:20 |
| | | | 71.5' - Fracture, horizontal, smooth, undulating, loose | x | | |
| | | | 72.0' - Fracture, horizontal, smooth, planar, loose | x | | |
| | | | 0 | x | | |
| | | | 1 | x | Siltstone | |
| | | | | x | At 72.8' - dark reddish brown, green to trace green mottling, soft, fresh | |
| 75 | | | 74.4' - Fracture, horizontal, smooth, planar, tight | x | | |
| 184.9 | | | 0 | x | | |
| | | | 1 | x | | |
| | R8HQ 10 ft 95% | 95 | 76.3' - Fracture, horizontal, smooth, planar, tight | x | | SC-3 collected 76.28-77.56' |
| | | | 0 | x | | |
| | | | 0 | x | | |
| | | | 78.0-90.1' - Capillary microfracture pattern | x | | |
| | | | 0 | x | | |
| 80 | | | 0 | x | | |
| 179.9 | | | 0 | x | | |
| | | | 0 | x | | |
| 81.5 | | | | x | | |
| | | | 0 | x | 81.5-90.1' - black and green mottling, fine grained | R9: 15:30-16:15 |
| | | | 0 | x | | |
| | | | 0 | x | | |
| | | | 0 | x | | |
| 85 | | | 0 | x | 84.8' - fine to medium sand , white inclusions begin, becomes hard | |
| 174.9 | | | 1 | x | | |
| | R9HQ 10 ft 100% | 98.4 | 86.3' - Fracture, horizontal, smooth, planar, tight to loose | x | | |
| | | | 0 | x | 86.8' - inclusions, numerous, up to fine gravel sized, some mottling | |
| | | | 0 | x | | |
| | | | 0 | x | | |
| 90 | | | | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 6 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

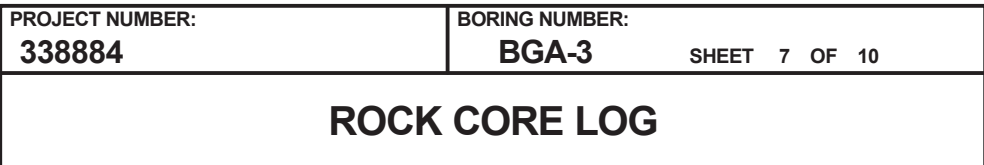
WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|-----------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| | | | 0 | | | 89.8-90.1' - transition to sandstone layer | |
| | 91.5 | | 3+ | 90.5' - Fracture, 80 deg, rough, undulating, thin quartz infilling, tight | | Sandstone | |
| | | | 0 | 90.7' - Fracture, horizontal, rough, undulating, plus several coarse gravel sized fragments, broken bedrock | | 90.1-90.7' - dark gray, hard to thin, fine sand to medium sand, fresh, multi-colored grains | R10: 08:10-08:55 on 4/25/06 |
| | | | 0 | 91.4' - Fracture, horizontal, rough, stepped, tight | | Siltstone | |
| | | | 0 | | | 90.7-126.3' - dark gray to dusky red, mottled yellow and green, soft, fresh, fine grained | |
| 95 | | | 0 | | | 91.5-101.5' - dark reddish brown, green mottling, soft to hard | |
| 164.9 | | | 0 | | | 91.5-94.4' - soft to hard, white, gray and green beds; not uniform and irregularly shaped; some swirled | |
| | | | 1 | 96.1' - Fracture, 5 deg, smooth, undulating | | | |
| | R10HQ 10 ft 100% | 99 | 1 | 96.9' - Fracture, horizontal, smooth, planar, tight fit | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 100 | | | 0 | | | | |
| 159.9 | | | 0 | | | | |
| | | | 0 | | | | |
| | 101.5 | | 0 | | | 101.5-111.5' - dusky red, white and gray mottling, soft to hard, fine sand mica particles | R11: 09:20-09:55 |
| | | | 0 | | | 102.6-103.0' - medium to coarse sand throughout | |
| | | | 0 | | | 102.8-102.9' - medium to coarse sand band at 20 degrees from horizontal | |
| 105 | | | 0 | | | 104.0-111.5' - dark reddish brown, scattered green and purple mottling, few fine gravel sized whitish inclusions; fine mica particles throughout | |
| 154.9 | | | 0 | | | | |
| | | | 0 | | | | |
| | R11HQ 10 ft 97% | 97 | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 110 | | | | | | | |



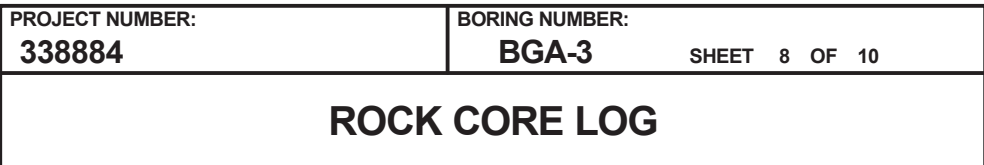
LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-3

SHEET 9 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

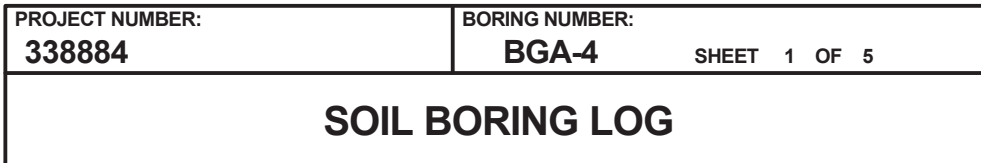
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 155 104.9 | | | | | | | |



| | |
|--|--|
| PROJECT NUMBER: <div style="border: 1px solid black; padding: 2px; display: inline-block;">338884</div> | BORING NUMBER: <div style="border: 1px solid black; padding: 2px; display: inline-block;">BGA-3</div> |
| SHEET 10 OF 10 | |
| <div style="border: 1px solid black; padding: 5px; font-size: 1.2em; font-weight: bold;">ROCK CORE LOG</div> | |

| | |
|---|---|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (687317.4 N, 2012132.9 E) |
| ELEVATION : 259.9 ft MSL (NGVD 29) | DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME |
| CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel | ORIENTATION : Vertical |
| WATER LEVELS : 9.4 ft bgs | START : 4/19/06 10:15 END : 4/26/06 09:50 LOGGER : JS |

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 175 84.9 | | | | 166.1' - Fracture, horizontal, smooth, undulating, loose fit | | | |
| 180 79.9 | | | | | | | |
| 185 74.9 | | | | | | | |
| 190 | | | | | | | |



LOGGER : DT/JF

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-4

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687537.9 N, 2012026.1 E)

ELEVATION : 275.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.5 ft bgs

START : 5/12/06 11:45

END : 5/26/06 13:05

LOGGER : DT/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|--|-----------------|--------------------|---|--|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 255.0 | 15.1 R1NQ 4.9 ft 106% | 96 | 1 | 15.3' - Fracture, 5 deg, rough, undulating, tight, 0.05' relief | <div><div><div>Sandstone</div><div>At 15.1' - dark reddish brown, soft, very fine sand to fine sand, slightly weathered, thinly laminated bedding at 20 degrees 15.5-20.0' - slightly weathered 17.1-20.4' - reddish brown, fine sand to medium sand, subangular to angular 18.1' - pale red to reddish brown, red mottling 18.6' - thin black oxidized bands parallel/subparallel to bedding 0.03-0.2' apart 19.4' - gradational from fine to coarse sand, subangular grains 20.0-21.0' - highly weathered 20.4-20.5' - strong brown, more fine-grained sand strong brown with small scale (0.03-0.1') long perpendicular to bedding, dendritic pattern of thin black lines</div><div>Claystone</div><div>21.0-21.6' - dark reddish brown, tan, and blue green, heavily mottled, very soft, highly weathered, very fine grained</div><div>Siltstone</div><div>At 21.6' - very dusky red, blue-green to light green mottling, very soft to soft, fine grained 21.6-25.0' - highly weathered 25.0-30.0' - very dusky red to dark reddish brown, blue-green mottling, slightly weathered 28.6-28.8' - fine sand</div></div></div> | Rock coring began at 10:30 on 5/25/06 R1: 10:30-10:40 and 12:45-13:10 on 5/25/06 At 16.2': R-Scale = R1 | |
| | | | 1 | 16.5' - Fracture, 40 deg, rough, undulating, black stains, 0.02' relief | | | |
| | | | 0 | | | | |
| | | | 1 | 18.4' - Fracture, 40 deg and 50 deg, rough, undulating, black stains, tight, 0.02' relief, perpendicular to bedding | | | |
| | | | 2 | 19.7' - Fracture, 20 deg, rough, undulating, tight | | | |
| | 20.0 | 0 | 2 | 19.8' - Fracture, 20 deg, rough, undulating, tight | | | R2: 13:15-13:30 |
| | | | 10+ | 20.6' - Fracture, 20 deg, rough, undulating, tight, parallel to bedding 20.7' - Fracture, 70 deg, rough, undulating, black stains, perpendicular to parallel breaks | | | |
| | | | 0 | 21.0' - Contact between siltstone and sandstone, 20 deg, rough, undulating, parallel to bedding 21.6-21.7' - Fracture zone, heavily fractured rock/clay zone, crumbled 23.7-24.6' - Horizontal hairlike fractures across bedding, bedding not readily visible | | | |
| | | | | | | | |
| | | | | | | | |
| 25 250.0 | 25.0 | 100 | 0 | 25.0' - Fracture, small horizontal capillary fractures | R3: 13:35-13:50 | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | 30.0 | 84 | 1 | 30.3' - Fracture, 30 deg, rough, undulating, black stains, tight, small (not full break) | | R4: 14:10-14:35 At 31.0': R-Scale = R1 | |
| | | | 0 | | | | |
| | | | 3 | 32.7-32.9' - Fracture zone, rough, ~10 pieces | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 35 | 35.0 | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-4

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687537.9 N, 2012026.1 E)

ELEVATION : 275.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.5 ft bgs

START : 5/12/06 11:45

END : 5/26/06 13:05

LOGGER : DT/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 40 235.0 | R5NQ 5 ft 100% | 100 | 1 | 35.9' - Fracture, 5 deg, rough, undulating, 0.05-0.07' cm relief, sharp contact 36.4' - Fracture, 5 deg, rough, undulating, 0.02' relief, small capillary fracture throughout siltstone | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-4

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687537.9 N, 2012026.1 E)

ELEVATION : 275.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

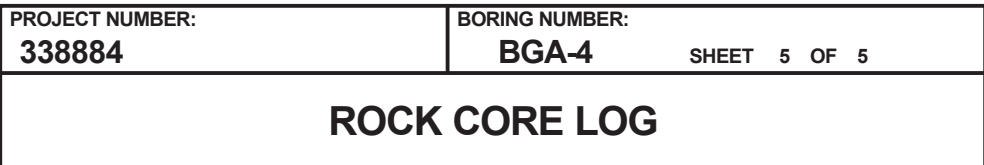
WATER LEVELS : 18.5 ft bgs

START : 5/12/06 11:45

END : 5/26/06 13:05

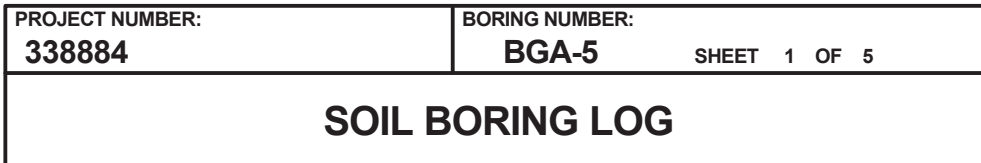
LOGGER : DT/JF

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|---|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 60 215.0 | | | | | | | | |



LOGGER : DT/JF

Rev. 5



LOGGER : EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-5

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687151.7 N, 2011758.3 E)

ELEVATION : 268.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--|---|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | | | | DESCRIPTION |
| | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |
| 15 253.4 | 12.6 R1NQ 3.7 ft 97% | 95 | 0 | 17.0' - Fracture, 25 deg, smooth, undulating | Sandstone At 12.6' - dark reddish brown, mottled pale green and black, thin to medium bedding, slightly weathered to moderately weathered, fine to medium sand, 40% silt 14.1-14.5' - gray, little to no silt 14.5-15.0' - 40% silt 15.0-15.4' - soft 15.4-16.3' - 40% silt | Rock coring began at 11:45 on 7/26/06 R1: 11:45-11:55 on 07/26/06 SC-1 collected 12.5-13.4' | |
| | | | 0 | | | | At 15.4': R-Scale = R2-R3 (performed at later date) |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 20 248.4 | 16.3 R2NQ 5 ft 97% | 97 | 1 | | 20.9-21.5' - grades to sandstone, laminated interbedded siltstone and sandstone Sandstone 21.5-26.5' - gray, black mottling, soft to hard, fine sand to coarse sand, poorly sorted 21.5-26.3' - fresh 21.5-23.0' - some laminated clay-siltstone beds at 20 degrees, mottled greenish gray | R2: 12:53-13:10 | |
| | | | 0 | | | | At 18.2': R-Scale = R2-R3 (performed at later date) |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 25 243.4 | 21.3 R3NQ 5 ft 101% | 90 | 1 | | | 21.9' - Fracture, 10 deg, smooth, undulating, black stains 22.8' - Fracture, 10 deg, rough, undulating |  | R3: 13:19-13:30 |
| | | | 1 | | | | |
| | | | 0 | At 24.9': R-Scale = R1 (performed at later date) | | | |
| | | | 0 | | | | |
| 30 238.4 | 26.3 R4NQ 5 ft 98% | 98 | 2 | | | 25.8' - Fracture, 65 deg, rough, undulating, black stains 26.0' - Fracture, vertical, rough, undulating, black stains 26.3' - Fracture, 55 deg, black stains 26.5' - Contact between siltstone and sandstone, <5 deg 29.0' - Joint, 55 deg | R4: 14:00-14:20 At 27.0': R-Scale = R2 (performed at later date) At 28.9': R-Scale = R2 (performed at later date) |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | 31.3 | | 0 | | | R5: 14:28-14:43 | |

| | | |
|----------------------------------|--------------------------------|--------------|
| PROJECT NUMBER: 338884 | BORING NUMBER: BGA-5 | SHEET 3 OF 5 |
| ROCK CORE LOG | | |

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687151.7 N, 2011758.3 E)

ELEVATION : 268.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------|------------------------------------|-----------------|--------------------|--|---|--|--|--|
| | | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 233.4 | 36.3 | R5NQ 5 ft 102% | 95 | 2 | 32.9' - Fracture, 60 deg and <5 deg, rough, undulating | 31.3-36.3' - moderately weathered, thin laminations at 15 degrees throughout section; very soft at clay seams and at laminations in bottom half of core (laminations <0.01' thick in groups up to 0.05' thick); 5-10% fine sand increases up to 20% with depth 34.4-34.7' - clay seam, very soft | At 33.5': R-Scale = R3-R4 (performed at later date) | | |
| | | | | 4 | | | | | |
| | | | | 6 | | | | | |
| | | | | 1 | | | | | |
| 40 228.4 | 41.3 | R6NQ 5 ft 100% | 91 | 0 | 34.8' - Fracture, 10 deg, rough, undulating 35.2' - Fracture, 10 deg, smooth, undulating 36.2' - Fracture, 15 deg, smooth, undulating 37.4' - Fracture, 15 deg, smooth, undulating, black stains 37.4' - Fracture, 15 deg, smooth, undulating, 0.02' thick clay infilling 37.6' - Fracture, 5 deg, rough, undulating, 0.1' thick clay infilling 39.3' - Fracture, 40 deg, smooth, undulating, reddish brown stains | Siltstone At 36.3' - dark gray, very soft to soft, moderately weathered 36.3-37.9' - 30-40% very fine to fine grained sand; 15 degree laminations of darker and light gray; laminations gradually decrease down section Sandstone At 37.9' - dark gray, fine sand to medium sand, laminations more horizontal, some swirled and mixed 38.8-39.2' - medium sand to fine gravel 39.1-40.1' - bedding at 60 degrees 39.2-40.4' - fine to medium grained with trace pebbles ~0.02' in size 40.1-40.6' - coarse sand contacts at 60 degrees 40.4-40.8' - medium to coarse grained (some grains up to 0.05' in size); ~20% coarse sand and pebbles, overall 70% sand 40.6-41.3' - laminations at 60 degrees 41.3-43.2' - gray, soft, medium sand to coarse sand, poorly sorted, slightly weathered, fining downward 42.5-42.7' - black laminations at 30 degrees 43.1' - 0.03' thick band of small pebbles 0.01' in size | R6: 08:20-08:33 on 07/28/06 | | |
| | | | | 5 | | | At 38.3': R-Scale = R3-R4 | | |
| | | | | 0 | | | At 40.7': R-Scale = R3-R4 R7: 08:50-09:00 | | |
| | | | | 1 | | | | | |
| 45 223.4 | 46.3 | R7NQ 5 ft 102% | 86 | 0 | 41.9-42.5' - Fractures (5), 85 deg and 15 deg, rough, undulating, < 0.01' thick 'limonite (yellowish brown) stains 43.2-43.4' - Fracture, 10 deg, smooth, undulating | 43.2-46.3' - black, very soft, slightly weathered, very fine grained, laminations at 10 degrees up to 0.01' thick of fine sand 44.8-46.3' - black laminations throughout section, medium to coarse sand Sandstone 46.3-49.8' - gray, fresh, faint laminations up to 0.01' thick at 20 degrees; black laminations; medium to coarse grained sand gradually fining to fine to medium grained 48.2-48.3' - very thin black siltstone bed, very fine grained, very soft | At 42.9': R-Scale = R3-R4 | | |
| | | | | 1 | | | SC-2 collected 45.1-46.0' | | |
| | | | | 0 | | | R8: 09:15-09:28 | | |
| | | | | 0 | | | At 47.1': R-Scale = R4 | | |
| 50 218.4 | 51.3 | R8NQ 5 ft 99% | 99 | 0 | 49.0' - Fracture, 65 deg, smooth, undulating 49.8' - Contact between siltstone and sandstone, 60 deg | | At 49.7': R-Scale = R4 | | |
| | | | | 0 | | | | | |
| | | | | 1 | | | | | |
| | | | | 0 | | | R9: 09:35-09:53 | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-5

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687151.7 N, 2011758.3 E)

ELEVATION : 268.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel





ORIENTATION : Vertical

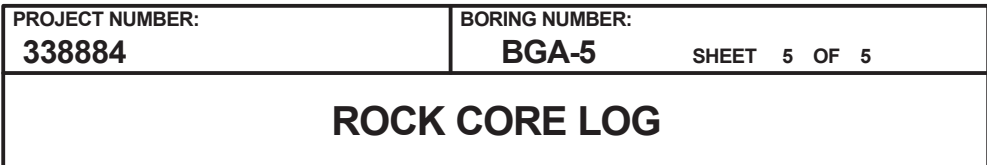
WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|---|---|---|--|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 213.4 | R9NQ 5 ft 104% | 100 | 0 | 56.4-56.7' - Fracture zone, horizontal and 10 deg, smooth, undulating 57.1' - Fracture, 5 deg, rough, undulating 57.2' - Fracture, 5 deg, rough, undulating 57.3' - Fracture, horizontal and 60 deg, smooth, undulating, 0.02' thick clay infilling 58.5-58.7' - Fracture zone, 5 deg, rough, undulating 59.0' - Fracture, 5 deg, smooth, undulating | x | Siltstone 49.8-51.3' - greenish gray to dark reddish brown, mottled dark greenish gray, very soft to soft, fresh, very fine to fine grained 49.8-51.3' - 10-15% fine sand grading to <10% at bottom of run | At 54.6': R-Scale = R3 | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| 56.3 | R10NQ 5 ft 97% | 72 |  | | x | Siltstone At 51.3' - dark reddish brown, light reddish and greenish gray mottling, very soft to soft 51.3-56.3' - slightly weathered, 5-10% fine sand fining with depth 56.3-71.3' - light olive brown mottling 56.3-61.3' - greenish gray and light olive brown mottling, moderately weathered, clay is light gray, very soft 57.5-58.2' - clay seam, very soft | R10: 10:08-10:28 | |
| | | | 10+ | | x | | | |
| | | | 3 | | x | | | |
| | | | 3 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| 60 208.4 | R11NQ 5 ft 73% | 73 |  | | x | | 61.3-65.0' - soft to hard, 10-15% fine sand 61.3-90.0' - fresh | At 60.6': R-Scale = R3-R4 |
| | | | 0 | | x | | | |
| | | | 0 | | x | | | |
| | | | 0 | x | | | | |
| | | | 0 | x | | | | |
| | | | 0 | x | | | | |
| 65 203.4 | R12NQ 5 ft 102% | 100 |  | x | 72.0-75.0' - 10% fine sand | | | At 65.6': R-Scale = R3 |
| | | | 0 | x | | | | |
| | | | 0 | x | | | | |
| | | | 0 | x | | | | |
| 70 198.4 | R12NQ 5 ft 102% | 100 | 0 | x | | 69.9' - Fracture, horizontal, smooth, undulating | | R12: 12:52-13:10 |
| | | | 0 | x | | | | |
| | | | 0 | x | | | | |
| | | | 1 | x | | | | |
| 71.3 | | |  | x | | | At 69.4': R-Scale = R3 | |
| | | | 0 | x | | | | |
| | | | | | | | | R13: 13:20-13:45 |



LOGGER : EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-6

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 275.2 | 0.0 | 11.0 | SS1SS | 2-2-3-4 (5) | Clayey Sand (SC) 0.0-0.5' - grayish brown, loose, fine to medium grained, medium plasticity, subrounded to subangular Clayey Sand (SC) 0.5-0.9' - brownish yellow, moist, loose, fine to medium grained, medium plasticity | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| | 2.0 | | | | | | |
| | 2.5 | 17.0 | SS2SS | 2-3-5-7 (8) | Sandy Clay (CL) 2.5-3.9' - pale brown, gray mottling, moist, medium stiff, medium to high plasticity, slow to rapid dilatancy, yellow laminations, 15 to 20% fine to medium grained sand | | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 270.2 | 5.0 | 17.0 | SS3SS | 21-30-30-50/2.75 (60) | Clay (CL) 5.0-6.4' - red, greenish gray mottling, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy, laminated | | |
| | 7.0 | | | | | | |
| | 7.5 | 5.0 | SS4SS | 50/5 (50/5") | Clay (CL) 7.5-7.9' - red, 10% black staining, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy, laminated, <5% fine sand | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 265.2 | 10.0 | 9.5 | SS5SS | 37-50/3.5 (50/3.5") | Clay (CL) 10.0-10.8' - reddish brown, dry to moist, fine grained, medium to low plasticity, slow to rapid dilatancy, <10% very pale brown mottling, 10% black staining | | |
| | 12.0 | | | | | | |
| | 12.5 | 3.5 | SS6SS | 50/3.5 (50/3.5") | Clay (CL) 12.5-12.7' - reddish brown, dry to moist, fine grained, medium to low plasticity, slow to rapid dilatancy, <10% very pale brown mottling, 10% black staining Clay (CL) 12.7-12.9' - light greenish gray, dry to moist, medium to low plasticity, rapid dilatancy, 20 to 25% fine sand, very hard | | |
| | 14.5 | | | | | | |
| 15 | | | | | | | |
| 260.2 | 15.0 | 17.0 | SS7SS | 3-36-50/5 (86/11") | Silty Sand (SM) 15.0-16.3' - brownish yellow and greenish gray, moist, fine to medium grained, medium to low plasticity, rapid dilatancy, <10% clay, black staining at bottom of sample, soft, very hard, laminated | | Driller Remark: Hit soft zone at 14.8' bgs; began losing water |
| | 17.0 | | | | | | Soil sampling completed at 11:45 on 7/24/06 |
| | 17.5 | 2.0 | SS8SS | 50/2 (50/2") | Silty Sand (SM) 17.5-17.7' - light gray, fine to coarse grained, low plasticity, rapid dilatancy, 10% clay, 10-15% very pale brown mottling, 10% coarse sand, some mica flakes, grains are subrounded to subangular Begin Rock Coring at 17.8 ft bgs See the next sheet for the rock core log | | Driller Remark: Hit hard zone at 17.2' bgs; stopped losing water |
| | 17.7 | | | | | | |
| 20 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 255.2 < | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-6

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | | |
|--|--|--|--------------------|---|---|--|---|---|-----------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 40 235.2 | R5NQ 5 ft 100% | 0 | 3 | 38.1' - Fracture, <5 deg, rough, undulating | . | 36.5-42.2' - highly weathered | At 40.6': R-Scale = R1 | | |
| | | | 4 | 38.4' - Fracture, <5 deg, rough, undulating | | 38.4' - red | | | |
| | | | | 38.9' - Fracture, <5 deg, rough, undulating | | | | | |
| | | | | 39.2' - Fracture, 20 deg, rough, undulating | | | | | |
| | | | | 39.4' - Fracture, 20 deg, rough, undulating | | | | | |
| | 41.5 | R6NQ 5 ft 102% | 48 | 3 | | 39.6' - Fracture, 20 deg, rough, undulating | | | |
| | | | | | | 39.8' - Fracture, 70 deg and <5 deg, rough, undulating | | | |
| | | | | | | 39.9' - Fracture, 70 deg and <5 deg, rough, undulating | | | |
| | | | | 0 | | 40.2' - Fracture, <5 deg, rough, undulating | | 41.5-42.2' - increased clay/siltstone clasts to 50% | R6: 15:21-15:32 |
| | | | | | | 40.8' - Fracture, <5 deg, rough, undulating | | | |
| 10+ | 41.1' - Fracture, <5 deg, rough, undulating | Siltstone | | | | | | | |
| | 41.3' - Fracture, 10 deg, rough, undulating | 42.2-44.1' - dark reddish brown, greenish gray mottling, soft, highly weathered, very fine grained | | | | | | | |
| | 42.3' - Fracture, 80 deg, slickensided, undulating, brownish-yellow staining | 42.2-42.6' - highly weathered | | | | | | | |
| 45 230.2 | R6NQ 5 ft 102% | 48 | 2 | 42.5-42.6' - Fracture zone, <5 deg, smooth, undulating, heavily fractured; crumbled | | 42.6-44.1' - slightly weathered | | | |
| | | | | 43.9-44.1' - Fracture zone, <5 deg, smooth, undulating | Sandstone | | | | |
| | | | | | 44.1-45.2' - gray, fine sand to coarse sand, poorly sorted, fresh | | | | |
| | | | 1 | | | | | | |
| | | | 0 | 45.2' - Contact between siltstone and sandstone, 10 deg, smooth, undulating, V shape | Siltstone | | | | |
| | 46.5 | R7NQ 5 ft 98% | 100 | | | At 45.2' - dark reddish brown, soft to hard, fresh, 30% fine to medium sand | At 45.8': R-Scale = R1-R2 | | |
| | | | | | | 45.2-46.5' - 15-20% fine sand | | | |
| | | | | | | 45.5' - coarse sand to small pebbles in 0.03' thick band at 20 degrees | R7: 15:45-16:05 | | |
| | | | | | | 46.2-46.3' - black mottling | | | |
| | | | | | | | At 47.7': R-Scale = R3-R4 | | |
| 50 225.2 | R7NQ 5 ft 98% | 100 | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | 49.5-50.1' - up to 30% coarse sand and small pebbles, subrounded | | | | |
| | | | 0 | | 50.5' - up to 30% coarse sand and small pebbles, subrounded | | | | |
| | | | | | | | | | |
| | 51.5 | R8NQ 5 ft 100% | 60 | 2 | 51.7' - Fracture, <5 deg, smooth, undulating | | Sandstone | R8: 08:51-09:05 on 07/25/06 | |
| | | | | | 52.2' - Fracture, 20 deg, rough, undulating | | At 51.5' - weak red, soft to hard, thick bedding, fine sand, subangular, poorly sorted, fresh, coarse sand to small pebbles mixed in, grades from 15% to 75-80% coarser material at 56.1', some clay clasts | At 52.8': R-Scale = R3.5 | |
| | | | | 1 | | | | | |
| | | | | 3 | 53.4' - Fracture, <5 deg, rough, undulating, 0.01' clay infilling, crumbled | | | | |
| | | | | 2 | 53.9' - Fracture, 60 deg, rough, undulating | | | | |
| 55 220.2 | R8NQ 5 ft 100% | 60 | | 54.2' - Fracture, 60 deg, rough, undulating, 45 deg angle to previous fracture | | | | | |
| | | | | 54.5' - Fracture, vertical, rough, undulating | | | | | |
| | | | | 54.8' - Fracture, 70 deg, rough, undulating | | | | | |
| | | | | 55.3' - Fracture, <5 deg, rough, undulating | | | | | |
| | | | | 55.8' - Fracture, <5 deg, rough, undulating | | | | | |
| | 56.5 | R8NQ 5 ft 100% | 60 | 2 | 56.1' - Contact between siltstone and sandstone, 60 deg and 10 deg, rough, undulating, 0.01' clay infilling | | Siltstone | R9: 09:23-09:40 | |
| | | | | | | At 56.1' - dusky red, soft, ~15-20% fine to medium sand | | | |
| | | | | | | 56.1-63.9' - slightly weathered | | | |
| | | | | 0 | | | | | |
| | | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-6

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 60 215.2 | R9NQ 5 ft 96% | 74 | 10+ | 57.6-57.8' - Fracture zone, <5, 20, and 45 deg; smooth, undulating | X | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|----------------------|------------------------------------|-----------------|---|--|---|--|--|
| | | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 80 195.2 | R13NQ 5 ft 97% | 97 | 0 | 79.8' - Contact between siltstone and sandstone, 40 deg 80.0' - Joint, fractured 1/2 way through; about 0.01' thick 81.6' - Fracture, <5 deg, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-7

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

ELEVATION : 267.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24" Split Spoon, 140 lb. Automatic Hammer




ORIENTATION : Vertical

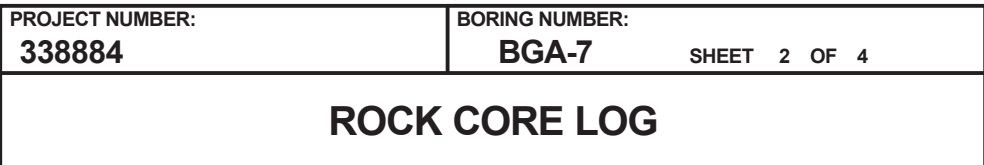
WATER LEVELS : 8.4 ft bgs

START : 5/17/06 10:10

END : 5/18/06 11:30

LOGGER : JS

| WATER LEVEL: 0.4 ft bgs | | START: 5/17/06 10:15 | | END: 5/17/06 1:00 | | LOGGERS: JG | |
|---------------------------------|---------------|----------------------|-----------------------------------|-------------------|---|---|---|
| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 267.8 | 0.0 | 14.0 | SS1SS | 4-5-4-5 (9) | Silty Sand (SM) 0.0-0.2' - light yellowish brown, dry, low plasticity, 40% fine to medium sand Sandy Lean Clay (CL) 0.2-0.5' - yellowish brown, moist, low plasticity, slow dilatancy, 30% fine medium to medium sand Sandy Lean Clay (CL) 0.5-1.2' - strong brown, dark orange mottling, moist, stiff, medium plasticity, slow dilatancy, 20% fine to medium sand Clayey Sand (SC) 2.5-2.8' - brown, moist, low plasticity, 25% fine to medium sand Sandy Lean Clay (CL) 2.8-3.7' - light gray, heavy orange mottling, moist, very stiff, low plasticity, rapid dilatancy, 35% very fine to fine sand Sandy Lean Clay (CL) 5.0-5.1' - light gray, heavy orange mottling, moist, very stiff, low plasticity Clay (CL) 5.1-6.0' - reddish brown, mottled black, moist, hard, low plasticity, a few white lenses near top Clay (CL) 7.5-7.8' - reddish brown, mottled black, moist, hard, low plasticity |  | |
| 5 | 262.8 | 5.0 | 12.0 | SS3SS | 6-32-50/4.5 (82/10.5") | | |
| | 7.0 | | | | | | |
| | 7.5 | 4.0 | SS4SS | 50/5 (50/5") | | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 257.8 | 10.0 | 4.0 | SS5SS | 50/4 (50/4") | Clay (CL) 10.0-10.3' - reddish brown, scattered green mottling, moist, hard, low plasticity |  | |
| | 12.0 | | | | | | |
| | 12.5 | 1.0 | SS6SS | 50/1 (50/1") | Clay (CL) 12.5-12.6' - reddish brown, scattered green mottling, moist, hard, low plasticity Begin Rock Coring at 12.6 ft bgs See the next sheet for the rock core log |  | Soil sampling completed at 11:30 on 5/17/06 |
| | 12.6 | | | | | | |
| 15 | | | | | | | |
| 252.8 | | | | | | | |
| | | | | | | | |
| 20 | | | | | | | |



LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-7

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

ELEVATION : 267.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel






ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/17/06 10:10

END : 5/18/06 11:30

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--|--|---|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 35 232.8 | 5 ft 102% | 48 | 3 | 32.5' - Fracture, horizontal, rough, undulating 32.7' - Fracture, horizontal, rough, undulating 32.9' - Fracture, horizontal, rough, undulating 33.0' - Fracture, horizontal, rough, undulating 33.4' - Fracture, 10 deg, smooth, stepped 33.9-40.0' - Fractures (2), horizontal and 60 deg, smooth, undulating |  | Siltstone 33.0-37.8' - dark reddish brown, mottled green, very soft to soft, highly weathered, fine grained 34.4-34.5' - clay seam | R6: 16:05-16:17 | |
| | | | 3 | | | | | |
| | | | 2 | | | | | |
| | | | 10+ | | | | | |
| 40 227.8 | R6NQ 5 ft 104% | 35 | 10+ | 35.1' - Fracture, horizontal, smooth, undulating 35.4-35.5' - Fractures (3) 35.5-37.8' - Clay seam, and fracture zone |  | Sandstone 37.8-39.5' - very dusky red, mottled green, soft to hard, very fine sand to fine sand 37.8-38.0' - highly weathered 38.0-39.5' - moderately weathered | R7: 08:40-08:51 on 5/18/2006 | |
| | | | 10+ | | | | | |
| | | | 10+ | | | | | |
| | | | 0 | | | | | |
| 45 222.8 | R7NQ 5 ft 100% | 100 | 3 | 39.5' - Fracture, 10 deg, smooth, undulating 39.7' - Fracture, 10 deg, smooth, undulating 39.9' - Fracture, 10 deg, smooth, undulating 40.0' - Fracture, 11 deg, smooth, undulating |  | Siltstone 39.5-39.9' - very dusky red, mottled green, very soft, moderately weathered | R8: 08:55-09:15 | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| 50 217.8 | R8NQ 5 ft 100% | 100 | 0 | |  | 45.0-46.7' - fine sand to medium sand | R9: 09:10-09:23 | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | R9NQ | | 3 | 50.1' - Fracture, 60 deg, smooth, planar 50.7-50.9' - Fractures (3), 10 deg and 50 deg |  | 50.0-55.0' - moderately weathered | | |
| | | | 2 | | | | | |
| | | | | | | | | |
| | | | 51.9' - Fractures (2), 50 deg and horizontal, smooth, undulating | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-7

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

ELEVATION : 267.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/17/06 10:10

END : 5/18/06 11:30

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 212.8 | 5 ft 100% | 78 | 1 | 52.9' - Fracture, horizontal, smooth, stepped | x x x | 51.7-56.6' - dusky red, mottled yellow and purple, very soft, mica particles, scattered green mottling | R10: 09:45-10:00 First water level = 8.4' bgs taken 5/18/06 at 17:52; second water level = 8.4' bgs taken 5/19/06 at 18:08 R-Scale not performed on rock core samples |
| | | | 1 | | x x x | 53.6-53.8' - clay seam | |
| | | | 1 | | x x x | 54.0' - clay seam, 0.05' thick | |
| | | | | | x x x | 54.3-55.0' - very soft to soft | |
| | | | 0 | | x x x | 55.0-56.0' - mottled black, fresh, 50% very fine to fine sand | |
| | | | 0 | | x x x | 56.0-56.6' - mottled green, very soft to soft, fresh, much less sand | |
| | | | 1 | 57.2' - Fracture, horizontal, rough, stepped | ..... | Sandstone | |
|  |  |  |  |  | ..... | 56.6-60.0' - dusky red, mottled green, fine sand, fresh, 20% silt | |
| | | | 0 |  | ..... | 57.2-57.5' - brown, mottled green, fine sand to medium sand | |
| | | | 0 |  | ..... | 58.3-58.5' - dark brown to gray, some green mottling | |
| 60 207.8 | R10NQ 5 ft 102% | 100 | | | | 59.0-59.9' - dark reddish brown, mottled black and green, very fine sand to fine sand | |
|  |  |  |  |  | ..... | 59.9-60.0' - brown | |
|  |  |  |  |  | ..... | Bottom of Boring at 60.0 ft bgs on 5/18/06 11:30 | |
| 65 202.8 | | | | | | | |
| 70 197.8 | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-8

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 140 lb. Automatic Hammer









ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

LOGGER : JS

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|---|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| | | | | | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| 263.6 | 0.0 | 19.0 | SS1SS | 2-2-3-4 (5) | Lean Clay (CL) 0.0-1.6' - brownish yellow, mottled dark orange, moist, medium stiff, low to medium plasticity, no to slow dilatancy, 10% fine sand |  | |
| | 2.0 | | | | | | |
| | 2.5 | 14.0 | SS2SS | 4-5-6-8 (11) | Lean Clay (CL) 2.5-3.2' - brownish yellow, mottled dark orange, moist, medium stiff, low to medium plasticity, no to slow dilatancy |  | |
| | 4.5 | | | | Fat Clay (CH) 3.2-3.7' - reddish brown, mottled white and red, moist, medium to high plasticity, no dilatancy |  | |
| 5 | | | | | | | |
| 258.6 | 5.0 | 15.0 | SS3SS | 7-8-12-20 (20) | Clay (CL) 5.0-6.3' - reddish brown, moist, very stiff, low to medium plasticity, slow dilatancy, greenish white lenses throughout |  | |
| | 7.0 | | | | | | |
| | 7.5 | 15.0 | SS4SS | 17-45-50/3 (95/9") | Clay (CL) 7.5-8.8' - reddish brown, mottled greenish white, black, moist, hard |  | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 253.6 | 10.0 | 6.0 | SS5SS | 30-50/3 (50/3") | Clay (CL) 10.0-10.5' - reddish brown, mottled greenish white and black, moist, very hard, low to medium plasticity, slow dilatancy |  | |
| | 12.0 | | | | | | |
| | 12.5 | 6.0 | SS6SS | 50/5 (50/5") | Clay (CL) 12.5-13.0' - reddish brown, mottled greenish white and black, moist, very hard, low to medium plasticity, slow dilatancy, scattered white lenses |  | |
| | 14.5 | | | | | | |
| 15 | | | | | | | Soil sampling completed at 14:46 on 5/15/06 |
| 248.6 | 15.0 15.2 | 2.0 | SS7SS | 50/1.5 (50/1.5") | Clay (CL) 15.0-15.2' - reddish brown, mottled greenish white and black, moist, very hard, low to medium plasticity, slow dilatancy Begin Rock Coring at 15.2 ft bgs See the next sheet for the rock core log |  | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BGA-8

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 20 243.6 | 15.2 R1NQ 3.8 ft 94% | 75 | 2 | 15.6' - Fracture, horizontal, smooth, undulating, tight fit 15.9' - Fracture, horizontal, smooth, undulating, tight fit 16.0' - Fracture, horizontal, smooth, undulating, tight fit 16.1' - Fracture, 30 deg, smooth, undulating | x x x x x x x x x x | Siltstone 15.2-18.2' - dark reddish brown, mottled green and black, very soft, slightly weathered, fine grained 16.0-16.9' - soft 16.9-18.2' - very soft | Rock coring began at 15:30 on 5/15/06 R1: 15:30-15:43 on 05/15/06 | |
| | | | 1 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | 19.0 | | 0 | | | Sandstone 18.2-19.9' - dark reddish brown, soft, very fine sand to fine sand, slightly weathered | R2: 16:10-16:23 | |
| | 24.0 | 100 | 1 | 19.9' - Fracture, 10 deg, smooth, undulating, loose fit 22.2' - Fracture, horizontal, smooth, undulating 23.5' - Fractures, horizontal and 50 deg, smooth, undulating 24.3' - Fracture, horizontal, smooth, undulating, tight fit | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-8

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| | R5NQ 4 ft 98% | 82 | 0 | | | | |
| | | | 0 | | | | |
| | | | 10+ | | | | |
| 38.0 | | | | | | 37.4-41.0' - moderately weathered 37.4-37.9' - clay seam | |
| | | | 0 | | | | R6: No time recorded |
| | | | 1 | 39.4' - Fracture, horizontal, smooth, undulating, 0.1' clay infilling | | 39.0-41.0' - very soft | SC-1 collected 38.0-39.1' |
| 40 223.6 | R6NQ 5 ft 98% | 84 | 10+ | | | 40.3-41.0' - clay seam, 0.75' thick | |
| | | | 0 | | | 41.0-45.2' - very soft to soft, fresh, coarse sand to fine gravel, scattered inclusions | |
| | | | 0 | | | | |
| 43.0 | | | | | | | |
| | R7NQ 1 ft 120% | 100 | 0 | | | | R7: No time recorded |
| 44.0 | | | | | | | R8: 10:35-10:53 |
| | | | 1 | 44.8' - Fracture, horizontal, smooth, undulating | | 45.2-46.0' - fresh, grades to very fine and fine sand | |
| 45 218.6 | | | 0 | | | | |
| | R8NQ 5 ft 104% | 100 | 0 | | | Sandstone 46.0-49.0' - dark reddish brown, mottled green, soft, very fine sand to fine sand, fresh | |
| | | | 1 | 47.4' - Fracture, 50 deg, smooth, undulating, thin quartz infilling | | 47.8-49.0' - grades to siltstone, soft | |
| | | | 0 | | | | |
| 49.0 | | | | | | Siltstone 49.0-51.5' - dark reddish brown, fresh, soft | R9: 11:30-11:38 |
| | | | 0 | | | 49.8-51.5' - soft, begins picking up more sand and transitions in and out of siltstone and very fine to fine grained sandstone | |
| 50 213.6 | R9NQ 5 ft 100% | 96 | 0 | | | Sandstone At 51.5' - dark reddish brown, fine sand, fresh, soft to hard, laminae silt seam | |
| | | | 0 | | | | |
| | | | 1 | | | | |
| 54.0 | | | | 53.9' - Fracture, 30 deg, smooth, undulating, black staining | | 53.6-53.8' - very dark gray, soft | R10: No time recorded |
| 55 | | | 0 | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-8

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel






ORIENTATION : Vertical

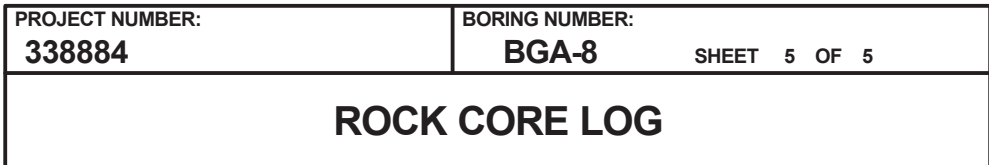
WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

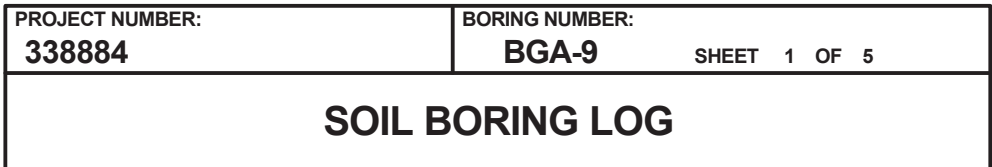
LOGGER : JS

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-------------------------|--------------------|--|---|---|------------------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |  |  | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 60 203.6 | R10NQ 5 ft 100% | 100 | 0 | 57.1' - Fracture, 60 deg, smooth, stepped 57.8-58.0' - Clay seam, 40 deg, slickensided |  | 53.8-54.0' - very dark greenish gray, very soft, 0.1' lens fine grained, 0.1' medium grained with multicolored grains Conglomerate 54.0-55.2' - dark greenish gray, soft to hard, fresh, multicolored grains, gray clay, coarse sand to fine gravel Sandstone 55.2-58.0' - dark reddish gray, laminated to very thin bedding, fine sand to medium sand, fresh, with some coarser beds, multicolored grains 57.8-58.0' - clay seam Conglomerate 58.0-59.4' - dark greenish gray, soft to hard, fresh, multicolored grains, coarse sand, fewer fine gravel, less fines, (gray clay) Sandstone 59.4-59.5' - dark reddish gray, hard, very thin bedding, fine sand to medium sand, fresh Conglomerate 59.5-60.1' - dark reddish gray, soft, thin bedding, fresh, multicolored grains (red, white, gray) and staining, medium gravel Sandstone 60.1-60.3' - dark reddish gray, hard, very thin bedding, fine sand to medium sand, fresh Conglomerate 60.3-62.7' - dark reddish gray, soft to hard, fresh, multicolored grains (red, white, gray) and staining, medium gravel Siltstone At 62.7' - dark reddish brown, black and green mottling, fresh, fine grained, soft 64.0-69.4' - no green mottling, fine grained Sandstone 69.4-69.8' - dark reddish brown, soft to hard, very fine sand to fine sand, fresh Siltstone At 69.8' - dark greenish gray, very soft to soft 69.8-71.1' - fresh 70.4-73.0' - dark reddish gray, mottled dark red, green, gray, very soft, fine grained 71.1-74.3' - highly weathered 73.0-74.3' - dusky red, clay seams 73.1-73.3' - clay seam Sandstone 74.3-77.1' - greenish black, fresh | R11: 12:45-12:57 |
| | | | 0 | | | | |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | 64.0 | R11NQ 5 ft 100% | 100 | 0 | 62.7' - Fracture, 20 deg, rough, undulating |  | R12: 13:04-13:23 |
| | | | | 0 | | | |
| | | | | 0 | | | |
| | | | | 1 | | | |
| | 65 198.6 | R12NQ 4.8 ft 100% | 100 | 0 | 70.5' - Fracture, horizontal, smooth, undulating, loose fit 71.1-73.0' - Fracture zone, horizontal |  | R13: 13:30-13:52 |
| | | | | 0 | | | |
| | | | | 0 | | | |
| | | | | 0 | | | |
| 70 193.6 | R13NQ 4.2 ft 76% | 55 | 0 | 73.5' - Fracture, horizontal, smooth, undulating, 0.1' clay infilling 73.7' - Fracture, 10 deg, smooth, undulating, tight fit 74.2' - Fracture, 20 deg, smooth, undulating |  | R14: 13:58-14:02 | |
| | | | 1 | | | | |
| | | | 10+ | | | | |
| | | | | | | | |
| 73.0 | R14NQ 1 ft 100% | 0 | 3 | |  | R15: 14:09-14:26 | |
| | | | 1 | | | | |
| 74.0 | | | | | | | |
| 75 | | | | | | | |



LOGGER : JS

Rev. 5



LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-9

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

ELEVATION : 253.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 5/15/06 12:40

END : 5/17/06 11:22

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|---|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 243.3 | 7.8 | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-9

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

ELEVATION : 253.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

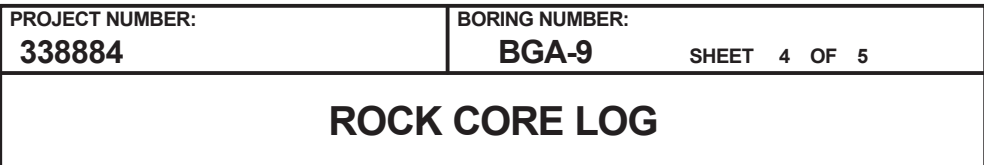
WATER LEVELS : 5.2 ft bgs

START : 5/15/06 12:40

END : 5/17/06 11:22

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|---|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 30 223.3 | R3NQ 10 ft 88% | 65.5 | 1 | 27.7' - Fracture, 70 deg, rough, undulating, tight | <div></div> | | | |
| | | | 0 | | | | | |
| | | | 1 | 29.7' - Fracture, 30 deg, rough, stepped, tight | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | | | | | | |
| 34.5 | | | | | | 34.5-35.4' - moderately weathered | R4: 14:50-15:08 and 15:10-15:30 | |



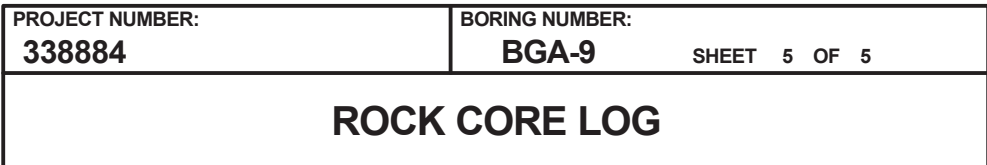
LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 5



LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-10

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

ELEVATION : 246.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead









ORIENTATION : Vertical

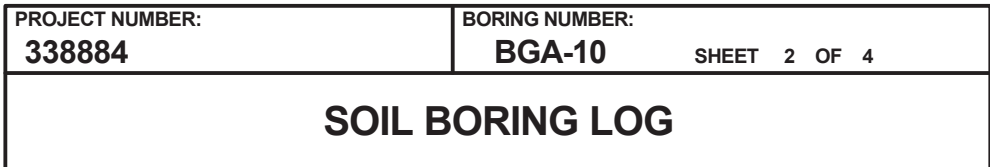
WATER LEVELS : 13.8 ft bgs

START : 5/17/06 14:05

END : 5/18/06 11:13

LOGGER : DT

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|---|----------|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 246.2 | 0.0 | 13.0 | SS1SS | 2-2-5-6 (7) | Fat Clay (CH) 0.0-0.5' - reddish brown, mottling, moist, medium stiff, high plasticity, organics Sandy Clay (CL) 0.5-1.1' - olive yellow, moist, medium stiff, fine grained, medium plasticity |  | |
| | 2.0 | | | | | | |
| | 2.5 | 13.0 | SS2SS | 4-4-8-10 (12) | Sandy Clay (CL) 2.5-3.6' - brownish yellow and light greenish gray, mottling, stiff, fine to medium grained |  | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 241.2 | 5.0 | 16.0 | SS3SS | 4-4-9-13 (13) | Sandy Clay (CL) 5.0-6.3' - brownish yellow and light greenish gray, mottling, stiff, fine to medium grained |  | |
| | 7.0 | | | | | | |
| | 7.5 | 16.0 | SS4SS | 4-6-11-14 (17) | Sandy Clay (CL) 7.5-8.8' - brownish yellow and light greenish gray, moist, very stiff, fine to coarse grained |  | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 236.2 | 10.0 | 9.0 | SS5SS | 7-50/3 (50/3") | Sandy Clay (CL) 10.0-10.5' - brownish yellow and light greenish gray, moist, very stiff, fine to coarse grained Clay (CL) 10.5-10.8' - reddish brown and light greenish gray, mottling, moist, hard, low plasticity, some fine sand, micaceous |  | |
| | 12.0 | | | | | | |
| | 12.5 | 14.0 | SS6SS | 12-29-50/2 (79/8") | Clay (CL) 12.5-13.5' - reddish brown and light greenish gray, mottling, moist, hard, low plasticity, some fine sand Silty Sand (SM) 13.5-13.7' - light greenish gray, moist, hard, fine grained, micaceous |  | |
| | 14.5 | | | | | | |
| 15 | | | | | | | |
| 231.2 | 15.0 | 13.5 | SS7SS | 12-27-50/1.5 (77/7.5") | Clay (CL) 15.0-16.1' - light greenish gray and brownish yellow, mottling, moist, black oxide zones, laminated |  | |
| | 17.0 | | | | | | |
| | 17.5 | 2.0 | SS8SS | 50/2 (50/2") | Sandy Clay (CL) 17.5-17.7' - dark brown, moist, fine grained, medium plasticity, trace sandstone fragments, micaceous |  | |
| | 19.5 | | | | | | |
| 20 | | | | | | | |



LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-10

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

ELEVATION : 246.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 13.8 ft bgs

START : 5/17/06 14:05

END : 5/18/06 11:13

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---------------------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 22.6 | R1NQ 1.9 ft 100% | 90 | 1 | 23.2' - Fracture, 10 deg, rough, undulating, loose | | Sandstone At 22.6' - reddish brown, soft, fine sand, slightly weathered, micaceous, quartz | Rock coring began at 08:52 on 5/18/06 |
| 24.5 | | | 1 | 24.3' - Fracture, horizontal, rough, stepped, loose | | | R1: 08:52-09:07 on 5/18/06 |
| 25 221.2 | | | 0 | 24.5' - Fracture, horizontal, rough, stepped, loose | | 24.5-24.9' - grayish green, some silt, fine sand, micaceous | |
| | | | 1 | 25.7' - Fracture, 10 deg, slickensided, undulating | | Siltstone 24.9-25.7' - dark reddish brown, soft, slightly weathered, fine grained, some sand, micaceous | R2: 09:15-09:28 and 09:30-09:42 |
| | | | 0 | | | Sandstone At 25.7' - dark bluish gray, fine sand, slightly weathered, some silt, micaceous | |
| | | | 0 | | | 27.8-34.0' - soft, fine sand to medium sand, subrounded, feldspars, micaceous, quartz | |
| 30 216.2 | R2NQ 10 ft 100% | 100 | 0 | | | 27.8-27.9' - reddish brown siltstone clasts | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | 34.0' - Fracture, 10 deg, rough, undulating, loose | | Siltstone At 34.0' - dark reddish brown, soft, fine grained, some fine sand, micaceous | |
| 35 211.2 | | | 0 | | | 34.0-40.0' - slightly weathered | R3: 09:48-10:22 and 10:23-10:42 |
| | | | 0 | | | | |
| | | | 0 | | | 36.0-36.5' - mottled greenish gray | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 40 206.2 | R3NQ 10 ft 99% | 95 | 0 | | | 40.0-53.5' - fresh | |
| | | | 0 | | | 40.2-42.5' - mottled green and red | |
| | | | 0 | | | | |
| | | | 0 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-10

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

ELEVATION : 246.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

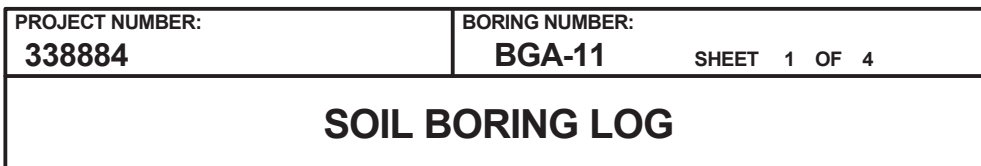
WATER LEVELS : 13.8 ft bgs

START : 5/17/06 14:05

END : 5/18/06 11:13

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 45 201.2 | 44.5 | | 0 | | 44.5-45.8' - some fine to medium grained sand | R4: 10:54-11:14 and 11:17-11:35 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 50 196.2 | R4NQ 10 ft 99% | 96 | 0 | | 44.5-45.8' - some fine to medium grained sand | SC-1 collected 45.0-46.1' | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 55 191.2 | 54.5 | | 0 | 53.5' - Fracture, 10 deg, rough, undulating, tight | Sandstone 53.5-54.3' - greenish gray, soft, fine sand to medium sand, fresh, some silt, micaceous, feldspar | First water level = 13.8' bgs taken 5/18/06 at 18:10; second water level = 2.5' bgs taken 5/19/06 at 13:19 | |
| | | | 0 | 54.2' - Fracture, 30 deg, rough, undulating, tight | | | Siltstone 54.3-54.5' - dark reddish brown, soft, fresh, fine grained, some fine sand, micaceous Bottom of Boring at 54.5 ft bgs on 5/18/06 11:13 | R-Scale not performed on rock core samples |
| 60 186.2 | | | | | | | |



LOGGER : JS/AT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-11

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)

ELEVATION : 246.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.9 ft bgs

START : 8/8/06 13:45

END : 8/9/06 10:55

LOGGER : JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 7.7 | R1NQ 1.8 ft 92% | 83 | 0 | | x x x | Siltstone 7.7-9.8' - dark reddish brown, reddish-black and trace greenish-gray mottling, soft to hard, moderately weathered, 35% very fine to fine sand | Rock coring began at 15:42 on 8/8/06 R1: 15:42-15:56 At 8.4': R-Scale = R2 |
| 9.5 | | | 0 | | x x x | | |
| 10 | | | 3 | 9.6' - Fracture, horizontal, smooth, planar | x x x | Sandstone At 9.8' - light brownish gray, soft, medium bedding, very fine sand to medium sand, multicolored sand 9.8-10.8' - moderately weathered | R2: 16:01-16:13 |
| 236.8 | | | 1 | 10.4' - Fracture, horizontal, smooth, undulating 10.5' - Fracture, 10 deg, smooth, undulating | x x x | Clay Seam 10.5-10.8' 10.8-15.6' - slightly weathered 11.2-11.3' - dark reddish brown mottling 11.5-15.6' - gray, soft to hard, very fine sand to coarse sand, 20-25% silt | At 11.5': R-Scale = R2 |
| | R2NQ 5 ft 97% | 83 | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 1 | | x x x | | |
| 14.5 | | | 2 | 14.4' - Fracture, 15 deg, rough, undulating 14.5-14.8' - Fracture, 60 deg, rough, undulating | x x x | | R3: 16:51-17:03 |
| 15 | | | 2 | 14.8' - Fracture, 5 deg, rough, undulating 15.6' - Fracture, 20 deg, rough, undulating 15.7' - Fracture, 10 deg, smooth, undulating | x x x | Siltstone 15.6-22.0' - dark reddish brown, greenish gray mottling, soft 15.6-15.7' - slightly weathered 15.7-22.0' - fresh | At 16.6': R-Scale = R2 |
| 231.8 | | | 0 | 17.3' - Fracture, 15 deg, rough, undulating | x x x | | |
| | R3NQ 5 ft 98% | 88 | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 1 | | x x x | | |
| 19.5 | | | 0 | | x x x | | R4: 17:10-17:26 |
| 20 | | | 1 | 21.1' - Fracture, horizontal, smooth, planar | x x x | Sandstone 22.0-23.4' - dark gray, soft to hard, fresh, 60-70% very fine to fine sand | At 22.5': R-Scale = R3 |
| 226.8 | | | 0 | | x x x | | |
| | R4NQ 5 ft 103% | 97 | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 1 | | x x x | | |
| 24.5 | | | 1 | 24.4' - Fracture, 20 deg, smooth, undulating 24.7' - Fracture, 15 deg, smooth, undulating 24.8' - Fracture, 45 deg, rough, undulating, tight fit | x x x | Siltstone 23.4-33.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh | R5: 07:54-08:13 on 8/9/06 |
| 25 | | | 0 | | x x x | | |
| 221.8 | | | 0 | | x x x | | |
| | R5NQ 5 ft 95% | 92 | 0 | | x x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-11

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)

ELEVATION : 246.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.9 ft bgs

START : 8/8/06 13:45

END : 8/9/06 10:55

LOGGER : JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|----------------------|--------------------|---|---|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 30 216.8 | 29.5 | R6NQ 5 ft 101% | 100 | 0 | 31.2' - Fracture, 25 deg, smooth, undulating, white/greenish staining | <div>XXXXXX XXXX</div> | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-11

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)

ELEVATION : 246.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

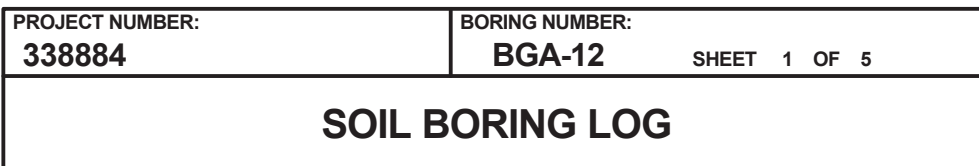
WATER LEVELS : 3.9 ft bgs

START : 8/8/06 13:45

END : 8/9/06 10:55

LOGGER : JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 50 196.8 | 49.5 | | 0 | | x | | At 48.5': R-Scale = R3.5 |
| | | | 0 | | x | | R10: 10:17-10:32 |
| | | | 0 | | x | | At 50.5': R-Scale = R3 |
| | | | 1 | | x | | |
| | R10NQ 5 ft 96% | 96 | 1 | | x | 52.0-54.5' - very fine to fine sand | At 54.0': R-Scale = R3-R4 |
| | | | 0 | | x | | |
| | | | 0 | | x | 53.0-54.0' - light reddish brown, mottled dark reddish brown and green, thin black lines inside center of green mottling | R11: 10:42-10:55 |
| 55 191.8 | 54.5 | | | | x | 54.5-58.3' - dark reddish-black to red clasts <0.0002-0.0007' | SC-1 collected 54.7-55.7' |
| | | | 1 | | x | | First water level = 3.9' bgs taken 8/10/06 at 11:43 At 56.1': R-Scale = R3 |
| | | | 1 | | x | | |
| | R11NQ 5 ft 98% | 76 | 1 | | x | | |
| | | | 0 | | x | | |
| | | | 6 | | x | | R-Scale performed during rock core logging |
| 60 186.8 | 59.5 | | | | x | Sandstone 58.3-58.7' - fresh, multicolored very fine to fine sand; silt beds between sand layers | |
| | | | | | x | Siltstone 58.7-59.5' - dark reddish brown, greenish-gray mottling, soft to hard, fresh | |
| | | | | | x | Bottom of Boring at 59.5 ft bgs on 8/9/06 10:55 | |
| 65 181.8 | | | | | x | | |



LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-12

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687173.0 N, 2012923.7 E)

ELEVATION : 260.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

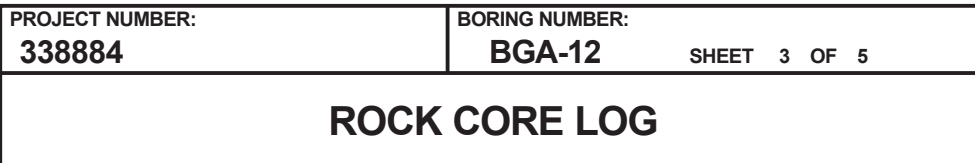
WATER LEVELS : 8.0 ft bgs

START : 4/17/06 09:50

END : 4/18/06 16:30

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | | | |
| | | | DESCRIPTION | | | |
| | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 12.8 | | | NA | | Silt (ML) 12.8-14.0' - reddish brown, mottled gray, highly weathered, hard | Rock coring began at 13:15 on 4/17/06 R1: 13:15-13:33 |
| 15 | | | 1 | | Siltstone At 14.0' - reddish brown, soft to hard, fresh, fine grained | Drillers Remark: Coring with recirculated water |
| 245.9 | | | 0 | | | |
| | R1/R2NQ 8.2 ft 99% | 77 | 1 | | | R2: 13:36-14:00 |
| | | | 0 | | | |
| | | | 1 | | | |
| | | | 0 | | | |
| 20 | | | 1 | | | |
| 240.9 | | | 0 | | | |
| | | | 0 | | | |
| | | | 4 | | 21.0-30.0' - occasional greenish gray mottling | R3: 08:05-08:36 on 4/18/06 |
| | | | 0 | | | |
| | | | 0 | | | |
| | | | 0 | | | |
| 25 | | | 0 | | | |
| 235.9 | | | 0 | | | |
| | R3/R4NQ 10 ft 100% | 82.5 | 0 | | | R4: 08:36-08:57 |
| | | | 0 | | | |
| | | | 0 | | 26.8-27.3' - bioturbation channels filled with finer grained more uniform material that gives the appearance of pebbles in core | |
| | | | 0 | | | |
| | | | 1 | | | |
| 30 | | | 10+ | | | |
| 230.9 | | | 2 | | Sandstone 30.2-30.6' - reddish brown to grayish red, fine sand to medium sand, poorly sorted, fresh, quartz, feldspar, mica grains, partly silty. | R5: 09:12-09:31 |
| | | | 0 | | Siltstone At 30.6' - reddish brown, soft to hard | |
| | | | 0 | | | |



LOGGER : DT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-12

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687173.0 N, 2012923.7 E)

ELEVATION : 260.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.0 ft bgs

START : 4/17/06 09:50

END : 4/18/06 16:30

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|---|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 205.9 | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-12

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687173.0 N, 2012923.7 E)

ELEVATION : 260.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

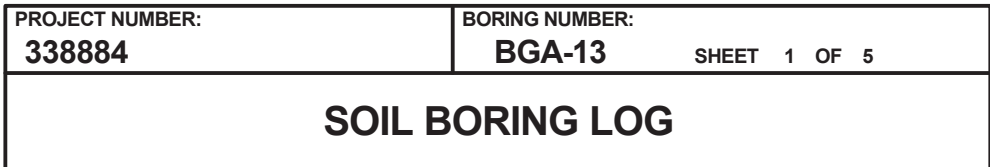
WATER LEVELS : 8.0 ft bgs

START : 4/17/06 09:50

END : 4/18/06 16:30

LOGGER : DT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|-----------------------------------|-----------------|--------------------|--|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 75 185.9 | 76.0 R14NQ 5 ft 100% | 97 | 0 | 76.0-81.0' - Microfractures, capillary pattern 76.4' - Fracture, smooth, undulating, tight fit 76.6' - Fracture, smooth, undulating, tight fit | x | 74.5-75.0' - coarse sand sized feldspar grains (<1%) 75.0-79.3' - grayish red to pale red, coarse siltstone, grades to sandstone in places, claystone pebbles (10-25% volume) 79.2' - mottled greenish gray 79.3-81.0' - grayish red, fine grained, some white inclusions (0.5-1) | R14: 15:56-16:30 First water level = 8.0' bgs taken 4/20/06 at 11:30 R-Scale not performed on rock core samples |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 80 180.9 | | | 0 | | x | | |
| 81.0 | | | 0 | | x | | |
| 85 175.9 | | | | | | Bottom of Boring at 81.0 ft bgs on 4/18/06 16:30 | |
| 90 170.9 | | | | | | | |



LOGGER : AT/LH/EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-13

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686459.9 N, 2011681.2 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.2 ft bgs

START : 7/26/06 16:00

END : 7/27/06 12:20

LOGGER : AT/LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|-------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 10 250.6 | 8.7 9.2 R1NQ 0.5 ft 90% | NA | 1 | 8.8' - Fracture, horizontal, rough, planar | x | Siltstone At 8.7' - dark reddish brown, mottled pale olive, very soft, laminated bedding, clay-like material | Rock coring began at 16:56 on 7/26/06 |
| | | | 1 | 9.0' - Fracture, horizontal, rough, planar | x | | |
| | | | 1 | 9.5' - Fracture, 10 deg, smooth, undulating, 0.005' relief | x | | |
| | | | 1 | 10.0' - Fracture, 5 deg, smooth, undulating, dark brown clay like, tight fit | x | | |
| | | | 1 | 10.7' - Fracture, horizontal, smooth, undulating, light gray greenish, concaved shaped, 0.01' relief | x | | |
| | | | 1 | 11.4' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 5 | 12.3' - Fracture, horizontal, smooth, undulating, tight fit | x | | |
| | | | 3 | 12.6' - Fracture, 15 deg, smooth, undulating, dark brown stains, 0.01' relief | x | | |
| | | | 3 | 12.9' - Fracture, 5 deg, smooth, undulating, 0.005' relief | x | | |
| | | | 3 | 13.0' - Fracture, 10 deg, smooth, undulating | x | | |
| 15 245.6 | 14.2 | 0 | 4 | 13.2' - Fracture, 20 deg, smooth, undulating, tight fit | x | 14.2-19.0' - moderately weathered | R3: 17:20-17:27 |
| | | | 2 | 13.4' - Fracture, 5 deg, smooth, undulating, dark brown stains, 0.01' relief | x | | |
| | | | 2 | 13.6' - Fracture, 10 deg, smooth, undulating | x | | |
| | | | 2 | 14.1' - Fracture, 15 deg, smooth, undulating, dark brown stains, 0.01' relief | x | | |
| | | | 1 | 14.2' - Fracture, 15 deg, smooth, undulating, dark brown stains, 0.01' relief | x | | |
| | | | 1 | 14.3' - Fracture, 5 deg, smooth, undulating, dark brown stains, 0.01' relief, 0.01' relief | x | | |
| | | | 1 | 15.2' - Fracture, horizontal, smooth, undulating, dark brown stains, 0.01' relief | x | | |
| | | | 1 | 15.3' - Fracture, 5 deg, smooth, undulating, dark brown stains, 0.01' relief, 0.3' relief | x | | |
| | | | 2 | 15.6' - Fracture, horizontal, smooth, undulating, 0.005' relief, tight fit | x | | |
| | | | 1 | 16.5' - Fracture, horizontal, smooth, undulating, dark brown stains, 0.01' relief | x | | |
| 20 240.6 | 19.2 | 86 | 1 | 16.7' - Fracture, horizontal, smooth, undulating, dark brown stains, 0.01' relief, tight fit | x | 15.6-16.7' - dark reddish brown to pale yellow, soft | At 17.3': R-Scale = R1-R2 |
| | | | 1 | 18.2' - Fracture, 5 deg, smooth, undulating, dark brown stains, 0.01' relief, tight fit | x | | |
| | | | 1 | 19.2-19.4' - Fractures (2), 5 deg, smooth, undulating | x | | |
| | | | 1 | 19.7' - Fracture, horizontal, smooth, undulating, 0.01 relief | x | | |
| | | | 3 | 20.3' - Fracture, horizontal, smooth, undulating, 0.005 relief | x | | |
| | | | 2 | 21.5' - Fracture, 50 deg, rough, undulating, 0.01 relief | x | | |
| | | | 4 | 22.6' - Fracture, horizontal, rough, undulating, 0.01 relief | x | | |
| | | | 4 | 24.3' - Fracture, horizontal, rough, undulating | x | | |
| | | | 4 | 24.6' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 4 | 24.8' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 24.9' - Fracture, horizontal, smooth, undulating | x | 19.0-24.2' - moderately weathered to slightly weathered 19.2-19.6' - 30% fine sand | At 18.5': R-Scale = R1-R2 |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 25.1' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 23.6-23.9' - pale olive, very soft | At 20.8': R-Scale = R1-R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 24.2-25.1' - dark reddish brown, very soft, interbedded clay layers | At 22.0': R-Scale = R1-R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 24.2-29.0' - slightly weathered | At 25.8': R-Scale = R1-R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 26.4': R-Scale = R1-R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| 25 235.6 | 24.2 | 58 | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | 25.1-29.2' - light brown, soft to hard, poorly sorted, 40% very fine to fine sand | At 27.2': R-Scale = R2 |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, horizontal, smooth, undulating | x | | |
| | | | 1 | 26.9' - Fracture, | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-13

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686459.9 N, 2011681.2 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.2 ft bgs

START : 7/26/06 16:00

END : 7/27/06 12:20

LOGGER : AT/LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|---|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | | | DESCRIPTION |
| | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS |
| 30 230.6 | 29.2 | | 2 | 29.3' - Fracture, horizontal, smooth, undulating 29.4' - Fracture, horizontal, smooth, undulating 29.5' - Fracture, horizontal, smooth, undulating 30.0' - Fracture, 5 deg, smooth, undulating, 0.01' relief 31.1' - Fracture, 15 deg, smooth, undulating 31.6' - Fracture, horizontal, smooth, undulating | 29.0-39.0' - moderately weathered 29.2-34.2' - soft to hard, 40% very fine to fine sand | At 28.5': R-Scale = R2 R6: No time recorded | |
| | R6NQ 5 ft 92% | 73 | | | | | At 30.5': R-Scale = R3-R4 |
| | | | 4 | | | | At 31.4': R-Scale = R3-R4 |
| | | | 1 | | | | At 32.0': R-Scale = R2-R3 |
| | | | 0 | | | | At 32.5': R-Scale = R3 |
| | | | 2 | | | | At 33.2': PP: 1.0 tsf At 33.4': PP: 1.0 tsf |
| | 34.2 | | | | | 33.5' - Fracture, 5 deg, smooth, undulating | 34.2-34.8' - mottled green, soft, <10% very fine to fine sand 35.0-35.5' - section was crushed in removal from rod 35.5-36.2' - dark brown, very soft, clay rich layer, poorly bedded 35.7' - clay layer 36.2-39.2' - mottled pale olive and reddish black, soft to hard, 25% gravel sized to coarse sand sized clasts |
| R7NQ 5 ft 106% | 62 | 3 | 34.9' - Fracture, horizontal, smooth, undulating 35.0' - Fracture, horizontal, smooth, undulating, 0.005' relief 35.6' - Fracture, horizontal, smooth, undulating 35.8' - Fracture, horizontal, smooth, undulating 36.1' - Fracture, 5 deg, smooth, undulating, 0.01' relief 36.4' - Fracture, 5 deg, smooth, undulating, 0.01' relief 37.0-37.5' - Fractures (2), 80 deg, smooth, undulating, 0.01' relief 38.3' - Fracture, horizontal, smooth, undulating 38.6' - Fracture, horizontal, smooth, undulating | At 37.6': R-Scale = R3 | | | |
| | | 10+ | | | | | |
| | | 3 | | | | | |
| | | 1 | | | | | |
| | | 2 | | | | | |
| 39.2 | | | | 39.0-54.2' - fresh 39.2-44.2' - large irregular shaped white clasts from <1/4 to 1, harder than matrix | At 39.0': R-Scale = R2 R8: No time recorded | | |
| R8NQ 5 ft 101% | 97 | | | | At 42.9': R-Scale = R2 | | |
| | | 1 | | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
| | | 0 | | | | | |
| 44.2 | | | | | At 43.8': R-Scale = R2 R9: No time recorded | | |
| 45 215.6 | R9NQ 5 ft 104% | 100 | 0 | | At 45.0': R-Scale = R3 | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 1 | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-13

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686459.9 N, 2011681.2 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

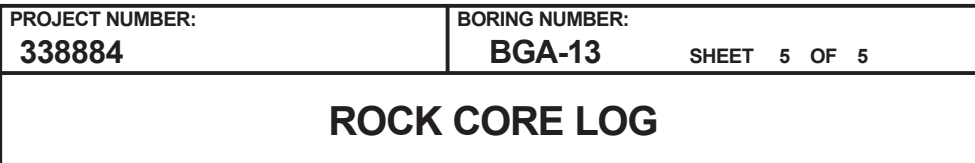
WATER LEVELS : 6.2 ft bgs

START : 7/26/06 16:00

END : 7/27/06 12:20

LOGGER : AT/LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 49.2 | | | 2 | | X | | |
| 50 | | | X | | X | | |
| 210.6 | | | 1 | | X | | |
| | | | 2 | | X | | |
| | R10NQ 5 ft 100% | 88 | 2 | 51.4' - Fracture zone, 70 deg and 45 deg, smooth, undulating | X | | |
| | | | 1 | 52.0' - Fracture zone, 25 deg, rough, undulating, tight fit | X | | |
| | | | 2 | 52.7' - Fracture, 60 deg, rough, undulating | X | | |
| 54.2 | | | | | X | | |
| 55 | | | 2 | | X | | |
| 205.6 | | | 2 | | X | | |
| | R11NQ 5 ft 103% | 80 | 0 | | X | | |
| | | | 3 | 57.1' - Fracture, horizontal, smooth, undulating, 0.03 inch clay infilling | X | | |
| | | | 2 | 57.4' - Fracture, 5 deg, smooth, undulating, 0.03 inch clay infilling | X | | |
| | | | | 57.5' - Fracture, 5 deg, smooth, undulating, 0.03 inch clay infilling | X | | |
| 59.2 | | | | 57.6' - Fracture, horizontal, smooth, undulating, 0.02 inch clay infilling | X | | |
| 60 | | | 10+ | 59.2-59.3' - Fracture zone, horizontal, smooth, undulating | X | | |
| 200.6 | | | 1 | 59.5-60.1' - Fracture zone, horizontal, smooth, undulating, 0.02 inch clay infilling | X | | |
| | R12NQ 5 ft 98% | 75 | 1 | | X | | |
| | | | 0 | | X | | |
| | | | 0 | | X | | |
| 64.2 | | | | | X | | |
| 65 | | | 1 | 64.4' - Fracture, vertical, rough, undulating | X | | |
| 195.6 | | | 0 | | X | | |
| | R13NQ 5 ft 102% | 94 | 0 | | X | | |
| | | | 0 | | X | | |



LOGGER : AT/LH/EM

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-14

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer










ORIENTATION : Vertical

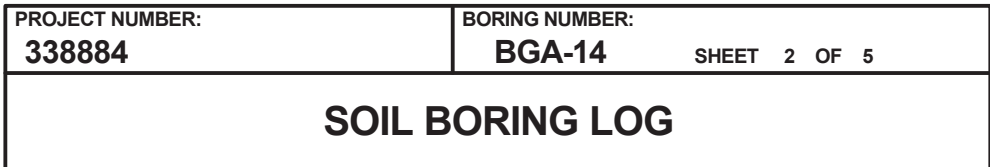
WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

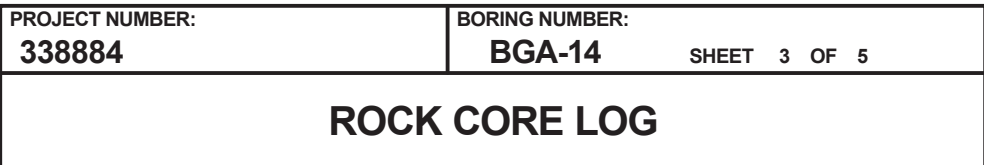
LOGGER : AT

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | #TYPE | STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N) | SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | SYMBOLIC LOG | COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | | | | | |
|---------------------------------|---------------|------|--------------|--|---|---|---|--|--|--|--|--|
| | RECOVERY (in) | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 287.0 | 0.0 | 10.8 | SS1SS A&B | 9-8-5-5 (13) | Silty Gravel (GM) 0.0-0.7' - pinkish gray, dry, dense, well graded fine to coarse, angular gravel. 25% fine to coarse sand silt Clay (CL) 0.7-0.9' - pale brown, moist, soft, high plasticity |  | | | | | | |
| | 2.0 | | | | | | | | | | | |
| | 2.5 | 21.6 | SS2SS | 4-9-26-31 (35) | Clay (CL) 2.5-3.8' - pale brown, moist, soft, high plasticity, sharp contact between clay layers at 3.75' |  | | | | | | |
| | 4.5 | | | | Sandy Silt (ML) 3.8-4.3' - brown, dry to moist, no plasticity, rapid dilatancy, 10-15% very fine to fine sand |  | | | | | | |
| 5 | | | | | | | | | | | | |
| 282.0 | 5.0 | 18.0 | SS3SS | 17-39-50 (89) | Sandy Silt (ML) 5.0-5.5' - brown, dry to moist, no plasticity, rapid dilatancy, 10-15% very fine to fine sand Silty Sand (SM) 5.5-6.5' - pinkish gray, reddish yellow linear mottling, dry to moist, 70-75% very fine to fine sand |  | | | | | | |
| | 7.0 | | | | | | | | | | | |
| | 7.5 | 15.6 | SS4SS | 44-36-50 (86) | Sandy Silt (ML) 7.5-8.9' - pinkish gray, reddish yellow linear mottling, dry to moist, very fine to fine grained, 70-75% very fine to fine sand |  | | | | | | |
| | 9.5 | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 277.0 | 10.0 | 13.2 | SS5SS | 32-50 (50") | Sandy Silt (ML) 10.0-10.5' - pinkish gray, dark brown mottling, dry to moist, very fine to fine grained |  | | | | | | |
| | 12.0 | | | | | | | | | | | |
| | 12.5 | 7.2 | SS6SS | 50 (50") | Sandy Silt (ML) 12.5-13.1' - pinkish gray, red and black mottling, dry to moist, very fine to fine grained, 70-75% very fine to fine sand |  | | | | | | |
| | 14.5 | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 272.0 | 15.0 | 6.0 | SS7SS | 50/5 (50/5") | Sandy Silt (ML) 15.0-15.5' - pinkish gray, mottled red, black, very fine to fine grained, mottles <0.0002-0.0007, poorly graded sand, dark brown weathering stains, laminated |  | | | | | | |
| | 17.0 | | | | | | | | | | | |
| | 17.5 | 8.4 | SS8SS | 50 (50") | Sandy Silt (ML) 17.5-18.0' - pinkish gray, very soft, very fine to fine grained, mottles <0.0002-0.0007, poorly graded sand, dark brown weathering stains, laminated |  | | | | | | |
| | 19.5 | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |



LOGGER : AT

Rev. 5



LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

DRILLING CONTRACTOR : K. Canuel, S&ME

ORIENTATION : Vertical

LOGGER : AT

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-14

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 45 242.0 | R5NQ 5 ft 100% | 100 | 0 | | x x x x | 42.5-47.5' - soft to hard | R5: 9:12-9:31 At 43.0': R-Scale = R3 |
| | | | 2 | 43.8' - Fracture, 85 deg, smooth, undulating, tight fit to tightly healed | x x x x | | |
| | | | 0 | 44.6' - Fracture, 10 deg, smooth, undulating, fairly tight fit | x x x x | | At 44.3': R-Scale = R3 |
| | | | 0 | | x x x x | | |
| | | | 0 | | x x x x | | |
| 47.5 | | | 0 | | x x x x | 46.9-47.5' - 5-10% white clasts | |
| | | | 0 | | x x x x | 47.5-52.5' - 25% gravel sized white clasts | R6: 9:47-10:03 |
| | | | 1 | | x x x x | | At 48.5': R-Scale = R3 |
| 50 237.0 | R6NQ 5 ft 97% | 87 | 0 | 49.4-49.7' - Fracture, 60 deg, smooth, undulating | x x x x | | |
| | | | 2 | 50.6' - Fracture, 10 deg, smooth, undulating, loose fit | x x x x | | |
| | | | 1 | 50.8' - Fracture, 10 deg, smooth, undulating | x x x x | | At 51.5': R-Scale = R3-R4 |
| 52.5 | | | x x x | 52.2' - Fracture, 5 deg, smooth, undulating | x x x x | | |
| | | | 4 | 52.8' - Fracture, horizontal, rough, undulating | x x x x | 52.5-53.1' - soft to hard, gravel sized white clasts (0.001) | R7: 10:36-10:49 |
| | | | 1 | 53.0' - Fracture, 5 deg, smooth, undulating, 0.05' relief | x x x x | 52.6-52.7' - clay seam | |
| | | | 0 | 53.1' - Fracture, 10 deg, smooth, undulating, 0.1' relief, 10% coverage | x x x x | 53.1-57.5' - green mottling, 30-35% coverage <0.0002-0.0004', same hardness as matrix | At 54.0': R-Scale = R3 |
| 55 232.0 | R7NQ 5 ft 96% | 72 | 0 | 53.3' - Fracture, 10 deg, smooth, undulating | x x x x | | |
| | | | 1 | 53.6' - Fracture, 5 deg, smooth, undulating, tight fit | x x x x | | At 55.7': R-Scale = R3 |
| | | | 1 | 56.3' - Fracture, horizontal, rough, undulating, 0.2' relief | x x x x | | At 56.6': R-Scale = R3-R4 |
| 57.5 | | | x x x | 56.9' - Fracture, 25 deg, smooth, undulating, 0.005' relief, tight fit | x x x x | | |
| | | | 0 | | x x x x | 57.5-58.3' - large linear-shaped green mottling to 4" in length by 1 1/3" wide | R8: 11:06-11:22 |
| | | | 0 | | x x x x | Sandstone | |
| 60 227.0 | R8NQ 5 ft 98% | 98 | 0 | | x x x x | At 58.6' - dark gray, soft to hard, up to 80% very fine to coarse sand, fining upwards, poorly sorted, some silt | At 59.5': R-Scale = R3-R4 |
| | | | 1 | | x x x x | 59.1-63.6' - multi-colored, laminated to thin bedding, very fine sand to coarse sand | |
| | | | 0 | 61.2' - Fracture, 10 deg, rough, undulating, 0'.005' relief | x x x x | 60.4-60.4' - dark gray/ grayish - black layer ~ 1/7" thick | At 60.5': R-Scale = R3-R4 |
| 62.5 | | | x x x | | x x x x | 62.0-62.5' - poorly laminated with red staining | At 61.7': R-Scale = R3-R4 |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-14

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 65 222.0 | R9NQ 5 ft 98% | 98 | 2 | 63.0' - Fracture, 10 deg, smooth, planar, tight fit | : : : : : : : : x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-15

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

LOGGER : EM/LH

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|----------|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 266.6 | 0.0 | 14.4 | SS1SS | 5-6-6-8 (12) | Clay (CL) 0.0-1.2' - yellow, mottled dark red, moist, stiff, medium to high plasticity, rapid dilatancy | | |
| | 2.0 | | | | | | |
| | 2.5 | 15.6 | SS2SS | 5-7-8-10 (15) | Lean Clay (CL) 2.5-3.8' - dark red & light gray, moist, stiff, medium to high plasticity, slow to rapid dilatancy | | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 261.6 | 5.0 | 16.8 | SS3SS | 9-15-23-30 (38) | Clay (CL) 5.0-6.4' - dark red, moist, hard, low to medium plasticity, slow to rapid dilatancy | | |
| | 7.0 | | | | | | |
| | 7.5 | 18.0 | SS4SS | 17-22-33-44 (55) | Clay (CL) 7.5-9.0' - dark red, moist, hard, low to medium plasticity | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 256.6 | 10.0 | 12.0 | SS5SS | 33-50/2 (50/2") | Clay (CL) 10.0-11.0' - dark red, mottled black & light olive brown, dry to moist, hard, low plasticity, rapid dilatancy | | |
| | 12.0 | | | | | | |
| | 12.5 | 13.2 | SS6SS | 10-50/5.5 (50/5.5") | Clay (CL) 12.5-13.6' - dark red, mottled greenish gray, dry to moist, hard, low plasticity, slow to rapid dilatancy | | |
| | 14.5 | | | | | | |
| 15 | | | | | | | |
| 251.6 | 15.0 | 3.0 | SS7SS | 50/3 (50/3") | Clay (CL) 15.0-15.3' - dark red, dry to moist, hard, low plasticity, highly weathered, 15% fine sand Clay Seam 15.0' - very soft lower surface Begin Rock Coring at 15.4 ft bgs See the next sheet for the rock core log | | |
| | 15.3 | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BGA-15

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

LOGGER : EM/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|----------------------|------------------------|--|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 20 246.6 | 15.4 R1NQ 16.0 0.6 ft 92% | 0 | 1 | 19.1' - Fracture, horizontal and 5 deg, rough, undulating 20.7' - Fracture, horizontal and 5 deg, smooth, undulating 21.8' - Fracture, 60 deg, rough, undulating, black stains 21.9' - Fracture, 5 deg, smooth, undulating, 0.02 thick clay infilling 22.1' - Fracture, 45 deg, rough, undulating 23.0' - Fracture, 5 deg, smooth, undulating, 0.05 thick clay infilling 23.2' - Fracture, 45 deg, smooth, undulating, 0.03 thick clay infilling 23.7' - Fracture, horizontal and 5 deg, smooth, undulating 23.8' - Contact between siltstone and sandstone, 20 deg 24.1' - Fracture, 20 deg, smooth, planar 24.6' - Fracture, horizontal and 5 deg, rough, undulating 25.3' - Fracture, 5 deg, smooth, undulating 25.6' - Fracture, 5 deg, rough, undulating 28.9' - Fracture, horizontal and 5 deg, smooth, undulating 29.3' - Contact between siltstone and sandstone, 20 deg | Siltstone At 15.4' - dusky red, soft, 45-50% fine to medium sand 15.4-16.0' - highly weathered 16.0-17.9' - soft, laminated reddish black bedding 16.0-18.4' - slightly weathered 17.9-18.4' - clay seam Sandstone At 18.4' - light brownish gray, fine sand to coarse sand, <5% coarse sand in beds at 60 degree angles. overall fining upward sequence 18.4-21.0' - slightly weathered 20.6' - small pebbles (up to .003') for .2' thick band 20.8' - fine sand to medium sand, trace sand 21.0-23.8' - slightly weathered to moderately weathered, trace small pebbles, siltstone/clay clasts up to 0.1' size Siltstone 23.8-24.2' - gray, very soft, slightly weathered to moderately weathered, some fine sand to medium sand Sandstone At 24.2' - gray, very soft to soft, siltstone beds up to 0.6' thick 24.2-26.0' - slightly weathered to moderately weathered 26.0-28.0' - mottled reddish brown, laminated bedding, slightly weathered, reddish brown clasts 0.01' in size 28.0-29.3' - slightly weathered, coarser material Siltstone At 29.3' - dark reddish brown, very soft, laminated bedding 29.3-33.5' - slightly weathered 29.6-31.0' - mottled black, 10% fine sand 31.0-36.0' - mottled green gray, very soft 33.5-36.0' - highly weathered | Rock coring began at 08:58 on 8/3/06 R1: 08:58-09:04 R2: 09:15-09:28 | | |
| | | 1 | At 17.3': R-Scale = R2 | | | | | |
| | | 0 | | | | | | |
| | R2NQ 5 ft 108% | 97 | 0 | | | At 19.6': R-Scale = R2 | | |
| | | 0 | | | | | | |
| | | 1 | | | | | | |
| | 21.0 | | 1 | | | At 21.0': R-Scale = R2 R3: 09:35-09:52 At 21.5': R-Scale = R2 | | |
| | 25 241.6 | R3NQ 5 ft 101% | | | | 1 | | |
| | | | | | | 2 | | |
| | | | | | | 3 | | |
| | | | 2 | | At 24.9': R-Scale = R2 | | | |
| | | | 2 | | | | | |
| 26.0 | | | 0 | | R4: 10:32-10:52 | | | |
| | | | 0 | | At 27.9': R-Scale = R2 | | | |
| | | | 1 | | | | | |
| | | | 0 | | At 30.5': R-Scale = R2 R5: 11:00-11:15 | | | |
| | | | 0 | | At 32.9': R-Scale = R3 | | | |
| 30 236.6 | R4NQ 5 ft 100% | | 0 | | | | | |
| | | | 1 | 32.4' - Fracture, horizontal and 5 deg, rough, undulating | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | 31.0 | | | | | | |
| | | | 0 | | | | | |
| | | | 1 | | | | | |
| | | | 0 | | | | | |
| | | | 2 | 33.9' - Fracture, 60 deg, smooth, undulating 34.1' - Fracture, horizontal, smooth, undulating, 0.05' thick clay infilling | | | | |
| | | | | | At 34.9': R-Scale = R1-R2 | | | |
| 35 231.6 | R5NQ 5 ft 100% | | 0 | | | | | |
| | | | 1 | | | | | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BGA-15

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

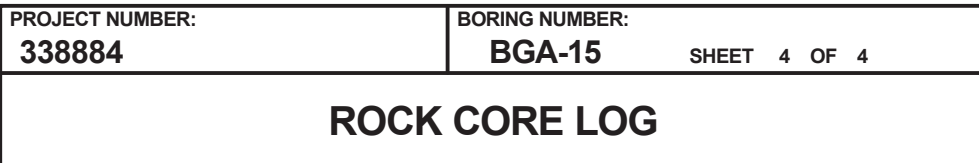
WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

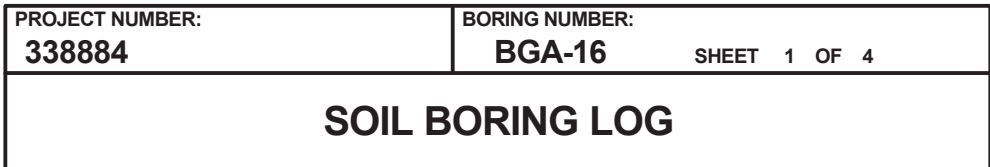
LOGGER : EM/LH

| WATER LEVELS: 11 | | START: 6/2/00 13:10 | | END: 6/4/00 14:21 | | LOGGER: ELMET | |
|--|------------------------------------|---------------------|--------------------|---|---|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 40 226.6 | 36.0 | 82 | 2 | x | | | |



LOGGER : EM/LH

Rev. 5



LOGGER : EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-16

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687118.1 N, 2012814.9 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 7/17/06 09:50

END : 7/17/06 16:45

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 7.9 | R1NQ 2.1 ft 100% | 0 | 6 | 8.0-8.6' - Fracture zone (6), <5 deg and 40 deg, rough, undulating, black stains, higher angled fractures have slickensides | x x x | Siltstone At 7.9' - reddish brown, mottled light greenish gray and brownish yellow, very soft | Rock coring began at 10:40 on 7/17/06 R1: 10:40-10:50 |
| 10 | 10.0 | | 1 | 8.9' - Fracture, 20 deg, rough, undulating, black stains, and slickensided | x x x | 7.9-10.0' - highly weathered | |
| 250.6 | | | 2 | 9.6' - Fracture, 40 deg, rough, undulating | x x x | 8.6-9.2' - 0.01-0.04' thick white clasts | |
| | | | 2 | 9.8' - Fracture, <5 deg, rough, undulating | x x x | 10.0-15.0' - very soft to soft | R2: 10:58-11:12 |
| | | | 3 | 10.1' - Fracture, 10 deg, rough, undulating | x x x | 10.0-15.2' - moderately weathered | |
| | | | 0 | 10.8' - Fracture, <5 deg, rough, undulating | x x x | 10.6-11.0' - ~50% very fine to fine grained sand; coarse sand size to fine gravel sized grains in siltstone and white clasts 0.01'-0.05' thick | |
| | | | 2 | 11.1' - Fracture, <5 deg, rough, undulating | x x x | | SC-1 collected 12.2-12.45' |
| | | | 3 | 11.2' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | 0 | 11.8' - Fracture, <5 deg, rough, undulating | x x x | | |
| 15 | 15.0 | 72 | 2 | 13.0' - Fracture, <5 deg, rough, undulating, black stains | x x x | 13.2-14.1' - soft to hard | |
| 245.6 | | | 3 | 13.8' - Fracture, vertical, rough, undulating | x x x | | |
| | | | 0 | 14.1' - Fracture, 10 deg, smooth, undulating, black stains | x x x | | |
| | | | 10+ | 14.3' - Fracture, <5 deg, rough, undulating | x x x | 15.0-20.0' - light greenish gray and reddish black mottling, black clasts 0.01-0.05' thick, or mottles - round to oblong | R3: 11:16-11:45 |
| | | | 1 | 14.7' - Fracture, 15 deg, rough, undulating, 0.1' thick clay infilling | x x x | 15.0-18.5' - very soft | |
| | | | 0 | 15.0-15.3' - Fracture zone, <5 deg, rough, undulating, 0.02 thick clay infilling, black stains | x x x | 15.2-25.8' - fresh | |
| | | | 0 | 16.8' - Fracture, <5 deg, rough, undulating | x x x | | |
| | | | 1 | 19.4' - Fracture, <5 deg, rough, undulating | x x x | 18.5-20.0' - soft | |
| 20 | 20.0 | 80 | 0 | | x x x | 20.0-25.0' - light greenish gray and brownish yellow mottling, soft, mottling throughout core | R4: 11:50-12:10 |
| 240.6 | | | 0 | | x x x | | |
| | | | 0 | | x x x | | |
| | | | 1 | 22.5' - Fracture, <5 deg, rough, undulating | x x x | | At 22.0': R-Scale = R3 |
| | | | 1 | 23.7' - Fracture, 60 deg, rough, undulating | x x x | | |
| | | | 0 | 23.8' - Joint, <0.01 thick clay infilling | x x x | | |
| 25 | 25.0 | 100 | 0 | | x x x | 24.6' - white clasts | R5: 13:07-13:20 |
| 235.6 | | | 0 | | x x x | 25.0-30.0' - light greenish gray and brownish yellow mottling, soft | |
| | | | 0 | | x x x | 25.8-29.3' - very soft, moderately weathered, white clasts up to 0.05' | At 26.0': R-Scale = R2 |
| | | | 10+ | | x x x | 27.6-27.8' - clay seam, very soft | |
| | | | | | x x x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-16

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687118.1 N, 2012814.9 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 7/17/06 09:50

END : 7/17/06 16:45

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 30 230.6 | 98% 30.0 | | 10+ | 27.9' - Fracture, 10 deg, rough, undulating, brownish yellow stains | x | 28.0-28.3' - clay seam, very soft | |
| | | | 1 | 28.2' - Fracture, 5 deg, rough, undulating, black stains | x | | |
| | | | | 28.4' - Fracture, 5 deg, rough, undulating | x | 29.3-42.5' - fresh | |
| | | | | 29.3' - Fracture, 5 deg, rough, undulating, black and brownish yellow stains | x | | |
| | | | 0 | | x | 30.0-35.0' - dark reddish brown, mottled yellowish brown, reddish black, and light greenish gray | R6: 13:25-13:42 |
| | | | 0 | | x | 30.0-32.0' - 10% fine to medium sand | |
| | | | 0 | | x | | |
| | R6NQ 5 ft 100% | 100 | 0 | | x | 32.0-32.9' - soft to hard, subrounded, ~30-40% fine to medium grained sand; 10% coarse | At 32.8': R-Scale = R3 |
| | | | 0 | | x | | |
| 35 225.6 | 35.0 | | 1 | 35.7' - Fracture, 5 deg, smooth, undulating | x | 35.0-40.0' - mottled yellowish brown, reddish black, light greenish gray, soft to hard | R7: 13:50-14:13 |
| | | | 1 | 36.6' - Fracture, 5 deg, smooth, undulating | x | 35.0-35.2' - ~30-40% fine to medium sand | Drillers Remark: Final 0.3' slipped out, unable to retrieve |
| | | | 0 | | x | | At 37.2': R-Scale = R3 |
| | R7NQ 5 ft 94% | 94 | 1 | 38.1' - Fracture, 5 deg, smooth, undulating | x | 38.1-38.7' - white to pink clay clasts up to 0.04' thick. | |
| | | | 0 | | x | | |
| 40 220.6 | 40.0 | | | | x | | R8: 14:20-14:35 |
| | | | 0 | | x | | |
| | | | 3 | 41.1' - Fracture, <5 deg, smooth, undulating | x | | |
| | | | | 41.4' - Fracture, vertical, rough, undulating | x | | At 41.7': R-Scale = R2 |
| | | | 1 | 41.5' - Fracture, <5 deg, rough, undulating, 0.03' thick clay infilling | x | 42.5-44.9' - moderately weathered, clay seams at bottom | At 42.2': R-Scale = R3 |
| | R8NQ 5 ft 104% | 87 | 0 | 43.4' - Fracture, <5 deg, smooth, undulating | x | 42.8-44.9' - soft, white to pink clay clasts 0.01-0.04' thick | |
| | | | 10+ | 44.1-44.7' - Fracture zone, 0.01-0.02' thick clay infilling, highly fractured (crumbled) | x | 43.0-45.0' - 50-60% black mottling | |
| 45 215.6 | 45.0 | | | | x | | |
| | | | 1 | 45.3' - Fracture, 15 deg, rough, undulating, 0.01' thick clay infilling, black stains | x | 44.9-62.3' - fresh | R9: 14:40-15:04 |
| | | | 0 | | x | 44.9-49.9' - dark reddish brown, mottled yellowish brown, reddish black, and light greenish gray | SC-2 collected |
| | | | | | x | 44.9-46.1' - 50-75% reddish black mottling; large white clasts up to 0.1' thick | 45.3-45.8' |
| | R9NQ 5 ft | 100 | 0 | | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-16

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687118.1 N, 2012814.9 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 7/17/06 09:50

END : 7/17/06 16:45

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | 100% | | 0 | | x x x | 46.1-47.2' - soft to hard, subrounded to subangular, up to 20% fine to medium sand; trace coarse sand; grades into very fine grained siltstone | |
| 50 | 50.0 | | 0 | | x x x | | |
| 210.6 | | | 0 | | x x x | 49.9-55.0' - dark reddish brown, mottled reddish black and greenish gray, soft | R10: 15:10-15:24 |
| | | | 0 | | x x x | 50.1' - white clay clasts 0.02' thick | |
| | R10NQ 5 ft 102% | 100 | 0 | | x x x | 51.8-53.0' - coarse sand sized clast (white clay) | |
| | | | 0 | | x x x | | At 53.1': R-Scale = R2 |
| 55 | 55.0 | | 0 | | x x x | | |
| 205.6 | | | 0 | | x x x | 55.0-60.0' - dark reddish brown, mottled reddish black, greenish gray, and yellowish brown, soft | R11: 15:40-16:05 |
| | | | 0 | | x x x | 56.3-60.0' - soft to hard | |
| | R11NQ 5 ft 100% | 100 | 0 | | x x x | 56.6-58.5' - 25% fine to medium sand | |
| | | | 1 | 58.8' - Fracture, 10 deg, rough, undulating | x x x | 56.6-56.9' - trace coarse sand | At 57.9': R-Scale = R2 |
| 60 | 60.0 | | 0 | | x x x | | |
| 200.6 | | | 0 | | x x x | 60.0-65.0' - dark reddish brown, mottled reddish black and greenish gray, 45-50% fine to medium sand | R12: 16:11-16:35 SC-3 collected 60.0-60.8' |
| | | | 0 | | x x x | 60.0-60.6' - 20-25% fine to medium sand | |
| | R12NQ 4.7 ft 100% | 100 | 0 | | x x x | | At 62.1': R-Scale = R2 |
| | | | 0 | | x x x | | |
| 65 | 64.7 | | 0 | | x x x | | R-Scale performed after drilling on stored samples |
| 195.6 | | | | | | Bottom of Boring at 64.7 ft bgs on 7/17/06 16:45 | |



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-17

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION | | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|------|---------------|------|-----------------------------------|------------------|--|--|--------------|---|---|
| | | RECOVERY (in) | | | | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | |
| | | #TYPE | | 6"-6"-6"-6" (N) | | | | | | |
| 261.6 | 0.0 | | | | | | Clay (CL) 0.0-2.0' - reddish brown, mottled black, dry to moist, stiff, low plasticity, medium dilatancy, trace wood and roots (at top 0.2') | | | |
| | 2.0 | | 24.0 | SS1SS | 3-4-8-10 (12) | | | | | |
| | 2.5 | | | | | | Clay (CL) 2.5-4.3' - reddish brown, mottled black, dry, stiff, low plasticity, medium dilatancy | | | |
| | 4.5 | | 21.6 | SS2SS | 5-6-12-14 (18) | | 2.9-3.0' - reddish yellow, very stiff, fat clay pockets, nonlinear or horizontal black material (laminated) along fractures within clay at 60 degrees | | | |
| 5 | | | | | | | 3.3-3.5' - reddish yellow, very stiff, fat clay pockets, nonlinear or horizontal black material (laminated) along fractures within clay at 60 degrees | | | |
| 256.6 | 5.0 | | | | | | Clay (CL) 5.0-5.3' - reddish brown, mottled strong brown, moist, hard, low plasticity, medium dilatancy | | | |
| | 7.0 | | 20.4 | SS3SS | 10-20-22-25 (42) | | Clay (CL) 5.3-6.0' - pale yellow, mottled black, moist, hard | | | |
| | 7.5 | | | | | | Clay (CL) 6.0-6.8' - dark reddish brown, mottled black, moist, hard, black material is in chunks (sand to fine gravel sized) | | | |
| | 9.5 | | 16.8 | SS4SS | 5-7-10-12 (17) | | Clay (CL) 7.5-7.9' - reddish brown, mottled black, very stiff, low plasticity, medium dilatancy, fat clay pocket, vertical at 7.6-6.9' | | | |
| 10 | | | | | | | | | | |
| 251.6 | 10.0 | | | | | | Clay (CL) 7.9-8.1' - very dark gray, mottled yellowish red, moist, very stiff | | | |
| | 12.0 | | 22.8 | SS5SS | 4-6-10-12 (16) | | Clay (CL) 8.1-8.5' - pale yellow, mottled black, moist, hard | | | |
| | 12.5 | | | | | | Clay (CL) 8.5-8.9' - very dark gray, mottled yellowish red and light gray, moist, very stiff | | | |
| | 14.5 | | 20.4 | SS6SS | 10-12-15-18 (27) | | Clay (CL) 10.0-11.9' - light yellowish brown, mottled black (in fractures) and reddish yellow, moist, very stiff | | | |
| | | | | | | | 11.3-11.9' - reddish yellow, clay pockets | | | |
| 15 | | | | | | | Clay (CL) 12.5-13.4' - light yellowish brown, mottled black (in fractures) and reddish yellow, moist, very stiff, darker at the top | | | |
| 246.6 | 15.0 | | | | | | Clay (CL) 13.4-14.2' - olive yellow, yellow, black and gray, moist, very stiff, trace medium to coarse sand | | | |
| | 17.0 | | 23.4 | SS7SS | 2-2-4-12 (6) | | Clay (CL) 15.0-17.0' - olive yellow, yellow, black and gray, moist, 24, trace medium to coarse sand | | | |
| | 17.5 | | | | | | 15.9' - coarse gravel sized piece of igneous rock from dike, discolored dark gray because of weathering | | | |
| | 19.5 | | 0.0 | SS8SS | 10-12-15-18 (27) | | Clay (CL) 17.5' - lost sample | | | Driller Remark: Didn't have catcher, lost sample. |
| 20 | | | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-17

SHEET 2 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

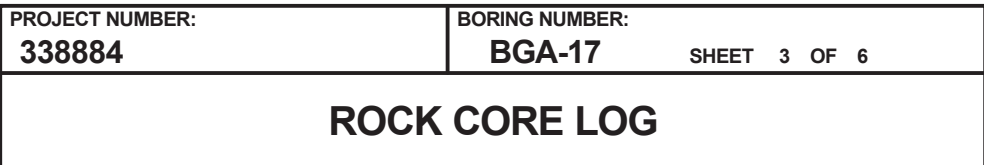
END : 7/26/06 08:50

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|--------------|---------------|--------|-----------------------------------|---|--------------|--|
| | | RECOVERY (in) | #TYPE | | 6"-6"-6"-6" (N) | | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| 241.6 | | | | | | | Driller's Remark: At 26.5' bgs material begins to be harder. At 27.0' it becomes even harder |
| | 22.5 | 24.0 | SS9SS | 3-4-6-6 (10) | Clay (CL) 22.5-24.5' - olive yellow, yellow, black and gray, moist, stiff, at 22.5-23.5' more clay than rest of same material (<50%), trace medium to coarse sand | | |
| | 24.5 | | | | | | |
| 25 | | | | | | | |
| 236.6 | | | | | | | |
| | 27.5 | 9.6 | SS10SS | 19-50/6 (50/6") | Clay (CL) 27.5-28.3' - dusky red, mottled black and pale yellow, moist, hard | | |
| | 29.5 | | | | | | |
| 30 | | | | | | | |
| 231.6 | | | | | | | |
| | 32.5 32.8 | 3.0 | SS11SS | 50/3 (50/3") | Clay (CL) 32.5-32.8' - dusky red, moist, hard, very fine sand to gravel sized pieces of ground up siltstone. Bake zone Begin Rock Coring at 32.8 ft bgs See the next sheet for the rock core log | | |
| | | | | | | | |
| 35 | | | | | | | |
| 226.6 | | | | | | | |
| | | | | | | | |
| 40 | | | | | | | |

Driller's Remark: At 26.5' bgs material begins to be harder. At 27.0' it becomes even harder

Soil sampling completed at 15:10 on 7/24/06



LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-17

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

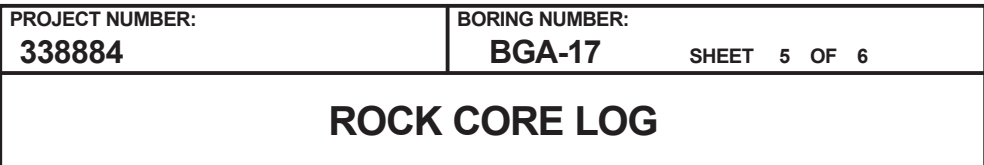
WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 55 206.6 | R6NQ 5 ft 100% | 28 | 10+ | 45.2' - Fracture, 10 deg, rough, undulating, no stains, yellow, dark gold/orange and black stains, few foliations | x | 54.2-56.4' - gravel sized white clasts | R6: 11:15-11:45 Driller Remark: Keep having to stop because of circulation problems. At 54.2-59.2': R-Scale = R5+ |
| | | | 10+ | 45.5' - Fracture, horizontal, smooth, stepped, yellow and dark gold/orange stains, foliated | x | 54.2-57.5' - coarse sand sized white clasts in linear (vertical) feature | |
| | | | 10+ | 45.7-46.1' - Fracture zone, rough, undulating, dark gold/orange, lime, yellow and black stains, undulating and stepped, gray, foliations | x | 54.2-59.2' - gravel sized white clasts | |
| | | | 3 | 46.1-46.5' - Fracture, vertical, rough, undulating, black, yellow and orange/gold stains | x | 56.4-59.2' - very fine sand sized vugs appearing as darker spots | |
| | | | 10+ | 46.5' - Fracture, rough, undulating, black and orange/gold stains, parabolic shaped | x | 57.0' - trace weak red mottles | |
| | | | 6 | 46.9' - Fracture, horizontal and vertical, rough, planar, greenish gray and black stains, foliations | x | Partially Metamorphosed Siltstone | |
| 60 201.6 | R7NQ 5 ft 84% | 44 | 10+ | 47.3-48.0' - Fracture zone, rough, undulating, hard white infilling, black stains, foliations | x | At 57.7' - bluish black, very hard, fresh, no foliations or linear features present | At 57.5' water turns gray from brown Driller's Remark: Rock is getting harder with depth R7: 14:04-14:15 At 59.2-64.2': R-Scale = R5 Driller's Remark: At 61.6' bgs rod dropped and bit kicked out, began losing 8-10 gallons a minute. Lost 0.3' out of the end of the core barrel R8: 14:22-14:31 Drilling mud is red now At 64.2-69.2': R-Scale = R5 |
| | | | 3 | 48.0-48.3' - Fracture, vertical, rough, undulating, hard greenish gray to white infilling, black, greenish gray and red stains | x | 59.2-83.4' - vugs present | |
| | | | 4 | 48.3' - Fracture, 10 deg, rough, undulating, hard white infilling, black stains | x | | |
| | | | 2 | 48.6' - Fracture, 35 deg, rough, undulating, hard white infilling | x | | |
| | | | 2 | 48.9' - Fracture, 45 deg, rough, undulating, hard white infilling | x | | |
| | | | 2 | 49.4-50.1' - Fracture zone, rough to planar, undulating to smooth, white, hard infilling, weak red stains, foliated | x | | |
| 65 196.6 | R8NQ 5 ft 93% | 85 | 2 | 50.9' - Fracture, horizontal, rough, stepped, hard white infilling | x | | R9: 14:37-14:47 |
| | | | 1 | 51.7' - Fracture, horizontal, rough, stepped, hard white infilling | x | | |
| | | | 1 | 51.9' - Fracture, horizontal, rough, undulating, hard white infilling, foliations | x | | |
| | | | 1 | 52.1' - Fracture, 45 deg and 45 deg, rough, planar, hard white infilling, weak red stains, opposing angles, foliations | x | | |
| | | | 3 | 52.4-53.8' - Fracture zone, rough, undulating, hard white infilling, rough and smooth, undulating and planar and stepped, foliations and linear features | x | | |
| | | | 3 | 53.8-54.0' - Fracture, vertical, rough, undulating, hard white infilling | x | | |
| 70 191.6 | R9NQ 5 ft 100% | 91 | 1 | 54.0' - Fracture, horizontal, rough, undulating, hard white infilling | x | | |
| | | | 1 | 54.2-54.5' - Fracture, vertical, rough, undulating, hard white infilling, foliated surface | x | | |
| | | | 3 | 54.5' - Fracture, 20 deg, smooth, stepped, hard white infilling, foliations | x | | |
| | | | 1 | 54.9-56.3' - microfractures, rough, undulating, tightly healed to loosely healed, white, hard infilling | x | | |
| | | | 1 | 54.9' - Fracture, 15 deg, rough, planar, hard white infilling, foliations | x | | |
| | | | 1 | 55.7-56.4' - Fracture, vertical, rough, undulating, hard white infilling, foliations and other linear features at 45 deg | x | | |
| | | | | 56.4' - Fracture, horizontal, smooth, undulating, hard white infilling, foliations | x | | |



LOGGER : LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-17

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 95 166.6 | | | | 68.4' - Fracture, 45 deg, rough, undulating, hard white infilling, no linear features 69.8' - Fractures (2), horizontal, rough, undulating, hard white infilling 70.1' - Fracture (1), horizontal, rough, undulating, hard white infilling 70.5' - Fracture, 45 deg, rough, undulating, hard white infilling 71.8' - Fracture, horizontal, rough, undulating, hard white infilling 72.2' - Fracture, 45 deg, rough, undulating, hard white infilling 72.9' - Fractures, horizontal, rough, undulating 73.0' - Fracture, 20 deg, rough, undulating, hard white infilling 74.8' - Fracture, 30 deg, rough, undulating, hard white infilling 75.4' - Fracture, horizontal, rough, undulating, hard white infilling 75.9' - Fracture, 45 deg, rough, undulating, hard white infilling 77.1' - Fracture, 20 deg, rough, undulating, hard white infilling 77.5' - Fracture, horizontal, rough, undulating, hard white infilling 78.2' - Fracture, horizontal, rough, undulating, hard white infilling 79.8' - Fracture, 20 deg, rough, undulating, hard white infilling 80.6' - Fracture, horizontal, rough, undulating, hard white infilling 80.9' - Fracture, horizontal, rough, undulating, hard white infilling 81.2' - Fracture, horizontal, rough, undulating, hard white infilling 81.7' - Fracture, rough, undulating, hard white infilling 82.3' - Fracture, horizontal and 50 deg, rough, undulating, hard white infilling 83.3' - Fracture, horizontal, rough, undulating, hard white infilling | | | |
| 100 161.6 | | | | | | | |
| 105 156.6 | | | | | | | |
| 110 151.6 | | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BGA-18

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

| DEPTH BELOW EXISTING GRADE (ft) | STANDARD PENETRATION TEST RESULTS | | | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|-----------------------------------|---------------|-------|--------------------|--|---|
| | INTERVAL (ft) | RECOVERY (in) | #TYPE | | | |
| | | | | | | |
| 263.5 | 0.0 | 15.0 | SS1SS | 9-7-7-8 (14) | Topsoil 0.0-0.2' - grass, gravel Silty Gravel With Sand (GM) 0.2-0.4' - light brown sand, light gray gravel, moist, hard, loose, 60% fine - coarse angular gravel, fine to medium sand, 15-20% low plastic fines Clay (CL) 0.4-1.3' - reddish brown, some purple and white mottling, moist, stiff, low to medium plasticity, slow to rapid dilatancy, 1 thick irregular sandy lens, fine to medium sand Silt With Sand To Clay (CL) 2.5-3.5' - reddish brown, scattered yellow mottling in last few inches in irregular laminations, moist, stiff, low plasticity, rapid dilatancy, very fine to fine sand, content varies throughout | |
| 5 | 2.0 | | | | | |
| 258.5 | 2.5 | 12.0 | SS2SS | 7-5-6-11 (11) | Lean Clay (CL) 5.0-5.5' - reddish brown, mottled orange and white, moist, stiff, low to medium plasticity, slow dilatancy, up to 15% very fine to fine sand, friable Clay (CL) 5.5-6.3' - reddish brown, greenish white mottling, dry to moist, very hard, low plasticity, some bedrock pieces, friable Lean Clay (CL) 7.5-8.7' - reddish brown, mottled weak red, green, olive yellow, moist, very hard, medium to high plasticity, no to slow dilatancy, very friable | |
| 10 | 4.5 | | | | | |
| 253.5 | 5.0 | 16.0 | SS3SS | 7-21-25-36 (46) | | |
| | 7.0 | | | | | |
| | 7.5 | 14.0 | SS4SS | 32-35-45-50/5 (80) | | |
| | 9.5 | | | | | |
| 10 | | | | | | |
| 253.5 | 10.0 | 0.0 | SS5SS | 18-15-17-19 (32) | No Recovery 10.0-12.0' | |
| | 12.0 | | | | | |
| | 12.5 | 3.0 | SS6SS | 50/3 (50/3") | Clay (CL) 12.5-12.8' - red, mottled purple and white, moist, very hard, low to medium plasticity, slow dilatancy Begin Rock Coring at 12.8 ft bgs See the next sheet for the rock core log | Soil sampling completed at 09:50 on 7/25/06 Drillers Remark: hard at 12.3' bgs |
| | 12.8 | | | | | |
| 15 | | | | | | |
| 248.5 | | | | | | |
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Soil sampling completed at 09:50 on 7/25/06
Drillers Remark: hard at 12.3' bgs



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-18

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

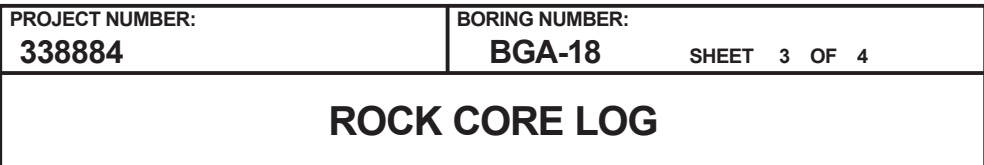
WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 15 248.5 | 12.8 R1NQ 2.6 ft 111% | 86 | 0 | | x | | |



LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

LOGGER : JS/AT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-18

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|-----------|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 55 208.5 | 5 ft 101% | 90 | 0 | 52.3-52.4' - Fracture, rough, undulating, circular break, 1/4 deep in to core, complete fracture 53.7-53.9' - Fracture, 45 deg, smooth, undulating | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-1

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 and 2-7/8 Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer






ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | SYMBOLIC LOG | PP (TSF) | COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
|---------------------------------|---------------|-------|-----------------------------------|--------------------|--|---|----------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | | |
| | | | | | | | | |
| 260.4 | 0.0 | 15.6 | SS1SS | 21-15-6-5 (21) | Asphalt 0.0-0.3' - asphalt mixed with fines Gravel With Sand (GM) 0.3-0.9' - gray, dry, loose, looks like a CA-6 fill Clay (CL) 0.9-1.2' - dark reddish brown, dry to moist, very stiff Silty Sand (SM) 1.2-1.3' - pale brown, dry to moist, medium dense, <5% clay Sandy Clay (CL) 2.5-3.4' - light greenish gray and very pale brown, moist, very stiff, little silt Silty Sand (SM) 3.4-4.5' - pale brown, dry to moist, medium dense, little silt, <5% clay |  | 3.5 | PT-1 collected 2.0-4.0' |
| 5 255.4 | 5.0 | 16.8 | SS3SS | 12-27-32-42 (59) | Silty Sand (SM) 5.0-6.4' - very pale brown, light yellowish brown, and black, moist, very dense, very fine to coarse grained, laminations in black, well to poorly sorted, subangular to subrounded |  | | PT-2 collected 6.0-8.0' Offset: 19.9' S54W of BCTA-1 Lab Result USCS: SC |
| | 7.0 | | | | | | | |
| | 7.5 | 22.8 | SS4SS | 9-16-36-50/3 (52) | Gravelly Sand (SW-SM) 7.5-8.0' - pale brown, moist, dense, very fine grained, subangular to subrounded, little silt, poorly sorted Fine To Coarse Sand (SP-SM) 8.0-8.5' - light gray, moist, very dense, little silt, laminated |  | | |
| 10 250.4 | 10.0 | 10.8 | SS5SS | 28-50/4 (50/4") | Silt (ML) 8.5-9.4' - light gray and light brownish gray, moist, very dense, rapid dilatancy, laminations Silt (ML) 10.0-10.9' - light gray, moist, very dense, very fine to fine grained, trace to little very fine to fine sand, trace clay at 10.0-10.1' bgs |  | | |
| | 12.0 | | | | | | | |
| | 12.5 | 19.2 | SS6SS | 20-28-50/3 (78/9") | Clay (CL) 12.5-14.1' - reddish brown, mottled reddish black and light greenish gray, moist, hard, laminated |  | | Soil sampling completed at 09:06 on 7/19/06 |
| 15 245.4 | 15.5 | | | | Begin Rock Coring at 15.5 ft bgs See the next sheet for the rock core log | | | |
| 20 | | | | | | | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-1

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 240.4 | 15.5 R1NQ 1.5 ft 60% | 0 | 3 | 15.8' - Fracture, 45 deg, smooth, planar 16.1' - Fracture, horizontal, smooth, planar | x | | |



PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-1

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 40 220.4 | R6NQ 5 ft 101% | 100 | 0 | | x | 37.5-38.5' - coarse sand sized white clasts | At 35.6': R-Scale = R2 |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| 45 215.4 | R7NQ 5 ft 95% | 76 | 0 | | x | 41.1-42.6' - trace <0.01 to 0.05' thick vugs | R7: 14:02-14:11 SC-1 collected 40.3-41.3' |
| | | | 10+ | 41.8-42.1' - Fracture zone, rough, undulating | x | | |
| | | | 1 | 42.5' - Fracture, horizontal, rough, planar | x | | |
| | | | 6 | 43.4' - Fracture, horizontal, rough, planar 43.5' - Fracture, horizontal, rough, planar 43.7' - Fracture, horizontal, rough, planar 43.8' - Fracture, horizontal, rough, planar 44.3' - Fracture, horizontal, rough, planar 44.5' - Fracture, horizontal, rough, planar 44.6' - Fracture, horizontal, rough, planar 45.0' - Fracture, horizontal, rough, planar 45.1' - Fracture, horizontal, rough, planar 45.2-45.4' - Fracture zone, horizontal, rough, planar 45.7' - Fracture, horizontal, rough, planar 46.5' - Fracture, horizontal, rough, planar 47.9' - Fracture, horizontal, rough, planar 48.3' - Fracture, horizontal, rough, planar 48.7' - Fracture, horizontal, rough, planar 48.9' - Fracture, horizontal, rough, planar 49.4' - Fracture, horizontal, rough, planar | x | | |
| 50 210.4 | R8NQ 5 ft 94% | 67 | 10+ | | x | 43.4-44.3' - very soft, laminated bedding 43.8-44.3' - siltstone is almost black 44.3-67.7' - soft | At 42.8': R-Scale = R2-R3 R8: 14:16-14:25 At 47.1': R-Scale = R3 |
| | | | 3 | | x | | |
| | | | 1 | | x | | |
| | | | 0 | | x | | |
| 55 205.4 | R9NQ 5 ft 94% | 92 | 3 | | x | 50.3' - Fracture, rough, planar 50.3' - Fracture, rough, planar 51.5' - Fracture, horizontal, smooth, undulating | R9: 14:33-14:41 At 51.7': R-Scale = R2 |
| | | | 0 | | x | | |
| | | | 1 | | x | | |
| | | | 0 | | x | | |
| | | | 0 | | x | | |
| | | | 1 | 54.4' - Fracture, horizontal, rough, planar | x | | R10: 08:03-08:18 on 7/20/06 |



PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-1

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 60 200.4 | R10NQ 5 ft 92% | 90 | 0 | 56.8' - Fracture, 45 deg, rough, undulating | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-1

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|--------------|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 80 180.4 | R14NQ 5 ft 100% | 100 | 0 | | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-2

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | | SYMBOLIC LOG | PP (TSF) | COMMENTS |
|---------------------------------|---------------|-------|-----------------------------------|---------------------|--|--------------|----------|--|
| | RECOVERY (in) | #TYPE | | 6"-6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | | |
| | | | | | | | | |
| 261.0 | | | | | Asphalt 0.0-0.3' | | | PT-1 collected 2.0-4.0' |
| | 0.8 | | | | Base Gravel 0.3-0.8' - fill | | | |
| | 16.8 | SS1SS | 2-3-5-7 (8) | | Clay (CL) 0.8-2.2' - reddish brown, mottled yellow and light gray, moist, stiff, slow dilatancy, 10-15% fine to coarse sand, subrounded to subangular, pockets of fine to medium grained sand | | | |
| | 2.8 | | | | | | | |
| | 3.3 | | | | Sandy Clay & Clay (CL) 3.3-4.5' - olive yellow, mottled light gray and reddish brown, moist, stiff, up to 30% fine to medium sand | | | 3.0 |
| 5 | | 21.6 | SS2SS | 5-5-7-10 (12) | | | | |
| 256.0 | 5.3 | | | | Clay (CL) 4.5-5.1' - reddish brown, mottled yellow and light gray, moist, stiff, slow dilatancy, 10-15% fine to coarse sand, subrounded to subangular, pockets of fine to medium grained sand | | | |
| | 5.8 | | | | Clay (CL) 5.8-6.5' - reddish brown, mottled yellow and light gray, moist, very stiff, low to medium plasticity, slow dilatancy, 10-15% fine to coarse sand, subrounded to subangular grains, pockets of fine to medium grained sand, trace coarse sand | | | |
| | 20.4 | SS3SS | 5-8-11-11 (19) | | | | | PT-2 collected 8.0-10.0' Offset: 12.5' S38E of BCTA-2 Lab Results USCS: CH w/Sand |
| | 7.8 | | | | | | | |
| | 8.3 | | | | Lean Clay (CL) 8.3-9.8' - reddish brown and olive yellow, moist, stiff, medium plasticity, slow dilatancy, alternating laminated color change with top reddish brown becoming olive yellow, 10% fine to medium grained sand | | | |
| 10 | | 18.6 | SS4SS | 5-7-8-6 (15) | | | 1.5-2.5 | |
| 251.0 | 10.3 | | | | | | | |
| | 10.8 | | | | Fat Clay (CH) 10.8-11.7' - olive yellow, mottled light gray and light red, dry to moist, very stiff, high plasticity, no dilatancy | | | PT-3 collected 11.0-13.0' |
| | 22.2 | SS5SS | 3-6-14-20 (20) | | Clay (CL) 11.7-12.6' - reddish brown, moist, very stiff, rapid dilatancy, trace (<5%) very fine and coarse sand | | 2.0-2.75 | |
| | 12.8 | | | | | | | |
| | 13.3 | | | | Clay (CL) 13.3-14.7' - reddish brown, moist, very stiff, slow to rapid dilatancy, trace (<5%) very fine and coarse sand, pockets of fat clay (CH) light gray | | | 3.0 |
| 15 | | 16.8 | SS6SS | 11-19-50/4 (69/10") | | | | |
| 246.0 | 15.3 | | | | | | | |
| | 15.8 | | | | Clay (CL) 15.8-17.4' - reddish brown, black mottling, moist, hard, slow to rapid dilatancy, trace (<5%) very fine and coarse sand, pockets of light gray fat clay to 16.5' | | | 5.0+ |
| | 19.2 | SS7SS | 6-14-25-50/4 (39) | | | | | |
| | 17.8 | | | | | | | |
| | 18.3 | | | | Clay (CL) 18.3-19.4' - red, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy, lessens with depth, trace very fine sand | | | |
| | 11.0 | SS8SS | 35-50/5 (50/5") | | | | | |
| 20 | | | | | | | | |



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| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCTA-2</div> <div style="text-align: right; font-size: 0.8em;">SHEET 2 OF 6</div> |
| <div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div> | |

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| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (687760.2 N, 2013343.4 E) |
| ELEVATION : 261.0 ft MSL (NGVD 29) | DRILLING CONTRACTOR : D. Hedges, S&ME |
| DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer | ORIENTATION : Vertical |
| WATER LEVELS : 8.5 ft bgs | START : 7/13/06 16:55 END : 7/18/06 12:17 LOGGER : LH/EM |

| DEPTH BELOW EXISTING GRADE (ft) | | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | | SOIL DESCRIPTION | | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|--------------|---------------|--------|-----------------------------------|--|------------------|---|--------------|----------|--|
| | | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | PP (TSF) | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | | | |
| 241.0 | 20.3 | | | | | | | | | Drillers Remark: Lost ~250 gallons of water during drilling and soil sampling Soil sampling completed at 09:40 on 7/14/06 |
| | 20.8 | 14.4 | SS9SS | 22-16-50/4 (66/10") | Clay (CL) 20.8-22.0' - red, mottled black, olive yellow, and light greenish gray, dry to moist, hard, low to medium plasticity, lessens with depth, trace very fine sand 21.0-21.3' - mottled light greenish gray, black, and olive yellow, dry to moist, hard, fine sand sized mica, breaks into horizontal 0.01' beds | | | | | |
| | 22.8 | | | | | | | | | |
| | 23.3 23.5 | 3.0 | SS10SS | 50/3 (50/3") | Sandy Silt (ML) 23.3-23.5' - dark reddish brown, light gray and olive mottling, moist, hard, low plasticity, rapid dilatancy, fine to medium grained, subrounded to subangular, micaceous, 20-25% sand, very fine to fine grained Begin Rock Coring at 23.5 ft bgs See the next sheet for the rock core log | | | | | |
| 25 236.0 | | | | | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-2

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--------------|---|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 25 236.0 | 23.8 R1NQ 0.3 ft 67% | 0 | 0 | | X | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-2

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


ORIENTATION : Vertical

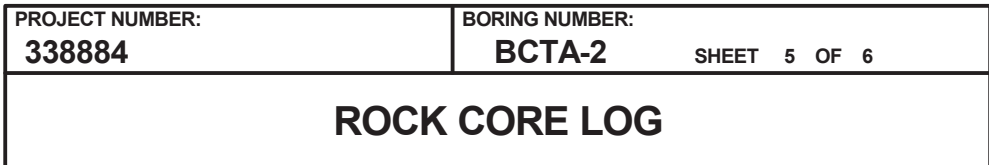
WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 45 216.0 | 44.5 | | 1 | 44.1' - Fracture, horizontal, rough, planar |  | Sandstone 41.5-45.1' - white and very dark gray, soft to hard, laminated to thin bedding, subangular to subrounded, poorly sorted, very fine to coarse grained, trace fine to medium gravel in bands of coarser material 41.5-44.5' - fresh 44.5-45.1' - moderately weathered Conglomerate 45.5-46.6' - white, greenish gray, and very dark gray, hard, medium bedding, subangular to subrounded, poorly sorted, moderately weathered, very fine sand to coarse gravel 46.0-46.05' - clay seam, very soft, 40% sand, 0.03' thick Sandstone At 46.6' - very dark gray and white, soft to hard, laminated to medium bedding 46.7-47.5' - very soft 46.7-49.5' - moderately weathered 47.5-59.2' - fresh 49.5-54.5' - soft to hard 49.5-50.1' - beds on 30 deg angle 52.0-54.5' - no gravel 53.1-54.5' - becomes coarse grained 54.5-59.2' - dark gray, white, and reddish brown, soft, subrounded, poorly sorted, very fine to coarse grained 54.9-58.2' - 0-30% fine gravel Shale 58.8-59.2' - black, laminated bedding, fresh Sandstone 59.2-67.1' - dark gray, white, and reddish brown, soft, medium bedding, subrounded, poorly sorted, fresh, very fine to coarse grained sand | R7: 10:11-10:22 | |
| | R7NQ 5 ft 104% | 80 | 1 | 45.3' - Fracture, horizontal, rough, undulating | | | SC-1 collected 45.3-46.1' | |
| | | | 1 | 46.1' - Fracture, 30 deg, rough, undulating | | | | |
| | | | 4 | 46.7' - Fracture, 10 deg, rough, undulating | | | | |
| | | | 4 | 46.7' - Fracture, horizontal, rough, undulating, parabolic shaped | | | | |
| | | | 4 | 46.9' - Fracture, horizontal, rough, planar | | | At 47.7': R-Scale = R3-R4 | |
| | | | 2 | 47.5' - Fracture, horizontal, rough, undulating | | | | |
| | 49.5 | 98 | 0 | 48.0' - Fracture, horizontal, smooth, planar | | | | |
| | | | 0 | 48.3' - Fracture, horizontal, smooth, planar | | | | |
| | | | 0 | 48.4' - Fracture, horizontal, smooth, planar | | | | |
| | | | 0 | 48.6' - Fracture, horizontal, smooth, planar | | | | |
| | | | 0 | 48.6' - Fracture, horizontal, smooth, stepped | | | | |
| 0 | | | 48.8' - Fracture, 35 deg, rough, undulating | R8: 10:28-10:36 | | | | |
| 54.5 | 100 | 0 | 49.4' - Fracture, 30 deg, smooth, planar, very dark gray stains, clay may be from laminated shale bed <0.01' thick of which the fracture is in the middle. | | | | | |
| | | 0 | | | | | | |
| | | 0 | | | | | | |
| | | 0 | | | | | | |
| | | 0 | | At 51.6': R-Scale = R2-R3 | | | | |
| | | 0 | | | | | | |
| 55 206.0 | R9NQ 5 ft 105% | 100 | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | R9: 10:40-10:47 | | | |
| 59.5 | 100 | 0 | | | | | | |
| | | 0 | | | | | | |
| | | 0 | | | | | | |
| | | 0 | | | | | | |
| | | 0 | | At 56.2': R-Scale = R2 | | | | |
| | | 0 | | | | | | |
| 60 201.0 | R10NQ 5 ft 100% | 100 | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | | | | |
| | | | 0 | | R10: 10:52-11:01 | | | |
| | | | | | | | At 60.8': R-Scale = R3 | |
| | | | | | | | SC-2 collected 62.0-63.0' | |



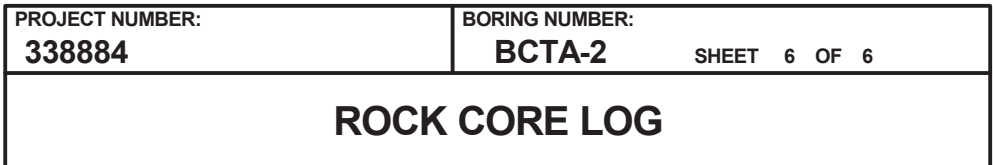
LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 5



LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-3

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687448.8 N, 2013227.8 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 & 2-15/16 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 12.4 ft bgs

START : 7/21/06 14:34

END : 7/21/06 17:36

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 260.3 | 0.0 | 24.0 | SS1SS | 2-3-5-5 (8) | Clay (CL) 0.0-2.0' - reddish brown, mottled white and reddish black, dry, stiff, trace gravel and roots | | PT-1 collected 3.0-5.0' |
| | 2.0 | | | | | | |
| | 2.5 | 21.6 | SS2SS | 5-8-12-13 (20) | Clay (CL) 2.5-4.3' - reddish brown, mottled white and reddish black, dry, very stiff, trace gravel and roots | | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 255.3 | 5.0 | 18.0 | SS3SS | 3-6-8-9 (14) | Clay (CL) 5.0-6.5' - reddish brown, olive yellow mottling, dry, stiff, trace gravel and roots | | PT-2 collected 6.0-8.0' |
| | 7.0 | | | | | | |
| | 7.5 | 18.0 | SS4SS | 3-15-45-50/4 (60) | Clay (CL) 7.5-9.0' - reddish brown, mottled reddish black and light greenish gray mottling, moist, hard, laminated beds at 8.3-9.0' 7.6-7.8' - yellow Clay seam | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 250.3 | 10.0 | 3.0 | SS5SS | 50/3 (50/3") | Clay (CL) 10.0-10.3' - reddish brown, mottled reddish black and light greenish gray mottling, moist, hard, clay seam, trace very fine sand | | Soil sampling completed at 15:40 on 7/21/06 |
| | 10.3 | | | | | | |
| | 13.6 | | | | Begin Rock Coring at 13.6 ft bgs See the next sheet for the rock core log | | |
| 15 | | | | | | | |
| 245.3 | | | | | | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-3

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687448.8 N, 2013227.8 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.4 ft bgs

START : 7/21/06 14:34

END : 7/21/06 17:36

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|--|--|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 15 245.3 | 13.6 R1NQ 0.8 ft 14.4 81% | 50 | 2 | 13.8' - Fracture, horizontal, rough, undulating 14.1' - Fracture, horizontal, rough, undulating 14.6' - Fracture, horizontal, smooth, planar | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-3

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687448.8 N, 2013227.8 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.4 ft bgs

START : 7/21/06 14:34

END : 7/21/06 17:36

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 35 225.3 | 34.4 | | 0 | 36.6' - Contact between sandstone and siltstone, pieces of siltstone mixed in with sandstone above, tightly healed 37.0' - Fracture, 20 deg, rough, undulating 37.2' - Fracture, 20 deg, rough, planar 37.4' - Fracture, horizontal, smooth, planar 37.5' - Fracture, horizontal, rough, undulating 37.6' - Fracture, horizontal, rough, undulating 37.8' - Fracture, horizontal, smooth, planar 37.9' - Contact between sandstone and siltstone, horizontal, tightly healed | x | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-4

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687562.0 N, 2013436.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

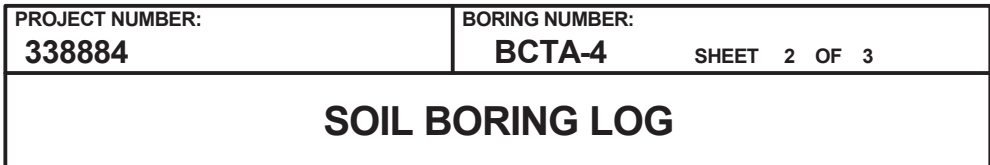
WATER LEVELS : 19.0 ft bgs

START : 7/20/06 14:30

END : 7/21/06 12:04

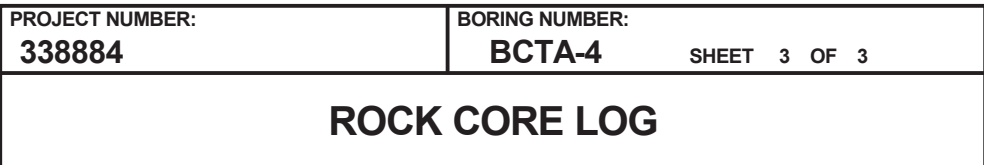
LOGGER : LH

| WATER LEVELS : 19.0 (RDS) | | START : 7/20/00 14:30 | | END : 7/20/00 2:04 | | LOGGER : LIT | | |
|---------------------------------|---------------|-----------------------|-----------------------------------|--------------------|--|--------------|----------|---|
| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | | SYMBOLIC LOG | PP (TSF) | COMMENTS |
| | RECOVERY (in) | #TYPE | | 6"-6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | | |
| | | | | | | | | |
| 262.8 | 0.0 | 19.2 | SS1SS | 2-5-6-7 (11) | Topsoil 0.0-0.2' Clay (CL) 0.2-1.6' - reddish brown, mottled light greenish gray, white and brownish yellow, dry, trace roots 0.4' - black piece of vesicular rock with iron oxide on out side | | | PT-1 collected 3.0-5.0' |
| | 2.0 | | | | | | | |
| | 2.5 | 18.0 | SS2SS | 3-4-8-10 (12) | Clay (CL) 2.5-4.0' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 2.9-3.3' - 0-40% very fine to fine sand 3.7-4.0' - 0-40% very fine to fine sand | | | |
| | 4.5 | | | | | | | |
| 5 | | | | | | | | |
| 257.8 | 5.0 | 21.0 | SS3SS | 4-7-14-16 (21) | Clay (CL) 5.0-6.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 5.3-5.4' - sand pocket 5.5-5.6' - sand pocket 5.6-5.7' - sand pocket 6.0' - sand pocket 6.2-6.4' - large gravel, siltstone | | | PT-2 collected 8.0-10.0' |
| | 7.0 | | | | | | | |
| | 7.5 | 14.0 | SS4SS | 6-7-10-14 (17) | Clay (CL) 7.5-8.7' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, very stiff, trace roots | | | |
| | 9.5 | | | | | | | |
| 10 | | | | | | | | |
| 252.8 | 10.0 | 17.4 | SS5SS | 3-6-8-10 (14) | Clay (CL) 10.0-11.5' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 10.2-10.6' - dark gray and very pale brown, moist, soft | | | PT-3 collected 13.0-15.0' Offset: 9.6' N53W of BCTA-4 Lab Results USCS: CL |
| | 12.0 | | | | | | | |
| | 12.5 | 19.2 | SS6SS | 5-8-10-11 (18) | Clay (CL) 12.5-13.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots | | | |
| | 14.5 | | | | Fat Clay (CH) 13.8-14.1' - brownish yellow, red mottling, moist, stiff | | 1.8 | |
| 15 | | | | | | | | |
| 247.8 | 15.0 | 21.0 | SS7SS | 5-9-16-18 (25) | Fat Clay (CH) 15.0-16.1' - yellowish red, yellow mottling, moist, soft to medium stiff, becomes clay with depth | | | 2.2 |
| | 17.0 | | | | Clay (CL) 16.1-16.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots | | | |
| | 17.5 | 20.4 | SS8SS | 8-10-12-20 (22) | Clay (CL) 17.5-19.2' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 18.5-19.2' - black mottling | | | |
| | 19.5 | | | | | | | |
| 20 | | | | | | | | |



LOGGER : LH

Rev. 5



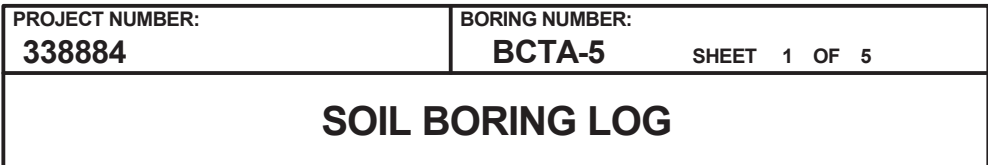
LOCATION : (NAD 27) (687562.0 N, 2013436.5 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 5



LOGGER : EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-5

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)

ELEVATION : 243.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.2 ft bgs

START : 7/31/06 09:35

END : 8/1/06 16:15

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|--|-----------------|--------------------|---|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 15 228.5 | 10.4 R1NQ 4 ft 103% | 50 | 3 | 10.4' - Fracture, <5 deg, rough, undulating, black stains | x | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-5

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)

ELEVATION : 243.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

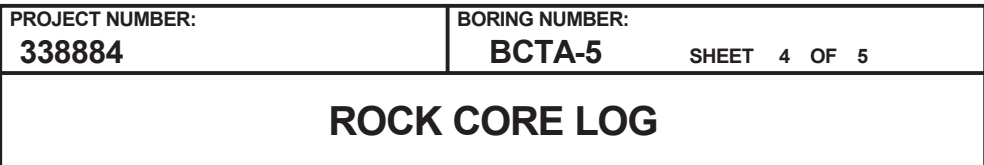
WATER LEVELS : 1.2 ft bgs

START : 7/31/06 09:35

END : 8/1/06 16:15

LOGGER : EM

| WATER LEVEL: 11.836 | | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 35 208.5 | R5NQ 5 ft 98% | 98 | 0 | 32.4' - Fracture, 5 deg, smooth, undulating | XXXXXX | | | |



LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)

DRILLING CONTRACTOR : M. Mosely, S&ME

ORIENTATION : Vertical

LOGGER : EM

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-5

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)

ELEVATION : 243.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

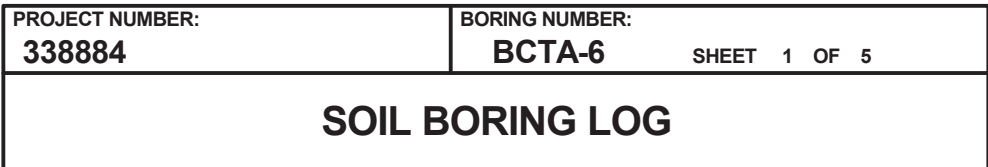
WATER LEVELS : 1.2 ft bgs

START : 7/31/06 09:35

END : 8/1/06 16:15

LOGGER : EM

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------------|--------------------|--|---|---|---------------------------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 75 168.5 | R13NQ 5 ft 104% | 100 | 0 | 71.7' - Fracture, 5 deg, rough, undulating | . | 71.8-72.0' - dark gray laminations on 20 degree angles | At 72.9': R-Scale = R3-R4 |
| | | | 1 | | | | |
| | | | 0 | | | | |
| | | | 2 | | | | |
| | 74.4 | R14NQ 5 ft 102% | 100 | XXX | 74.1' - Contact between siltstone and sandstone, 20 deg, smooth, undulating, <0.01' thick clay infilling 74.2' - Fracture, 20 deg, rough, undulating | X | |



LOGGER : JS/LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-6

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

ELEVATION : 239.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel





ORIENTATION : Vertical

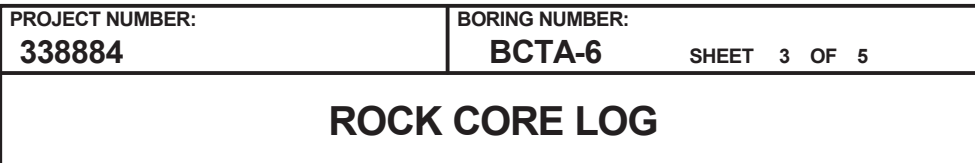
WATER LEVELS : 9.0 ft bgs

START : 7/26/06 14:40

END : 7/27/06 15:46

LOGGER : JS/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | | DESCRIPTION | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | |
| | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 15 224.8 | R1NQ 4.8 ft 100% | 0 | 10+ |  | Sandstone 10.2-10.7' - dusky red, very soft, very fine sand to fine sand, highly weathered, 35% fines (silt) | Rock coring began at 16:30 on 7/26/06 R1: 16:30-16:46 on 7/26/06 At 10.7-11.5': PP: 1.75-2.0 tsf At 10.7-11.5': R-Scale = R0 At 12.0-12.6': PP: 1.75 tsf At 12.0-12.6': R-Scale = R0 At 12.9-14.5': R-Scale = R0 | |
| | | | 10+ | | Siltstone 10.7-12.0' - dusky red, trace green and black mottling, very soft, highly weathered, very fine grained 10.7-11.5' - clay seam | | |
| | | | 10+ | | Clay (CL) 12.0-12.6' - highly weathered, some bedrock pieces | | |
| | | | 10+ | | Siltstone 12.6-12.9' - dusky red, trace green and black mottling, very soft, highly weathered, very fine grained | | |
| | | | 10+ | | Sandy Silt (ML) 12.9-14.5' - highly weathered | | |
| 20 219.8 | R2NQ 5 ft 90% | 86 | 0 |  | Sandstone 14.5-15.0' - dark gray, black mottling, soft, very fine sand to fine sand, highly weathered | R2: 08:10-08:23 on 7/27/06 | |
| | | | 2 | | Siltstone At 15.0' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh | | |
| | | | 2 | | 20.0-22.4' - soft | | |
| | | | 0 | | Sandstone 22.4-23.8' - white, dark gray, and dark greenish gray, mottled dark reddish brown and greenish gray, soft, medium bedding, subangular to subrounded, fresh, very fine to fine sand, well sorted, trace medium sand | | |
| | | | 0 | | Siltstone At 23.8' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, gravel sized white clasts throughout 25.0-30.0' - coarsening with depth 25.0-27.9' - very soft | | |
| 25 214.8 | R3NQ 5 ft 101% | 100 | 0 |  | 27.9-30.0' - soft, 0-30% very fine to fine sand | R4: 09:03-09:17 At 25.0-30.0': R-Scale = R2 | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 30 210.8 | R4NQ 5 ft 100% | 100 | 0 |  | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |



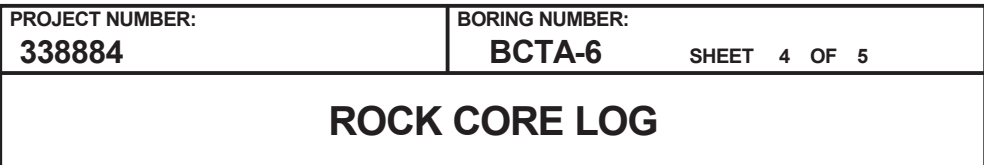
LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/LH

Rev. 5



LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS/LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-6

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

ELEVATION : 239.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

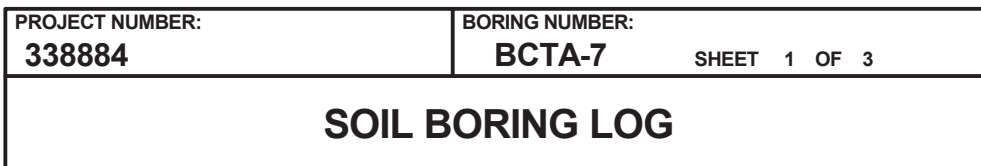
WATER LEVELS : 9.0 ft bgs

START : 7/26/06 14:40

END : 7/27/06 15:46

LOGGER : JS/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 75 164.8 | R13NQ 5 ft 101% | 100 | 0 | | | 68.9-69.4' - 20-50% silt 70.0-80.0' - very soft | R13: 15:12-15:19 At 71.0': R-Scale = R2 (performed during rock core logging) |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 80 159.8 | R14NQ 5 ft 102% | 100 | 0 | | | | R14: 15:26-15:31 First water level = 9.0' bgs taken 7/28/06 at 14:45 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| 85 154.8 | R15NQ 5 ft 102% | 82 | 5 | | | 80.0-82.4' - slightly weathered 80.2' - 1/2 orange stained clast | R15: 15:37-15:46 |
| | | | 1 | | | | At 81.4': R-Scale = R2 (performed during rock core logging) |
| | | | 2 | 82.4' - Fracture, horizontal, rough, undulating, 0.02' relief | | 81.8-82.0' - dark gray to black silty laminae | |
| | | | 0 | 82.8' - Fracture, horizontal, smooth, undulating, 0.01' relief | | 82.1-82.4' - rust colored stains at 30 degrees, 1 mm thick | |
| | | | 0 | | | Siltstone | At 83.7': R-Scale = R2 (performed during rock core logging) |
| | | | | | | 82.4-85.0' - dark reddish brown, green mottling, soft, slightly weathered, very fine to fine grained, trace very fine sand, 20 degree bedding | R-Scale performed after drilling on stored samples unless otherwise specified |
| | | | | | | Bottom of Boring at 85.0 ft bgs on 7/27/06 15:46 | |
| 90 | | | | | | | |



LOCATION : (NAD 27) (688279.2 N, 2012780.6 E)

DRILLING CONTRACTOR : M. Mosely, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-7/8 Tricone Bit, 24" Split Spoon, 140 lb. Hammer

ORIENTATION : Vertical

WATER LEVELS : 3.2 ft bgs

START : 8/2/06 10:32

END : 8/2/06 16:40

LOGGER : AT

2BB-452



PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-7

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688279.2 N, 2012780.6 E)

ELEVATION : 232.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

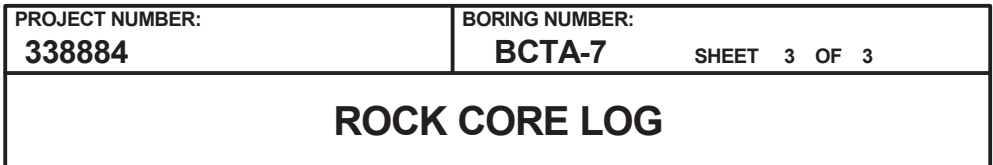
WATER LEVELS : 3.2 ft bgs

START : 8/2/06 10:32

END : 8/2/06 16:40

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS | | | |
|--|------------------------------------|-----------------------|--|---|--------------|--|--|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | | | | |
| | | | | | | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | |
| 15 217.8 | 10.2 | R1NQ 4.8 ft 67% | 48 | 0 | | Siltstone At 10.2' - dusky red, trace green and purple mottling, soft, 10% very fine to fine sand 10.2-15.0' - slightly weathered to moderately weathered | Rock coring began at 15:10 on 8/2/06 R1: No time recorded | | | | |
| | 1 | | | | | | | | | | |
| | 1 | | 11.8-12.1' - Fracture | | | | | | | | |
| | 0 | | 12.5' - Fracture, 25 deg, smooth, undulating | | | | | | | | |
| | | | 13.5' - Fracture, 10 deg, smooth, undulating | | | | | | | | |
| | 20 212.8 | 15.0 | R2NQ 5 ft 95% | 69 | | | | 3 | | 15.0-15.7' - dark reddish brown, 10% very fine to fine sand, mottled purple to black, reddish black, and white, harder than matrix 15.0-20.0' - moderately weathered 15.7-40.0' - dark reddish brown, green mottling, 10% very fine sand, 10% white clasts, harder than matrix 17.2-17.5' - clay seam 17.9-18.2' - clay seam | At 12.3': R-Scale = R2-R3 (performed during rock core logging) At 13.0': R-Scale = R2-R3 (performed during rock core logging) At 14.0': R-Scale = R2-R3 (performed during rock core logging) At 14.7': R-Scale = R2-R3 (performed during rock core logging) R2: No time recorded |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| 20.0 | | | 0 | 14.2' - Fracture, 10 deg, smooth, undulating 14.7' - Fracture, 30 deg, smooth, undulating 15.0-15.1' - Fracture 15.2' - Fracture, horizontal, smooth, undulating 15.3' - Fracture, horizontal, smooth, undulating 15.9' - Fracture, horizontal, smooth, undulating | | | | | | | |
| 25 207.8 | | 20.0 | R3NQ 5 ft 103% | 92 | 1 | | 20.0-38.8' - fresh 21.5-21.6' - soft to hard, large irregular shaped green mottling | At 16.8': R-Scale = R3-R4 (performed during rock core logging) At 17.2-17.5': R-Scale = R0 At 17.9-18.2': R-Scale = R0 | | | |
| | | 2 | | | | | | | | | |
| | | 1 | | | | | | | | | |
| | | 0 | | | | | | | | | |
| | 0 | | | | | | | | | | |
| | 25.0 | | 0 | 20.4' - Fracture, 25 deg, smooth, undulating, 0.02' relief, loose 21.4' - Fracture, 20 deg, smooth, undulating, fairly tight 21.5' - Fracture, 10 deg, smooth, undulating, loose 22.3' - Fracture, 20 deg, smooth, undulating, fairly tight | | | | | | | |
| | 30 | 30.0 | R4NQ 5 ft 98% | 98 | 0 | | | | | 26.0-26.9' - soft to hard, 25% very fine to fine sand, harder than overlying and underlying material | At 19.0': R-Scale = R3-R4 (performed during rock core logging) R3: 8:35-8:42 |
| | | 1 | | | | | | | | | |
| | | 1 | | | | | | | | | |
| | | 1 | | | | | | | | | |
| 0 | | | | | | | | | | | |
| | | | | | | | | | | | |



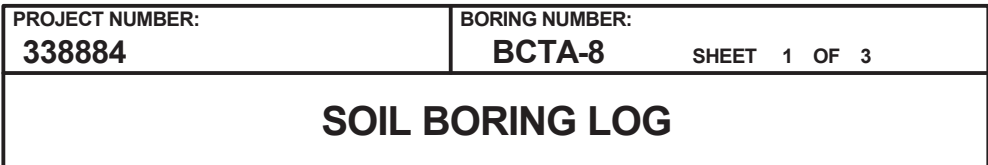
LOCATION : (NAD 27) (688279.2 N, 2012780.6 E)

DRILLING CONTRACTOR : M. Mosely, S&ME

ORIENTATION : Vertical

LOGGER : AT

Rev. 5



LOGGER : AT

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BCTA-8

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688410.9 N, 2013044.2 E)

ELEVATION : 227.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.1 ft bgs

START : 8/10/06 08:23

END : 8/10/06 13:29

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 20 207.0 | 15.1 R1NQ 4.4 ft 98% | 93 | 1 | | x x | Siltstone 15.1-21.4' - dusky red, mottled greenish gray, soft to hard, 10-15% very fine to fine sand 15.1-19.5' - slightly weathered | Rock coring began at 11:09 on 8/10/06 R1: 11:09-11:33 At 16.7': R-Scale = R3 |
| | | | 0 | 16.1' - Fracture, 50 deg, rough, undulating, greenish white staining, 0.2' relief | x x | | |
| | | | 1 | 17.7' - Fracture, 30 deg, rough, undulating, 0.05' relief | x x | | |
| | | | 1 | | x x | | |
| | | | 0 | | x x | | |
| | 19.5 | 60 | 1 | 18.9' - Fracture, 16 deg, white infilling 18.9' - Clay seam, 16 deg, white infilling, 0.05' thick | x x | 19.5-21.4' - moderately weathered 19.7-21.4' - small (<0.25 to 0.375") sandstone lineations | R2: No time recorded At 20.7': R-Scale = R3 |
| | | | 1 | 20.4' - Fracture, 20 deg, smooth, undulating, 0.2' relief 21.0' - Fracture, 5 deg, smooth, undulating, 0.05' relief | x x | | |
| | | | 4 | 21.4' - Contact between siltstone and sandstone, sharp 21.9' - Fracture, 10 deg, smooth, undulating 22.2' - Fracture, 25 deg, rough, undulating | x x | | |
| | | | 5 | 22.5' - Fracture, horizontal, smooth, undulating, 0.3 gray clay infilling 22.6' - Fracture, 10 deg, smooth, planar | x x | | |
| | | | 2 | 23.2-23.6' - Fracture, 20 deg, smooth, undulating | x x | | |
| 25 202.0 | 24.5 | 98 | 2 | 23.4-23.5' - Fracture, 25 deg, smooth, undulating 23.5' - Fracture, 15 deg, smooth, planar 23.8' - Fracture, 15 deg, smooth, planar 23.9' - Fracture, 10 deg, smooth, planar 26.1' - Fractures (2), horizontal and 50 deg, smooth, undulating 26.3' - Fracture, 25 deg, smooth, undulating | x x | Siltstone At 24.5' - dusky red, mottled greenish gray and dark reddish-black, soft to hard, 10-15% very fine to fine sand 24.5-29.5' - slightly weathered | R3: No time recorded At 28.0': R-Scale = R3 |
| | | | 0 | | x x | | |
| | | | 0 | | x x | | |
| | | | 0 | | x x | | |
| | | | 0 | | x x | | |
| | 29.5 | 93 | 2 | 30.3' - Fracture, 60 deg, smooth, undulating 30.6' - Fractures (2), 10 deg and 50 deg, smooth, undulating | x x | 29.5-34.5' - fresh, red clasts, from <0.0002-0.0007", harder than matrix | R4: No time recorded |
| | | | 0 | | x x | | |
| | | | 0 | 31.6' - Contact between siltstone and sandstone, sharp | x x | | |
| | | | 0 | | x x | | |
| | | | 0 | | x x | | |
| 30 197.0 | 34.5 | | | | x x | 31.9-34.5' - poorly bedded, slight laminations visible | SC-1 collected 32.8-33.7' At 33.8': R-Scale = R3-R4 |
| | | | | | x x | | |
| | | | | | x x | | |
| | | | | | x x | | |
| 35 | | | | | x x | R5: No time recorded | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-8

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688410.9 N, 2013044.2 E)

ELEVATION : 227.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.1 ft bgs

START : 8/10/06 08:23

END : 8/10/06 13:29

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 40 187.0 | R5NQ 5 ft 100% | 91 | 0 | 37.6' - Contact between siltstone and sandstone, 30 deg, smooth, planar 37.9' - Fracture, 20 deg, smooth, undulating | x | 34.5-37.6' - fresh, 30-40% very fine to fine sand | At 35.5': R-Scale = R3-R4 |
| | | | 0 | | x | 36.5-37.6' - well bedded, highly laminated silt and sand layers | First water level = 2.1' bgs taken 8/10/06 at 18:14; second water level = 1.5' bgs taken 8/11/06 at 14:05 |
| | | | 0 | | x | | |
| | | | 2 | | x | Sandstone At 37.6' - gray, soft to hard, fresh, well graded, well laminated beds, red stain at contact of beds, 39.0-39.5' cross bedding | At 38.5': R-Scale = R3-R4 |
| | | | 0 | | x | | |
| 41.0 | R6NQ 1.5 ft 100% | 100 | 0 | | . | 39.5-41.0' - laminations disappear with depth, becomes poorly graded with depth | R6: No time recorded R-Scale performed during rock core logging |
| | | | 0 | | . | | |
| 45 182.0 | | | | | . | Bottom of Boring at 41.0 ft bgs on 8/10/06 13:29 | |
| | | | | | . | | |
| | | | | | . | | |
| | | | | | . | | |
| | | | | | . | | |
| 50 177.0 | | | | | . | | |
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PROJECT NUMBER:
338884

BORING NUMBER:
BCA-1

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, 2-15/16 Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14





LOGGER : LH

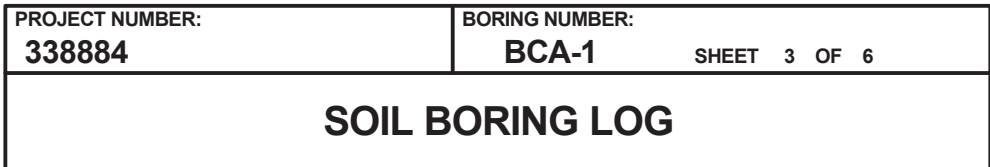
| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS | | |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|--|--------------|----------|---|-----|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | PP (TSF) | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | |
| | | | | | | | | | |
| 256.2 | 0.0 | 18.0 | SS1SS | 6-9-10-10 (19) | Clay (CL) 0.0-1.5' - reddish brown, mottled yellow and reddish black, dry, stiff, medium to low plasticity, slow dilatancy | | | | |
| | 2.0 | | | | | | | | |
| | 2.5 | 13.0 | SS2SS | 5-7-8-9 (15) | Clay (CL) 2.5-3.6' - reddish brown, mottled yellow and light gray, dry, stiff, medium to low plasticity, fill | | | | |
| | 4.5 | | | | | | | | |
| 5 | | | | | | | | | |
| 251.2 | 5.0 | 11.5 | SS3SS | 5-5-6-8 (11) | Clay (CL) 5.0-6.0' - olive brown, mottled reddish brown, light gray and yellow, moist, stiff, sand pockets and clay pockets | | | ST-1 collected 6.0-8.0' | |
| | 7.0 | | | | | | | | |
| | 7.5 | 6.5 | SS4SS | 3-3-5-5 (8) | Clay (CL) 7.5-8.0' - light yellowish brown, mottled reddish brown, moist, trace organics and sand | | | | |
| | 9.5 | | | | | | | | |
| 10 | | | | | | | | | |
| 246.2 | 10.0 | 8.0 | SS5SS | 2-1-2-1 (3) | Clay (CL) 10.0-10.7' - light yellowish brown, mottled reddish brown, moist, soft | | | ST-2 collected 11.0-13.0' | |
| | 12.0 | | | | | | | | |
| | 12.5 | 10.0 | SS6SS | 2-1-1-2 (2) | Clay (CL) 12.5-13.4' - light yellowish brown and reddish brown, moist, very soft, fill | | | | |
| | 14.5 | | | | | | | | |
| 15 | | | | | | | | | |
| 241.2 | 15.0 | 10.0 | SS7SS | 2-1-2-2 (3) | Clay (CL) 15.0-15.9' - light yellowish brown and reddish brown, moist, soft, fill | | | | |
| | 17.0 | | | | | | | | |
| | 17.5 | 14.0 | SS8SS | 2-2-2-2 (4) | Clay (CL) 17.5-18.7' - reddish brown, light olive brown, and light yellowish brown, soft, mixture of all previous soils, fill | | | | 1.0 |
| | 19.5 | | | | | | | | |
| 20 | | | | | | | | | |
| | | | | | | | | | |



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| PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div> | BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCA-1</div> <div style="text-align: right; font-size: 0.8em;">SHEET 2 OF 6</div> |
| <div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div> | |

| | |
|--|---|
| PROJECT : PEC COLA, New Hill, NC | LOCATION : (NAD 27) (686832.1 N, 2014476.2 E) |
| ELEVATION : 256.2 ft MSL (NGVD 29) | DRILLING CONTRACTOR : J. Little, S&ME |
| DRILLING EQUIPMENT AND METHOD : BK-51, 2-15/16 Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead | ORIENTATION : Vertical |
| WATER LEVELS : 26.6 ft bgs | START : 8/2/06 08:11 END : 8/3/06 09:14 LOGGER : LH |

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N) | SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | SYMBOLIC LOG | COMMENTS | |
|---------------------------------|---------------|-------|----------|--|--|---|---|------------------------------|
| | RECOVERY (in) | #TYPE | PP (TSF) | | | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION | |
| | | | | | | | | |
| 236.2 | 20.0 | 14.0 | SS9SS | 2-2-2-3 (4) | Clay (CL) 20.0-21.2' - soft, mixture of all previous soils, fill |  | 0.5 | ST-4 collected 27.0-29.0' |
| | 22.0 | | | | | | | |
| 25 | | | | | | | | |
| 231.2 | 25.0 | 14.0 | SS10SS | 2-3-3-3 (6) | Clay (CL) 25.0-26.2' - medium stiff, mixture of all previous soils |  | 0.9 | |
| | 27.0 | | | | | | | |
| | | | | | | | | |
| 30 | | | | | | | | |
| 226.2 | 30.0 | 0.0 | SS11SS | 3-4-4-4 (8) | No Recovery 30.0-32.0' | | | |
| | 32.0 | | | | | | | |
| | | | | | | | | |
| 35 | | | | | | | | |
| 221.2 | 35.0 | 9.0 | SS12SS | 11-24-26-36 (50) | Clay (CL) 35.0-37.5' - dark reddish brown, moist, hard, low plasticity, slow dilatancy |  | | |
| | 37.0 | | | | | | | |
| | | | | | | | | |
| 40 | 39.5 | | | | |  | | |



LOGGER : LH

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BCA-1

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14

LOGGER : LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | |
| 45.3 | R1NQ 5 ft 94% | 34 | 10+ | 45.3' - Fracture zone, rough, undulating | ---- | Sandstone 45.3-46.4' - dark reddish gray, mottled reddish black and light greenish gray, very soft to soft, very fine sand, subangular to subrounded, well sorted, highly weathered Siltstone 46.4-69.5' - dark reddish brown, mottled reddish black and greenish gray, very soft to soft 46.4-46.7' - clay seam, very soft, friable 46.4-46.8' - highly weathered 46.8-50.3' - moderately weathered to highly weathered 48.5-48.7' - laminated 48.6-48.7' - laminated 47.8-47.9' - laminated 49.3-49.5' - laminated 49.4-49.9' - clay seams alternating with siltstone, very soft, friable, 0.01-0.02' thick each 49.8-50.0' - laminated 50.3-50.8' - laminated 50.3-61.3' - moderately weathered 51.8-51.9' - clay seams with siltstone, very soft, friable, 0.01' thick each 51.8-52.6' - laminated 53.3-55.3' - gravel sized white clasts 57.5-58.0' - white clasts 59.2-59.7' - vugs 59.8-59.9' - clay seam, 0.07' thick, very soft, some siltstone in it 60.3-65.3' - soft 60.6-60.8' - clay seam, very soft, friable material, some siltstone within 61.3-69.5' - fresh 62.2-62.4' - 0.05' thick, 0.1' long vugs | Rock coring began at 14:36 on 8/2/06 R1: 14:36-14:46 on 8/2/06 At 48.2': R-Scale = R1 R2: 14:57-15:05 At 53.5': R-Scale = R3 R3: 15:12-15:21 At 56.1': R-Scale = R3-R4 R4: 15:28-15:40 |
| | | | 10+ | 46.2-46.4' - Fracture zone, rough, undulating | ---- | | |
| | | | 1 | 47.0' - Fracture, 45 deg and horizontal, smooth, undulating | ---- | | |
| | | | 1 | 47.8' - Fracture, horizontal, rough, undulating | ---- | | |
| | | | 1 | 48.6' - Fracture, horizontal, rough, undulating | ---- | | |
| 50 206.2 | R2NQ 5 ft 98% | 72 | 2 | 50.3' - Fracture, horizontal and 45 deg, rough, planar | ---- | | |
| | | | 5 | | ---- | | |
| | | | 3 | 52.1' - Fracture, horizontal, smooth, planar, black stains | ---- | | |
| | | | 0 | 52.4' - Fracture, rough, planar, black stains | ---- | | |
| | | | 0 | 52.6' - Fracture, rough, planar, black stains | ---- | | |
| 55 201.2 | R3NQ 5 ft 101% | 86 | 0 | | ---- | | |
| | | | 0 | | ---- | | |
| | | | 2 | 57.2-57.8' - Series of vertical and angled fractures, some tightly healed, rough, undulating | ---- | | |
| | | | 0 | 58.4' - Fracture, 60 deg, slickensided, undulating, black stains | ---- | | |
| | | | 4 | 58.9' - Fracture, horizontal, rough, planar 59.2' - Fracture, horizontal, rough, planar, black stains | ---- | | |
| 60 196.2 | R4NQ 5 ft 90% | 68 | 8 | 59.7-59.8' - Fractures (2), horizontal, rough, planar, black stains | ---- | | |
| | | | 3 | 60.3-60.6' - Fractures (4), horizontal, rough, planar, black stains | ---- | | |
| | | | 0 | 60.6' - Fracture (0), rough, planar, black stains | ---- | | |
| | | | 0 | 60.8-60.9' - Fractures (2), 45 deg, rough, planar, black stains | ---- | | |
| | | | 0 | 61.1-61.2' - Fractures (2), 40 deg, rough, planar, black stains | ---- | | |
| 65 191.2 | | | 0 | 62.0-62.2' - Fractures (2), horizontal, rough, planar, black stains | ---- | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-1

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

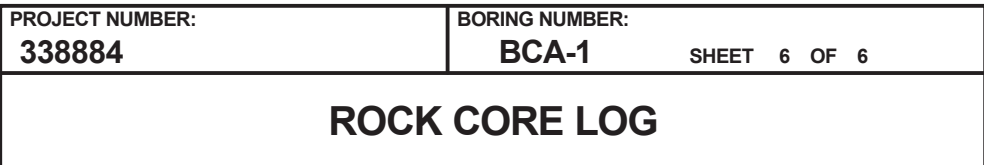
WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14

LOGGER : LH

| WATER LEVEL: 20.0 RGS | | DISCONTINUITIES | | SYMBOLIC LOG | | LITHOLOGY | | COMMENTS | |
|--|------------------------------------|-----------------|--------------------|---|--|---|--|--|--|
| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | SYMBOLIC LOG | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | | |
| 70 186.2 | R5NQ 5 ft 100% | 100 | 0 | 69.1' - Contact between siltstone and sandstone, horizontal, smooth, planar, slightly gradational, tightly healed 69.4' - Fracture, horizontal, rough, undulating 69.8' - Fracture, horizontal, rough, planar | | x | | | |



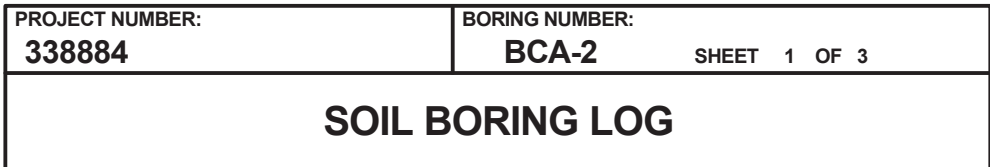
LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 5



LOGGER: AT

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BCA-2

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688236.2 N, 2013338.7 E)

ELEVATION : 244.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

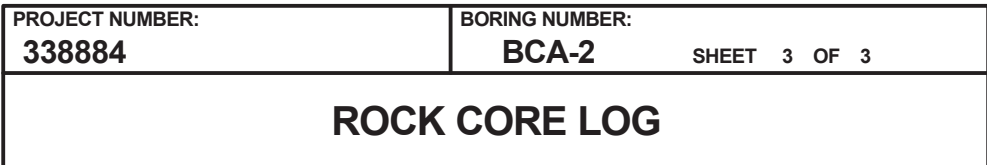
WATER LEVELS : 2.7 ft bgs

START : 8/10/06 14:48

END : 8/10/06 17:10

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS | |
|--|------------------------------------|-----------------------|----------------------|--|--|---|--|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 10 234.4 | 7.8 | R1NQ 1.7 ft 97% | 68 | 0 | x x x x x x x x x x | Siltstone At 7.8' - reddish brown, soft, 30% very fine to fine sand, soil like appearance | Rock coring began at 15:52 on 8/10/06 R1: No time recorded | |
| | 9.5 | R2NQ 5 ft 100% | 3 | 8.9' - Fracture, 60 deg, black stains 9.1' - Fracture, 60 deg, rough, planar, black stains 9.5' - Fracture, vertical, smooth, undulating 10.4' - Fracture, smooth, undulating | | 7.8-10.5' - moderately weathered | At 8.0': R-Scale = R1-R2 R2: No time recorded | |
| | | | 2 | | | 10.5-10.8' - highly weathered 10.5-10.7' - clay seam, 0.15' thick, brown 10.7-10.8' - white, highly plastic fat clay seam | At 10.7-10.8': PP: 1.0 tsf | |
| | | | 1 | | | Sandstone 10.8-11.5' - pale olive, very soft, very fine sand to fine sand, highly weathered 11.1-11.2' - clay seam, yellowish brown | | |
| | | | 0 | | | | | |
| | 14.5 | R3NQ 5 ft 98% | 3 | 12.7' - Fracture, 10 deg, rough, undulating 13.0-13.3' - Fracture, very soft sandstone crushed into soil 13.5' - Fracture, horizontal, smooth, undulating, 0.2' relief 14.0' - Fracture, 30 deg, rough, stepped, 0.3' relief 14.3' - Fracture, 30 deg, rough, undulating, 0.05' relief | | | | |
| | | | 2 | | | | | |
| | | | 4 | | | | | |
| | | | 5 | 16.1' - Fracture, 40 deg, rough, undulating, 0.3' relief 16.8' - Fracture, 15 deg, rough, undulating, brown stains 17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain | | | | |
| | 15 229.4 | 19.5 | R4NQ 5 ft 100% | 32 | | 17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar | x x x x x x x x x x | At 14.5' - dark reddish brown, very soft, intermittent clay seams, 30% very fine to fine sand, soil-like appearance 14.5-17.1' - highly weathered 14.8-15.1' - clay seam, brown stains 15.3-15.4' - clay seam, brown stains 15.5-17.5' - olive 15.6-15.7' - clay seam, brown stains 16.0' - clay seam, brown stains, 0.05' thick 16.3-16.4' - clay seam, olive, 0.15' thick 16.8-17.1' - clay seam, olive 17.1-17.5' - slightly weathered | R3: No time recorded |
| 1 | | | | | | At 16.5': R-Scale = R1 | | |
| 0 | | | | | | At 17.9': R-Scale = R5 | | |
| 0 | | | | | | | | |
| 20 224.4 | | R5NQ 1 ft 85% | 60 | 81 | | | At 19.5' - highly weathered 19.5-19.7' - reddish brown, soft, slightly weathered, 30% very fine to fine sand, soil-like appearance 19.7-20.5' - slightly weathered | R4: No time recorded |
| | | | | 2 | | | At 20.8': R-Scale = R3-R4 | |
| | | | | 0 | | | At 22.0': R-Scale = R3-R4 | |
| | | | | 0 | | | First water level = 2.7' bgs taken 8/10/06 at 18:22; second water level = 4.5' bgs taken 8/11/06 at 14:08 | |
| 25 219.4 | | | | | | | R5: No time recorded At 24.9': R-Scale = R3-R4 R-Scale performed during rock core logging. | |
| | | | | | | | | |



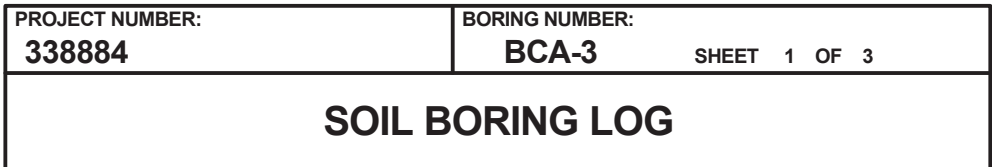
LOCATION : (NAD 27) (688236.2 N, 201338.7 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

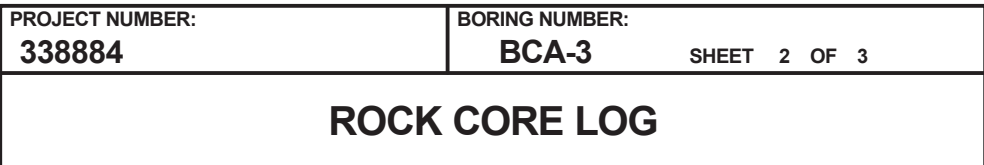
LOGGER : AT

Rev. 5



LOGGER : LH/JS/AT

Rev. 5



LOGGER : LH/JS/AT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-3

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687233.2 N, 2012525.3 E)

ELEVATION : 262.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

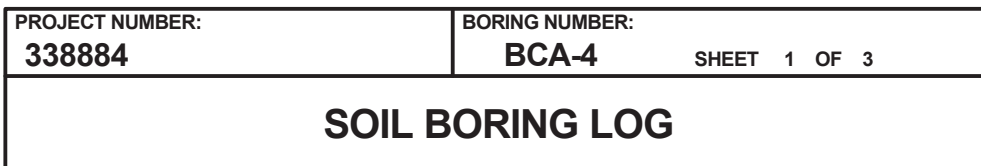
WATER LEVELS : 6.6 ft bgs

START : 7/26/06 14:36

END : 7/27/06 09:00

LOGGER : LH/JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|---|--------------|---|---|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 25 237.6 | 5 ft 101% 25.3 | 98 | 0 | 21.8' - Fracture, 20 deg, rough, undulating | | 21.6-21.7' - laminated bedding Sandstone At 21.7' - white, dark gray, and dark greenish gray, soft, massive bedding, very fine sand to medium sand, angular to subrounded, fresh | R6: No time recorded |
| | | | 1 | 24.1' - Fracture, 30 deg, rough, undulating | | 21.7-22.4' - 20% coarse grained | |
| | | | 1 | 24.9' - Fracture, rough, undulating | | 23.2-23.4' - 20% coarse grained | |
| | | | 0 | | | 24.2-25.0' - greenish gray mottles | At 26.8': R-Scale = R3-R4 |
| | | | 1 | | | 24.4-24.9' - 20% coarse grained | |
| | | | 2 | 27.2' - Fracture, 50 deg | | 25.3-26.5' - mottled dark gray to dark brown, soft to hard, well sorted | |
| | | 74 | 6 | 27.9' - Fracture, 60 deg, rough, undulating | | 26.5-27.1' - soft to hard, fine sand to coarse sand, rust colored mottling | At 29.6': R-Scale = R2 |
| | | | 6 | 28.2' - Fracture, horizontal, rough, undulating | | 27.4-28.2' - soft to hard, fine sand to medium sand, poorly graded | |
| | | | 0 | 28.4-28.6' - Fracture zone (3), smooth, undulating | | 27.9-28.1' - rust colored mottling | |
| 30 232.6 | | | 0 | 28.7' - Fracture, 5 deg, rough, undulating, gray stains | | 28.2-28.2' - clay and sandstone pieces | R7: No time recorded on 07/27/06 |
| | | | 1 | 28.8' - Fracture, horizontal, smooth, undulating | | 28.3-28.6' - 5% irregular white clasts harder than matrix | |
| | | | 0 | 29.2' - Fracture, 5 deg, smooth, undulating | | | |
| | | | 1 | 31.0' - Fracture, smooth to rough, stepped | | 30.3-35.5' - green and purple mottling, very fine to fine grained, 10-15% mottles in scattered threads | At 34.0': R-Scale = R2 |
| | | | 0 | | | | |
| | | | 1 | 32.4' - Fracture, 10 deg, some white infilling | | | |
| | | 100 | 1 | 33.5' - Fracture, horizontal, some white infilling | | | R8: No time recorded |
| | | | 1 | | | | |
| | | | 0 | | | | |
| 35 227.6 | | | 0 | | | 35.5-40.3' - mottled green, 25-30% fine sand, harder in sandy areas | First water level = 6.6' bgs taken 7/27/06 at 09:30; second water level = 8.3' bgs taken 7/28/06 at 13:05 |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | At 38.6': R-Scale = R3-R4 |
| | | | 0 | | | | R-Scale performed after drilling on stored samples |
| 40 222.6 | | | 0 | | | | |
| | | | | | | Bottom of Boring at 40.3 ft bgs on 7/27/06 09:00 | |



LOGGER : JS/AT/LH

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-4

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687298.2 N, 2013040.6 E)

ELEVATION : 262.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.8 ft bgs

START : 7/28/06 11:00

END : 8/1/06 14:33

LOGGER : JS/AT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|---|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 20 242.9 | | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-4

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687298.2 N, 2013040.6 E)

ELEVATION : 262.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.8 ft bgs

START : 7/28/06 11:00

END : 8/1/06 14:33

LOGGER : JS/AT/LH

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN LENGTH AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | COMMENTS |
|--|----------------------------------|-----------------|--------------------|--|---------------------------------|---|--|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. |
| 40 222.9 | 40.2 | 90 | 2 | 34.4-34.6' - Fracture, 60 deg, rough, undulating | x x | 35.6-35.9' - white clasts 35.9-36.2' - very soft, laminated bedding 36.2-37.7' - soft | R5: 14:25-14:33 |
| | | | 1 | 34.5' - Fracture, horizontal, rough, undulating 36.0' - Fracture, 30 deg, rough, undulating 36.2' - Fracture, horizontal, rough, undulating 36.7' - Fracture, 30 deg, smooth, stepped | x x x x x x x x x x | | |
| | | | 2 | | x x x x x x x x x x | | |
| | | | 2 | 38.3' - Fracture, horizontal, rough, undulating | x x x x x x x x x x | | |
| | | | 0 | | x x x x x x x x x x | | |
| | | | | | | 37.5-40.2' - trace medium to coarse sand 37.7-38.3' - very soft, laminated bedding 37.9-38.1' - clay seam, very soft, friable, 0.08' thick 38.1-38.2' - clay seam, very soft, friable, 0.08' thick | At 37.8-38.2': R-Scale = R0-R1 First water level = 6.8' bgs taken 8/1/06 at 16:14; second water level = 8.1' bgs taken 8/2/06 at 08:55 R-Scale performed after drilling on stored samples |
| | | | | | | Bottom of Boring at 40.2 ft bgs on 8/1/06 14:33 | |
| 45 217.9 | | | | | | | |
| 50 212.9 | | | | | | | |
| 55 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-5

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687400.5 N, 2012819.7 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, 4-1/2 Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 5.8 ft bgs

START : 7/27/06 11:40

END : 7/28/2006

LOGGER : JS/AT

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|--|--------------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 260.3 | 0.0 | 12.0 | SS1SS | 7-10-10-7 (20) | Fill 0.0-0.1' - grass and fine to coarse gravel Silty Sand (SM) 0.1-0.6' - dark reddish gray, moist, dense, fine to coarse sand, fine to medium sand, 15% non-plastic fines Sandy Silt (ML) 0.6-1.0' - reddish brown, white mottling, moist, very stiff, low plasticity, very rapid dilatancy, 25% very fine to fine sand Sandy Silt (ML) 2.5-2.8' - reddish brown, white mottling, moist to wet, stiff, low plasticity, rapid dilatancy, up to 25% very fine sand, friable, reworked native material Sandy Silt (ML) 2.8-3.9' - reddish brown, white mottling, dry to moist, very stiff, low plasticity, rapid dilatancy, up to 25% very fine sand, varies in sample, friable Sandy Silt (ML) 5.0-5.4' - reddish brown, white mottling, dry to moist, very stiff, low plasticity, rapid dilatancy, up to 25% very fine sand, varies in sample, friable | | |
| 5 | 2.0 | | | | | | |
| 255.3 | 2.5 | 17.0 | SS2SS | 8-38-38-50/4 (76) | | | |
| | 4.5 | | | | | | |
| | 5.0 | 5.0 | SS3SS | 50/4 (50/4") | | | Too friable for PP |
| | 7.0 | | | | | | Soil sampling completed at 13:10 on 7/27/06 |
| | 7.5 | 2.0 | SS4SS | 50/2 (50/2") | Sandy Silt (ML) 7.5-7.6' - reddish brown, black and yellow mottling, dry to moist, very stiff, low plasticity, rapid dilatancy, up to 25% very fine sand, varies in sample, friable Begin Rock Coring at 7.6 ft bgs See the next sheet for the rock core log | | |
| | 7.6 | | | | | | |
| 10 | | | | | | | |
| 250.3 | | | | | | | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BCA-5

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687400.5 N, 2012819.7 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

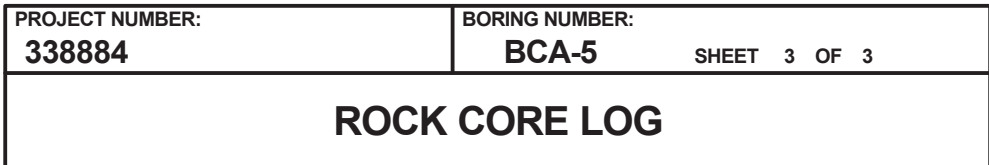
WATER LEVELS : 5.8 ft bgs

START : 7/27/06 11:40

END : 7/28/2006

LOGGER : JS/AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 10 250.3 | 7.6 R1NQ 2.4 ft 102% | 100 | 0 | 8.7' - Fracture, 5 deg, rough, undulating, black streaks | x | | | |



LOGGER : JS/AT

Rev. 5



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-6

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688172.3 N, 2012652.4 E)

ELEVATION : 245.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24" Split Spoon, 140 lb. Hammer

ORIENTATION : Vertical

WATER LEVELS : 4.8 ft bgs

START : 8/3/06 12:45

END : 8/4/2006

LOGGER : AT

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|--|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| 245.4 | 0.0 | 3.6 | SS1SS | 13-16-10-12 (26) | Sandy Silt (ML) 0.0-0.2' - yellowish brown, dry to moist, hard, 30% very fine to fine sand, fine to coarse gravel | | PT-1 collected 5.0-7.0' |
| | 2.0 | | | | | | |
| | 2.5 | 8.4 | SS2SS | 5-5-6-8 (11) | Sandy Silt (ML) 2.5-3.2' - yellowish brown, dry to moist, soft, 30% very fine to fine sand, fine to coarse gravel | | |
| | 4.5 | | | | | | |
| 5 240.4 | 5.0 | 13.2 | SS3SS | 2-2-4-6 (6) | Clay (CL) 5.0-6.1' - grayish brown, moist, low to medium plasticity, slow to rapid dilatancy, black organic layer, root casts | | Soil sampling completed at 14:35 on 8/3/06 |
| | 7.0 | | | | | | |
| | 7.5 | 12.0 | SS4SS | 7-14-17-21 (31) | Clay (CL) 7.5-7.9' - grayish brown, moist, low to medium plasticity, slow to rapid dilatancy, black organic layer, root casts | | |
| | 9.5 | | | | Clay (CL) 7.9-8.5' - reddish brown, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy | | |
| 10 235.4 | 10.0 | 10.8 | SS5SS | 15-22-50/2 (72/8") | Clay (CL) 10.0-10.9' - reddish brown, moist, hard, low to medium plasticity, slow to rapid dilatancy | | |
| | 10.9 | | | | | | |
| | 11.5 | | | | Begin Rock Coring at 11.5 ft bgs See the next sheet for the rock core log | | |
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PROJECT NUMBER:

338884

BORING NUMBER:

BCA-6

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688172.3 N, 2012652.4 E)

ELEVATION : 245.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

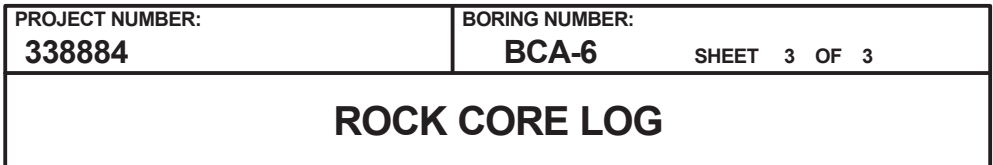
WATER LEVELS : 4.8 ft bgs

START : 8/3/06 12:45

END : 8/4/2006

LOGGER : AT

| DEPTH AND ELEVATION BELOW SURFACE (ft) | CORE RUN, LENGTH, AND RECOVERY (%) | DISCONTINUITIES | | | SYMBOLIC LOG | LITHOLOGY | | COMMENTS |
|--|------------------------------------|-----------------|--------------------|---|--------------|--|--|----------|
| | | R Q D (%) | FRACTURES PER FOOT | DESCRIPTION | | ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS | SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC. | |
| | | | | DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS | | | | |
| 15 230.4 < | | | | | | | | |



LOGGER : AT

Rev. 5



PROJECT NUMBER:
338884

BORING NUMBER:
BCA-7

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.9 N, 2013818.7 E)

ELEVATION : 263.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer

ORIENTATION :

WATER LEVELS : ---

START : 8/9/06 11:17

END : 8/9/06 16:07

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | INTERVAL (ft) | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|-------|-----------------|-----------------------------------|---|--------------|---|
| | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | | | | |
| | | | | | | | |
| | | | | | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| 263.2 | 0.0 | 14.0 | SS1SS | 5-8-9-11 (17) | Clay (CL) 0.0-1.2' - reddish brown, light greenish gray mottling, dry, very stiff, trace roots | | Install NW surface casing to 10' bgs. |
| | 2.0 | | | | | | |
| | 2.5 | 15.0 | SS2SS | 6-5-11-14 (16) | Clay (CL) 2.5-3.8' - reddish brown, trace brown mottling, dry, very stiff, gray sand pockets very fine to medium grained 3.5-3.8' - trace gravel laminated beds | | |
| | 4.5 | | | | | | |
| 5 | | | | | | | |
| 258.2 | 5.0 | 12.0 | SS3SS | 8-9-11-13 (20) | Clay (CL) 5.0-6.0' - reddish brown, trace brown mottling, dry, very stiff, gray and yellowish brown sand pockets very fine to medium grained | | |
| | 7.0 | | | | | | |
| | 7.5 | 15.0 | SS4SS | 7-8-10-16 (18) | Clay (CL) 7.5-8.8' - reddish brown, trace brown mottling, dry, very stiff, brown clay pockets mottled light gray | | |
| | 9.5 | | | | | | |
| 10 | | | | | | | |
| 253.2 | 10.0 | 7.0 | SS5SS | 34-50/6 (50/6") | Clay (CL) 10.0-10.6' - reddish brown, moist, hard, low plasticity, laminated | | |
| | 12.0 | | | | | | |
| | 12.5 | 5.0 | SS6SS | 50/5 (50/5") | Clay (CL) 12.5-13.0' - reddish brown, moist, hard, low plasticity, reddish black linear mottles | | |
| | 14.5 | | | | | | |
| 15 | | | | | | | |
| 248.2 | 15.0 | 11.0 | SS7SS | 39-50/6 (50/6") | Clay (CL) 15.0-16.0' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity | | |
| | 17.0 | | | | | | |
| | 17.5 | 10.0 | SS8SS | 15-17-50/5 (67/11") | Clay (CL) 17.5-18.4' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity | | |
| | 19.5 | | | | | | |
| 20 | | | | | | | |



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-7

SHEET 2 OF 2

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.9 N, 2013818.7 E)

ELEVATION : 263.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer

ORIENTATION :

WATER LEVELS : ---

START : 8/9/06 11:17

END : 8/9/06 16:07

LOGGER : LH

| DEPTH BELOW EXISTING GRADE (ft) | | | | STANDARD PENETRATION TEST RESULTS | SOIL DESCRIPTION | SYMBOLIC LOG | COMMENTS |
|---------------------------------|---------------|---------------|--------|-----------------------------------|--|--------------|---|
| | INTERVAL (ft) | RECOVERY (in) | #TYPE | 6"-6"-6"-6" (N) | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION |
| | | | | | | | |
| 243.2 | 20.0 | 5.0 | SS9SS | 50/5 (50/5") | Clay (CL) 20.0-20.5' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity | | First water level = 7.4' bgs taken 8/10/06 at 20:02 |
| | 22.0 | | | | | | |
| 25 | | | | | | | |
| 238.2 | 25.0 | 6.0 | SS10SS | 50/6 (50/6") | Silt (ML) 25.0-25.3' - light gray and pale red, moist, very dense Clay (CL) 25.3-25.5' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity | | |
| | 27.0 | | | | | | |
| 30 | | | | | | | |
| 233.2 | 30.0 30.2 | 2.0 | SS11SS | 50/2 (50/2") | Sand With Silt (SP-SM) 30.0-30.2' - light gray and pale red, moist, very dense, very fine to fine grained, subangular to subrounded, poorly sorted, 20% silt Bottom of Boring at 30.2 ft bgs on 8/9/06 16:07 | | |
| | | | | | | | |
| 35 | | | | | | | |
| 228.2 | | | | | | | |
| | | | | | | | |
| 40 | | | | | | | |