

APPENDIX B1.2
GEOTECHNICAL TEST RESULTS
ADVANCED TERRA TESTING

Moisture & Density Determinations
ASTM D 2216 & D 2937

| | | | |
|-------------|-------------|----------|---------|
| CLIENT: | MWH | JOB NO. | 2512-77 |
| PROJECT | Church Rock | LOCATION | NECR |
| PROJECT NO. | -- | | |

| | | | | |
|--------------|-----------------|---------------|---------------|-----------------|
| BORING NO. | NECR2-CC07 | SF3-CC01 | N2D-CC01 | NECR2-CC01 |
| DEPTH | 6-6.5' | 6-6.5' | 11-11.5' | 5.5-6.0' |
| SAMPLE NO. | NECR2-CC07-001b | SF3-CC01-002a | N2D-CC01-003a | NECR2-CC01-001a |
| DATE SAMPLED | 10/30/2013 | 10/30/2013 | 10/30/2013 | 10/30/2013 |
| DATE TESTED | 11/15/2013 | 11/15/2013 | 11/15/2013 | 11/15/2013 |
| LOCATION | NECR2 | SANDFILL3 | NECRDRAIN | NECR2 |

DENSITY DETERMINATIONS

| | | | | |
|-----------------------|---------|---------|---------|---------|
| Sample Height (IN) | 5.812 | 5.726 | 5.802 | 5.995 |
| Sample Diameter (IN) | 1.929 | 1.922 | 1.929 | 1.928 |
| Wt of Wet Soil (GMS) | 462.90 | 464.36 | 425.18 | 489.32 |
| Sample Volume (CU Ft) | 0.00983 | 0.00961 | 0.00981 | 0.01013 |
| WET DENSITY (PCF) | 103.8 | 106.5 | 95.5 | 106.5 |
| DRY DENSITY (PCF) | 101.0 | 96.4 | 91.8 | 99.1 |

MOISTURE DETERMINATIONS

| | | | | |
|------------------------------|--------|--------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 472.25 | 472.80 | 431.72 | 495.90 |
| Wt. of Dry Soil & Dish (gms) | 459.88 | 428.62 | 415.31 | 461.98 |
| Net Loss of Moisture (gms) | 12.37 | 44.18 | 16.41 | 33.92 |
| Wt. of Dish (gms) | 9.35 | 8.44 | 6.54 | 6.58 |
| Wt. of Dry Soil (gms) | 450.53 | 420.18 | 408.77 | 455.40 |
| Moisture Content (%) | 2.7 | 10.5 | 4.0 | 7.4 |

| | | |
|--------------|---------------|---------------|
| BORING NO. | SF3-CC01 | SF3-CC01 |
| DEPTH | 3.5-4' | 11-11.5' |
| SAMPLE NO. | SF3-CC01-001a | SF3-CC01-003a |
| DATE SAMPLED | 10/30/2013 | 10/30/2013 |
| DATE TESTED | 11/15/2013 | 11/15/2013 |
| LOCATION | SANDFILL3 | SANDFILL3 |

DENSITY DETERMINATIONS

| | | |
|-----------------------|---------|---------|
| Sample Height (IN) | 5.049 | 5.649 |
| Sample Diameter (IN) | 1.933 | 1.929 |
| Wt of Wet Soil (GMS) | 451.90 | 391.33 |
| Sample Volume (CU Ft) | 0.00857 | 0.00955 |
| WET DENSITY (PCF) | 116.2 | 90.3 |
| DRY DENSITY (PCF) | 99.3 | 83.5 |

MOISTURE DETERMINATIONS

| | | |
|------------------------------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 458.44 | 397.92 |
| Wt. of Dry Soil & Dish (gms) | 392.63 | 368.34 |
| Net Loss of Moisture (gms) | 65.81 | 29.58 |
| Wt. of Dish (gms) | 6.54 | 6.59 |
| Wt. of Dry Soil (gms) | 386.09 | 361.75 |
| Moisture Content (%) | 17.0 | 8.2 |

| | | | |
|----------------|--|-------|-------------------|
| Data entry by: | CJW | Date: | 11/18/2013 |
| Checked by: | <u>CJC</u> | Date: | <u>11/18/2013</u> |
| File name: | M&D-ASTMD-2216-2937-R0-AsnSheet1P2.xls | | |



Moisture & Density Determinations
ASTM D 2216 & D 2937

| | | | |
|-------------|-------------|----------|---------|
| CLIENT: | MWH | JOB NO. | 2512-77 |
| PROJECT | Church Rock | LOCATION | NECR |
| PROJECT NO. | -- | | |

| | | | | |
|--------------|---------------|------------|---------------|----------------|
| BORING NO. | N2D-CC01 | NECR2-CC05 | N2D-CC01 | NECR2-CC05 |
| DEPTH | 3.5 -4' | 5-5.5' | 6-6.5' | 2.5-3' |
| SAMPLE NO. | N2D-CC01-001a | NECR2-CC05 | N2D-CC01-002a | NECR2-CC05-002 |
| DATE SAMPLED | 10/30/2013 | 10/29/2013 | 10/30/2013 | 10/29/2013 |
| DATE TESTED | 11/15/2013 | 11/15/2013 | 11/15/2013 | 11/15/2013 |
| LOCATION | NECR2DRAIN | NECR2 | NECR2DRAIN | NECR2 |

DENSITY DETERMINATIONS

| | | | | |
|-----------------------|---------|-----------|---------|---------|
| Sample Height (IN) | 5.986 | NA | 5.213 | 2.207 |
| Sample Diameter (IN) | 1.927 | NA | 1.917 | 1.925 |
| Wt of Wet Soil (GMs) | 454.06 | NA | 360.54 | 170.87 |
| Sample Volume (CU Ft) | 0.01010 | NA | 0.00871 | 0.00372 |
| WET DENSITY (PCF) | 99.1 | Disturbed | 91.3 | 101.3 |
| DRY DENSITY (PCF) | 91.2 | MC Only | 87.2 | 93.7 |

MOISTURE DETERMINATIONS

| | | | | |
|------------------------------|--------|--------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 463.61 | 246.09 | 368.98 | 364.25 |
| Wt. of Dry Soil & Dish (gms) | 427.70 | 224.51 | 352.72 | 337.53 |
| Net Loss of Moisture (gms) | 35.91 | 21.58 | 16.26 | 26.72 |
| Wt. of Dish (gms) | 9.55 | 9.27 | 8.44 | 8.49 |
| Wt. of Dry Soil (gms) | 418.15 | 215.24 | 344.28 | 329.04 |
| Moisture Content (%) | 8.6 | 10.0 | 4.7 | 8.1 |

| | | | | |
|--------------|-----------------|----------------|-----------------|-----------------|
| BORING NO. | NECR2-CC07 | NECR2-006 | NECR2-CC07 | NECR2-CC06 |
| DEPTH | 5.5-6' | 3.5-4' | 10-10.5' | 3-3.5' |
| SAMPLE NO. | NECR2-CC07-001b | NECR2-006-001a | NECR2-CC07-002a | NECR2-CC06-001b |
| DATE SAMPLED | 10/30/2013 | 10/30/2013 | 10/30/2013 | 10/30/2013 |
| DATE TESTED | 11/15/2013 | 11/15/2013 | 11/15/2013 | 11/15/2013 |
| LOCATION | NECR2 | NECR2 | NECR2 | NECR2 |

DENSITY DETERMINATIONS

| | | | | |
|-----------------------|---------|---------|---------|---------|
| Sample Height (IN) | 5.992 | 5.757 | 5.246 | 5.730 |
| Sample Diameter (IN) | 1.920 | 1.928 | 1.921 | 1.925 |
| Wt of Wet Soil (GMs) | 482.25 | 467.05 | 403.55 | 475.35 |
| Sample Volume (CU Ft) | 0.01004 | 0.00973 | 0.00880 | 0.00965 |
| WET DENSITY (PCF) | 105.9 | 105.9 | 101.1 | 108.6 |
| DRY DENSITY (PCF) | 101.3 | 101.1 | 97.1 | 103.4 |

MOISTURE DETERMINATIONS

| | | | | |
|------------------------------|--------|--------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 491.56 | 476.34 | 412.78 | 483.77 |
| Wt. of Dry Soil & Dish (gms) | 470.63 | 455.18 | 396.73 | 461.18 |
| Net Loss of Moisture (gms) | 20.93 | 21.16 | 16.05 | 22.59 |
| Wt. of Dish (gms) | 9.31 | 9.29 | 9.23 | 8.42 |
| Wt. of Dry Soil (gms) | 461.32 | 445.89 | 387.50 | 452.76 |
| Moisture Content (%) | 4.5 | 4.7 | 4.1 | 5.0 |

| | | | |
|----------------|--|-------|-------------------|
| Data entry by: | CJW | Date: | 11/17/2013 |
| Checked by: | <u>CJC</u> | Date: | <u>11/18/2013</u> |
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Moisture & Density Determinations
ASTM D 2216 & D 2937

| | | | |
|-------------|-------------|----------|---------|
| CLIENT: | MWH | JOB NO. | 2512-77 |
| PROJECT | Church Rock | LOCATION | NECR |
| PROJECT NO. | -- | | |

| | | |
|--------------|------------------------|------------------------|
| BORING NO. | SP-CC13 | SP-CC13 |
| DEPTH | 11-11.5' | 15.5-16.0' |
| SAMPLE NO. | SP-CC13-002a (11-11.5) | SP-CC13-003a (15.5-16) |
| DATE SAMPLED | 11/11/13 MWH | 11/11/13 MWH |
| DATE TESTED | 11/17/13 CJW | 11/17/13 CJW |
| LOCATION | SEDPAD | SEDPAD |

DENSITY DETERMINATIONS

| | | |
|-----------------------|---------|---------|
| Sample Height (IN) | 5.880 | 5.709 |
| Sample Diameter (IN) | 1.938 | 1.913 |
| Wt of Wet Soil (GMs) | 474.81 | 449.00 |
| Sample Volume (CU Ft) | 0.01004 | 0.00950 |
| WET DENSITY (PCF) | 104.3 | 104.2 |
| DRY DENSITY (PCF) | 100.8 | 97.5 |

MOISTURE DETERMINATIONS

| | | |
|------------------------------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 481.37 | 445.23 |
| Wt. of Dry Soil & Dish (gms) | 465.29 | 416.79 |
| Net Loss of Moisture (gms) | 16.08 | 28.44 |
| Wt. of Dish (gms) | 6.57 | 6.63 |
| Wt. of Dry Soil (gms) | 458.72 | 410.16 |
| Moisture Content (%) | 3.5 | 6.9 |

Data entry by:
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Date: 11/18/2013
Date: 11/19/2013



Moisture & Density Determinations
ASTM D 2216 & D 2937

| | | | |
|-------------|-------------|----------|---------|
| CLIENT: | MWH | JOB NO. | 2512-77 |
| PROJECT | Church Rock | LOCATION | NECR |
| PROJECT NO. | -- | | |

| | | | | |
|--------------|---------------------------|--------------------------|--------------------------|--------------------------|
| BORING NO. | NECR1-CC17 | NECR1-CC17 | NECR1-CC17 | NECR1-CC17 |
| DEPTH | 5.5-6.0' | 10.5-11.0' | 15.5-16.0' | 20.5-21.0' |
| SAMPLE NO. | NECR1-CC17-001b (5.5-6.0) | NECR1-CC17-002b(10.5-11) | NECR1-CC17-003b(15.5-16) | NECR1-CC17-004b(20.5-21) |
| DATE SAMPLED | 11/07/13 MWH | 11/07/13 MWH | 11/07/13 MWH | 11/07/13 MWH |
| DATE TESTED | 11/17/13 CJW | 11/17/13 CJW | 11/17/13 CJW | 11/17/13 CJW |
| LOCATION | NECR1 | NECR1 | NECR1 | NECR1 |

DENSITY DETERMINATIONS

| | | | | |
|-----------------------|---------|---------|---------|---------|
| Sample Height (IN) | 5.779 | 5.672 | 5.702 | 5.811 |
| Sample Diameter (IN) | 1.937 | 1.933 | 1.939 | 1.936 |
| Wt of Wet Soil (Gms) | 432.79 | 447.40 | 481.39 | 512.32 |
| Sample Volume (CU Ft) | 0.00986 | 0.00963 | 0.00974 | 0.00990 |
| WET DENSITY (PCF) | 96.8 | 102.4 | 108.9 | 114.1 |
| DRY DENSITY (PCF) | 92.3 | 96.5 | 106.7 | 95.8 |

MOISTURE DETERMINATIONS

| | | | | |
|------------------------------|--------|--------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 439.34 | 456.69 | 490.67 | 521.61 |
| Wt. of Dry Soil & Dish (gms) | 419.09 | 430.76 | 456.45 | 439.59 |
| Net Loss of Moisture (gms) | 20.25 | 25.93 | 9.28 | 82.02 |
| Wt. of Dish (gms) | 6.55 | 9.29 | 0.00 | 9.29 |
| Wt. of Dry Soil (gms) | 412.54 | 421.47 | 456.45 | 430.30 |
| Moisture Content (%) | 4.9 | 6.2 | 2.0 | 19.1 |

| | | | | |
|------------------|------------------------|------------------------|--------------------------|----------------------|
| BORING NO. | NMSA-CC02 | NMSA-CC02 | NMSA-CC02 | SP-CC13 |
| DEPTH | 3-3.5' | 6-6.5' | 10.5-11.0' | 5.5-6' |
| SAMPLE NO. | NMSA-CC02-001b (3-3.5) | NMSA-CC02-002a (6-6.5) | NMSA-CC02-003b (10.5-11) | SP-CC13-001b (5.5-6) |
| DATE SAMPLED | 11/08/13 MWH | 11/08/13 MWH | 11/08/13 MWH | 11/11/13 MWH |
| DATE TESTED | 11/17/13 CJW | 11/17/13 CJW | 11/17/13 CJW | 11/17/13 CJW |
| SOIL DESCRIPTION | NMSA | NMSA | NMSA | SEDPAD |

DENSITY DETERMINATIONS

| | | | | |
|-----------------------|---------|---------|---------|---------|
| Sample Height (IN) | 5.608 | 5.227 | 5.891 | 5.805 |
| Sample Diameter (IN) | 1.925 | 1.922 | 1.934 | 1.934 |
| Wt of Wet Soil (Gms) | 512.20 | 465.85 | 452.18 | 500.18 |
| Sample Volume (CU Ft) | 0.00945 | 0.00878 | 0.01001 | 0.00987 |
| WET DENSITY (PCF) | 119.6 | 117.0 | 99.5 | 111.7 |
| DRY DENSITY (PCF) | 110.6 | 97.5 | 86.6 | 101.4 |

MOISTURE DETERMINATIONS

| | | | | |
|------------------------------|--------|--------|--------|--------|
| Wt. of Wet Soil & Dish (gms) | 521.74 | 475.17 | 460.65 | 508.64 |
| Wt. of Dry Soil & Dish (gms) | 483.22 | 397.64 | 401.71 | 462.43 |
| Net Loss of Moisture (gms) | 38.52 | 77.53 | 58.94 | 46.21 |
| Wt. of Dish (gms) | 9.54 | 9.32 | 8.47 | 8.46 |
| Wt. of Dry Soil (gms) | 473.68 | 388.32 | 393.24 | 453.97 |
| Moisture Content (%) | 8.1 | 20.0 | 15.0 | 10.2 |

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Date: 11/18/2013
Date: 11/19/2013



SPECIFIC GRAVITY TESTS ASTM D 854
 CLIENT: MWH JOB NO. 2512-77
 PROJECT: Church Rock

| BORING NO. | NMSA-CC04 | P2-CC04 | SP-CC13 |
|---|----------------------|-------------------|--------------------|
| DEPTH | 0-15' | 0-3' | 0-15' |
| SAMPLE NO. | NMSA-CC04-BULK(0-15) | P2-CC04-BULK(0-3) | SP-CC13-BULK(0-15) |
| DATE SAMPLED | 11/08/13 MWH | 11/11/13 MWH | 11/11/13 MWH |
| DATE TESTED | 11/22/13 CAL | 11/26/13 CAL | 11/26/13 CAL |
| LOCATION | NMSA | POND2 | SEDPAD |
| Pycnometer # | AA | AA | 1 |
| Weight of oven dry soil (g) (Wo) | 30.310 | 30.628 | 30.614 |
| Weight of flask, soil, and water. (g) (Wb) | 183.999 | 184.157 | 180.890 |
| Temperature (deg. C) (Tx) | 19.2 | 20.5 | 21.0 |
| Weight of water & flask at Tx (from cal. curve)(Wa) | 165.084 | 165.056 | 161.946 |
| Specific Gravity* | 2.66 | 2.66 | 2.62 |

*Specific Gravity = $W_o / [W_o + (W_a - W_b)]$

Data entry by: CAL
 Data checked by: KR
 FileName: MWSGAS21

Date: 12/03/2013
 Date: 12/5/13



Specific Gravity
ASTM D 854 - Method B

CLIENT: MWH JOB NO. 2512-77

PROJECT Church Rock LOCATION Pond 3
PROJECT NO. -

BORING NO. P3-CC07
DEPTH 0-5
SAMPLE NO. P3-CC07-Bulk (0-5)
DATE SAMPLED -
DATE TESTED 3/14/14 SKL

Pycnometer # Big 9

Weight of oven dry soil (g) (Wo) 45.94
Weight of flask, soil,
and water. (g) (Wb) 703.28
Temperature (deg. C) (Tx) 23.5
Weight of water & flask
at Tx (from cal. curve)(Wa) 674.82
Specific Gravity* 2.63

*Specific Gravity = $Wo/[Wo+(Wa-Wb)]$

Data entry by: SKL Date: 3/14/2014
Checked by: BKL Date: 3/14/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_9.xls



COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
BORING NO. NECR1-CC01 DATE SAMPLED 10/30/13 MWH
DEPTH 10-20' DATE TESTED 11/19/13 CAL
SAMPLE NO. NECR1-CC01-BULK LOCATION NECR1
PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------------|--------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 200.00 | 160.00 | 120.00 | 80.00 | 40.00 | 0.00 |
| Wt. of soil & dish (g) | 512.31 | 489.06 | 397.85 | 647.91 | 459.96 | 466.13 |
| Dry wt. soil & dish (g) | 430.77 | 418.04 | 344.27 | 572.38 | 412.64 | 425.75 |
| Net loss of moisture (g) | 81.54 | 71.02 | 53.58 | 75.53 | 47.32 | 40.38 |
| Wt. of dish (g) | 9.48 | 8.44 | 9.23 | 6.55 | 6.56 | 8.45 |
| Net wt. of dry soil (g) | 421.29 | 409.60 | 335.04 | 565.83 | 406.08 | 417.30 |
| Moisture Content (%) | 19.35 | 17.34 | 15.99 | 13.35 | 11.65 | 9.68 |
| Corrected Moisture Content | 16.66 | 14.92 | 13.76 | 11.49 | 10.03 | 8.33 |

Density determination

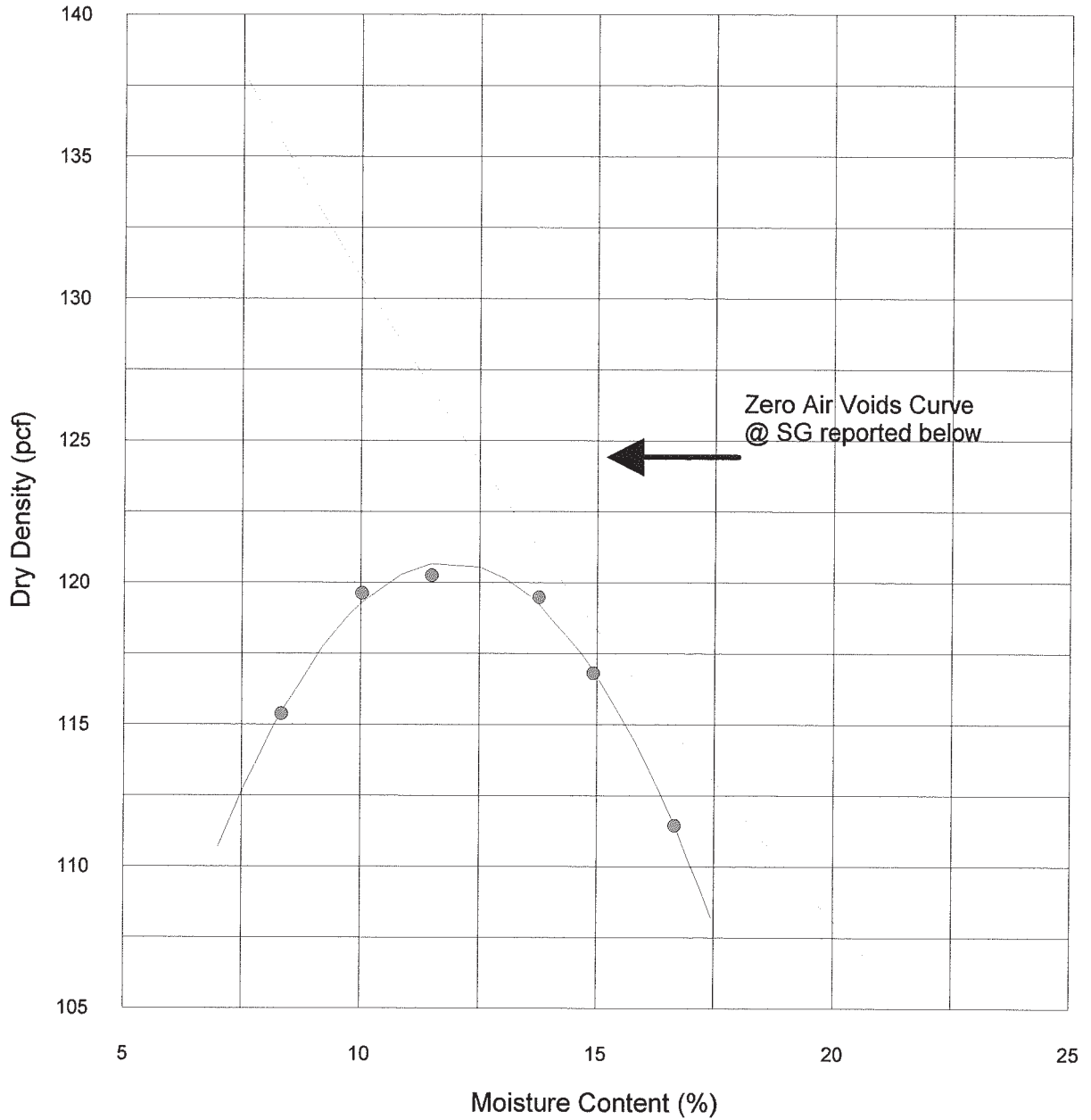
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|-----------------------------|--------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 14.46 | 14.61 | 14.67 | 14.60 | 14.51 | 14.27 |
| Wt. of mold (lb) | 10.25 | 10.25 | 10.25 | 10.25 | 10.25 | 10.25 |
| Net wt. of wet soil (lb) | 4.21 | 4.36 | 4.42 | 4.35 | 4.26 | 4.02 |
| Net wt of dry soil (lb) | 3.53 | 3.72 | 3.81 | 3.84 | 3.82 | 3.67 |
| Dry Density, (pcf) | 105.82 | 111.47 | 114.32 | 115.13 | 114.46 | 109.96 |
| Corrected Dry Density (pcf) | 111.45 | 116.81 | 119.49 | 120.25 | 119.62 | 115.38 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 | 30 |

Data entered by: CAL Date: 11/22/2013
Data checked by: KE Date: 12/3/13
FileName: MWD698-4



Proctor Compaction Test

NECR1-CC01, 10-20', NECR1-CC01-BULK



■ Best Fit Curve ▲ Zero Air Voids Curve
● Actual Data @ SG = 2.65

OPTIMUM MOISTURE CONTENT = 11.9 MAXIMUM DRY DENSITY = 120.7
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. NECR2-CC05 DATE SAMPLED 10/29/13 MWH
 DEPTH 0-10' DATE TESTED 11/20/13 CAL
 SAMPLE NO. NECR2-CC05-BULK(0-10) LOCATION NECR2
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 0.00 | 40.00 | 80.00 | 120.00 | 160.00 |
| Wt. of soil & dish (g) | 530.56 | 604.79 | 499.68 | 483.58 | 571.50 |
| Dry wt. soil & dish (g) | 485.68 | 543.80 | 442.92 | 421.27 | 491.30 |
| Net loss of moisture (g) | 44.88 | 60.99 | 56.76 | 62.31 | 80.20 |
| Wt. of dish (g) | 6.54 | 6.55 | 6.53 | 6.58 | 6.61 |
| Net wt. of dry soil (g) | 479.14 | 537.25 | 436.39 | 414.69 | 484.69 |
| Moisture Content (%) | 9.37 | 11.35 | 13.01 | 15.03 | 16.55 |
| Corrected Moisture Content | 8.83 | 10.70 | 12.25 | 14.15 | 15.59 |

Density determination

| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 9.41 | 9.66 | 9.76 | 9.73 | 9.61 |
| Wt. of mold (lb) | 5.36 | 5.36 | 5.36 | 5.36 | 5.36 |
| Net wt. of wet soil (lb) | 4.05 | 4.30 | 4.40 | 4.37 | 4.25 |
| Net wt of dry soil (lb) | 3.70 | 3.86 | 3.89 | 3.80 | 3.65 |
| Dry Density, (pcf) | 111.09 | 115.85 | 116.81 | 113.97 | 109.40 |
| Corrected Dry Density (pcf) | 113.26 | 117.91 | 118.84 | 116.08 | 111.60 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

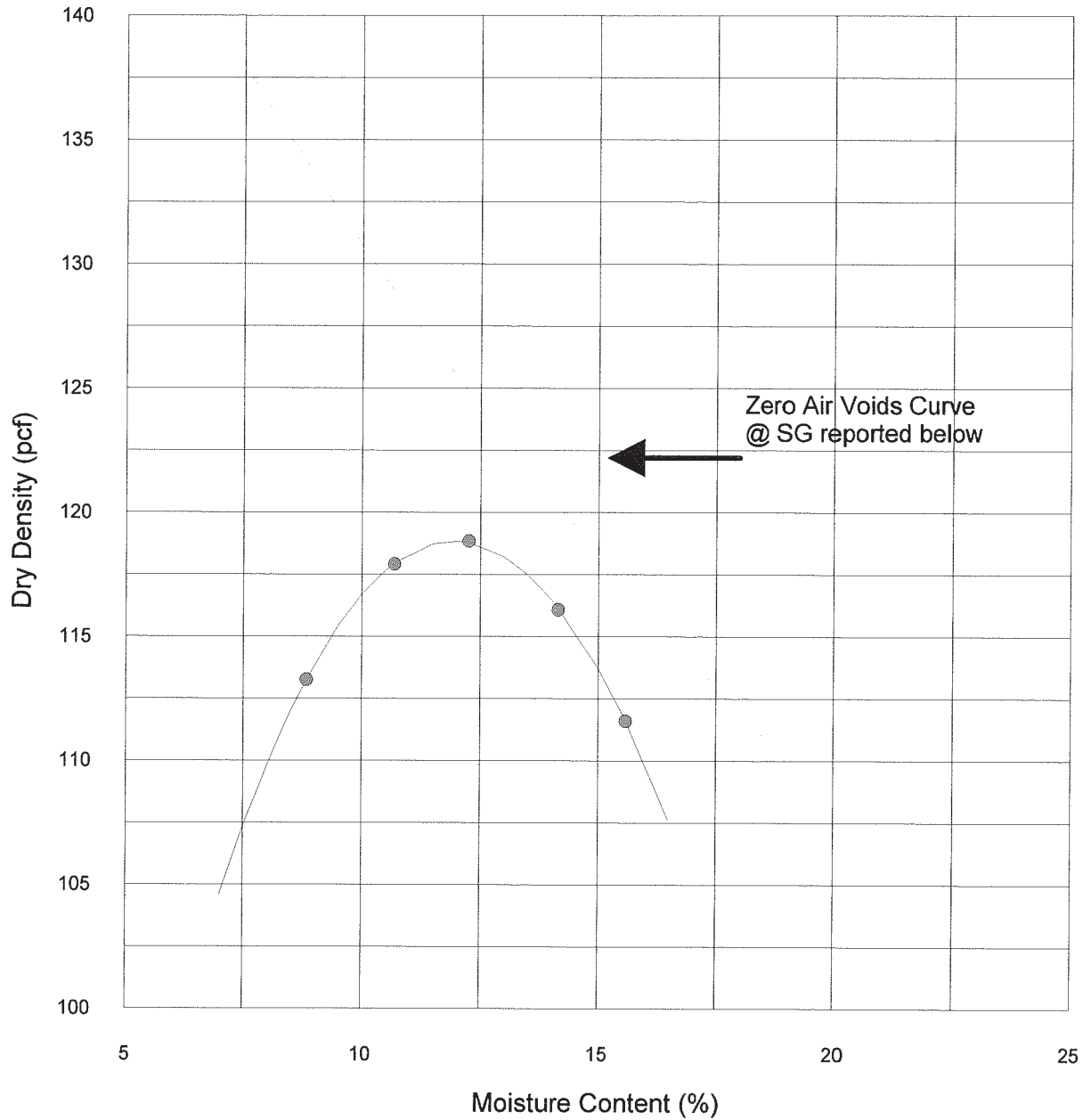
Data entered by: CAL
 Data checked by: KR
 FileName: MWD698-6

Date: 11/22/2013
 Date: 12/9/13



Proctor Compaction Test

NECR2-CC05, 0-10', NECR2-CC05-BULK(0-10)



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG = 2.65
● Actual Data

OPTIMUM MOISTURE CONTENT = 11.9 MAXIMUM DRY DENSITY = 118.8
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. SF3-CC01 DATE SAMPLED 10/30/13 MWH
 DEPTH 0-10' DATE TESTED 11/19/13 CAL
 SAMPLE NO. SF3-CC01-004-BULK LOCATION Sandfill 3
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 160.00 | 120.00 | 80.00 | 40.00 | 0.00 |
| Wt. of soil & dish (g) | 511.46 | 457.01 | 542.53 | 487.40 | 565.67 |
| Dry wt. soil & dish (g) | 430.43 | 391.92 | 473.59 | 433.08 | 508.96 |
| Net loss of moisture (g) | 81.03 | 65.09 | 68.94 | 54.32 | 56.71 |
| Wt. of dish (g) | 6.55 | 8.47 | 9.28 | 9.29 | 9.28 |
| Net wt. of dry soil (g) | 423.88 | 383.45 | 464.31 | 423.79 | 499.68 |
| Moisture Content (%) | 19.12 | 16.97 | 14.85 | 12.82 | 11.35 |
| Corrected Moisture Content | 15.99 | 14.20 | 12.42 | 10.73 | 9.50 |

Density determination

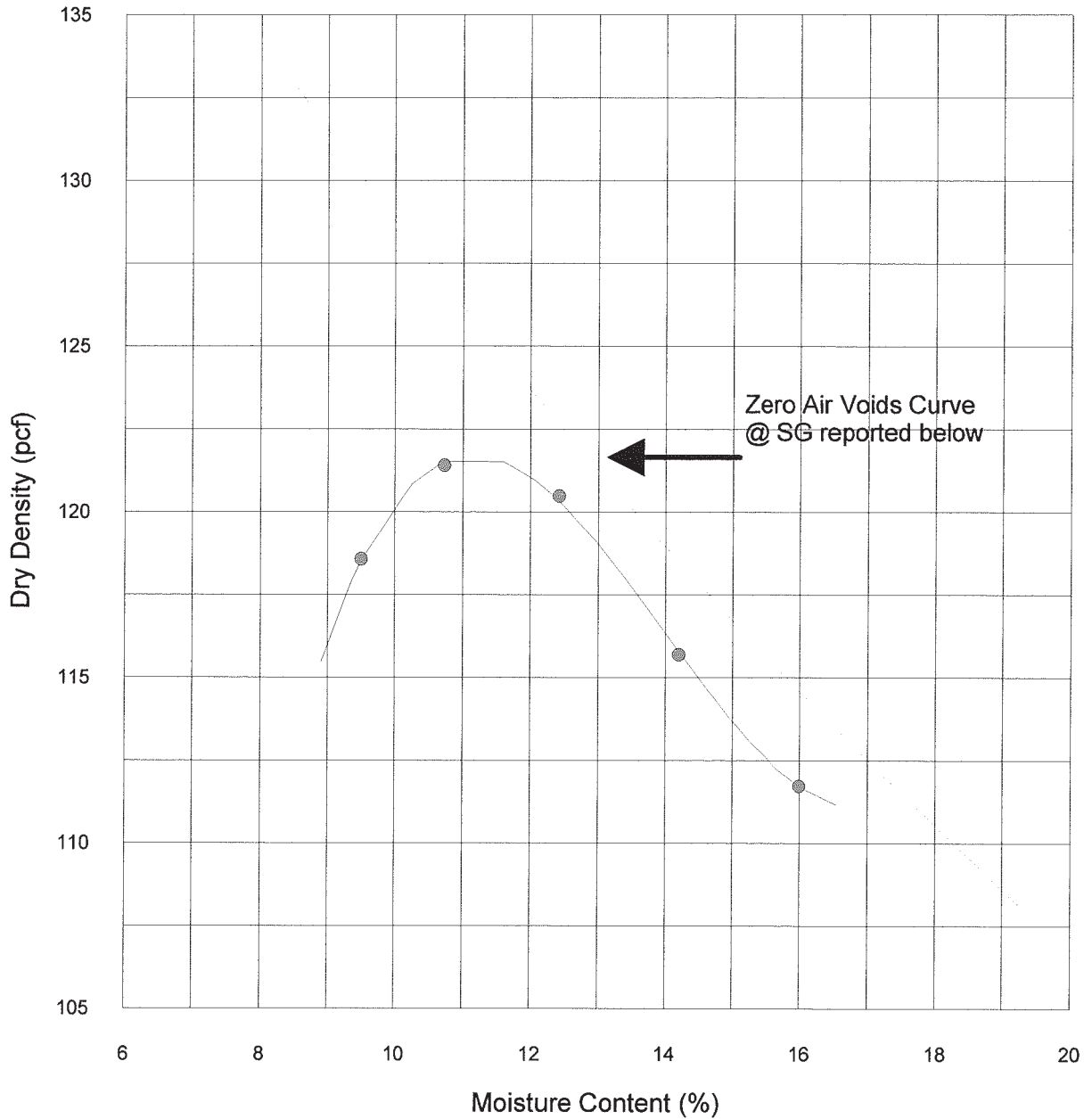
| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 14.43 | 14.52 | 14.64 | 14.60 | 14.43 |
| Wt. of mold (lb) | 10.25 | 10.25 | 10.25 | 10.25 | 10.25 |
| Net wt. of wet soil (lb) | 4.18 | 4.27 | 4.39 | 4.35 | 4.18 |
| Net wt of dry soil (lb) | 3.51 | 3.65 | 3.82 | 3.86 | 3.75 |
| Dry Density, (pcf) | 105.28 | 109.51 | 114.67 | 115.67 | 112.62 |
| Corrected Dry Density (pcf) | 111.73 | 115.70 | 120.48 | 121.41 | 118.58 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

Data entered by: CAL Date: 11/20/2013
 Data checked by: Cal Date: 11/20/2013
 FileName: MWD698-5



Proctor Compaction Test

SF3-CC01, 0-10', SF3-CC01-004-BULK



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG = 2.60
● Actual Data

OPTIMUM MOISTURE CONTENT = 11.1 MAXIMUM DRY DENSITY = 121.7
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. N2D-CC01 DATE SAMPLED 10/30/13 MWH
 DEPTH 0-10' DATE TESTED 11/19/13 CAL
 SAMPLE NO. ND2-CC01-004-BULK LOCATION NECR2DRAIN
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 240.00 | 200.00 | 120.00 | 160.00 | 80.00 |
| Wt. of soil & dish (g) | 339.84 | 514.11 | 540.07 | 494.69 | 560.97 |
| Dry wt. soil & dish (g) | 290.85 | 448.56 | 485.15 | 439.82 | 511.77 |
| Net loss of moisture (g) | 48.99 | 65.55 | 54.92 | 54.87 | 49.20 |
| Wt. of dish (g) | 6.58 | 6.55 | 6.55 | 6.56 | 6.55 |
| Net wt. of dry soil (g) | 284.27 | 442.01 | 478.60 | 433.26 | 505.22 |
| Moisture Content (%) | 17.23 | 14.83 | 11.48 | 12.66 | 9.74 |
| Corrected Moisture Content | 16.25 | 13.98 | 10.82 | 11.94 | 9.18 |

Density determination

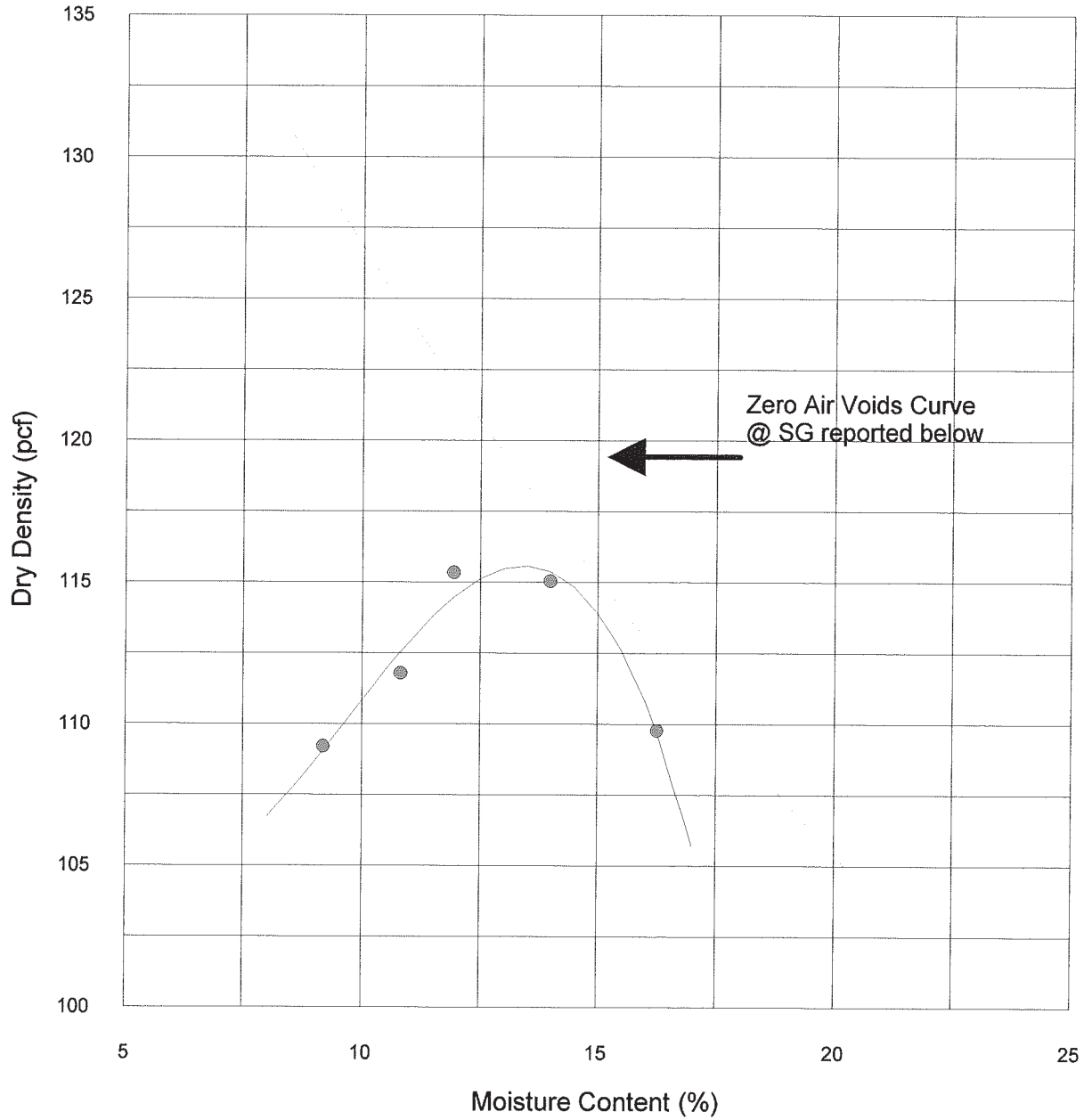
| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 9.58 | 9.70 | 9.45 | 9.63 | 9.29 |
| Wt. of mold (lb) | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| Net wt. of wet soil (lb) | 4.21 | 4.33 | 4.08 | 4.26 | 3.92 |
| Net wt of dry soil (lb) | 3.59 | 3.77 | 3.66 | 3.78 | 3.57 |
| Dry Density, (pcf) | 107.73 | 113.12 | 109.80 | 113.43 | 107.16 |
| Corrected Dry Density (pcf) | 109.77 | 115.04 | 111.79 | 115.34 | 109.22 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

Data entered by: CAL Date: 11/20/2013
 Data checked by: W Date: 11/20/2013
 FileName: MHD698-1



Proctor Compaction Test

N2D-CC01, 0-10', ND2-CC01-004-BULK



■ Best Fit Curve ▲ Zero Air Voids Curve
● Actual Data @ SG = 2.55

OPTIMUM MOISTURE CONTENT = 13.4 MAXIMUM DRY DENSITY = 115.6
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. SF2-CC01 DATE SAMPLED 10/29/13 MWH
 DEPTH 0-10' DATE TESTED 11/19/13 CAL
 SAMPLE NO. SF2-CC01-BULK LOCATION Sandfill 2
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 240.00 | 200.00 | 160.00 | 120.00 | 80.00 |
| Wt. of soil & dish (g) | 385.56 | 540.26 | 677.11 | 671.10 | 583.45 |
| Dry wt. soil & dish (g) | 327.35 | 466.25 | 594.71 | 598.75 | 528.20 |
| Net loss of moisture (g) | 58.21 | 74.01 | 82.40 | 72.35 | 55.25 |
| Wt. of dish (g) | 6.46 | 6.54 | 6.56 | 6.58 | 6.58 |
| Net wt. of dry soil (g) | 320.89 | 459.71 | 588.15 | 592.17 | 521.62 |
| Moisture Content (%) | 18.14 | 16.10 | 14.01 | 12.22 | 10.59 |
| Corrected Moisture Content | 15.10 | 13.41 | 11.67 | 10.18 | 8.83 |

Density determination

| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 14.43 | 14.52 | 14.63 | 14.57 | 14.41 |
| Wt. of mold (lb) | 10.25 | 10.25 | 10.25 | 10.25 | 10.25 |
| Net wt. of wet soil (lb) | 4.18 | 4.27 | 4.38 | 4.32 | 4.16 |
| Net wt of dry soil (lb) | 3.54 | 3.68 | 3.84 | 3.85 | 3.76 |
| Dry Density, (pcf) | 106.15 | 110.34 | 115.25 | 115.49 | 112.85 |
| Corrected Dry Density (pcf) | 112.45 | 116.34 | 120.86 | 121.08 | 118.66 |

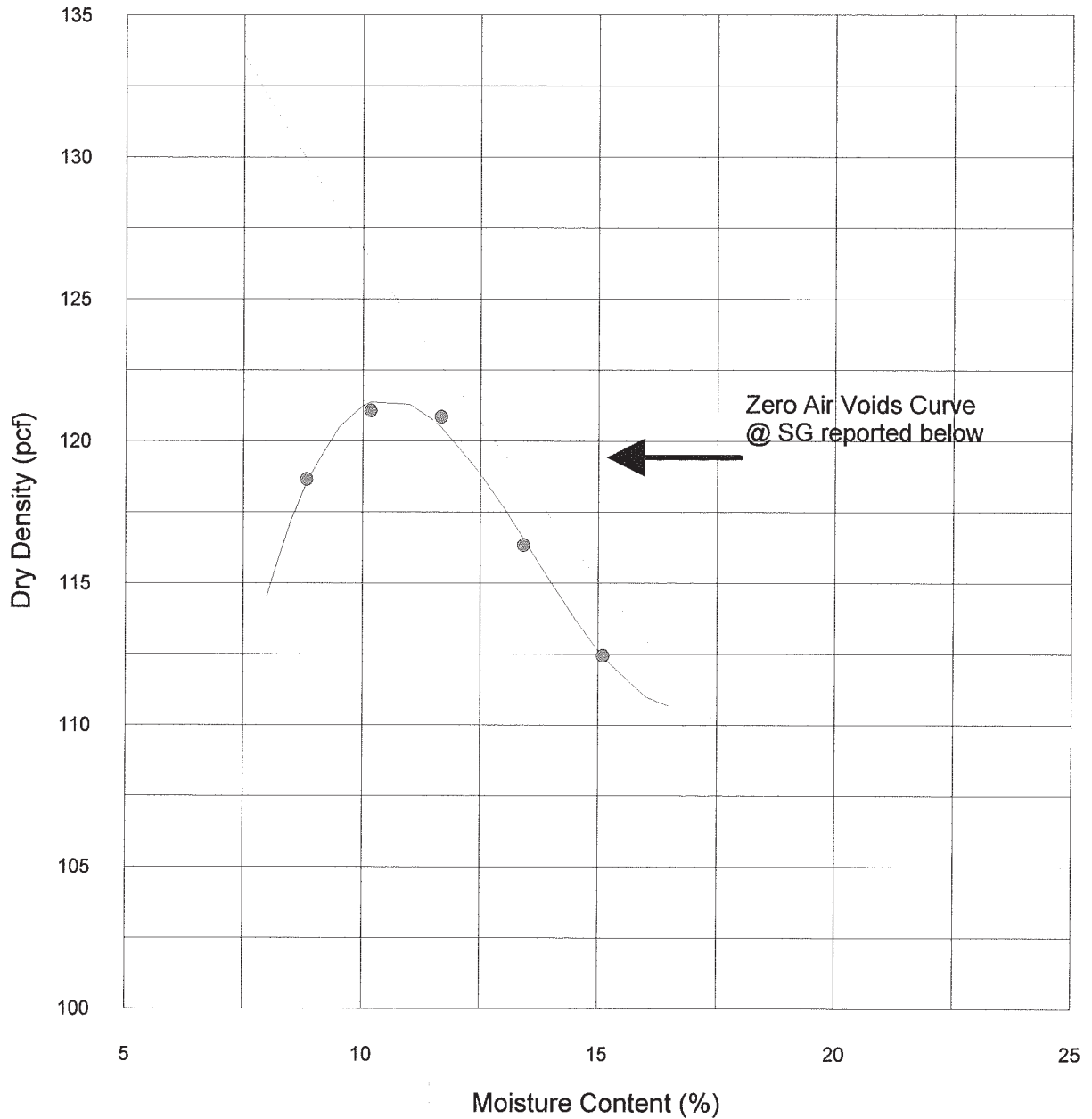
| | | | | | |
|---------------|----|----|----|----|----|
| Volume Factor | 30 | 30 | 30 | 30 | 30 |
|---------------|----|----|----|----|----|

Data entered by: CAL Date: 11/20/2013
 Data checked by: W Date: 11/20/2013
 FileName: MWD698-3



Proctor Compaction Test

SF2-CC01, 0-10', SF2-CC01-BULK



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG = 2.55
● Actual Data

OPTIMUM MOISTURE CONTENT = 10.5 MAXIMUM DRY DENSITY = 121.5
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

| | | | |
|------------|-----------------|--------------|--------------|
| CLIENT: | MWH | JOB NO. | 2512-77 |
| BORING NO. | NECR2-CC07 | DATE SAMPLED | 10/30/13 MWH |
| DEPTH | 0-10' | DATE TESTED | 11/19/13 CAL |
| SAMPLE NO. | NECR2-CC07-BULK | LOCATION | NECR2 |
| PROJECT | Church Rock | | |

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 280.00 | 240.00 | 200.00 | 160.00 | 120.00 |
| Wt. of soil & dish (g) | 387.96 | 508.58 | 478.16 | 425.83 | 525.04 |
| Dry wt. soil & dish (g) | 330.02 | 437.49 | 418.43 | 379.11 | 473.12 |
| Net loss of moisture (g) | 57.94 | 71.09 | 59.73 | 46.72 | 51.92 |
| Wt. of dish (g) | 6.59 | 6.54 | 8.39 | 9.30 | 8.47 |
| Net wt. of dry soil (g) | 323.43 | 430.95 | 410.04 | 369.81 | 464.65 |
| Moisture Content (%) | 17.91 | 16.50 | 14.57 | 12.63 | 11.17 |
| Corrected Moisture Content | 14.95 | 13.77 | 12.16 | 10.55 | 9.33 |

Density determination

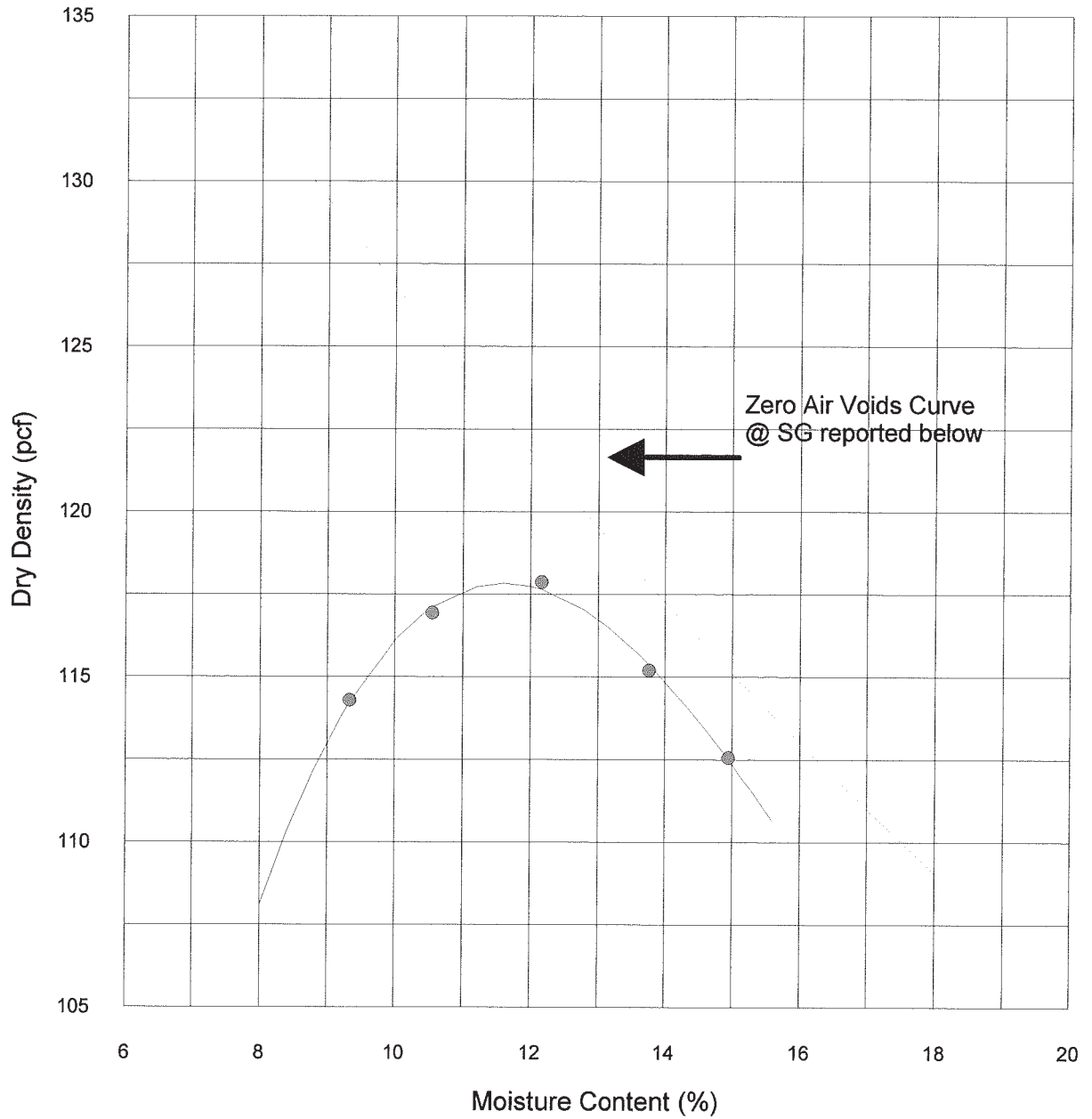
| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 14.43 | 14.49 | 14.53 | 14.42 | 14.26 |
| Wt. of mold (lb) | 10.25 | 10.25 | 10.25 | 10.25 | 10.25 |
| Net wt. of wet soil (lb) | 4.18 | 4.24 | 4.28 | 4.17 | 4.01 |
| Net wt of dry soil (lb) | 3.54 | 3.64 | 3.74 | 3.70 | 3.61 |
| Dry Density, (pcf) | 106.35 | 109.19 | 112.07 | 111.07 | 108.21 |
| Corrected Dry Density (pcf) | 112.56 | 115.20 | 117.87 | 116.94 | 114.29 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

Data entered by: CAL Date: 11/20/2013
 Data checked by: W Date: 11/20/2013
 FileName: MHD698-2.123



Proctor Compaction Test

NECR2-CC07, 0-10', NECR2-CC07-BULK



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG =
● Actual Data 2.55

OPTIMUM MOISTURE CONTENT = 11.6 MAXIMUM DRY DENSITY = 117.8
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. P2-CC04 DATE SAMPLED 11/11/13 MWH
 DEPTH 0-3' DATE TESTED 11/21/13 CAL
 SAMPLE NO. P2-CC04-BULK(0-3) LOCATION POND 2
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 |
|----------------------------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 80.00 | 120.00 | 160.00 | 200.00 |
| Wt. of soil & dish (g) | 547.89 | 554.37 | 449.61 | 571.03 |
| Dry wt. soil & dish (g) | 467.42 | 464.58 | 371.66 | 464.06 |
| Net loss of moisture (g) | 80.47 | 89.79 | 77.95 | 106.97 |
| Wt. of dish (g) | 6.54 | 6.53 | 6.58 | 6.57 |
| Net wt. of dry soil (g) | 460.88 | 458.05 | 365.08 | 457.49 |
| Moisture Content (%) | 17.46 | 19.60 | 21.35 | 23.38 |
| Corrected Moisture Content | | | | |

Density determination

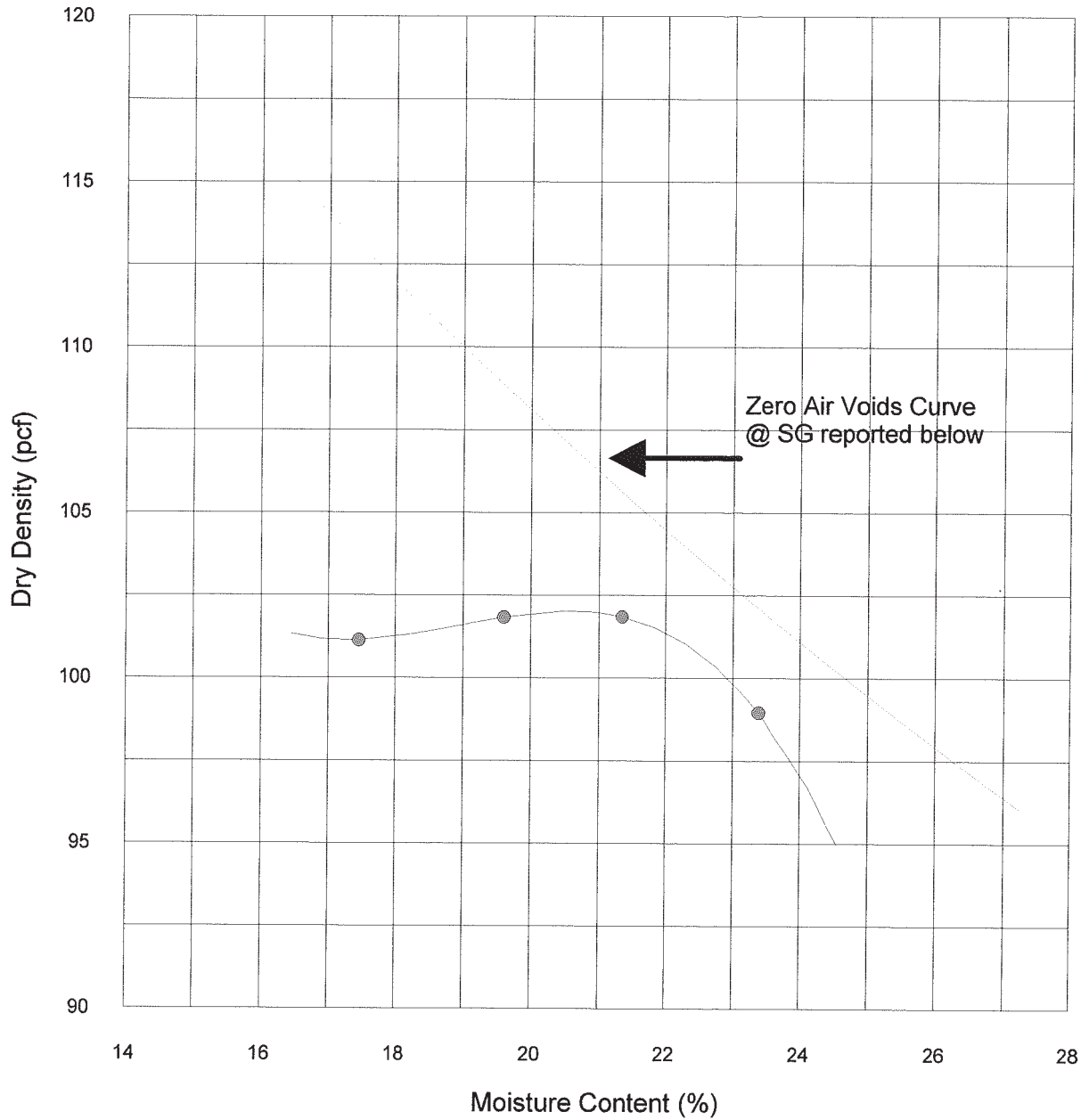
| | | | | |
|-----------------------------|--------|--------|--------|-------|
| Wt of soil & mold (lb) | 9.33 | 9.43 | 9.49 | 9.44 |
| Wt. of mold (lb) | 5.37 | 5.37 | 5.37 | 5.37 |
| Net wt. of wet soil (lb) | 3.96 | 4.06 | 4.12 | 4.07 |
| Net wt of dry soil (lb) | 3.37 | 3.39 | 3.40 | 3.30 |
| Dry Density, (pcf) | 101.14 | 101.84 | 101.85 | 98.96 |
| Corrected Dry Density (pcf) | | | | |
| Volume Factor | 30 | 30 | 30 | 30 |

Data entered by: CAL Date: 11/22/2013
 Data checked by: KE Date: 12/3/13
 FileName: MWD69810



Proctor Compaction Test

P2-CC04, 0-3', P2-CC04-BULK(0-3)



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG = 2.65
● Actual Data

OPTIMUM MOISTURE CONTENT = 20.6 MAXIMUM DRY DENSITY = 102.0
ASTM D 698 A, Rock correction applied? N

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. NECR1-CC17 DATE SAMPLED 11/07/13 MWH
 DEPTH 10-20' DATE TESTED 11/21/13 CAL
 SAMPLE NO. NECR1-CC17-BULK(0-20) LOCATION NECR1
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 0.00 | 40.00 | 80.00 | 120.00 | 160.00 |
| Wt. of soil & dish (g) | 637.62 | 470.29 | 463.87 | 439.93 | 465.65 |
| Dry wt. soil & dish (g) | 599.51 | 435.29 | 422.14 | 393.10 | 410.00 |
| Net loss of moisture (g) | 38.11 | 35.00 | 41.73 | 46.83 | 55.65 |
| Wt. of dish (g) | 8.40 | 9.22 | 9.44 | 8.43 | 6.61 |
| Net wt. of dry soil (g) | 591.11 | 426.07 | 412.70 | 384.67 | 403.39 |
| Moisture Content (%) | 6.45 | 8.21 | 10.11 | 12.17 | 13.80 |
| Corrected Moisture Content | 6.06 | 7.72 | 9.50 | 11.44 | 12.96 |

Density determination

| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 9.47 | 9.70 | 9.90 | 9.91 | 9.81 |
| Wt. of mold (lb) | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| Net wt. of wet soil (lb) | 4.10 | 4.33 | 4.53 | 4.54 | 4.44 |
| Net wt of dry soil (lb) | 3.85 | 4.00 | 4.11 | 4.05 | 3.90 |
| Dry Density, (pcf) | 115.55 | 120.04 | 123.42 | 121.42 | 117.05 |
| Corrected Dry Density (pcf) | 117.71 | 122.08 | 125.36 | 123.42 | 119.17 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

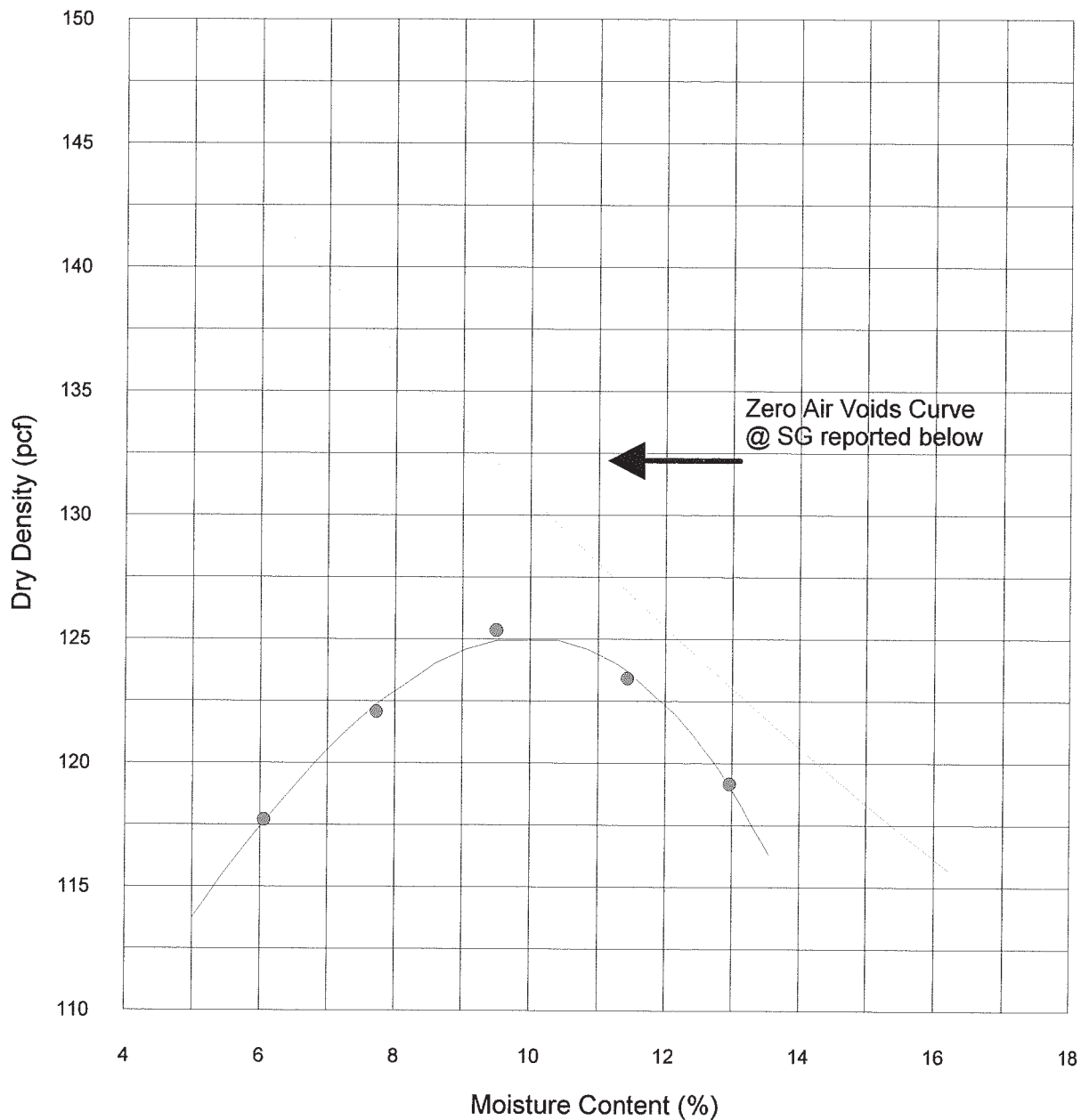
Data entered by: CAL
 Data checked by: KE
 FileName: MWD698-9

Date: 11/22/2013
 Date: 12/3/13



Proctor Compaction Test

NECR1-CC17, 10-20', NECR1-CC17-BULK(0-20)



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG =
● Actual Data 2.65

OPTIMUM MOISTURE CONTENT = 10.0 MAXIMUM DRY DENSITY = 125.1
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

| | | | |
|------------|-----------------------|--------------|--------------|
| CLIENT: | MWH | JOB NO. | 2512-77 |
| BORING NO. | NECR1-CC17 | DATE SAMPLED | 11/07/13 MWH |
| DEPTH | 0-10' | DATE TESTED | 11/21/13 CAL |
| SAMPLE NO. | NECR1-CC17-BULK(0-10) | LOCATION | NECR1 |
| PROJECT | Church Rock | | |

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 80.00 | 120.00 | 160.00 | 200.00 | 240.00 |
| Wt. of soil & dish (g) | 467.96 | 518.98 | 562.68 | 360.41 | 498.63 |
| Dry wt. soil & dish (g) | 428.71 | 467.39 | 497.75 | 314.33 | 427.94 |
| Net loss of moisture (g) | 39.25 | 51.59 | 64.93 | 46.08 | 70.69 |
| Wt. of dish (g) | 6.62 | 6.58 | 6.52 | 6.53 | 6.54 |
| Net wt. of dry soil (g) | 422.09 | 460.81 | 491.23 | 307.80 | 421.40 |
| Moisture Content (%) | 9.30 | 11.20 | 13.22 | 14.97 | 16.78 |
| Corrected Moisture Content | | | | | |

Density determination

| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 9.63 | 9.83 | 9.83 | 9.75 | 9.65 |
| Wt. of mold (lb) | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| Net wt. of wet soil (lb) | 4.26 | 4.46 | 4.46 | 4.38 | 4.28 |
| Net wt of dry soil (lb) | 3.90 | 4.01 | 3.94 | 3.81 | 3.67 |
| Dry Density, (pcf) | 116.93 | 120.33 | 118.18 | 114.29 | 109.96 |
| Corrected Dry Density (pcf) | | | | | |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

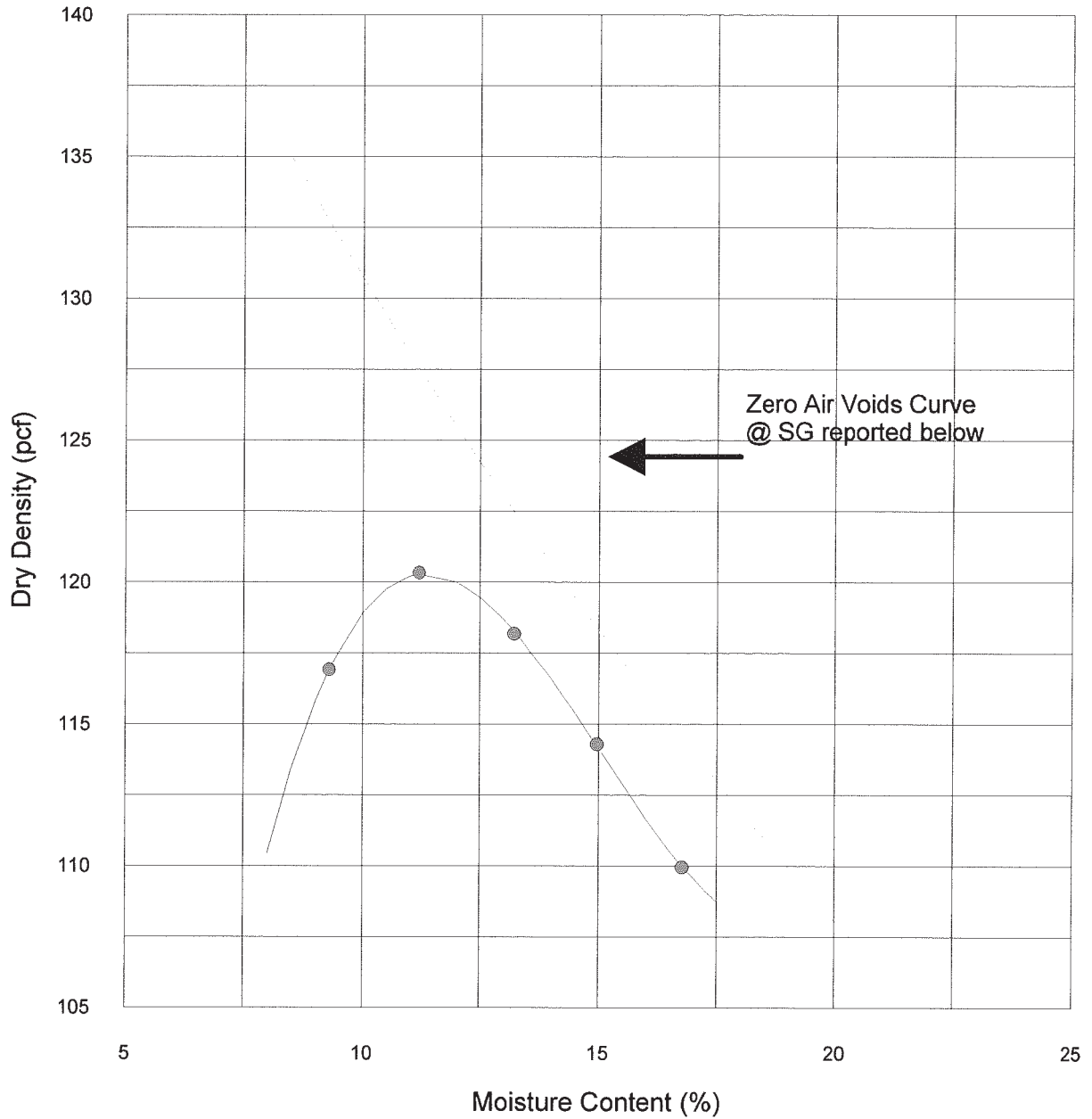
Data entered by: CAL
 Data checked by: KA
 FileName: MW669811

Date: 11/22/2013
 Date: 12/5/13



Proctor Compaction Test

NECR1-CC17, 0-10', NECR1-CC17-BULK(0-10)



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG = 2.65
● Actual Data

OPTIMUM MOISTURE CONTENT = 11.3 MAXIMUM DRY DENSITY = 120.3
ASTM D 698 A, Rock correction applied? N

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. SP-CC13 DATE SAMPLED 11/11/13 MWH
 DEPTH 0-15' DATE TESTED 11/21/13 CAL
 SAMPLE NO. SP-CC13-BULK(0-15) LOCATION SED PAD
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 0.00 | 40.00 | 80.00 | 120.00 | 160.00 |
| Wt. of soil & dish (g) | 479.38 | 485.02 | 527.78 | 439.82 | 503.74 |
| Dry wt. soil & dish (g) | 447.85 | 444.46 | 476.80 | 390.51 | 439.77 |
| Net loss of moisture (g) | 31.53 | 40.56 | 50.98 | 49.31 | 63.97 |
| Wt. of dish (g) | 6.54 | 6.50 | 9.23 | 9.26 | 9.27 |
| Net wt. of dry soil (g) | 441.31 | 437.96 | 467.57 | 381.25 | 430.50 |
| Moisture Content (%) | 7.14 | 9.26 | 10.90 | 12.93 | 14.86 |
| Corrected Moisture Content | | | | | |

Density determination

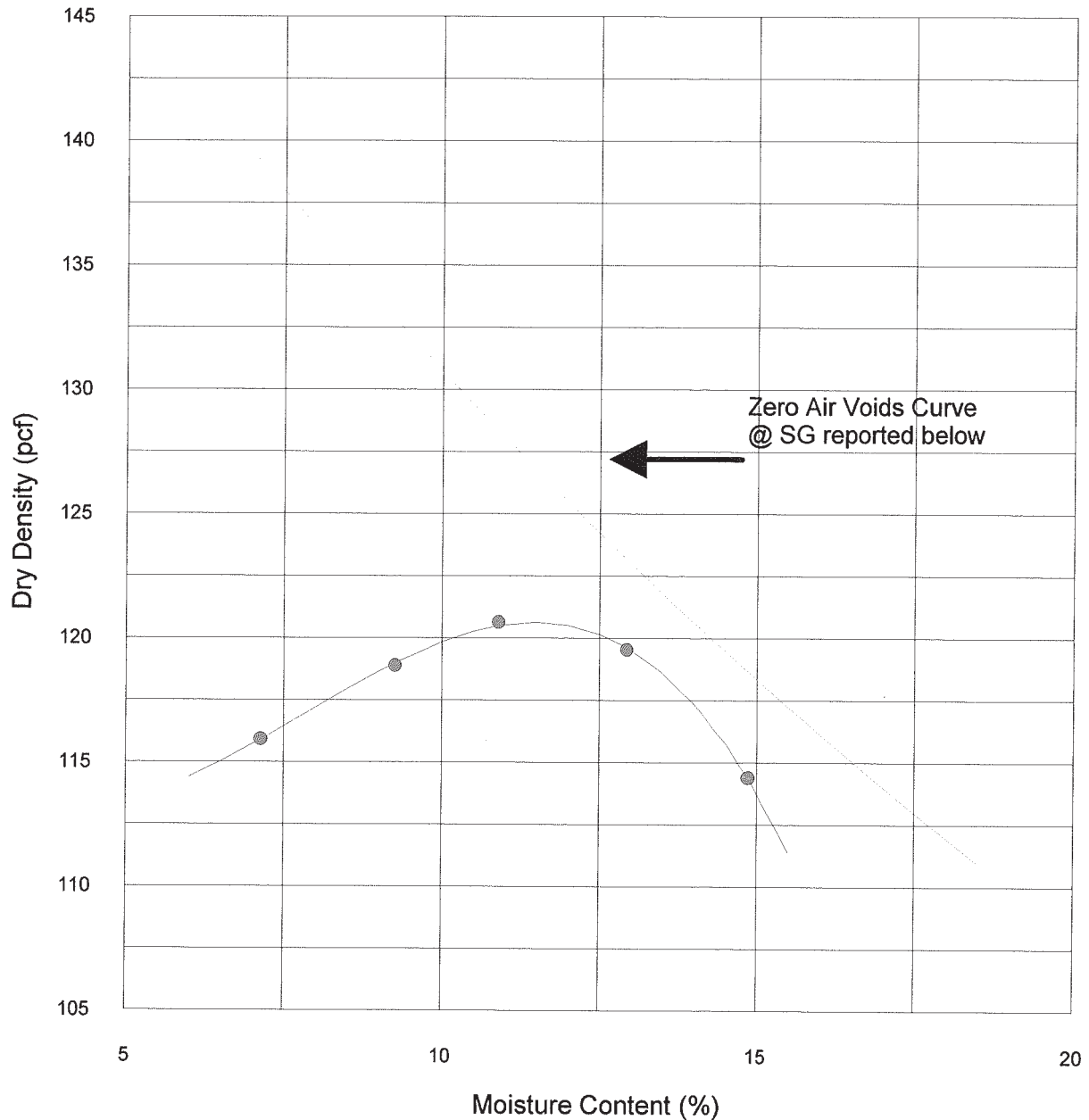
| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 9.51 | 9.70 | 9.83 | 9.87 | 9.75 |
| Wt. of mold (lb) | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| Net wt. of wet soil (lb) | 4.14 | 4.33 | 4.46 | 4.50 | 4.38 |
| Net wt of dry soil (lb) | 3.86 | 3.96 | 4.02 | 3.98 | 3.81 |
| Dry Density, (pcf) | 115.92 | 118.89 | 120.65 | 119.54 | 114.40 |
| Corrected Dry Density (pcf) | | | | | |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

Data entered by: CAL Date: 11/22/2013
 Data checked by: KP Date: 12/3/13
 FileName: MWD698-8



Proctor Compaction Test

SP-CC13, 0-15', SP-CC13-BULK(0-15)



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG =
● Actual Data 2.65

OPTIMUM MOISTURE CONTENT = 11.5 MAXIMUM DRY DENSITY = 120.6
ASTM D 698 A, Rock correction applied? N

COMPACTION TEST
ASTM D 698 A

CLIENT: MWH JOB NO. 2512-77
 BORING NO. NMSA-CC04 DATE SAMPLED 11/08/13 MWH
 DEPTH 0-15' DATE TESTED 11/21/13 CAL
 SAMPLE NO. NMSA-CC04-BULK(0-15) LOCATION NMSA
 PROJECT Church Rock

Moisture Determination

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------|--------|--------|--------|--------|--------|
| Wt of Moisture added (ml) | 0.00 | 40.00 | 80.00 | 120.00 | 160.00 |
| Wt. of soil & dish (g) | 688.18 | 647.30 | 575.39 | 519.17 | 451.34 |
| Dry wt. soil & dish (g) | 635.64 | 588.48 | 514.17 | 455.66 | 389.98 |
| Net loss of moisture (g) | 52.54 | 58.82 | 61.22 | 63.51 | 61.36 |
| Wt. of dish (g) | 6.54 | 8.44 | 6.54 | 6.55 | 6.59 |
| Net wt. of dry soil (g) | 629.10 | 580.04 | 507.63 | 449.11 | 383.39 |
| Moisture Content (%) | 8.35 | 10.14 | 12.06 | 14.14 | 16.00 |
| Corrected Moisture Content | 7.91 | 9.60 | 11.42 | 13.38 | 15.15 |

Density determination

| | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt of soil & mold (lb) | 9.72 | 9.90 | 9.93 | 9.82 | 9.71 |
| Wt. of mold (lb) | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 |
| Net wt. of wet soil (lb) | 4.35 | 4.53 | 4.56 | 4.45 | 4.34 |
| Net wt of dry soil (lb) | 4.01 | 4.11 | 4.07 | 3.90 | 3.74 |
| Dry Density, (pcf) | 120.44 | 123.39 | 122.08 | 116.96 | 112.24 |
| Corrected Dry Density (pcf) | 122.23 | 125.10 | 123.82 | 118.83 | 114.21 |
| Volume Factor | 30 | 30 | 30 | 30 | 30 |

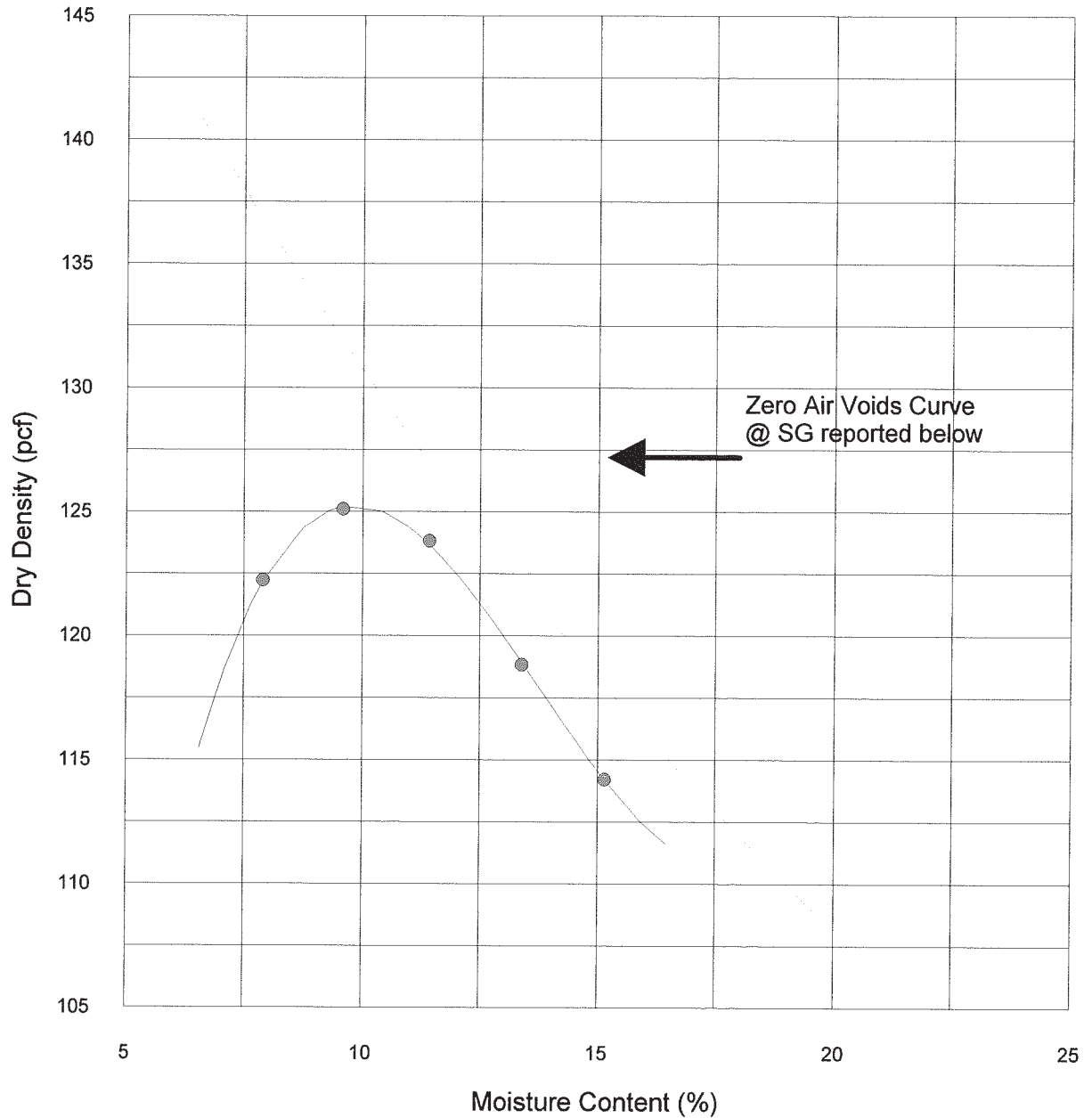
Data entered by: CAL
 Data checked by: KR
 FileName: MW6698-7

Date: 11/22/2013
 Date: 12/3/13



Proctor Compaction Test

NMSA-CC04, 0-15', NMSA-CC04-BULK(0-15)



■ Best Fit Curve ▲ Zero Air Voids Curve @ SG =
● Actual Data 2.65

OPTIMUM MOISTURE CONTENT = 9.8 MAXIMUM DRY DENSITY = 125.2
ASTM D 698 A, Rock correction applied? Y

Compaction Test ASTM D 698 - A

Client: MWH
 Project Number: Church Rock
 Location: Pond 3
 Sampled by: --
 Tested by: BDF

Job number: 2512-77
 Boring: P3-CC07
 Depth: 0-5
 Sample Id: Bulk(0-5)
 Test date: 3/10/2014

Initial conditions

| | | | |
|------------------------------|-------|---------------------------------|-------|
| Wet Weight Pan and Soil (g): | 49.33 | Wet Weight of Total Fines (lb): | 32.03 |
| Dry Weight Pan and Soil (g): | 48.90 | Dry weight of total fines (lb): | 31.73 |
| Wt. Water (g): | 0.43 | Mdc (mass dry coarse) (lb): | 1.55 |

| | |
|-----------------|--------|
| Pf (% fines) | 95.36% |
| Pc (% coarse) | 4.64% |
| Use Correction? | No |
| Layers | 5 |
| Blows/Layer | 25 |

| Wt of Moisture added (ml) | 240 | 280 | 320 | 360 | 400 |
|-----------------------------|--------|--------|--------|--------|--------|
| Wt. of soil & dish (g) | 473.88 | 469.95 | 490.69 | 571.15 | 520.97 |
| Dry wt. soil & dish (g) | 425.98 | 416.04 | 428.87 | 491.79 | 442.43 |
| Net loss of moisture (g) | 47.90 | 53.91 | 61.82 | 79.36 | 78.54 |
| Wt. of dish (g) | 6.53 | 6.53 | 6.63 | 8.23 | 6.65 |
| Net wt. of dry soil (g) | 419.45 | 409.51 | 422.24 | 483.56 | 435.78 |
| Moisture Content | 11.42% | 13.16% | 14.64% | 16.41% | 18.02% |
| Corrected Moisture Content | | | | | |
| | | | | | |
| Wt of soil & mold (lb) | 13.80 | 13.91 | 13.97 | 13.95 | 13.88 |
| Wt. of mold (lb) | 9.78 | 9.78 | 9.78 | 9.78 | 9.78 |
| Net wt. of wet soil (lb) | 4.02 | 4.13 | 4.19 | 4.17 | 4.10 |
| Net wt of dry soil (lb) | 3.61 | 3.65 | 3.65 | 3.58 | 3.47 |
| | | | | | |
| Dry Density, (pcf) | 108.24 | 109.49 | 109.65 | 107.46 | 104.22 |
| Corrected Dry Density (pcf) | | | | | |

Data entry by:
 Data checked by:
 Filename

BDF



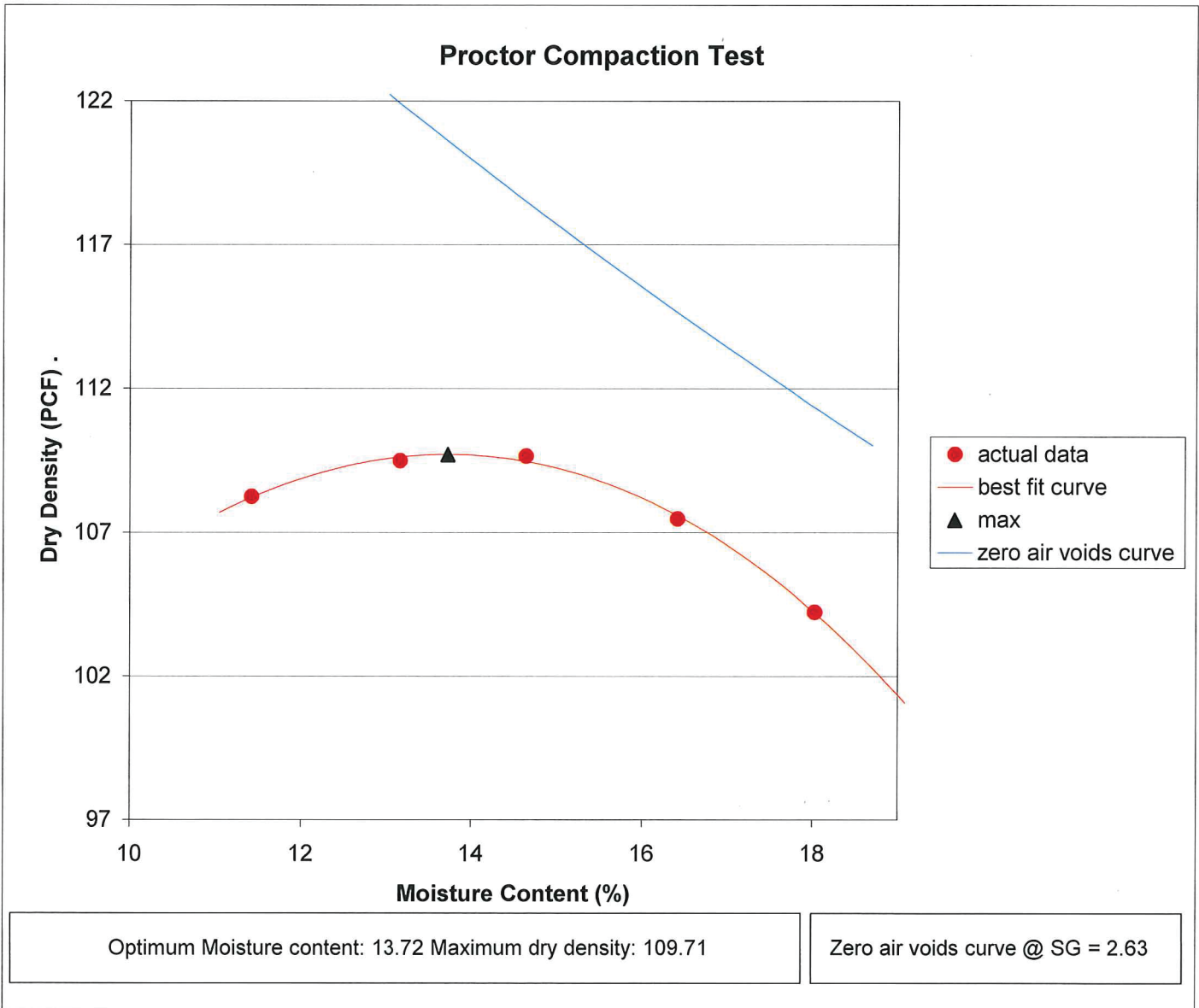
Date: 03/14/14
 Date: 3/14/14

2512_77_Proctor_ASTMD1557_ASTMD698_R0_1.xls

Compaction Test
ASTM D 698 - A

Client: MWH
Project Number: Church Rock
Location: Pond 3
Sampled by: --
Tested by: BDF

Job number: 2512-77
Boring: P3-CC07
Depth: 0-5
Sample Id: Bulk(0-5)
Test date: 3/10/2014



Data entry by: BDF
Data checked by: *[Signature]*
Filename: 2512_77_Proctor_ASTMD1557_ASTMD698_R0_1.xls



Date: 03/14/14
Date: *3/14/14*

APPENDIX B1.3
ASBESTOS ANALYTICAL TEST RESULTS
ASSAIGAI ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS REPORT

To: MWH AMERICAS INC

Date Received: 12/4/2013
Date Completed: 12/9/2013
Workorder: BB33139
No. of Analyses: 04
No. of Samples: 02

Fax:

Attn: Toby Leeson

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples (EPA-600/M4-82-020) And as cited in 40 CFR Part 763, Subp. F, Appendix A, Section 1, visual estimate comparing the quantity of non-asbestos material to asbestos fibers. The EPA Preferred Method is the Determination of Asbestos in Bulk Building Materials (EPA-600/R-93/116 July 1993). Detection Limit: 1% of the portion of the sample examined. Analyses completed at 4301 Masthead NE, Albuquerque, NM.

Sampling Site NECR - PDS

| Sample ID | Description | Asbestos Type | Percent Asbestos | Other Fibers | Percent Content | Matrix |
|------------------|------------------|---------------|------------------|--------------|-----------------|------------------------|
| P1-PACM-Pit1-001 | White Floor Tile | Chrysotile | 2 | None | ---- | Clays, Calcite, Binder |
| | Black Mastic | Chrysotile | 3 | None | ---- | Tar, Clays |
| P1-PACM-Pit1-002 | White Floor Tile | Chrysotile | 2 | None | ---- | Clays, Calcite, Binder |
| | Black Mastic | Chrysotile | 3 | None | ---- | |

Pursuant to the Asbestos NESHAP Clarification Regarding Analysis of Multi-layered Systems (Federal Register/Vol. 50, No. 3, Wednesday, January 5, 1994), each layer, in a sample containing one or more distinct layers, has been individually analyzed and reported. These results relate only to the above samples as submitted unless otherwise noted. Reproduction of this report in less than full requires the written consent of AAL.

We Appreciate the opportunity to perform analytical work for you. If you have any questions, please call.

Analyst: 
 Mario Roybal

Mario Roybal

Respectfully submitted,

William P. Biava, Asbestos Laboratory Manager



NVLAP LAB CODE 101457-0

APPENDIX B1.4

ANALYTICAL TEST RESULTS VALIDATION REPORT

NECR MINE AND CHURCH ROCK MILL SITE

MWH

APPENDIX B1.4

DATA VERIFICATION SOIL 2013 SOIL SAMPLING

Introduction. Soil samples were collected at the Northeast Church Rock Mine Site October 29 through December 12, 2013. The following paragraphs summarize the results of the data verification. Radium-226 and Uranium analyses had 10% Level IV verification performed. All other analytes had Level II or III verification.

Analytical Procedures and Detection Limits. All samples were analyzed in accordance with the methodology, detection limits, and quality control (QC) criteria specified in the project *Quality Assurance Project Plan*, United Nuclear Corporation, Northeast Church Rock Site (QAPP; MWH, 2013). Energy Laboratories of Casper, Wyoming provided analytical services.

A summary of qualified data is presented in Table B-1. Table B-2 summarizes data with QC outside acceptance criteria that did not result in data qualification.

Holding times were evaluated. All holding times met method criteria with the exceptions listed in Table B-1 with “HT” as the QC type.

Initial calibration, initial calibration verification (ICV), and continuing calibration criteria were evaluated for uranium. All calibration criteria were met. Calibration data were reproducible for uranium. There is no calibration for EPA method 901.1 for radium-226.

All metals ICV, interference check samples and serial dilutions met acceptance criteria.

Laboratory control samples (LCS) and laboratory fortified blank samples (LFB) (where applicable) met acceptance criteria with the exceptions listed in Table B-1 with “LCS” as the QC type.

Method blanks met acceptance criteria with the exceptions listed in Table B-2 with “MB” as the QC type.

Six field duplicate (FD) samples were collected. All FD criteria were met with the exceptions listed in Table B-1 with “FD” as the QC type.

Laboratory selected batch replicates and matrix spike (MS) and or MS/matrix spike duplicate (MSD) analyses met acceptance criteria with the exceptions listed in Table B-2 with “MS” and/or “MSD” as the QC type.

All uranium and radium-226 results were reproducible and matched the laboratory report.

Dilutions were required during metals and uranium analyses due to the high concentrations of analyte(s). The affected sample results are flagged with a “D” to indicate sample dilution.

Conclusions. Based on the results of the data verification, the data are considered precise, accurate, and representative, as qualified. Analytical completeness for this sampling round is 100 percent.

TABLE B-1
SUMMARY OF QUALIFIED DATA
NORTHEAST CHURCH SITE
 (Page 1 of 2)

| Location Identification | Field Identification | Sample Date | Analysis | Analyte | Sample Result | Sample Units | QC Type | QC Result | Qualifier | Bias | Comment |
|-------------------------|----------------------|-------------|------------|-------------------|---------------|--------------|---------|-----------|-----------|------|--|
| P1-CC04-002 | P1-CC04-002 | 11-Nov-13 | SW6020 | Uranium | 2110 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC04-003 | P1-CC04-003 | 11-Nov-13 | SW6020 | Uranium | 176 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC05-003 | P1-CC05-003 | 11-Nov-13 | SW6020 | Uranium | 174 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC07-002 | P1-CC07-002 | 12-Nov-13 | SW6020 | Uranium | 209 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC07-003 | P1-CC07-003 | 12-Nov-13 | SW6020 | Uranium | 183 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC08-001 | P1-CC08-001 | 12-Nov-13 | SW6020 | Uranium | 434 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC08-002 | P1-CC08-002 | 12-Nov-13 | SW6020 | Uranium | 70.7 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC10-003 | P1-CC10-003 | 12-Nov-13 | SW6020 | Uranium | 1220 | mg/kg | FD | 144% | J | None | Datum is estimated; bias unknown. Field duplicate RPD outside acceptance criteria. |
| P1-CC11-004 | P1-CC11-004 | 12-Nov-13 | SW6020 | Uranium | 3190 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC12-004 | P1-CC12-004 | 12-Nov-13 | SW6020 | Uranium | 393 | mg/kg | FD | 138% | J | None | Datum is estimated; bias unknown. Field duplicate RPD outside acceptance criteria. |
| P1-CC13-002 | P1-CC13-002 | 12-Nov-13 | SW6020 | Uranium | 1330 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| SP-CC04-004 | SP-CC04-004 | 1-Nov-13 | SW6020 | Uranium | 108 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| SP-CC08-001 | SP-CC08-001 | 4-Nov-13 | SW6020 | Uranium | 231 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| SP-CC08-002 | SP-CC08-002 | 4-Nov-13 | SW6020 | Uranium | 184 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| SP-CC10-003 Dup | SP-CC10-203 | 4-Nov-13 | SW6020 | Uranium | 104 | mg/kg | LCS | 126% | J+ | High | Datum is estimated; potential high bias. |
| SP-CC11-002 | SP-CC11-002 | 4-Nov-13 | SW6020 | Uranium | 206 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| TPH-01 | TPH-01 | 12-Nov-13 | SW846 Ch 7 | Sulfide, Reactive | <20 | mg/kg | HT | 10 days | J- | Low | Potential false negative. Holding time exceeded. |
| TPH-02 | TPH-02 | 13-Nov-13 | SW846 Ch 7 | Sulfide, Reactive | <20 | mg/kg | HT | 9 days | J- | Low | Potential false negative. Holding time exceeded. |

TABLE B-1
SUMMARY OF QUALIFIED DATA
NORTHEAST CHURCH SITE
 (Page 2 of 2)

| Location Identification | Field Identification | Sample Date | Analysis | Analyte | Sample Result | Sample Units | QC Type | QC Result | Qualifier | Bias | Comment |
|-------------------------|----------------------|-------------|------------|---------------------------|---------------|--------------|---------|-----------|-----------|------|--|
| P1-CC10-003 | TPH-P1-CC10-003 | 12-Nov-13 | SW6020 | Uranium | 197 | mg/kg | LCS | 126% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC10-003 | TPH-P1-CC10-003 | 12-Nov-13 | SW846 Ch 7 | Sulfide, Reactive Uranium | <20 | mg/kg | HT | 10 days | J- | Low | Potential false negative. Holding time exceeded. |
| P1-CC11-004 | TPH-P1-CC11-004 | 12-Nov-13 | SW6020 | Uranium | 2940 | mg/kg | LCS | 126% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC11-004 | TPH-P1-CC11-004 | 12-Nov-13 | SW846 Ch 7 | Sulfide, Reactive Uranium | <20 | mg/kg | HT | 10 days | J- | Low | Potential false negative. Holding time exceeded. |
| TPH-P1-CC11-005 | TPH-P1-CC11-005 | 12-Nov-13 | SW6020 | Uranium | 1310 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| TPH-P1-CC11-005 | TPH-P1-CC11-005 | 12-Nov-13 | SW846 Ch 7 | Sulfide, Reactive Uranium | 22 | mg/kg | HT | 10 days | J- | Low | Potential false negative. Holding time exceeded. |
| P1-CC12-004 | TPH-P1-CC12-004 | 12-Nov-13 | SW6020 | Uranium | 72.7 | mg/kg | LCS | 121% | J+ | High | Datum is estimated; potential high bias. |
| P1-CC12-004 | TPH-P1-CC12-004 | 12-Nov-13 | SW846 Ch 7 | Sulfide, Reactive Uranium | 26 | mg/kg | HT | 10 days | J- | Low | Potential false negative. Holding time exceeded. |
| TPH-P1-CC13-003 | TPH-P1-CC13-003 | 12-Nov-13 | SW6020 | Uranium | 1090 | mg/kg | LCS | 126% | J+ | High | Datum is estimated; potential high bias. |
| TPH-P1-CC13-003 | TPH-P1-CC13-003 | 12-Nov-13 | SW846 Ch 7 | Sulfide, Reactive | 30 | mg/kg | HT | 10 days | J- | Low | Potential false negative. Holding time exceeded. |

mg/kg milligrams per kilogram
 pCi/g picocuries per gram
 D Sample dilution required for analysis; reported values reflect the dilution.
 FD field duplicate
 HT holding time
 LCS laboratory control standard
 QC quality control

TABLE B-2
SUMMARY OF NON-CONFORMING DATA
NORTHEAST CHURCH SITE
 (Page 1 of 1)

| Location Identification | Field Identification | Sample Date | Analysis | Analyte | Sample Result | Sample Units | QC Type | QC Result | Bias | Comment |
|-------------------------|----------------------|-------------|----------|---------|---------------|--------------|---------|-------------|------|--|
| P1-CC12-004 | P1-CC12-004 | 12-Nov-13 | SW6020 | Uranium | 393 | mg/kg | MS/MSD | NC | None | Sample concentration >4X spike concentration. Recovery not evaluated. |
| SP-CC11-002 | SP-CC11-002 | 4-Nov-13 | SW6020 | Uranium | 206 | mg/kg | MS/MSD | NC | None | Sample concentration >4X spike concentration. Recovery not evaluated. |
| P1-CC12-004 | TPH-P1-CC12-004 | 12-Nov-13 | SW6010B | Barium | 2 | mg/l | MB/MS | 0.2 mg/l/NC | None | Analyte detected in an associated blank. Sample concentration > 50X blank concentration. Sample concentration >4X spike concentration; MS not evaluated. |



mg/kg milligrams per kilogram
 mg/l milligrams per liter
 NC not calculated
 MB method blank
 MS matrix spike
 MSD matrix spike duplicate
 QC quality control

APPENDIX B2
FIELD LOGS AND PHOTOGRAPHS

APPENDIX B2.1
DRILLING LOGS

APPENDIX B2.1A
DRILLING LOGS
GEO

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/30/2013 | FINISH: 10/30/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7130.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 11.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|--|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 15" | 4 | | | | | (0' - 2.5') SOIL - Dark brown, moist, fine- to coarse-grained soil. | | | | | | 115.6 | 13.4 | |
| 1 | | | | | | (1' - 1.5') Light to dark brown, very loose, slightly moist, fine- to very fine-grained, low plasticity silty sand. | | | | | | | | |
| 21" | CA | | | 4 | | (2.5' - 5') SILTY SAND - Medium brown, some tan, very loose, slightly moist, fine- to very fine-grained, silty sand, low plasticity. |  | 8.6 | 91.2 | | | | | |
| 3 | | | 1B | 4 | | | | | | | | | | |
| 4 | | | 1A | 4 | | | | | | | | | | |
| 28" | CA | | | 3 | | (5' - 10') SILTY SAND - Light brown, loose, dry, fine- to very fine-grained, silty sand, low plasticity. |  | 4.7 | 87.2 | | | | | |
| 5 | | | 2B | 4 | | | | | | | | | | |
| 6 | | | 2A | 6 | | | | | | | | | | |
| 10 | CA | | | 4 | | E.O.B. = 10', backfilled with cuttings and ground | | | | | | | | |
| 11 | | | | 3B | 6 | Moved 2' over to obtain bulk sample due to lack of cuttings. | | | | | | | | |
| 11 | | | | 3A | 9 | | | 4.0 | 91.8 | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: | FINISH: | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7096.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 20.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|---|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | | |
| | | | | | | | | | | | | SPECIFIC GRAVITY | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 48" | 32" | 3 | CA 17" | 1A | 10 | (0' - 4.5') SILTY SAND - Light-medium brown, very loose, fine- to very fine-grained silty sand, low plasticity. | | | | 2.68 | 120.7 | 11.9 | | |
| 5 | | | | | 10 | Same as above, 3" | | | | | | | | |
| 6 | | | | | 10 | (4.5' - 14.5') SAND - Dark brown, loose, slightly moist, fine- to medium-grained sand, lenses of medium-grained red sand, white clasts (1" - 2.5"), low plasticity. | | | | | | | | |
| 10 | 33" | | | | 50/5" | Clasts size is 0.5" to 1" | | | | | | | | |
| 11 | | | CA 15" | 2B | 4 | | | | | | | | | |
| 12 | | | | 2A | 9 | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC01

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|---|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 33' | | | | | | (4.5' - 14.5') SAND - Dark brown, loose, slightly moist, fine- to medium-grained sand, lenses of medium-grained red sand, white clasts (1" - 2.5"), low plasticity. | | | | | | | | |
| 14- | | | | | | (14.5' - 15') SILTY SAND - Light tan, very dense, hard, dry, fine-grained silty sand, low plasticity. | | | | | | | | |
| 15' | 60" | | CA 5" | | 50/ 5" | (15' - 20') SAND - Light gray to white with dark brown areas, very dense, fine- to very fine-grained sand, layered, possible placed NECR-1 material. | | | | | | | | |
| 16- | | | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | | | |
| 18- | | | | | | | | | | | | | | |
| 19- | | | | | | | | | | | | | | |
| 20- | | | | | | E.O.B. = 20', backfilled with two bags of bentonite, backfilled with cuttings to surface. | | | | | | | | |
| 21- | | | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | | | |

LEGEND:

- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:

None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/7/2013 | FINISH: 11/7/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7096.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 21.5 | | |

| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|----------------------------|------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| DEPTH (FT) | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 0 | 54" | 5 | | | | (0' - 1') SOIL - Dark brown, loose, moist soil. | | | | | | 120.3 | 11.3 | |
| 1 | | | | | | (1' - 4') SILTY SAND - Light tan, loose, dry, very fine silty sand. | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | (4' - 6.5') SILTY SAND - Gray and brown, loose, dry, very fine silty sand, no plasticity. | | | | | | | | |
| 5 | 44" | | CA 20" | | 5 | | | | 4.9 | 92.3 | | | | |
| 6 | | | 1B | | 5 | | | | | | | | | |
| 7 | | | 1A | | 5 | | | | | | | | | |
| 8 | | | | | | (6.5' - 10') SAND - Gray, loose, dry, medium-grained sand, probably mine waste. | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | 45" | 6 | CA 18" | | 4 | (10' - 15') SAND - Same as above, very stiff clay lens at 13', trace green for the last 6", no plasticity. | | | | | | 125.1 | 10.0 | |
| 11 | | | 2B | | 3 | | | | 6.2 | 96.5 | | | | |
| 12 | | | 2A | | 4 | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC17

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 14.5 | 0 | | | | | (10' - 15') SAND - Same as above, very stiff clay lens at 13', trace green for the last 6", no plasticity. | | | | | | | | |
| 15.32 | | CA 18" | | | 3 | (15' - 21.5') SAND - Same as above, red streaks dominate most material. | | | 2.0 | 106.7 | | | | |
| | | | | 3 | | | | | | | | | | |
| | | | | 3 | | | | | | | | | | |
| 16.3 | | | | | 3 | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | | | | | 2 | | | | | | | | | |
| 20.4 | | | | | 4 | | | | 19.1 | 95.8 | | | | |
| 21.4 | | | | | 10 | | | | | | | | | |
| 22 | | | | | | E.O.B. = 21.5', backfilled with cuttings | | | | | | | | |
| 23 | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | |

LEGEND:

CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:

None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: | FINISH: | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7191.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 7.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|---|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|--|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 0 | 60" | NA | NA | NA | | (0' - 8") SOIL - Light brown soil. | | | | | | | | | |
| 1 | | | | | | (8" - 5') SAND - Light gray, dry, coarse sand, unconsolidated. | | | | | | | | | |
| 5 | | | | | 31 | (5' - 7.5') SANDSTONE - Light brown, very dense, dry, fine to medium grained silty sand to highly weathered sandstone | | | 7.4 | 99.1 | | | | | |
| 6 | | | | | 50/3" | | | | | | | | | | |
| 8 | | | | | | Gypsum at bottom 2" E.O.B. = 7.5', backfilled with cuttings | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.

| CONTRACTOR INFORMATION | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-------------------|----------------------------|--------------------|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/29/2013 | FINISH: 10/29/2013 |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7183.0 | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 10.0 | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|-----------------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 30" | 5 | | 1 | | | (0' - 10') SILTY SAND - Light brown, very dense, slightly moist, fine grained silty sand | | | | | | 118.8 | 11.9 | (0 - 2.5') >2.0 pCi/g |
| 1 | | | | | | Indurated | | | | | | | | |
| 30" | | CA 7" | 2 | | 50/6" | | | 8.1 | 93.7 | | | | | |
| 3 | | | | | | | | | | | | | | |
| 60" | | CA 6" | 3 | | 45/6" | Slightly more clay | | 10 | D | | | | | (5' - 8') <2.0 pCi/g |
| 5 | | | 4 | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | Trace gypsum | | | | | | | | |
| 10 | | | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | Backfilled with chips at bottom, cuttings above | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 >2.0 = rad readings above 2.0 pCi/g.
 <2.0 = rad readings below 2.0 pCi/g. (aka clean material).

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/30/2013 | FINISH: 10/30/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7177.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 4.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-----------------------------|---|------------|---------|-----------------|-------------------|---------------------|-----------------|---------------|-----------------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | | |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 27" | 2 | | | | | (0 - 4.5') SILTY SAND - Light reddish brown, dry, medium dense, fine grained silty sand, gray spots, minor gravel 1" - 1.5" | | | | | | | | |
| NR | CA 16" | | | 8 | Slightly more gray material | | | | | | | | | (0 - 2.5') <2.0 pCi/g |
| | | | | 9 | | | | 5.0 | 103.4 | | | | | |
| | | | | 24 | | | | 4.7 | 101.1 | | | | | |
| | | | | | | E.O.B. = 4.5'. Auger refusal due to steel plate or pipe, re-drill 10' down as NECR2-CC07, backfilled with NECR2-CC06 cuttings | | | | | | | | |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 <2.0 = rad readings below 2.0 pCi/G (aka clean material).

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/30/2013 | FINISH: 10/30/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 0.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 10.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|---|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|----------------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | | |
| | | | | | | | | | | | | SPECIFIC GRAVITY | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 0 | 50" | 2 | | | | (0' - 6.5') SILTY SAND - Light reddish brown, dry, fine grained silty sand, gray lenses, 1" gravel | | | | | 2.71 | 117.8 | 11.6 | |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | 31" | | CA | | 8 | Indurated | | | | | | | | (5' - 9') >2.0 pCi/g |
| 6 | | | | | 17 | | | | 4.5 | 101.3 | | | | |
| 7 | | | | | 27 | | | | 2.7 | 101.0 | | | | |
| 8 | | | | | | (6.5' - 10') WEATHERED SANDSTONE - Light brown, medium dense, slightly moist, fine silty sand with gravel lenses. | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | 3 | CA | | 50/6" | | | | 4.1 | 97.1 | | | | |
| 11 | | | | | | E.O.B. = 10.5'. Backfilled with cuttings. | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 No gamma samples due to close proximity to CC06 (clean).
 >2.0 = rad readings above 2.0 pCi/g

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/8/2013 | FINISH: 11/8/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7143.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 11.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|---|------------|---------|-----------------|-------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 28" | NA | | | | | (0' - 1') SAND - Tan, soft, dry, medium to coarse sand. | | | | | | | |
| 1 | | | | | | (1' - 2') CLAYEY SILT - Medium brown, slightly stiff, slightly moist clayey silt, low plasticity. | | | | | | | |
| 2 | | | | | | (2' - 5') Gray, medium dense, dry, fine to medium sand. | | | | | | | |
| 3 | | | | | 11 | | | | | | | | |
| 3 | | | 1B | 13 | | | | | 8.1 | 110.6 | | | |
| 4 | | CA 18" | 1A | 13 | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 5 | | CA 13" | | 12 | | (5' - 10') SILTY SAND - Dark brown, medium dense, moist, very fine silty sand, low plasticity. | | | | | | | |
| 6 | | | | 11 | | | | | | | | | |
| 6 | | | 2A | 7 | | | | | 20.0 | 97.5 | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 10 | | CA 18" | | 1 | | E.O.B. = 10', backfilled with cuttings | | | | | | | |
| 11 | | | 3B | 1 | | | | | 15.0 | 86.6 | | | |
| 11 | | | 3A | 1 | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/8/2013 | FINISH: 11/8/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7142.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 11.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 32" | | | | | | (0' - 1.5') SILTY SAND - Red/brown, very stiff, dry, very fine silty sand. | | | | | | | | |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | (1.5' - 5') SAND - Gray, medium dense, dry, fine to medium sand, no plasticity. | | | | | | | | |
| 3 | 21" | 1 | CA | 15" | 18 | | | | | | | | | <100 pCi/g |
| 4 | | | | 2B | 15 | | | | | | | | | |
| 5 | | | | 2A | 11 | | | | | | | | | |
| 6 | | 4 | CA | | 4 | (5' - 10') SAND - Green to gray, loose, slightly moist, fine to medium sand, no plasticity, trace red for the last 1'. | | | | | | | | ≥100 pCi/g |
| 7 | | | | 3A | 4 | | | | | | | | | |
| 8 | | 5 | | | 5 | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | CA | | 11 | | | | | | | | | |
| 11 | | | | 6B | 10 | | | | | | | | | |
| 12 | | | | 6A | 13 | | | | | | | | | |
| 13 | | | | | | E.O.B. = 11.5', backfilled with cuttings | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/8/2013 | FINISH: 11/8/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7141.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 15.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 52" | 1 | N/A | N/A | | | (0' - 1.5') SILTY SAND - Brown, soft, dry, very fine silty sand. | | | | | 2.66 | 125.2 | 9.8 | |
| 1 | | | | | | (1.5' - 14') SAND - Gray, loose to medium dense, dry, fine- to medium-grained sand, orange/green stains. | | | | | | | | |
| 32" | | | | | | | | | | | | | | |
| 45" | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.



CLIENT:



BORING LOG

BOREHOLE ID:

NMSA-CC04

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|--|--|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | |
| 45' | 1 | N/A | N/A | | | (1.5' - 14') SAND - Gray, loose to medium dense, dry, fine- to medium-grained sand, orange/green stains. | | | | | | | | | | |
| 14- | | | | | | (14' - 15') SILTY SAND - Brown, medium hard, slightly moist, very fine silty sand, no plasticity, indurated. | | | | | | | | | | |
| 15- | | | | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | | | |
| 16- | | | | | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | | | | | |
| 18- | | | | | | | | | | | | | | | | |
| 19- | | | | | | | | | | | | | | | | |
| 20- | | | | | | | | | | | | | | | | |
| 21- | | | | | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | | | | | |

LEGEND:

CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:

None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/12/2013 | FINISH: 11/12/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7106.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 24.4 | | |

| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|----------------------------|------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| DEPTH (FT) | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 0 | 32" | Bulk | | | | (0' - 1') SILTY SAND - Light brown, loose, moist silty sand, clayey, no plasticity. | | | | | | | | |
| 1 | | | | | | (1' - 5') SILTY CLAY - Light brown to gray, soft, moist silty sand, high plasticity. | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | 32" | | CA 16" | | 0 | | | | | | | | | |
| | | | | 1B | 1 | | | | | | | | | |
| | | | | 1A | 2 | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | 17" | | CA 18" | | 0 | (5' - 8') CLAY - Gray, very soft, moist clay, high plasticity. | | | | | | | | |
| | | | | 2B | 0 | | | | | | | | | |
| | | | | 2A | 0 | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | 31" | | | | | (8' - 10') CLAY - Dark gray, soft, moist clay, moderate plasticity. | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | 38" | | CA 16" | | 2 | (10' - 15') SILTY CLAY - Brown, soft, moist silty clay, high plasticity. | | | | | | | | |
| | | | | 3B | 3 | | | | | | | | | |
| | | | | 3A | 3 | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 NR = no recovery



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC09

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 38" | Bulk | | | | | (10' - 15') SILTY CLAY - Brown, soft, moist silty clay, high plasticity. | | | | | | | | |
| 14- | | | | | | | | | | | | | | |
| 15- | 31" | Bulk | CA 14" | 4B | 2 | (15' - 17.5') SILTY CLAY - Same as above, gray to brown. | | | | | | | | |
| | | | | 4A | 3 | | | | | | | | | |
| | | | | | 4 | | | | | | | | | |
| 16- | | | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | | | |
| 18- | 27" | | | | | (17.5' - 21.5') SILTY CLAY - Same as above with gravel. | | | | | | | | |
| 19- | | | | | | (19') Very wet | | | | | | | | |
| 20- | 35" | | NR | | 1 | (21.5' - 24.4') SILT - Brown/gray, medium hard, dry silt, no plasticity. | | | | | | | | |
| | | | | | 2 | | | | | | | | | |
| | | | | | 4 | | | | | | | | | |
| 21- | | | | | | | | | | | | | | |
| 22- | 22" | | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | | | |
| 25- | | | | | | E.O.B. = 24.4', backfilled with cuttings | | | | | | | | |
| 26- | | | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | | | |

LEGEND:

CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:

NR = no recovery

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/11/2013 | FINISH: 11/11/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7100.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 3.2 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|---|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | | |
| | | | | | | | | | | | | SPECIFIC GRAVITY | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 1 | NA | 1 | NA | NA | | (0' - 38") - SILTY CLAY - Dark brown, moist, silty clay, high plasticity. | | | | | 2.66 | 102.0 | 20.6 | |
| 4 | | | | | | E.O.B. = 38", auger refusal, backfilled with cuttings | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 Hand augered due to access.



CLIENT:



BORING LOG

BOREHOLE ID:

SF3-001

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/30/2013 | FINISH: 10/30/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7116.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 11.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|--|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 23" | 4 | | | | | (0' - 2.5') SAND - Light brown-tan, slightly moist, fine- to slightly coarse grained, sand, low plasticity. | | | | | | 2.68 | 121.7 | 11.1 | |
| 28" | | CA 18" | | | 5 | (2.5' - 5') SAND - Dark brown, loose, slightly moist, medium-grained sand, with 1/2" clasts, minor clay at ~3', low plasticity. | | | 17.0 | 99.3 | | | | | |
| 3 | | | | 9 | | | | | | | | | | | |
| 4 | | | | 10 | | | | | | | | | | | |
| 35" | | CA 18" | | | 4 | (5' - 11.5') SILTY SAND - Dark brown, loose, slightly moist, fine- to very fine-grained silty sand, trace clay, red oxides (1%), low plasticity. | | | 10.5 | 96.4 | | | | | |
| 5 | | | | 8 | | | | | | | | | | | |
| 6 | | | | 8 | | | | | | | | | | | |
| 10 | | CA 17" | | | 4 | | | | 8.2 | 83.5 | | | | | |
| 11 | | | | 5 | | | | | | | | | | | |
| 11 | | | | 6 | | | | | | | | | | | |
| 12 | | | | | | E.O.B. = 11.5', backfilled with cuttings | | | | | | | | | |

LEGEND:

CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:

None.

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/11/2013 | FINISH: 11/11/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7097.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 16.2 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | | |
| | | | | | | | | | | | | SPECIFIC GRAVITY | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 0 | 30" | Bulk | | | | (0' - 15') SAND - greenish gray, loose to medium dense, dry to slightly moist, fine to medium sand, no plasticity. | | | | | 2.62 | 120.6 | 11.5 | |
| 5 | 28" | | CA 16" | | 2 | | | | | | | | | |
| 6 | | | 1B | | 3 | | | 10.2 | 101.4 | | | | | |
| 6 | | | 1A | | 3 | 2" clay lens with red, orange, and black oxide stains | | | | | | | | |
| 8 | 24" | | | | | Alternating coarse and fine sand | | | | | | | | |
| 10 | 28" | | CA 15" | | 3 | | | | | | | | | |
| 11 | | | | | 6 | | | | | | | | | |
| 11 | | | 2A | | 11 | | | 3.5 | 100.8 | | | | | |

LEGEND:
 CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:
 None.



CLIENT:



BORING LOG

BOREHOLE ID:

SP-CC13

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|-----------------|-----------------|---------------------|-------------|--|------------|---------|-----------------|-------------------|---------------------|------------------|-----------------|---------------|
| | CORE RECOV. (IN) | BULK SAMPLE NO. | GEOTECH. SAMPLE | GEOTECH. SAMPLE NO. | BLOW COUNTS | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | SPECIFIC GRAVITY | PROCTOR | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 28 | Bulk | | | | | (0' - 15') SAND - greenish gray, loose to medium dense, dry to slightly moist, fine to medium sand, no plasticity. | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | | | | 4 | Last 2" - Brown, slightly hard, dry silty sand, no plasticity. | | | | | | | | |
| 16 | | CA 14" | | | 3 | | | | 6.9 | 97.5 | | | | |
| 16 | | | 3A | | 3 | | | | | | | | | |
| 16 | | | | | 4 | E.O.B. = 16.2', backfilled with cuttings | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | |




LEGEND:

CA = CALIFORNIA SAMPLE
 ST = SHELBY TUBE
 AC = ACRYLIC LINER
 H.S.A. = HOLLOW-STEM AUGER
 C.C. = CONTINUOUS CORE

NOTES:

None.

APPENDIX B2.1B
DRILLING LOGS
ENVIRONMENTAL

|  | |   | | | BORING LOG | | BOREHOLE ID: NECR1-52A | | | | | | |
|---|------------------|---|-----------------------------|--|-----------------------------|--------------------|---|-------------------|------------------|-----------------|---------------|---------------------|--|
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/13/2013 | | FINISH: 11/13/2013 | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7094.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: KJ | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 19.4 | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | |
| 0 | | | | (0' - 9.1') SILTY SAND - Medium to dark brown, moderately moist silty clay with very low clay content. | | | | | | | | | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | 7.5' very hard to drill, debris including wood, rubber pieces, 1 ft. thick felt like "rotten concrete" | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | 1 | >2.0 | (9.1' - 9.6') CLAYEY SILT - Yellow orange, loose, moist clayey silt, high plasticity. | | | | | | | | | |
| 10 | 18" | | | (9.6' - 11.6') SILT - Silt grading to very weathered mudstone | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | (11.6' - 12.6') CLAYEY SILT - Brown, stiff, moist clayey silt, moderate plasticity. | | | | | | | | | |
| 12 | 12" | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-52A

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|-----------------------------|--|------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 12' | 1 | | >2.0 | (14.1' - 17.6') SILTSTONE - Light gray brown, slightly moist siltstone interbedded with mudstone, moderately cemented, very weathered. | | | | | | | | |
| 14' | 2 | | =2.0 | | | | | | | | | |
| 27" | | | | | | | | | | | | |
| 15' | | | | | | | | | | | | |
| 16' | | | | | | | | | | | | |
| 17' | 3 | | <2.0 | (17.6' - 19.1') SILTSTONE - Light gray, dry weathered siltstone, very thin beds. | | | | | | | | |
| 27" | | | | | | | | | | | | |
| 18' | | | | | | | | | | | | |
| 19' | | | | | | | | | | | | |
| 20' | | | | E.O.B. = 19.4', backfilled with cuttings | | | | | | | | |
| 21' | | | | | | | | | | | | |
| 22' | | | | | | | | | | | | |
| 23' | | | | | | | | | | | | |
| 24' | | | | | | | | | | | | |
| 25' | | | | | | | | | | | | |
| 26' | | | | | | | | | | | | |
| 27' | | | | | | | | | | | | |

LEGEND:


















PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE





















NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM







| | | | | | | | | | | | |
|---|------------------|---|--------------------------------|---|---|-----------------------------|-----------------------------------|--------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: NECR1-CC02 | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7096.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 5.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 43" | C | >2.0 | | (0' - 6") SOIL - Dark-medium brown, dry, organics, low plasticity. (6" - 5') SILTY SAND - Light brown-tan, very hard, dry, fine-to coarse-grained sand with silt, clasts (1/4" - 1 1/2"), clasts are white, weathered. |  | | | | | | |
| 1 | | | | |  | | | | | | |
| 2 | | | | |  | | | | | | |
| 3 | | | | |  | | | | | | |
| 4 | | | | |  | | | | | | |
| 5 | | | | |  | | | | | | |
| 6 | | | | E.O.B. = 5' This sample and four others will be composited, NECR1-CC02:06-BULK |  | | | | | | |
| 7 | | | | |  | | | | | | |
| 8 | | | | |  | | | | | | |
| 9 | | | | |  | | | | | | |
| 10 | | | | |  | | | | | | |
| 11 | | | | |  | | | | | | |
| 12 | | | | |  | | | | | | |
| 13 | | | | |  | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | |




| | | | | | | | | | | | | | |
|---|------------------|--|--|----------------------------|---|---|-----------------------------------|-----------------|-------------------|------------------|-----------------|---------------|---|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: NECR1-CC03 | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7097.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 5.0 | | | | | | | | | |
| | | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 37" | C | >2.0 | (0' - 8") SOIL - Medium brown, soft, slightly moist, organics/roots, low plasticity. | |  |  | | | | | | | |
| 1 | | | (8" - 5') Sand - Light brown-tan, soft to slightly firm, dry, gravel (millimeters - 1"), low plasticity. | | | | | | | | | | |
| 2 | | | | |  |  | | | | | | | |
| 3 | | | | | | | | | | | | |  |
| 4 | | | | |  |  | | | | | | | |
| 5 | | | E.O.B. = 5', backfilled with cuttings | | | | | | | | | |  |
| 6 | | | This sample and four others will be composited to test. NECR1-CC02:06-BULK | |  |  | | | | | | | |
| 7 | | | | | | | | | | | | |  |
| 8 | | | | |  |  | | | | | | | |
| 9 | | | | | | | | | | | | |  |
| 10 | | | | |  |  | | | | | | | |
| 11 | | | | | | | | | | | | |  |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |






LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE




NOTES:
 None.

RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | | | | | | | |
|---|------------------|--|-----------------------------|---|-----------------------------|-----------------------------------|---|---|-----------------|-------------------|------------------|-----------------|---------------|---------------------|---|--|--|--|--|--|--|
|  | | CLIENT:   | | BORING LOG | | BOREHOLE ID: NECR1-CC04 | | | | | | | | | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | | | | | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7098.0 | | | | | | | | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 5.0 | | | | | | | | | | | | | | | | | |
| | | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | | | | | | |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | | | | | | |
| 60" | C | | >2.0 | (0' - 1') SOIL - Dark brown, slightly firm, moist, low plasticity. | | |  | | | | | | | | | | | | | | |
| 1 | | | | (1' - 4') SAND - Dark brown, very soft, dry, fine-grained silty sand, gravel (1/2"), organics, no plasticity. | | | | | | | | | | |  | | | | | | |
| 2 | | | | (4' - 5') SAND - Gray material, soft, dry, medium-grained sand. | | | | | | | | | | | | | | | | | |
| 3 | | | | E.O.B. = 5', backfilled with cuttings This sample and four others will be composited, NECR1-CC02:06-BULK | | |  | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | | | | | |

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|---|------------------|---|------------------------------|---|----------------------|-----------------------------|-----------------------------------|---|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: NECR1-CC05 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7098.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 5.0 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 40" | C | >2.0 | | (0' - 8") SILTY SAND - Dark brown, slightly firm, moist, fine to very fine-grained silty sand, moderate plasticity. | | | | | | | | |
| 1 | | | | (8" - 5') SILTY SAND WITH GRAVEL - Light brown-tan, very soft, dry, very fine silty sand with gravel (1/4" - 1/2"), low plasticity. | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | E.O.B. = 5', backfilled with cuttings This sample and four others will be composited to test. NECR1-CC02:06-BULK | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | |

| | | | | | | | | | | | |
|---|------------------|---|---|--|--|-----------------------------|-----------------------------------|--------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: NECR1-CC06 | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7097.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 5.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 45" | C | >2.0 | (0' - 0.5') SOIL - Dark brown, moist, moderate plasticity soil. |  | | | | | | | |
| 1 | | | (0.5' - 5') SILTY SAND - Light to dark brown, moderately hard, slightly moist, fine-grained silty sand, gravel (0 - 1 1/2"), trace clay, slight plasticity. |  | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | E.O.B. = 5', backfilled with cuttings This sample and four others will be composited to test. NECR1-CC02:06-BULK | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | NOTES: First attempt <1' recovery, moved 1' over. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | |

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|---|------------------|---------------------------------------|--------------------------------|--|-------------------|---|-----------------------------|------------|--------------------|-----------------------------------|-----------------|---|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: NECR1-CC07 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7094.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 15.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | | LABORATORY TEST DATA | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 46" | | | | (0' - 5') SILTY SAND - Dark to light brown, very firm, moist, trace clay, moderate plasticity. | | | | | | | | | | | |
| 1 2 3 4 | | | | Dry and softer at 4' | | | | | | | | | | | |
| 53" | 1 | >2.0 | | (5' - 9') SILTY SAND - Medium brown to reddish brown, slightly moist, fine to medium-grained silty sand, lense of coarse gray sand at 6', no plasticity. | | | | | | | | | | | |
| 5 6 7 8 9 | | | | | | | | | | | | | | | |
| 10 | 2 | >2.0 | | (9' - 10') SILT - Light tan, moderately hard, dry, fine- to very fine-grained silt, no plasticity. | | | | | | | | | | | |
| 10 11 | | | | (10' - 11') SILTY SAND - Medium brown to light tan, slightly hard, slightly moist, fine-grained silty/sand, no plasticity. | | | | | | | | | | | |
| 11 | | | | (11' - 12') WHITE GRAVEL - White gravel layer, 1/2 to 1". | | | | | | | | | | | |
| 12 13 | 3 | =2.0 | | (12' - 15') SILTY SAND - Light brown, medium to very hard, dry, fine to very fine-grained silty sand, some clay, layers of white precipitate. | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC07

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS |
|------------|----------------------------|------------|---|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------|---------------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 42' | 3 | =2.0 | (12' - 15') SILTY SAND - Light brown, medium to very hard, dry, fine to very fine-grained silty sand, some clay, layers of white precipitate. | | | | | | | | |
| 14- | | | | | | | | | | | |
| 15- | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | |
| 16- | | | | | | | | | | | |
| 17- | | | | | | | | | | | |
| 18- | | | | | | | | | | | |
| 19- | | | | | | | | | | | |
| 20- | | | | | | | | | | | |
| 21- | | | | | | | | | | | |
| 22- | | | | | | | | | | | |
| 23- | | | | | | | | | | | |
| 24- | | | | | | | | | | | |
| 25- | | | | | | | | | | | |
| 26- | | | | | | | | | | | |
| 27- | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE




NOTES:




None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--------------------------------|---|-------------------|---|-----------------------------|------------|--------------------|-----------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: NECR1-CC08 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7095.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 8.0 | | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 53" | NR | NA | | (0' - 1') SILTY SAND - Dark brown, very firm, moist, fine-grained, some plasticity, silt sand, some clay. | | | | | | | | | | | | | |
| 1 | | | | (1' - 6') SILTY SAND - Light brown to tan, moderately firm, dry, fine to very fine-grained, silty sand, no plasticity. Trace gray material with red/orange oxides at 1' to 2' | | | | | | | | | | | | | |
| 2 | | | | Lense of coarse sand at 4.5' to 5' | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | 27" | | | | | | | | | | | | | | | | |
| 6 | | | | (6' - 8') SAND - Gray to light brown, soft, fine to medium-grained sand. | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | E.O.B. = 8', Auger refusal due to concrete | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: No samples collected. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |

| | | | | | | | | | | | | | |
|---|------------------|--|--------------------------------|--|-----------------------------|--------------------|-----------------------------------|-----------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: NECR1-CC09 | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7095.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 8.8 | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 39" | | | | (0' - 1') SOIL - Light brown, very soft, dry, trace clay, low plasticity. | | | | | | | | | |
| 1 | | | | (1' - 8.8') SILTY SAND - Light brown to tan, dry, fine to very fine-grained silty sand, small pebbles, no plasticity, red/orange oxide stains. | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | 25" | 1 | >2.0 | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | E.O.B. = 8.8', Auger refusal due to concrete | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | |

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|---|------------------|--|--------------------------------|--|-----------------------------|-----------------------------|----------------------------|-----------------------------------|--------------------|---|-----------------|---------------|---------------------|--|
|  | | CLIENT:  | |  | | BORING LOG | | BOREHOLE ID: NECR1-CC10 | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7094.0 | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 15.0 | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | |
| 28" | | | | (0' - 8") SILTY SAND - Red brown, moist silty sand, gravel. | | | | | | | | | | |
| 1 | | | | (2' - 28") SILTY SAND - Red brown, medium firm, slightly moist silty sand, trace clay, some plasticity. | | | | | | | | | | |
| 2 | | | | No recovery, assumed silty sand | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | 30" | | | (5' - 10") SILTY SAND - Dark brown, very soft, wet, very fine grained silty sand, moderate plasticity. | | | | | | | | | | |
| 6 | | | | Very moist to wet at 6' to 7' | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | 14" | 1 | >2.0 | (10' - 15') CLAYEY SILT - Dark brown to tan to red/brown, moderately hard, slightly moist, 20 - 30% clay, moderate plasticity. | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | NOTES: None. | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC10

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 14 | 1 | >2.0 | (10' - 15') CLAYEY SILT - Dark brown to tan to red/brown, moderately hard, slightly moist, 20 - 30% clay, moderate plasticity. | | | | | | | | | |
| 15 | | | E.O.B. at 15', poor recovery, material consistent with other elevated radiation level material | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/6/2013 | FINISH: 11/6/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7091.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 15.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|-----------------------------|--|----------------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 28" | | | | (0' - 3') SILTY SAND - Brown, loose, very soft, dry silty sand, trace gravel. | | | | | | | |
| 26" | | | | | | | | | | | |
| 3 | 1 | <200 | | (3' - 5.2') SAND - Light tan to white, loose, soft, dry, fine to medium sand, trace clay. | | | | | | | |
| 29" | 2 | <100 | | (5.2' - 7.5') Silty Clay - Black with tan, stiff, slightly moist, trace black gravel, white precipitate, low plasticity. | | | | | | | |
| 20" | 3 | <100 | | (7.5' - 10') SILTY CLAY - Brown, stiff, moist silty clay, gray gravel (10-15%), moderate plasticity. | | | | | | | |
| 55" | | | | (10' - 14.25') SILTY CLAY - Red/brown, slightly to very stiff, slightly moist to moist silty clay, moderate plasticity. | | | | | | | |
| 4 | 4 | <100 | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC11

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|---|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 55' | 4 | <100 | (10' - 14.25') SILTY CLAY - Red/brown, slightly to very stiff, slightly moist to moist silty clay, moderate plasticity. | | | | | | | | |
| 14- | | | (14.25' - 15') SANDSTONE - Gray, fine- to medium-grained weathered sandstone. | | | | | | | | |
| 15- | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | |
| 16- | | | | | | | | | | | |
| 17- | | | | | | | | | | | |
| 18- | | | | | | | | | | | |
| 19- | | | | | | | | | | | |
| 20- | | | | | | | | | | | |
| 21- | | | | | | | | | | | |
| 22- | | | | | | | | | | | |
| 23- | | | | | | | | | | | |
| 24- | | | | | | | | | | | |
| 25- | | | | | | | | | | | |
| 26- | | | | | | | | | | | |
| 27- | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/6/2013 | FINISH: 11/6/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7091.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 10.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|-----------------------------|---|------------|---------|-----------------|-------------------|------------------|-----------------|---------------|---------------------|--|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | |
| | | | | | | | | | | | | | |
| 23" | 1 | <100 | | (0' - 2.5') SILTY SAND - Brown, soft to slightly firm, slightly moist silty sand, fine to very fine organics, no plasticity. | | | | | | | | | |
| 29" | 2 | <200 | | (2.5' - 5.5') SAND - Gray, soft to slightly firm, dry, fine- to medium-grained sand. | | | | | | | | | |
| 42" | 3 | <100 | | (5.5' - 10') CLAYEY SILT - Reddish brown, stiff to very stiff, slightly moist clayey silt, dark gravel (20-30%), moderate plasticity. | | | | | | | | | |
| 32" | 4 | <100 | | | | | | | | | | | |
| 10' | | | | E.O.B. = 10', backfilled with bentonite chips | | | | | | | | | |

| | |
|---|---|
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM |
|---|---|

| CONTRACTOR INFORMATION | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-------------------|----------------------------|-------------------|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/6/2013 | FINISH: 11/6/2013 |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7095.0 | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 15.0 | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|-----------------------------|--|------------|---------|-----------------|-------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 28" | | | | (0' - 5') SILTY SAND - Brown to light brown, soft, dry to slightly moist, fine silty sand. | | | | | | | |
| 24" | 1 | <100 | | | | | | | | | |
| 29" | 2 | <100 | | (5' - 15') SAND - Gray to light brown, soft, dry to slightly moist fine sand, no plasticity. | | | | | | | |
| 25" | 3 | <100 | | Various stains of orange, white black, and red | | | | | | | |
| 29" | 4 | <100 | | | | | | | | | |
| 21" | 5 | <100 | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC13

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 21 | 5 | <100 | (5' - 15') SAND - Gray to light brown, soft, dry to slightly moist fine sand, no plasticity. No stains | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--------------------------------|--|-------------------|---|-----------------------------|------------|-------------------|-----------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: NECR1-CC14 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/6/2013 | | FINISH: 11/7/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7094.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 20.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 29" | | | | (0' - 7') SILTY SAND - Light brown, soft, dry, fine to very fine silty sand, gravel (5%). | | | | | | | | | | | |
| 1 | | 1 | <100 | Small sample due to recovery | | | | | | | | | | | |
| 16" | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 29" | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 7 | | | | (7' - 7.5') CLAY - Dark gray, dry clay and claystone fragments. | | | | | | | | | | | |
| 26" | | 2 | <100 | (7.5' - 10') CLAYEY SILT - Stiff to very stiff, slightly moist clayey silt with clay lense, low plasticity. | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | |
| 34" | | | | (10' - 15') SILTY SAND - Red brown, very stiff, slightly moist silty sand, trace clay, no plasticity, white/black/orange staining. | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 3 | | 3 | <100 | | | | | | | | | | | | |
| 20" | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC14

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|---|------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 20' | 3 | <100 | (10' - 15') SILTY SAND - Red brown, very stiff, slightly moist silty sand, trace clay, no plasticity, white/black/orange staining. | | | | | | | | |
| 14- | | | | | | | | | | | |
| 15 | 35" | 4 | <100 | (15' - 17.5) CLAYEY SILTY SAND - Light orange brown, very stiff to moderately hard, slightly to moderately moist clayey silty sand, low to medium plasticity, orange oxide. | | | | | | | |
| 16- | | | | | | | | | | | |
| 17- | | | | | | | | | | | |
| 18- | | 5 | <100 | Construction wood and debris | | | | | | | |
| 19- | | | | | | | | | | | |
| 20- | | | | E.O.B. = 20', backfilled with cuttings | | | | | | | |
| 21- | | | | | | | | | | | |
| 22- | | | | | | | | | | | |
| 23- | | | | | | | | | | | |
| 24- | | | | | | | | | | | |
| 25- | | | | | | | | | | | |
| 26- | | | | | | | | | | | |
| 27- | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|--|------------------------------|---|----------------------|-----------------------------|----------------------------|-----------------------------------|-------------------|-----------------|---------------|---------------------|
|  | |  | |  | | BORING LOG | | BOREHOLE ID: NECR1-CC15 | | | | |
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/7/2013 | | FINISH: 11/7/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7098.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 22.5 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 25" | | | | (0' - 1') SILTY SAND - Red/brown, soft, slightly moist, low plasticity. | | | | | | | | |
| 1 | | | | (1' - 13') SILTY SAND - Light tan, slightly hard, dry, very fine-grained sandy silt. | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 20" | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | 31" | 1 | <100 | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 21" | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | 21" | 2 | <100 | Trace white gravel | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | 11.8' - hit concrete (4" thick) | | | | | | | | |
| 26" | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC15

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|-----------------------------|--|------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 26' | | | | (13' - 15') SANDSTONE - White, dry sandstone grading to red/brown, dry, very fine silty sand. | | | | | | | | |
| 14- | | | | | | | | | | | | |
| 15 | 33" | 3 | <100 | (15' - 18') SILTY SAND - Red/brown to light gray, soft to slightly hard, dry, very fine silty sand, lenses of gray clay. | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | |
| 18 | 17" | | | (18' - 22.5') SILTY SAND - Dark brown, slightly hard, slightly moist, fine silty sand. | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20 | 32" | 4 | <100 | | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | | E.O.B. = 22.5', backfilled with cuttings | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/7/2013 | FINISH: 11/7/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7096.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 20.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|-----------------------------|--|----------------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 24" | | | | (0' - 6") SOIL - Brown soil. | | | | | | | | |
| 1 | | | | (6" - 1') CLAY - Brown/green, medium stiff, slightly moist clay, moderate plasticity. | | | | | | | | |
| 2 | | | | (1' - 10') SILTY SAND - Light tan/brown, very soft, dry, very fine silty sand. | | | | | | | | |
| 18" | 1 | <100 | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 31" | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 19" | 2 | <100 | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 32" | 3 | <100 | | (10' - 16') SILTY SAND - Light brown, soft to slightly hard, dry silty sand, 5% gravel, white and orange stains. Gravel layer (2") | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 20" | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

NECR1-CC16

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|--|----------------------------|------------|--|----------------------|------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 20' 14- 15' 39" | 3 | <100 | (10' - 16') SILTY SAND - Light brown, soft to slightly hard, dry silty sand, 5% gravel, white and orange stains. | | | | | | | | |
| 16- 17- 18- 20" | 4 | <100 | (16' - 20') SANDY SILT - Light brown, slightly hard, dry silt to medium sand. | | | | | | | | |
| 18- 20" | 5 | | | | | | | | | | |
| 20- 21- 22- 23- 24- 25- 26- 27- | | | E.O.B. = 20', backfilled with cuttings | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE




NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|--|-----------------------------|---|-----------------------------|--------------------|-----------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: NECR2-CC02 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/29/2013 | | FINISH: 10/29/2013 | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7188.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): 4.5' | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 9.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 60" | 1 | | >2.0 | (0' - ~4.5') SILTY SAND - Light brown, dry, low plasticity silty sand, 1" gravel. | | | | | | | | |
| 1 | | 2 | - | Increase in clay content at 2.5' | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | 3 | <2.0 | | | | | | | | | |
| 5 | 48" | | | (~4.5' - ~9') SILTY SAND - Gray-brown with green, dry, fine-grained silty sand, no gravel, weathered bedrock. | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 9', backfilled with cuttings | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: Moved ~20' due to access. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|------------------|--|-----------------------------|--|-----------------------------|-----------------------------------|------------|---------|-----------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | BORING LOG | | BOREHOLE ID: NECR2-CC03 | | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/29/2013 | | FINISH: 10/29/2013 | | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7200.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 24.3 | | | | | | | | | | |
| | | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 60" | 1 | | >2.0 | (0' - 1') SAND - Gray-brown, slightly moist, medium-grained, loose (possible fill). | | | | | | | | | | |
| 1 | | | | (1' - 4') SILTY SAND - Brown-gray, loose to medium dense, dry silty sand, 1" clasts, contains multiple 2" gray sand lense, coarse-grained, dry, non-consolidated (possible fill or disturbed). | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | 2 | >2.0 | (4' - 5') SAND - Light brown, medium dense to dense, fine to silty sand, massive structure. | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 36" | 3 | | >2.0 | (5' - 7') SILTY SAND - Light brown, dense, dry, fine grained silty sand, 1/2" - 3" clasts, massive structure. | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | (7' - 11') No recovery, assumed silty sand. | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | 48" | | | [Small lense of friable gray, weathered rock] | | | | | | | | | | |
| 11 | | | | (11' - 13.5') SILTY SAND - Light brown, slightly moist, fine-to medium-grained silty sand, 1" clasts. | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: Backfilled with cuttings. | | | | | | | | | | |
| | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

NECR2-CC03

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|----------------------------|------------------|------------|-----------------------------|--|------------|---------|-----------------|-------------------|---------------------|-----------------|---------------|
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 48" | | | | (11' - 13.5') SILTY SAND - Light brown, slightly moist, fine-to medium-grained silty sand, 1" clasts. | | | | | | | |
| 14- | 4 | | >2.0 | (13.5' - 24') SANDY CLAY - Dark greenish gray, very moist, consolidated, high plasticity, 1" dark gray clasts | | | | | | | |
| 15- | 60" | 5 | >2.0 | ~15' cuttings become light greenish gray, stiff, dry to slightly moist sandy claystone. | | | | | | | |
| 20- | | 6 | <2.0 | ~20' cuttings become light brown to gray, dry with red stains | | | | | | | |
| 24- | | 7 | | Trace roots/organics at 24'. (24' - 24.3') SILTY CLAY - Dark brown, slightly moist, low plasticity, no oxidation, sandstone gypsum last inch. E.O.B. = 24.3' | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

Backfilled with cuttings.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|--|------------------------------|---|---|-----------------------------|-----------------------------|-----------------------------------|--------------------|-----------------|---------------|---------------------|
|  | |  | |  | | BORING LOG | | BOREHOLE ID: NECR2-CC04 | | | | |
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/29/2013 | | FINISH: 10/29/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7182.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): 7.0' | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 43" | 1 | 1 | ~2.0 | (0' - 5') SAND - Light reddish-brown, dry, fine- to very fine-grained sand, clasts ranging from up to 1". | | | | | | | | |
| 5 | 2 | 2 | | (~7' - 10') SANDSTONE - Light gray, dry, hard, fine-grained weathered sandstone. ~7' Red oxidized lense (2"), dry, hard claystone. | | | | | | | | |
| 10 | | | | E.O.B. = 10.0', backfilled with cuttings | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | |

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/8/2013 | FINISH: 11/8/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7142.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 25.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|-----------------------------|---|----------------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 27" | | | | (0' - 1.5') SAND - Medium brown, loose, slightly moist, medium-grained sand. | | | | | | | |
| 1 | | | | | | | | | | | |
| 2 | 1 | <100 | | (1.5' - 5.5') SAND - Gray with purple and green, soft, slightly moist, medium-grained sand. | | | | | | | |
| 27" | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | 33" | | | | | | | | | | |
| 6 | 2 | <100 | | (5.5' - 11') SILTY SAND - Brown, slightly firm, moist, very fine silty sand, trace clay. | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | 27" | 3 | <100 | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | 32" | | | | | | | | | | |
| 11 | 4 | <100 | | (11' - 12.5') CLAY - Dark brown, soft, moist clay, medium plasticity. | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | 25" | | | (12.5' - 16.5') SILT WITH SAND LENSES - Medium brown, slightly stiff, slightly moist silt with sand lenses, low plasticity. | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

NMSA-CC01

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS |
|------------|----------------------------|------------|-----------------------------|--|----------------------|---------|-----------------|-------------------|-----------------|---------------|---------------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 25' | | | | (12.5' - 16.5') SILT WITH SAND LENSES - Medium brown, slightly stiff, slightly moist silt with sand lenses, low plasticity. | | | | | | | |
| 14- | | | | | | | | | | | |
| 15' | 54" | | | | | | | | | | |
| 16- | | | | Brief increase in drilling resistance | | | | | | | |
| 17- | | 5 | <100 | (16.5' - 20') SILTY CLAY - Dark brown, stiff, moist silty clay, trace gravel, medium plasticity. 2" gray sandstone, medium grained | | | | | | | |
| 18- | | | | | | | | | | | |
| 19- | | | | Hard drilling | | | | | | | |
| 20- | | | | Gray sandstone in shoe | | | | | | | |
| 21- | 54" | 6 | <100 | (20' - 25') LAYERED CLAY AND CLAYSTONE - Dark brown to gray, soft to very hard, moist, layered clay and claystone, gypsum precipitate. | | | | | | | |
| 22- | | | | | | | | | | | |
| 23- | | | | Hard drilling | | | | | | | |
| 24- | | | | | | | | | | | |
| 25- | | | | | | | | | | | |
| 26- | | | | E.O.B. = 25', backfilled with cuttings | | | | | | | |
| 27- | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|---|-------------------|---|-----------------------------|-------------------|-------------------|--------------------------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC01 | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/6/2013 | | FINISH: 11/6/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7120.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 32" | 1 | | >2.0 | (0' - 3') SILTY SAND - Light brown with white/gray fragments, soft, dry, trace gravel, indurated. | | | | | | | | |
| 22" | | | | (3' - 5') SILTY SAND - Light tan to white, slightly hard to moderately hard, slightly moist, silty sand, indurated. | | | | | | | | |
| 53" | 2 | | >2.0 | (5' - 10') SILTY SAND - Light brown with orange stains, slightly hard, dry to slightly moist, gravel (5%), indurated. | | | | | | | | |
| | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 13" | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | |

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/6/2013 | FINISH: 11/6/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 0.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 15.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 25" | 1 | NA | (0' - 4.9') SAND WITH GRAVEL - Tan, soft, sand with gravel, loose. Pink hue | | ▽ | | | | | | |
| 58" | 2 | | (4.9' - 5.0') SILTY SAND - Brown, slightly moist, silty sand, indurated. (5.0' - 8.0') SAND - White with some pink, dry, fine to coarse grained sand, soft. | | ▽ | | | | | | |
| 14" | 3 | | (8.0' - 15.0') Brown, slightly moist, clayey silt, trace gravel, moderate plasticity, moderately to very hard. | | ▽ | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.

RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC02

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 14 | 3 | NA | (8.0' - 15.0') Brown, slightly moist, clayey silt, trace gravel, moderate plasticity, moderately to very hard. | | | | | | | | | |
| 15 | | | Weathered sandstone, grey, trace gypsum E.O.B. = 15', backfilled with cuttings | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |

LEGEND:







- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:

None.




RAD SCREENING NOTE:





ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | |
|---|------------------|------------|-----------------------------|---|--|---|--|---|---------|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC03 | | | | | |
| PROJ. LOC.: GALLUP, NM | | | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/11/2013 | | FINISH: 11/11/2013 | | | | | |
| DRILLER: M. CAIN | | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7108.0 | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | |
| LOGGED BY: CME | | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 28" | 1 | 1 | PTW | (0' - 6") CLAYEY SAND - Light brown, soft, dry clayey sand, low plasticity. | | | |  | | | | | | | |
| 1 | | | | (6" - 2.5') CLAY - Gray to red, stiff, slightly moist clay, high plasticity. | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 32" | 2 | 2 | <100 | (2.5' - 5') SILTY SAND - Light brown with gray, soft, dry silty sand, no plasticity. | | | |  | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 30" | 3 | 3 | <100 | (5' - 10') SILTY SAND - Light brown, soft to slightly hard, dry silty sand with gravel. | | | |  | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 27" | | | | Gravel is 1/4" - 1/2", red and black stains in sand | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | |
|---|------------------|--|-----------------------------|--|-----------------------------|--------------------------------|---------|-----------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | BORING LOG | | BOREHOLE ID: P1-CC04 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/11/2013 | | FINISH: 11/11/2013 | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7106.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 10.0 | | | | | | | | | |
| | | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 30" | 1 | | PTW | (0' - 4') CLAY - Gray and red, firm, moist clay, high plasticity. | | | | | | | | | |
| 38" | 2 | | PTW | (4' - 5') SILTY SAND - Brown, slightly firm, slightly moist silty sand, low plasticity. | | | | | | | | | |
| 36" | 3 | | <100 | (5' - 10') SILTY CLAY WITH GRAVEL - Brown with orange and white stains, firm, moist silty clay with gravel, moderate plasticity. Decreasing moisture content with depth. | | | | | | | | | |
| 37" | 4 | | <100 | E.O.B. = 10', backfilled with cuttings | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: Core expanded in auger causing greater than 100% recovery. | | | | | | | | | |
| | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|---|-------------------|---|-----------------------------|--|--------------------|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC05 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/11/2013 | | FINISH: 11/11/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7106.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 15.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 36" | 1 | | PTW | (0' - 7') CLAY - Brown, very firm, moist clay, organics, trace gravel, high plasticity. | | | |  | | | | | | | |
| 16" | 2 | | PTW | | | | | | | | | | | | |
| 58" | 3 | | <100 | Purple hue present | | | | | | | | | | | |
| 32" | 4 | | <100 | (7' - 10') CLAYEY SILT - Brown and gray, very firm, dry clayey silt, no plasticity. | | | | | | | | | | | |
| NR | | | | (10' - 15') No Recovery - Assume clayey silt | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC05

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|--|----------------------------|------------|-----------------------------|--|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| NR 14- 15- 16- 17- 18- 19- 20- 21- 22- 23- 24- 25- 26- 27- | | | | (10' - 15') No Recovery - Assume clayey silt | | | | | | | | |
| | | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | |

LEGEND:




- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE




NOTES:




Core expanded in auger causing greater than 100% recovery.




RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|--|---|--|-----------------------------|-------------------|--------------------|--------------------------------|-------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC06 | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/11/2013 | | FINISH: 11/11/2013 | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7106.0 | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 28" | 1 | PTW | | (0' - 6') CLAY - Brown and gray, stiff, moist clay, high plasticity. | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 25" | 2 | PTW | | More gray, red stains | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | 38" | 3 | <100 | | | | | | | | | | | |
| 6 | | | | | (6' - 10') SILTY CLAY - Brown, very firm, dry silty clay, low plasticity. | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | 32" | 4 | <100 | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: Core expanded in auger causing greater than 100% recovery. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |




| | | | | | | | | | | | | | | |
|---|------------------|--|-----------------------------|---|-----------------------------|--------------------------------|------------|---|-----------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | BORING LOG | | BOREHOLE ID: P1-CC07 | | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/12/2013 | | FINISH: 11/12/2013 | | | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7106.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 10.0 | | | | | | | | | | |
| | | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 34" | 1 | | <100 | (0' - 2.5') CLAYEY SILT TO CLAY - Brown, very firm, moist clayey silt clay, moderate plasticity. | | | | | | | | | | |
| 25" | 2 | | PTW | (2.5' - 6') CLAY - Brown, slightly firm, moist clay, grades to gray, moderate plasticity. | | | | | | | | | | |
| 22" | 3 | | <200 | (6' - 7.5') SAND - Light brown, soft, moist, medium- to coarse-grained sand. | | | | | | | | | | |
| 23" | 4 | | <100 | (7.5' - 10') SILTY CLAY - Dark brown, slightly firm, moist silty clay with 1/2" - 1" gravel, high plasticity. | | | | | | | | | | |
| | | | | E.O.B. = 10', backfilled with cuttings, wet cuttings placed at bottom | | | | | | | | | | |
| 13" | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | |

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|---|------------------|---------------------------------------|------------------------------|---|-------------------|---|-----------------------------|------------|--------------------|--------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC08 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/12/2013 | | FINISH: 11/12/2013 | | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7106.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 27" | 1 | | PTW | (0' - 2.5') CLAY - Gray/red brown, slightly firm, moist clay, high plasticity. | | | | | | | | | | | | | |
| 30" | 2 | | <100 | (2.5' - 3') SAND - Light brown, slightly moist, coarse sand. | | | | | | | | | | | | | |
| 3' | | | | (3' - 6') SAND AND CLAY - Gray, slightly firm, moist interlayered fine-medium sand and clay, high plasticity. | | | | | | | | | | | | | |
| 37" | 3 | | <100 | (6' - 10') SILT WITH GRAVEL - Gray brown, firm, dry silt with gravel, gravel < 1/2", no plasticity. | | | | | | | | | | | | | |
| 28" | | | | Grades to red-brown | | | | | | | | | | | | | |
| 10' | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | | | | | | |
| 11' | | | | | | | | | | | | | | | | | |
| 12' | | | | | | | | | | | | | | | | | |
| 13' | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |

| | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--|--|-------------------|---|-----------------------------|------------|--------------------|--------------------------------|-------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC10 | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/12/2013 | | FINISH: 11/12/2013 | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7106.0 | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 9.6 | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 43" | 1 | PTW | (0" - 7.3') SILTY CLAY - Yellow-orange, soft, moist silty clay, high plasticity. | | | | | | | | | | | |
| 40" | 2 | PTW | | | | | | | | | | | | |
| 47" | 3 | PTW | | | | | | | | | | | | |
| 20" | 4 | <100 | (7.3' - 9.6') SILTY SAND - Gray, moderately hard, moist silty sand, no plasticity. | | | | | | | | | | | |
| | | | | E.O.B. = 9.6', backfilled with cuttings | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 Core expanded in auger causing greater than 100% recovery.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | | | |
|---|------------------|------------|-----------------------------|---|--|---|--|-----------------------------|---------|--------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC11 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/12/2013 | | FINISH: 11/12/2013 | | | | | | | |
| DRILLER: M. CAIN | | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7113.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: CME | | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 15.0 | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 27" | 1 | | <100 | (0' - 5') SILTY SAND - Light brown, slightly firm, dry, silty sand, no plasticity. | | | | | | | | | | | | | |
| 15" | 2 | | <200 | Gray stringers | | | | | | | | | | | | | |
| 60" | 3 | | PTW | (5' - 12') CLAY - Brown and gray, soft, slightly moist clay, high plasticity. | | | | | | | | | | | | | |
| 50" | 4 | | PTW | Strong diesel smell | | | | | | | | | | | | | |
| 45" | 5 | | PTW | Diesel smell absent at ~12' | | | | | | | | | | | | | |
| 28" | 6 | | <100 | (12' - 12.5') CLAY AND GRAVEL - Dark brown, slightly hard, slightly moist clay and gravel, moderate plasticity. | | | | | | | | | | | | | |
| | | | | (12.5' - 15') CLAY - Dark green/brown/gray, firm, slightly moist clay, no plasticity. | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: Core expanded in auger causing greater than 100% recovery. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC11

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|---|----------------------------|------------|-----------------------------|---|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|--|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) | |
| 28' 14- 15- 16- 17- 18- 19- 20- 21- 22- 23- 24- 25- 26- 27- | 6 | | <100 | (12.5' - 15') CLAY - Dark green/brown/gray, firm, slightly moist clay, no plasticity. | | | | | | | | | |
| | | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | | |

LEGEND:




- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:

Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | | | |
|---|------------------|------------|-----------------------------|--|--|---|--|-----------------------------|---------|--------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC12 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/12/2013 | | FINISH: 11/12/2013 | | | | | | | |
| DRILLER: M. CAIN | | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7113.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: CME | | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 17.5 | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 29" | 1 | 1 | <100 | (0' - 5') SILTY SAND - Red-brown, soft, dry to slightly moist silty sand. | | | | | | | | | | | | | |
| 24" | 2 | 2 | <200 | | | | | | | | | | | | | | |
| 25" | 3 | 3 | <100 | (5' - 11') SAND - Light tan, soft, dry, medium to coarse sand. | | | | | | | | | | | | | |
| 25" | | | | | | | | | | | | | | | | | |
| 31" | | | | | | | | | | | | | | | | | |
| 11' | | | | (11' - 15') CLAY - Dark gray, very soft, moist clay, high plasticity, strong diesel smell. | | | | | | | | | | | | | |
| 58" | 4 | PTW | | Strong diesel smell | | | | | | | | | | | | | |
| 13' | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC12

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|--|---|----------------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 58" | 4 | PTW | (11' - 15') CLAY - Dark gray, very soft, moist clay, high plasticity, strong diesel smell. | | | | | | | | | |
| 14- | | | Last 3" - gray brown, dry siltstone | | | | | | | | | |
| 15 | 40" | 5 | <100 | (15' - 17.5') CLAYSTONE/SILTSTONE - Dark brown, hard, slightly moist claystone/siltstone. | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | |
| 18- | | | | E.O.B. = 17.5', backfilled with cuttings | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20- | | | | | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | DRILL RIG INFORMATION | BOREHOLE INFORMATION |
|------------------------------|-------------------------|----------------------------|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" |
| | | START: 11/12/2013 |
| | | FINISH: 11/12/2013 |
| | | SURFACE ELEV. (FT): 7111.0 |
| | | DEPTH TO BEDROCK (FT): N/A |
| | | TOTAL DEPTH (FT): 13.9 |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|---|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 40" | 1 | <200 | (0' - 5') SILTY CLAY - Brown, very firm, dry silty clay, low plasticity. | | | | | | | | |
| 29" | 2 | PTW | (5' - 7.5') CLAY - Light tan to gray to black, soft, slightly moist clay, high plasticity. | | | | | | | | |
| 60" | 3 | PTW | Diesel smell (7.5' - 12') CLAY - Gray to brown, soft, moist to slightly wet clay, high plasticity. | | | | | | | | |
| 34" | 4 | PTW | (12' - 12.5') SILTSTONE - Brown, very hard, dry siltstone. | | | | | | | | |
| 25" | 5 | <100 | (12.5' - 13.9') SILTSTONE INTERBEDDED WITH SANDSTONE - Light gray to medium brown, siltstone | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC13

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 25' | 5 | <100 | (12.5' - 13.9') SILTSTONE INTERBEDDED WITH SANDSTONE - Light gray to medium brown, siltstone interbedded with sandstone, low clay content in some areas. E.O.B. = 13.9', backfilled with cuttings | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |

LEGEND:





- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|---|-------------------|--|-----------------------------|-----------------|--------------------|--------------------------------|---------------|---------------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC14 | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/13/2013 | | FINISH: 11/13/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7124.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: KJ | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 30.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 1 | | | | (0' - 15') SILTY SAND - Orange/brown, dry silty sand with ~30% gravel content, no clay content, roadfill/dam. | |  | | | | | | Logging the cuttings only |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | Moisture content increased, silty sand with clay, minimal gravel. | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC14

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | | |
|------------|----------------------------|------------|-----------------------------|---|------------|---------|-----------------|-------------------|---------------------|-----------------|---------------|--|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 14 | | | | (0' - 15') SILTY SAND - Orange/brown, dry silty sand with ~30% gravel content, no clay content, roadfill/dam. | | | | | | | | |
| 15 | 8" | | | (15' - 15.7') SILTY SAND WITH GRAVEL - Yellowish orange, unconsolidated, moist silty sand with gravel, weak cementation, no plasticity. | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | 45" | 1 | <100 | (20' - 22.5') SAND - Medium brown, dry, fine-grained sand interbedded with weathered siltstone, no plasticity. Wood/small branches returning with cuttings | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | 21" | 2 | <100 | (22.5' - 23.5') SILTSTONE - Light gray, dry siltstone, no plasticity, weathered. | | | | | | | | |
| 24 | | | | (23.5' - 24.2') MUDSTONE - Dark gray brown, stiff, dry mudstone with gypsum infilling. | | | | | | | | |
| 25 | 41" | 3 | <100 | Difficult to drill 25' - 26.5' (25' - 27.5') SANDSTONE - Light gray to medium brown, hard, dry, fine-grained sandstone, some siltstone interbeds, weathered. | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 30" | | 4 | <100 | (27.5' - 30') SANDSTONE - Medium brown, very stiff, dry | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC14

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------|---------------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 28-30 | 4 | <100 | (27.5' - 30') SANDSTONE - Medium brown, very stiff, dry sandstone grading to mudstone, gypsum infilling, no plasticity, weathered. | | | | | | | | |
| 30 | | | E.O.B. = 30', backfilled with cuttings | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |
| 37 | | | | | | | | | | | |
| 38 | | | | | | | | | | | |
| 39 | | | | | | | | | | | |
| 40 | | | | | | | | | | | |
| 41 | | | | | | | | | | | |
| 42 | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | |
|---|------------------|------------|-----------------------------|--|--|---|---------|-----------------------------|-------------------|--------------------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC15 | | | |
| PROJ. LOC.: GALLUP, NM | | | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | |
| CONTRACTOR INFORMATION | | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | |
| DRILLING COMPANY: NATIONAL | | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/13/2013 | | FINISH: 11/13/2013 | | | |
| DRILLER: M. CAIN | | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7124.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: KJ | | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 22.5 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 53" | 1 | | <100 | (0' - 1') SILTY SAND - Yellow orange, dry, silty sand. | | | | | | | | | |
| 1 | | | | (1' - 5') SILTY SAND - Yellow orange, moist silty sand with gravel up to 2", some clay content in interbeds with low plasticity. | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | 47" | 2 | <100 | (5' - 6') SANDSTONE - Light gray, very stiff, dry sandstone, weathered, very thin bedding. | | | | | | | | | |
| 6 | | | | (6' - 12.5') MUDSTONE - Hard, slightly moist, mudstone, gypsum and siltstone infilling, weathered thick bedding. | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | 30" | 3 | <100 | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | 28" | 4 | <100 | (12.5' - 15') SILTSTONE - Hard, slightly moist, thinly bedded siltstone, weathered. | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC15

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 28" | 4 | <100 | (12.5' - 15') SILTSTONE - Hard, slightly moist, thinly bedded siltstone, weathered. | | | | | | | | |
| 42" | 5 | <100 | (15' - 22.5') SANDSTONE - Yellow gray to gray, dry sandstone interbedded with siltstone, gypsum infilling, very weathered. | | | | | | | | |
| 33" | 6 | <100 | | | | | | | | | |
| 44" | 7 | <100 | Moist section at 20.2 for ~4" | | | | | | | | |
| | | | E.O.B. = 22.5', backfilled with cuttings | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | |
|---|------------------|---|------------------------------|--|-------------------|-----------------------------|----------------------------|---|--------------------|------------------|-----------------|---------------|---------------------|
|  | |  | |  | | BORING LOG | | BOREHOLE ID: P1-CC16 | | | | | |
| PROJ. LOC.: GALLUP, NM | | CLIENT: | | | | | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/13/2013 | | FINISH: 11/13/2013 | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7122.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: KJ | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 17.5 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 40" | 1 | | <100 | (0' - 3.5') SANDSTONE - Yellowish orange, very stiff, dry sandstone grading to siltstone, very thin beds, very weathered. Recovery ends at ~3.5, assume sandstone | | | | | | | | | |
| 27" | 2 | | <100 | (5' - 7.5') SILTSTONE - Yellow to gray, very stiff, dry siltstone with interbedded mudstone, low clay content, weathered. | | | | | | | | | |
| 21" | 3 | | <100 | (7.5' - 8.3') SAND - Yellow brown, soft sand, grading to very stiff silt, very thin beds, no plasticity. Recovery ends at ~8.3, assume sand | | | | | | | | | |
| 28" | 4 | | <100 | (10' - 12.5') SILTSTONE - Yellow brown, soft siltstone interbedded with dark brown mudstone with gypsum infilling, weak, very weathered. | | | | | | | | | |
| 25" | 5 | | <100 | (12.5' - 17.5') SANDSTONE - Medium brown gray, slightly moist sandstone interbedded with siltstone. | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

P1-CC16

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|---|--|------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 25' | 5 | <100 | (12.5' - 17.5') SANDSTONE - Medium brown gray, slightly moist sandstone interbedded with siltstone. | | | | | | | | | |
| 14- | | | | | | | | | | | | |
| 15 | 30" | 6 | <100 | | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | Gypsum present | | | | | | | | |
| 18- | | | | E.O.B. = 17.5', backfilled with cuttings | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20- | | | | | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:






















PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE






NOTES:

None.

RAD SCREENING NOTE:




ALL FIELD SCREENINGS CONDUCTED BY AVM





| | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--|--|-------------------|---|-----------------------------|---|--|---|---|---|---|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P2-CC01 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/6/2013 | | FINISH: 11/6/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7122.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 36" | 1 | | >2.0 | (0' - 6") GRAVEL WITH SILTY SAND - White gravel with brown silty sand. | | | |  |  |  |  |  |  | | |
| 1 | | | (6" - 2') SILTY SAND - Brown, hard, dry silty sand. | | | | | | | | | | | | |
| 2 | | | (2' - 5.5') SAND - White, dry, medium to coarse sand, grades to indurated. | | | | | | | | | | | | |
| 5 | 41" | 2 | =2 | (5.5' - 10') SILT - Brown, slightly to moderately hard, dry, fine to slightly silt, trace clay, no plasticity. | | | |  |  |  |  |  |  | | |
| 6 | | | | | | | | | | | | | | | |
| 8 | 22" | 3 | =2 | E.O.B. = 10', backfilled with cuttings | | | |  |  |  |  |  |  | | |
| 10 | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. | | | | | | | | | |
| RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | | | | | | | |




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|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: P2-CC02 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/6/2013 | | FINISH: 11/6/2013 | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7124.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 15" | 1 | >2.0 | | (0' - 6") SOIL - Reddish-brown, loose, dry, with 20-30% tan gravel (1/2"). | |  | | | | | | |
| 28" | 2 | <2.0 | | (5' - 10") SILTY SAND - Tan to light brown, soft to slightly hard, dry fine silty sandy, white gravel (30%) (1 1/2"), indurated. | |  | | | | | | |
| 25" | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 15" | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--------------------------------|---|-------------------|---|-----------------------------|------------|-------------------|--------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: P2-CC03 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/6/2013 | | FINISH: 11/6/2013 | | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7124.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 7.5 | | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 28" | 1 | 1 | <2 | (0' - 2') SILTY SAND WITH GRAVEL - Dry to slightly moist, silty sand with gravel. | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | |
| 2 | | | | (2' - 2.5') SANDSTONE BOULDER | | | | | | | | | | | | | |
| 26" | | | | (2.5' - 5.3') SAND - Light brown, very soft, dry fine sand with trace gravel. | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | Trace gravel (1/2") | | | | | | | | | | | | | |
| 5 | 32" | | | | | | | | | | | | | | | | |
| 6 | | 2 | <2.0 | (5.3' - 7.5') SILTSTONE - White, slight to medium hard, dry siltstone, trace clay, weathered. | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | E.O.B. = 7.5', backfilled with cuttings | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |

| | | | | | | | | | | | | |
|---|------------------|---|-----------------------------|---|-----------------------------|---|-----------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | BORING LOG | | BOREHOLE ID: P3-CC07 | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/13/2013 | | FINISH: 11/13/2013 | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7064.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 4.8 | | | | | | | | |
| | | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 1 | Bulk | <100 | | (0' - 6") SILTY SAND - Brown, very soft, slightly moist silty sand with trace clay, low plasticity. | |  | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | (4.5' - 4.75') CLAYEY SAND - clayey sand, low plasticity. | | | | | | | | |
| 6 | | | | Refusal at 57" E.O.B. = 4.8', backfilled with cuttings | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: Hand auger due to access restrictions. | | | | | | | | |
| | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--------------------------------|--|-------------------|---|-----------------------------|------------|--------------------|----------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: PND3-CC01 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7084.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 15.3 | | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 50" | | 1 | <2.0 | (0' - 6') SAND - Light brown to tan, medium hard, small gravel 2 1/2" pieces, no plasticity. | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | 60" | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | (8' - 10') SAND - Light tan to red/brown, very hard, fine-grained silty sand, dry, low plasticity. | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | 60" | | | Red/brown: very fine siltstone/claystone | | | | | | | | | | | | | |
| 11 | | | | (10.5 - 11.5') SAND - White, soft, dry, medium-grained sand. | | | | | | | | | | | | | |
| 12 | | 2 | <2.0 | (11.5' - 15') SILTSTONE/CLAYSTONE - Reddish brown to tan, slightly hard, dry to slightly moist, very fine siltstone/claystone interbedded. | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

PND3-CC01

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 60 | 2 | <2.0 | (11.5' - 15') SILTSTONE/CLAYSTONE - Reddish brown to tan, slightly hard, dry to slightly moist, very fine siltstone/claystone interbedded. | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | Last 1" white, dry, fine to very fine silty sandstone, very hard E.O.B. = 15.3', auger refusal | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | DRILL RIG INFORMATION | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|------------------------|----------------------------|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/31/2013 |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | FINISH: 10/31/2013 |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | SURFACE ELEV. (FT): 7080.0 |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | DEPTH TO BEDROCK (FT): N/A |
| | | TOTAL DEPTH (FT): 20.0 | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|--|----------------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 49" | | | (0' - 1') SILTY SAND - Red/brown, slightly hard, slightly moist, some plasticity. | | | | | | | | |
| 1 | 1 | <2.0 | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | (4' - 10') SILTY SAND - Light brown to tan, soft to medium hard, dry, trace white clasts, some gravel. | | | | | | | | |
| 5 | 26" | 2 | =2.0 | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | 43" | | (10' - ~14.5') SILTY SAND - Light brown, very soft to medium hard, dry, fine to very fine-grained silty sand, no plasticity. | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

PND3-CC02

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|-----------------------------|--|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 43' | | | | (10' - ~14.5') SILTY SAND - Light brown, very soft to medium hard, dry, fine to very fine-grained silty sand, no plasticity. | | | | | | | | |
| 14- | | | | (~14.5' - 15') SAND - Tan, hard, dry, fine-grained sand. | | | | | | | | |
| 15 | 32" | 3 | <2.0 | (15' - 20') Sand - Light brown, very soft (top) to medium hard (bottom ~10'), no plasticity. | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | |
| 18- | | | | | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20- | | | | E.O.B. = 20', backfilled with cuttings | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:







PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|---|-----------------------------|--|-----------------------------|---|-------------------------------|---|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: PND3-CC03 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | | START: 10/31/2013 | | FINISH: 10/31/2013 | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7087.0 | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 20.0 | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 46" | | | | (0' - 1') SOIL - Dark brown, moist soil. | |  | | | | | | |
| 1 | 1 | | >2.0 | (1' - 15') SILTY SAND - Light brown, soft, dry, fine-grained silty sand, white weathered sandstone fragments, no plasticity. | |  | | | | | | |
| 5 | 14" | | | | | | | | | | | |
| 10 | 14" | 2 | =2.0 | No sandstone fragments | |  | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

PND3-CC03

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 14" | 2 | =2.0 | (1' - 15') SILTY SAND - Light brown, soft, dry, fine-grained silty sand, white weathered sandstone fragments, no plasticity. | | | | | | | | | |
| 15" | 12" | | (15' - 20') SAND - Light tan, medium hard, dry, trace clay, trace sandstone fragments, low plasticity. | | | | | | | | | |
| 20' | | | E.O.B. = 20', backfilled with cuttings | | | | | | | | | |
| 21' | | | | | | | | | | | | |
| 22' | | | | | | | | | | | | |
| 23' | | | | | | | | | | | | |
| 24' | | | | | | | | | | | | |
| 25' | | | | | | | | | | | | |
| 26' | | | | | | | | | | | | |
| 27' | | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--------------------------------|---|-------------------|---|------------------------------|---|-------------------|----------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: PND3-CC04 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/7/2013 | | FINISH: 11/7/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7080.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): 22.0' | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 25.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 24" | 1 | 1 | <100 | (0' - 6') SILTY SAND - Brown, soft, moist silty sand, clay lense at 1' (1"), no plasticity. | | | | | | | | | | | |
| 31" | 2 | 2 | <100 | (6' - 12.5') SAND - Brown, slightly moist, medium-grained sand, trace gravel (5%), grades to very fine silty sand, indurated. | | | | | | | | | | | |
| 26" | 3 | 3 | <100 | (12.5' - 13.5') SILT TO MEDIUM SAND - Very soft, slight moist silty to medium sand, gray gravel (40%). | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

PND3-CC04

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|--|----------------------|------------|---------|-----------------|-------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | | PROCTOR | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 26' | 3 | <100 | (12.5' - 13.5') SILT TO MEDIUM SAND - Very soft, slight moist silty to medium sand, gray gravel (40%). (13.5' - 15') SILT - Gray and red, slightly firm, slightly moist silt, trace clay, low plasticity. | | | | | | | | |
| 15' | 4 | <100 | (15' - 22') SILT - Gray and orange (50/50), medium stiff, moist silt, trace clay, moderate plasticity. | | | | | | | | |
| 22' | 5 | <100 | (22' - 25') CLAYEY SILTY SAND - Brown/gray, very stiff, dry clayey silty sand, low plasticity. (native soil) | | | | | | | | |
| 25' | | | E.O.B. = 25', backfilled with cuttings | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE




NOTES:














None.









RAD SCREENING NOTE:









ALL FIELD SCREENINGS CONDUCTED BY AVM




| | | | | | | | | | | | | |
|---|------------------|--|------------------------------|---|----------------------|-----------------------------|----------------------------|----------------------------------|-------------------|-----------------|---------------|---------------------|
|  | |  | |  | | BORING LOG | | BOREHOLE ID: PND3-CC05 | | | | |
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/7/2013 | | FINISH: 11/7/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7080.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 34" | 1 | 1 | <100 | (0' - 5') SILTY SAND - Medium stiff to soft, moist silty sand, trace clay, no plasticity. | | | | | | | | |
| 27" | 2 | 2 | <100 | | | | | | | | | |
| 22" | 3 | 3 | <100 | 30-40% gravel with orange/white stains | | | | | | | | |
| 10' | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 13" | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |




| | | | | | | | | | | | | |
|---|------------------|---|-----------------------------|---|-----------------------------|---------|----------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: PND3-CC06 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | | START: 11/7/2013 | | FINISH: 11/7/2013 | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7082.0 | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 36" | 1 | | <100 | (0' - 5') SILTY SAND - Brown, soft to slightly hard, dry, very fine silty sand, indurated. | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | 13" | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | 29" | 2 | <100 | (5' - 10') SAND - Light brown, very soft, dry fine sand. | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | 24" | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|--|-------------------|---|-----------------------------|---|---|----------------------------------|-------------------|---|-----------------|---------------|---------------------|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: ROAD-CC01 | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/30/2013 | | FINISH: 10/30/2013 | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7147.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): 6.2' | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | |
| 36" | 1 | 1 | >2.0 | (0' - 3.5') GRAVELLY SAND - Medium brown, moist, large 1-2" gravel, fine- to coarse-grained sand, trace clay, moderate plasticity. | | | |  |  | | | | | | | |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | (3.5' - 4.8') SILTY SAND - Light reddish brown, dry, fine silty sand, no gravel, low plasticity. | | | |  |  | | | | | | | |
| 5 | | | | Native material | | | | | | | | | | | | |
| 28" | 2 | 2 | <2.0 | (~4.8' - 6') SANDSTONE - Light tan, dry, fine-grained weathered sandstone, 1/2 - 2" pieces. | | | |  |  | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | (6' - 6.2') CLAY - White, loose, dry, clay-sized particles. | | | |  |  | | | | | | | |
| 8 | | | | (6.2' - E.O.B.) SANDSTONE - Light tan, dry, weathered sandstone, same as 5' - 6'. | | | |  |  | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: Backfilled with 1 bag of bentonite and cuttings. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | |

| | | | | | | | | | | | | |
|---|------------------|--|-----------------------------|---|-----------------------------|---|-------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: ROAD-CC02 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 10/30/2013 | | FINISH: 10/30/2013 | | | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7132.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): 7.0' | | | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 10.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 35" | 1 | | <2.0 | (0' - ~1') SOIL - Surface soil, large clasts found on road. | |  | | | | | | |
| 1 | | | | (~1' - 2.5') SAND - Light-dark brown, moderately stiff, slightly moist, some clay, no clasts, low plasticity. | |  | | | | | | |
| 2 | | | | (2.5' - 3') SANDSTONE - Light tan, not stiff, dry, fine- to medium-grained, weathered sandstone clasts. | |  | | | | | | |
| 3 | | | | Poor recovery, assume sandstone to 5' | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | 24" | 2 | | (5' - 6') SILTY SAND - Light brown, soft, dry, 1" layer of clay/vegetation, sandstone clasts 1/4" - 1.5", low plasticity. | |  | | | | | | |
| 6 | | | | (6' - 7') SILTY SAND - Light tan, soft, dry, fine to very fine-grained, silty sand, possible weathered bedrock, low plasticity. | |  | | | | | | |
| 7 | | | | Poor recovery, assume silty sand to E.O.B. | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |

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|---|------------------|---------------------------------------|--------------------------------|--|-------------------|---|-----------------------------|---|--------------------|----------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: ROAD-CC03 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 10/30/2013 | | FINISH: 10/30/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7110.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 49" | 1 | 1 | <2.0 | (0' - 1') SOIL - Dark brown, moist soil. | | | |  | | | | | | | |
| 1 | | | | (1' - 5') SILTY SAND - Light brown with 5% white, very soft, dry, fine to very fine-grained silty sand, low plasticity, disturbed. | | | | | | | | | | | |
| 2 | | | | | | | |  | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | 15" | | | (5' - 10') SILTY SAND - Light brown, slightly stiff, dry, fine to very fine-grained, ~5% 1" clasts, low plasticity, undisturbed. | | | |  | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | Not enough material for 2nd sample | | | | | | | | | | | |
| 9 | | | | | | | |  | | | | | | | |
| 10 | | | | E.O.B. - 10', backfilled with cuttings | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 12 | | | | | | | |  | | | | | | | |
| 13 | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | |

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|---|------------------|--|------------------------------|--|-------------------|-----------------------------|----------------------------|-------------------------------|-------------------|---|-----------------|---------------|---------------------|
|  | |  | |  | | BORING LOG | | BOREHOLE ID: SP-002 | | | | | |
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/1/2013 | | FINISH: 11/1/2013 | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7098.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 28" | 1 | 1 | <100 | (0' - 2') SILTY SAND - Reddish brown, slightly to moderately stiff, dry to slightly moist, fine to very fine-grained silty sand, layered ~1 gray material, low plasticity. | | | | | | | | | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | (2' - 2.5') SILTY SAND - Light brown/reddish brown, soft, dry, no plasticity, orange oxide. | | | | | | | | | |
| 20" | 2 | 2 | <100 | (2.5' - 10') SILTY SAND - Light brown to tan, soft to slightly hard, dry, very fine silty sand, no plasticity. | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 30" | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 21" | 3 | 3 | <100 | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 13 | | | | E.O.B. - 10', backfilled with cuttings | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | |

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|---|------------------|---------------------------------------|------------------------------|---|-------------------|---|-----------------------------|-------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BOREHOLE ID: | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | BORING LOG | | SP-005 | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/1/2013 | | FINISH: 11/1/2013 | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7092.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 22.5 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 28" | 1 | | <200 | (0' - 1') SOIL - Brown, slightly moist soil. | | | | | | | | | |
| 1 | | | | (1' - 5') SAND - Light gray, soft, dry to slightly moist, fine- to medium-grained sand, no plasticity, green/purple/red/orange stains. | | | | | | | | | |
| 21" | 2 | | <200 | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 24" | 3 | | PTW | (5' - 10') SILTY SAND - Light gray, soft to slightly hard, dry to slightly moist, fine- to medium-grained, low plasticity, brown/purple/green stains. | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | ~7' Dark gray rock, claystone with 2 mm clasts | | | | | | | | | |
| 24" | 4 | | <200 | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 28" | 5 | | <100 | (10' - 11') SAND - Medium brown, soft, moist, fine- to very fine-grained sand, low plasticity. | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 28" | 6 | | <100 | (12.5' - 19.5') SILT WITH CLAY - Dark brown, slightly to moderately stiff, moist, fine silt with clay, moderate plasticity. | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

SP-005

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|---|----------------------|------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 28' | 6 | <100 | (12.5' - 19.5') SILT WITH CLAY - Dark brown, slightly to moderately stiff, moist, fine silt with clay, moderate plasticity. | | | | | | | | | |
| 14- | | | | | | | | | | | | |
| 15- | 7 | <100 | | | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | |
| 18- | | | Harder drilling | | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20- | 8 | <100 | (19.5' - 20') SAND - Brown, very hard, dry to slightly moist, fine-grained sand with 20% gravel (<1"). | | | | | | | | | |
| 20- | | | (20' - 22.5') SAND - Light brown-tan, very soft, dry, clasts (1/2" - 1"), no plasticity, red/orange oxide. | | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | E.O.B. = 22.5', backfilled with cuttings | | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE




NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|--------------------------------|--|-------------------|---|-----------------------------|------------|-------------------|--------------------------------|-------------------|---|-----------------|---------------|---------------------|--|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: SP-CC01 | | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/1/2013 | | FINISH: 11/1/2013 | | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7097.0 | | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | | |
| 32" | 1 | 1 | <200 | (0' - 5') SAND - Light brown to tan, slightly hard, dry, fine to medium-grained sand, clay lenses, low/no plasticity, brown red/orange oxide stains. | | | | | | | | | | | | | |
| 1 | | | | Sample interval due to recovery. | | | | | | | | | | | | | |
| 2 | | | | Light tan sand lense at ~5' | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | 22" | 2 | <100 | (5' - 10') CLAYEY SILT - Red/brown, slightly to moderately stiff, slightly to moderately moist, clayey silt, moderate plasticity. | | | | | | | | | | | | | |
| 6 | | | | Sample interval due to recovery. | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: Mine debris in hole. | | | | | | RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | |

| | | | | | | | | | | | | |
|---|------------------|---|--------------------------------|---|----------------------|-----------------------------|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: SP-CC03 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/1/2013 | | FINISH: 11/1/2013 | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7096.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 32" | 1 | | <100 | (0' - 2') SAND - Light brown, soft to slightly hard, dry, gray coarse sand, lenses of gray and white material, orange/red oxide. | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | (2' - 2.5') SILTY SAND - Light to medium brown, slightly hard, dry, very fine-grained silty sand, no plasticity. | | | | | | | | |
| 25" | 2 | | <100 | (2.5' - 5') SILTY SAND - Light brown, soft to slightly hard, dry, no plasticity, gray stringers, red/orange oxide stains (trace). | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 37" | 3 | | <100 | (5' - 10') SILTY SAND - Light brown, very soft to soft, dry, fine to very fine-grained silty sand, no plasticity, uniform. | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with 1 bag bentonite and cuttings | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/1/2013 | FINISH: 11/1/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7095.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 17.5 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS |
|------------|----------------------------|------------|---|----------------------|------------|---------|----------------------|-------------------|------------------|-----------------|---------------|---------------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | | | | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 32" | 1 | <200 | (0' - 13') SAND - Light tan, soft to slightly hard, dry to slightly moist, fine to coarse-grained sand, trace red clay, no plasticity, red/orange oxide stains. | | | | | | | | | |
| 25" | 2 | <200 | | | | | | | | | | |
| 23" | 3 | <200 | | | | | | | | | | |
| 20" | 4 | PTW | | | | | | | | | | |
| 24" | 5 | <200 | | | | | | | | | | |
| 21" | | | | | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

SP-CC04

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|-----------------------------|--|------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 21 | | | | (13' - 17.5') SAND - Light tan, very soft, slightly moist, medium to coarse-grained sand, well sorted. | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | 22" | 6 | <200 | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | E.O.B. = 17.5', backfilled with cuttings | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:




ALL FIELD SCREENINGS CONDUCTED BY AVM




| | | | | | | BORING LOG | | BOREHOLE ID: SP-CC06 | | | | |
|-------------------------------|------------------|--|--------------------------------|---|-------------------|-----------------------------|----------------------------|--------------------------------|-------------------|-----------------|---------------|---------------------|
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/1/2013 | | FINISH: 11/1/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7091.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 31" | 1 | 1 | <100 | (0' - 2.5') SILTY SAND - Medium brown, slightly firm, dry to slightly moist, fine to very fine silty sand, trace organics, trace clay, low plasticity. | | [Symbol] | | | | | | |
| 23" | 2 | 2 | <100 | (2.5' - 7') SILTY SAND - Medium brown, slightly firm, slightly moist, fine to very fine silty sand, trace clay, medium plasticity, orange and black staining. | | [Symbol] | | | | | | |
| 26" | 3 | 3 | <100 | Driller notes harder at 6.5' - 7' | | [Symbol] | | | | | | |
| 15" | 4 | 4 | <100 | (7' - 10') SANDSTONE - Light brown, hard, dry, fine- to medium-grained weathered sandstone, indurated. | | [Symbol] | | | | | | |
| E.O.B. | | | | E.O.B. = 10', backfilled with cuttings | | [Symbol] | | | | | | |
| 13" | | | | | | [Symbol] | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.

RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | |
|---|------------------|--|------------------------------|--|----------------------|-----------------------------|----------------------------|--------------------------------|-------------------|-----------------|---------------|---------------------|
|  | |  | |  | | BORING LOG | | BOREHOLE ID: SP-CC07 | | | | |
| PROJ. LOC.: GALLUP, NM | | CLIENT: NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/1/2013 | | FINISH: 11/1/2013 | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7093.0 | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 30" | 1 | | <100 | (0' - 2.5') SILTY SAND - Medium to light brown, soft to slightly hard, dry to slightly moist, fine to very fine silty sand, trace gravel (2 1/2"), trace gray. | | | | | | | | |
| 32" | 2 | | <200 | (2.5' - 5') SILTY SAND - Red/brown with white lense, moderately to very firm, dry to slightly moist, fine to very fine silty sand, trace to minor clay, no plasticity. | | | | | | | | |
| 33" | 3 | | <100 | (5' - 7.5') SILTY SAND - Brown to dark brown, firm to very firm, slightly moist, very fine silty sand with clay, moderate plasticity. | | | | | | | | |
| 31" | 4 | | <100 | (7.5' - 10') SILTY SAND - Light brown, soft to slightly firm, dry to slightly moist, very fine silty sand, no plasticity. | | | | | | | | |
| | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|---|-------------------|---|-----------------------------|------------|-------------------|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|--|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: SP-CC08 | | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/4/2013 | | FINISH: 11/4/2013 | | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7097.0 | | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 15.0 | | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS | |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | | |
| 32" | 1 | | PTW | (0' - 6') SAND - Gray with orange blue stains, soft to slightly firm, dry, fine to medium-grained sand, no plasticity. | | | | | | | | | | | | |
| 22" | 2 | | <200 | | | | | | | | | | | | | |
| 32" | 3 | | <100 | (6' - 10') SILTY SAND - Brown to dark brown, slightly hard, dry to slightly moist, very fine silty sand, no plasticity. | | | | | | | | | | | | |
| 23" | 4 | | <100 | | | | | | | | | | | | | |
| 32" | | | | (10' - 15') SILTY SAND - Brown with grey lense, Soft to slightly stiff, dry to slightly moist, fine to very fine-grained silty sand, trace clay, no plasticity. | | | | | | | | | | | | |
| 22" | 4 | | <100 | 12.5' - gray material lense (1") | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

SP-CC08

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS |
|------------|----------------------------|------------|---|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------|---------------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 22' | 4 | <100 | (10' - 15') SILTY SAND - Brown with grey lense. Soft to slightly stiff, dry to slightly moist, fine to very fine-grained silty sand, trace clay, no plasticity. | | | | | | | | |
| 14- | | | | | | | | | | | |
| 15- | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | |
| 16- | | | | | | | | | | | |
| 17- | | | | | | | | | | | |
| 18- | | | | | | | | | | | |
| 19- | | | | | | | | | | | |
| 20- | | | | | | | | | | | |
| 21- | | | | | | | | | | | |
| 22- | | | | | | | | | | | |
| 23- | | | | | | | | | | | |
| 24- | | | | | | | | | | | |
| 25- | | | | | | | | | | | |
| 26- | | | | | | | | | | | |
| 27- | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE




NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|--|-------------------|---|-----------------------------|------------|-------------------|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: SP-CC09 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/4/2013 | | FINISH: 11/4/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7095.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 12.5 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 28" | 1 | | <200 | (0' - 0.5') SOIL - Brown soil. | | | | | | | | | | | |
| 1 | | | | (0.5' - 10.5') SAND - Gray, soft, slightly moist, fine to medium-grained sand, white and orange stains. | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 14" | 2 | | <200 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | at 4': medium to coarse-grained, well cemented sandstone | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 30" | 3 | | PTW | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 18" | 4 | | <200 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | | | | Sand becomes coarse-grained, green streaks. | | | | | | | | | | | |
| 25" | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 5 | | | <100 | (10.5' - 12.5') SILTY SAND - Brown, soft to slightly firm, slightly moist, fine to very fine-grained silty sand, gravel (<1/2"), low to medium plasticity. | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | E.O.B. -= 12.5', backfilled with cuttings | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|--|-------------------|---|-----------------------------|------------|-------------------|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: SP-CC10 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/4/2013 | | FINISH: 11/4/2013 | | | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7094.0 | | | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 17.5 | | | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 29" | 1 | | PTW | (0' - 7") SAND - Light gray, soft, slightly moist, fine to medium-grained sand, trace clay, trace gravel, no plasticity. | | | | | | | | | | | |
| 22" | 2 | | <200 | | | | | | | | | | | | |
| 24" | 3 | | PTW | Sand becomes dry | | | | | | | | | | | |
| 10" | | | | (7' - 10.5') SAND - Gray, slightly moist, coarse sand, indurated, trace gold/red/brown. | | | | | | | | | | | |
| 14" | | | | | | | | | | | | | | | |
| 11" | 4 | | <100 | (10.5' - 15') SILTY SAND - Dark brown, slightly firm, slightly moist to moist, fine to very fine silty sand, low to medium plasticity. | | | | | | | | | | | |
| 10" | | | | | | | | | | | | | | | |
| 13" | | | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | | | |



CLIENT:



BORING LOG

BOREHOLE ID:

SP-CC10

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | | |
|------------|----------------------------|------------|--|--|------------|---------|-----------------|-------------------|------------------|---------------------|-----------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | | PROCTOR | |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) |
| 10' | 4 | <100 | (10.5' - 15') SILTY SAND - Dark brown, slightly firm, slightly moist to moist, fine to very fine silty sand, low to medium plasticity. | | | | | | | | | |
| 14' | | | | | | | | | | | | |
| 15' | 28" | 5 | <100 | (15' - 17.5') CLAYEY SILT - Brown, stiff, moist, clayey silt, high plasticity. | | | | | | | | |
| 16' | | | | | | | | | | | | |
| 17' | | | | | | | | | | | | |
| 18' | | | | E.O.B. = 17.5', backfilled with cuttings | | | | | | | | |
| 19' | | | | | | | | | | | | |
| 20' | | | | | | | | | | | | |
| 21' | | | | | | | | | | | | |
| 22' | | | | | | | | | | | | |
| 23' | | | | | | | | | | | | |
| 24' | | | | | | | | | | | | |
| 25' | | | | | | | | | | | | |
| 26' | | | | | | | | | | | | |
| 27' | | | | | | | | | | | | |

LEGEND:




PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE






NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| | | | | | | | | | | | | | |
|---|------------------|---------------------------------------|------------------------------|--|-------------------|---|-----------------------------|-----------------|-------------------|--------------------------------|-----------------|---------------|---------------------|
|  | | CLIENT: | |  | |  | | BORING LOG | | BOREHOLE ID: SP-CC11 | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/4/2013 | | FINISH: 11/4/2013 | | | | |
| DRILLER: M. CAIN | | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7095.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 10.0 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 36" | 1 | PTW | | (0' - 8") SOIL - Dark brown soil. | | | | | | | | | |
| 1 | | | | (8" - 4.5') SAND - Dark gray, soft, dry, no plasticity. | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | 28" | 2 | <200 | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | 32" | 3 | <200 | (4.5' - 10') SILTY SAND - Slightly hard, dry to slightly moist, fine to very fine silty sand, no plasticity. | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | Trace gravel, ~1" | | | | | | | | | |
| 8 | 28" | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | E.O.B. = 10', backfilled with cuttings | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| LEGEND: PTW = RAD READINGS ABOVE 200 pCi/g <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g <100 = RAD READINGS BELOW 100 pCi/g >2.0 = RAD READINGS ABOVE 2.0 pCi/g <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL) C = COMPOSITE SAMPLE | | | | | | NOTES: None. RAD SCREENING NOTE: ALL FIELD SCREENINGS CONDUCTED BY AVM | | | | | | | |

| | | | | | | | | | | | | |
|---|------------------|---|------------------------------|---|----------------------|--|--------------------------------|-------------------|------------------|-----------------|---------------|---------------------|
|  | | CLIENT:   | | | BORING LOG | | BOREHOLE ID: SP-CC12 | | | | | |
| PROJ. LOC.: GALLUP, NM | | NECR - PRE DESIGN STUDY INVESTIGATION | | | | | | | | | | |
| CONTRACTOR INFORMATION | | | DRILL RIG INFORMATION | | | BOREHOLE INFORMATION | | | | | | |
| DRILLING COMPANY: NATIONAL | | DRILLING RIG: CME 85 HD | | BIT TYPE: N/A | | START: 11/4/2013 | | FINISH: 11/4/2013 | | | | |
| DRILLER: M. CAIN | | DRILLING METHOD: H.S.A. | | HOLE DIAM.: 8.25" | | SURFACE ELEV. (FT): 7094.0 | | | | | | |
| DRILLER'S HELPER: J. RAMIREZ | | HAMMER TYPE: AUTO | | AUGER ID: 5.25" | | DEPTH TO BEDROCK (FT): N/A | | | | | | |
| LOGGED BY: CME | | HAMMER WT: 140 lb | | CORE DIAM.: 3.0" | | TOTAL DEPTH (FT): 5.0 | | | | | | |
| FIELD SAMPLE RECOVERY DATA | | | | | LABORATORY TEST DATA | | | | | | | |
| DEPTH (FT) | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | ADDITIONAL COMMENTS |
| | | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 31" | 1 | 1 | <200 | (0' - 2') GRAVELLY SAND - Light gray, soft, dry, angular dark gray gravel, no plasticity. | |  | | | | | | |
| 25" | 2 | 2 | <100 | (2' - 5') SAND - Red/brown, slightly stiff, dry, trace clay, no plasticity. | |  | | | | | | |
| 5' | | | | E.O.B. = 5', backfilled with cuttings | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/8/2013 | FINISH: 11/8/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7156.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 15.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 28" | 1 | <2.0 | (0' - 4.5') SILTY SAND - Light brown, very soft, dry gravelly silty sand. | | | | | | | | |
| 29" | | | Slightly hard sand lenses | | | | | | | | |
| 38" | | | (4.5' - 6') WEATHERED SANDSTONE - Light tan, dry, weathered sandstone, silty sand, fractured. | | | | | | | | |
| 6' | 2 | <2.0 | (6' - 10') SILTY SAND WITH GRAVEL - Light tan, very soft, dry silty sand with gravel (1/4"). | | | | | | | | |
| 57" | 3 | <2.0 | (10' - 12') WEATHERED SANDSTONE - Slightly hard, weathered sandstone, fine to very fine sand. | | | | | | | | |
| 12' | | | (12' - 15') LAYERED CLAYSTONE AND SILTSTONE - Dark gray, medium stiff, dry claystone layered with siltstone. | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

YARD-CC01

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|--|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 57' | 3 | <2.0 | (12' - 15') LAYERED CLAYSTONE AND SILTSTONE - Dark gray, medium stiff, dry claystone layered with siltstone. | | | | | | | | | |
| 14- | | | | | | | | | | | | |
| 15- | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | |
| 18- | | | | | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20- | | | | | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

| CONTRACTOR INFORMATION | | DRILL RIG INFORMATION | | BOREHOLE INFORMATION | |
|------------------------------|-------------------------|-----------------------|----------------------------|----------------------|--|
| DRILLING COMPANY: NATIONAL | DRILLING RIG: CME 85 HD | BIT TYPE: N/A | START: 11/8/2013 | FINISH: 11/8/2013 | |
| DRILLER: M. CAIN | DRILLING METHOD: H.S.A. | HOLE DIAM.: 8.25" | SURFACE ELEV. (FT): 7148.0 | | |
| DRILLER'S HELPER: J. RAMIREZ | HAMMER TYPE: AUTO | AUGER ID: 5.25" | DEPTH TO BEDROCK (FT): N/A | | |
| LOGGED BY: CME | HAMMER WT: 140 lb | CORE DIAM.: 3.0" | TOTAL DEPTH (FT): 15.0 | | |

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | LABORATORY TEST DATA | | ADDITIONAL COMMENTS |
|------------|----------------------------|------------|---|----------------------|------------|---------|-----------------|-------------------|----------------------|---------------|---------------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | | | | | | PROCTOR | | |
| | | | | | | | | | MAX. DD (LB/FT) | OPT. W.C. (%) | |
| 33" | 1 | <2.0 | (0' - 15') SILTY SAND WITH GRAVEL - Light brown, very soft, dry silty sand with gravel, gravel is 1/4" to 1" large, 5%. | | | | | | | | |
| 45" | 2 | <2.0 | | | | | | | | | |
| 35" | 3 | <2.0 | Trace white gravel | | | | | | | | |

LEGEND:
 PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:
 None.
RAD SCREENING NOTE:
 ALL FIELD SCREENINGS CONDUCTED BY AVM



CLIENT:



BORING LOG

BOREHOLE ID:

YARD-CC02

PROJ. LOC.: GALLUP, NM

NECR - PRE DESIGN STUDY INVESTIGATION

| DEPTH (FT) | FIELD SAMPLE RECOVERY DATA | | | | LABORATORY TEST DATA | | | | | | ADDITIONAL COMMENTS | |
|------------|----------------------------|------------|---|----------------------|----------------------|---------|-----------------|-------------------|------------------|-----------------|---------------------|---------------|
| | CORE RECOV. (IN) | SAMPLE NO. | RAD FIELD SCREENING (pCi/g) | MATERIAL DESCRIPTION | USCS CLASS | GRAPHIC | WATER CONT. (%) | DRY DENSITY (PCF) | SPECIFIC GRAVITY | PROCTOR | | |
| | | | | | | | | | | MAX. DD (LB/FT) | | OPT. W.C. (%) |
| 35' | 3 | <2.0 | (0' - 15') SILTY SAND WITH GRAVEL - Light brown, very soft, dry silty sand with gravel, gravel is 1/4" to 1" large, 5%. | | | | | | | | | |
| 14- | | | | | | | | | | | | |
| 15- | | | E.O.B. = 15', backfilled with cuttings | | | | | | | | | |
| 16- | | | | | | | | | | | | |
| 17- | | | | | | | | | | | | |
| 18- | | | | | | | | | | | | |
| 19- | | | | | | | | | | | | |
| 20- | | | | | | | | | | | | |
| 21- | | | | | | | | | | | | |
| 22- | | | | | | | | | | | | |
| 23- | | | | | | | | | | | | |
| 24- | | | | | | | | | | | | |
| 25- | | | | | | | | | | | | |
| 26- | | | | | | | | | | | | |
| 27- | | | | | | | | | | | | |

LEGEND:

PTW = RAD READINGS ABOVE 200 pCi/g
 <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
 <100 = RAD READINGS BELOW 100 pCi/g
 >2.0 = RAD READINGS ABOVE 2.0 pCi/g
 <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
 C = COMPOSITE SAMPLE

NOTES:

None.

RAD SCREENING NOTE:

ALL FIELD SCREENINGS CONDUCTED BY AVM

APPENDIX B2.1C

ASBESTOS PIT

LOGS

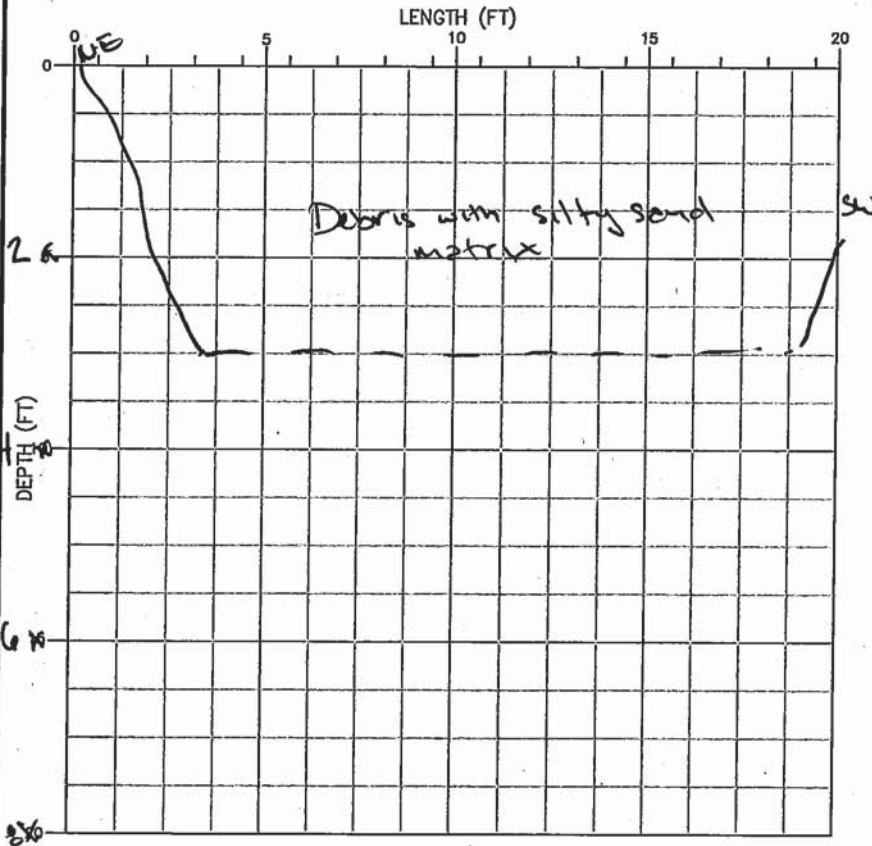
PIT NAME: PACM-PH 1
 GENERAL LOCATION: Pond 1
 PIT TREND: NE-SW
 PIT FACED LOGGED: SE

DATE: Nov 14, 2013
 FIELD ENGINEER: K. Johnson
 EXCAVATOR: Bebe
 CONTRACTOR: AMEC

TEST PIT LOG

LEGEND

- CONTACT
- ▽ GROUNDWATER LEVEL



| SAMPLE No. | DEPTH | TIME |
|---------------|-------|-------|
| PACM-PH-1-001 | 0-1' | 13:29 |
| PACM-PH-1-002 | 0-1' | 13:29 |
| | | |
| | | |

PIT WIDTH: 4 ft
 PIT LENGTH: 22 ft
 PIT DEPTH: 3 ft

| SOIL UNIT | SOIL DESCRIPTION AND EXCAVATION NOTES |
|-----------|---|
| | Matrix - silty sand, sl. mast. Yellow orange. Potential bedrock at NE end Debris to the surface → Rotten wood, concrete chunks, cinder blocks, T posts, PVC pipe, plastic bottles. Floor tile. Debris very close to surface. |

SPECIAL NOTES:
 Larry Bush on site to advise where vermiculite insulation may be located.
 -Per US - Debris was pushed off the road in the NE corner of Pond 1
 & then buried.

| REV | REVISIONS | DATE | DES BY | DWN BY | REVIEWED AND SIGNED BY |
|-----|-----------|------|--------|--------|------------------------|
| | | | | | |

PROJECT No
 FILENAME
 SCALE NOT TO SCALE FIGURE No



PIT NAME: PACM-Pit 2
 GENERAL LOCATION: Pond 1
 PIT TREND: NE-SW
 PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
 FIELD ENGINEER: K. Johnson
 EXCAVATOR: Bebe
 CONTRACTOR: AMEC

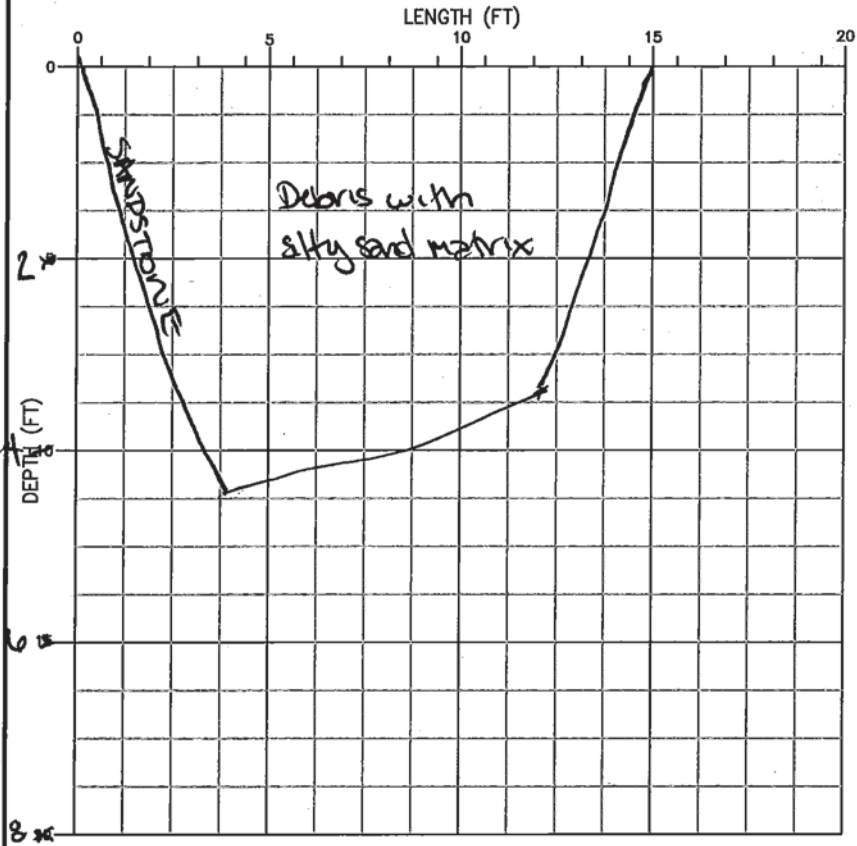
TEST PIT LOG

LEGEND

- CONTACT
- ▽ GROUNDWATER LEVEL

| SAMPLE No. | DEPTH | TIME |
|------------|-------|------|
| | | |
| | | |
| | | |
| | | |

PIT WIDTH: 4.5'
 PIT LENGTH: 15'
 PIT DEPTH: 4.5'



| SOIL UNIT | SOIL DESCRIPTION AND EXCAVATION NOTES |
|-----------|--|
| | <p>Matrix - silty sand, slightly moist, yellow orange. Sandstone bedrock on NE end of the pit.</p> <p>Debris included: cinder blocks, Dnsco pipe, fiberglass insulation, sheetrock, etc.</p> |

SPECIAL NOTES:

SEE PACM-Pit 1
 - Pit 2 contained the most debris of the 5 pits.

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

| REV | REVISIONS | DATE | DES BY | DWN BY | REVIEWED AND SIGNED BY |
|-----|-----------|------|--------|--------|------------------------|
| | | | | | |
| | | | | | |

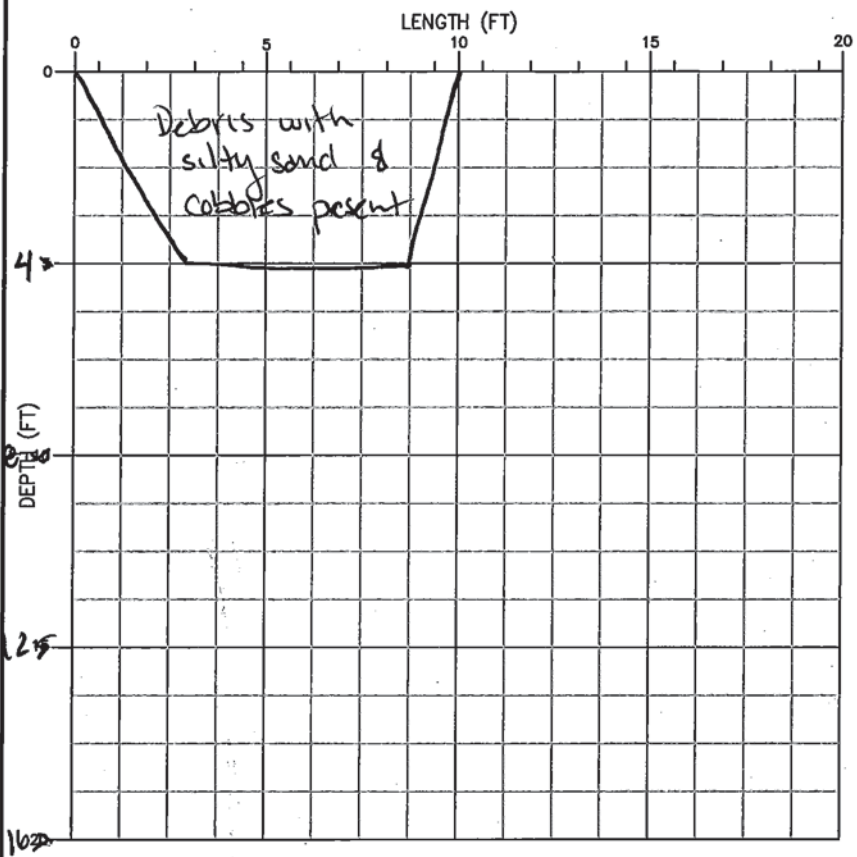


PROJECT No
 FILENAME:
 SCALE NOT TO SCALE FIGURE No

PIT NAME: PACM-Pit 3
 GENERAL LOCATION: Pond 1
 PIT TREND: NE-SW
 PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
 FIELD ENGINEER: K. Johnson
 EXCAVATOR: Bebe
 CONTRACTOR: KMEC

TEST PIT LOG



LEGEND

- CONTACT
- ▽ GROUNDWATER LEVEL

| SAMPLE No. | DEPTH | TIME |
|------------|-------|------|
| | | |
| | | |
| | | |
| | | |

PIT WIDTH: 4 ft
 PIT LENGTH: 3.5 ft
 PIT DEPTH: 10 ft

| SOIL UNIT | SOIL DESCRIPTION AND EXCAVATION NOTES |
|-----------|---|
| | <p>Pit generally contained a matrix of silty sand w/ gravel cobbles. Sl. moist.</p> <p>Debris comprised of cinder blocks & Drisco pipe.</p> |

SPECIAL NOTES:

SEE PACM-Pit 1

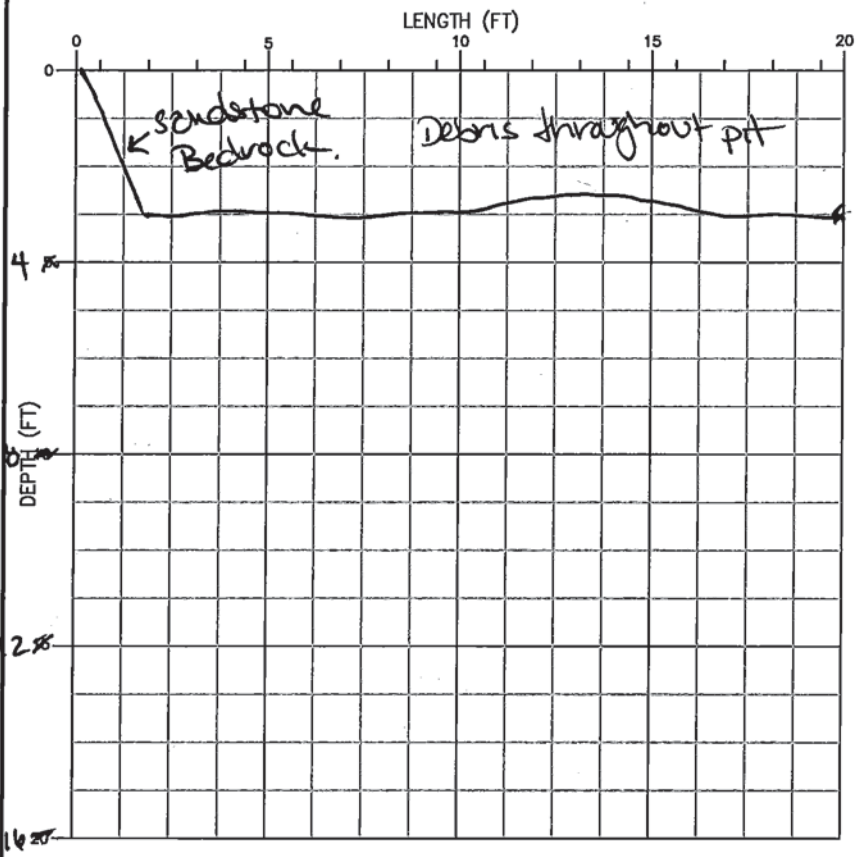
TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

| | | | | | |
|-----|-----------|--------------------|--------|-----------|------------------------|
| REV | REVISIONS | DATE | DES BY | DWN BY | REVIEWED AND SIGNED BY |
| | | | | | |
| | | PROJECT No | | | |
| | | FILENAME: | | | |
| | | SCALE NOT TO SCALE | | FIGURE No | |

PIT NAME: PACM - Pit 4
 GENERAL LOCATION: Pond 1
 PIT TREND: NE-SW
 PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
 FIELD ENGINEER: K. Johnson
 EXCAVATOR: Bebe
 CONTRACTOR: AMEC

TEST PIT LOG



LEGEND

- CONTACT
- ▽ GROUNDWATER LEVEL

| SAMPLE No. | DEPTH | TIME |
|------------|-------|------|
| | | |
| | | |
| | | |
| | | |

PIT WIDTH: 4 ft
 PIT LENGTH: 25 ft
 PIT DEPTH: 3 ft

| SOIL UNIT | SOIL DESCRIPTION AND EXCAVATION NOTES |
|----------------|---|
| | <p>Matrix, silty sand, slightly moist, gravel & cobbles up to 1A in diameter present.</p> <p>Sandstone Bedrock on NE end of the pit.</p> <p>Debris included: Fiberglass insulation, metal, rotter/burnt wood,</p> |
| SPECIAL NOTES: | |

SEE PACM-Pit 1

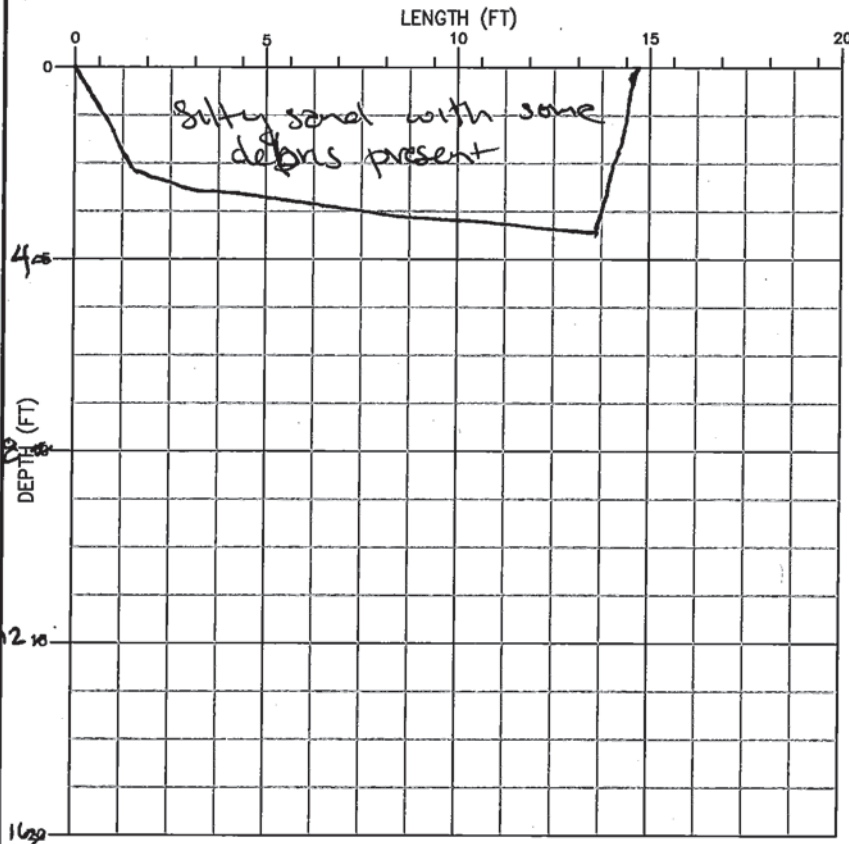
TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

| | | | | | | |
|------------|-----------|--------------------|--------|-----------|------------------------|--|
| REV | REVISIONS | DATE | DES BY | DWN BY | REVIEWED AND SIGNED BY | |
| MWH | | PROJECT No | | FILENAME: | | |
| | | SCALE NOT TO SCALE | | FIGURE No | | |

PIT NAME: PACM-Pit 5
 GENERAL LOCATION: Pond 1
 PIT TREND: NE-SW
 PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
 FIELD ENGINEER: K. Johnson
 EXCAVATOR: Bebe
 CONTRACTOR: AMEC

TEST PIT LOG



LEGEND

- CONTACT
- ▽ GROUNDWATER LEVEL

| SAMPLE No. | DEPTH | TIME |
|------------|-------|------|
| | | |
| | | |
| | | |
| | | |

PIT WIDTH: 3.5 ft
 PIT LENGTH: 14 ft
 PIT DEPTH: 2.5 - 3 ft

| SOIL UNIT | SOIL DESCRIPTION AND EXCAVATION NOTES |
|-----------|--|
| | Matrix - Same as others, silty sand, slightly moist, yellow orange. Some cobbles/gravel. Disturbed. Debris - limited, some pipe present |

SPECIAL NOTES:

SEE - PACM - P.t 1

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

| | | | | | |
|-------|-----------|------------|--------|--------------|------------------------|
| REV | REVISIONS | DATE | DES BY | DWN BY | REVIEWED AND SIGNED BY |
| | | PROJECT No | | FILENAME: | |
| SCALE | | FIGURE No | | NOT TO SCALE | |