

**APPENDIX I**

**WELL PLUGGING AND ABANDONMENT FORMS**

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: PZ-B (piezometer)                      Date Installed: 10 to 11/2002
2. Coordinates: North: 550570.89 East: 2444030.40      Location: Phase II Area
3. Total Depth (ft): 22.5 Inside Diam. (in): 1.0 Stickup Length (ft): 2.2  
Total Casing Length (ft): 14.7 Screen Length (ft): 10.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 1-inch casing and tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams                      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice                      Date: 01/18/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/15/2008 Date Completed: 01/15/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 23.0 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/18/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]                      Date: 1-18-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: PZ-C (piezometer)                      Date Installed: 10 to 11/2002
2. Coordinates: North: 550333.10 East: 2443366.64      Location: Phase II Area
3. Total Depth (ft): 41.0 Inside Diam. (in): 1.0 Stickup Length (ft): 2.0  
Total Casing Length (ft): 28.0 Screen Length (ft): 15.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 1-inch casing and tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams                      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice                      Date: 01/18/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/16/2008 Date Completed: 01/16/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 41.0 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/18/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]                      Date: 1-18-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: PZ-E (piezometer)      Date Installed: 10 to 11/2002
2. Coordinates: North: 549700.26 East: 2442693.91      Location: Phase I Area
3. Total Depth (ft): 34.7 Inside Diam. (in): 1.0      Stickup Length (ft): 3.0  
Total Casing Length (ft): 27.7      Screen Length (ft): 10.0      Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 1-inch casing and tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Tolefanti      Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/23/2008      Date Completed: 01/29/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 35.0 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/29/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]      Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: PZ-F (piezometer) Date Installed: 10 to 11/2002
2. Coordinates: North: 549472.48 East: 2441965.96 Location: Phase I Area
3. Total Depth (ft): 56.0 Inside Diam. (in): 1.0 Stickup Length (ft): 3.0  
Total Casing Length (ft): 24.0 Screen Length (ft): 35.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 1-inch casing and tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/28/2008 Date Completed: 01/29/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 46.0 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/29/2008
7. Comments: Piezometer log indicates depth of 56 ft, however only 46 ft of casing material was encountered during abandonment; casing was not broken or damaged during removal.
8. P&A Report Prepared by: [Signature] Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: PZ-1 (piezometer) Date Installed: 10 to 11/2002
2. Coordinates: North: 550822.86 East: 2442641.00 Location: Phase I Area
3. Total Depth (ft): 52.0 Inside Diam. (in): 1.0 Stickup Length (ft): 3.0  
Total Casing Length (ft): 40.0 Screen Length (ft): 15.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 1-inch casing and tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/18/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/17/2008 Date Completed: 01/17/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie gout
4. Actual depth grouted 50.0 ft
5. Problems and/or deviations from specifications: Piezometer casing removed from PZ-1 totaled 45 ft. Overdrilled to 50 ft and tremie grouted to ground surface.
6. Site cleanup completed: Date: 01/18/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-18-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-10A (overburden well)      Date Installed: 06/01/2005
2. Coordinates: North: 550029.94 East: 2441382.19      Location: Phase I Area
3. Total Depth (ft): 56.2    Inside Diam. (in): 2.0    Stickup Length (ft): 3.7  
Total Casing Length (ft): 24.9    Screen Length (ft): 35.0    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing concrete pad, bollards, well cover, and 2-inch well casing and then tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice      Date: 01/23/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/18/2008    Date Completed: 01/23/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: partial casing removal, overdrilling, and tremie grout
4. Actual depth grouted 56.2 ft
5. Problems and/or deviations from specifications: Bottom 15 feet of 2-inch well casing broke off in borehole. Attempted to retrieve well section but was unsuccessful. Set tremie pipe into well materials and completed grouting on 01/23/2008.
6. Site cleanup completed: Date: 01/24/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]      Date: 1-23-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-10B (bedrock well) Date Installed: 05/31/2005
2. Coordinates: North: 550032.15 East: 2441388.23 Location: Phase I Area
3. Total Depth (ft): 72.4 Inside Diam. (in): 2.0 Stickup Length (ft): 3.4  
Total Casing Length (ft): 50.7 Screen Length (ft): 25.1 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing concrete pad, bollards, well cover, and 2-inch well casing and then tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/18/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/18/2008 Date Completed: 01/18/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 46.0 ft
5. Problems and/or deviations from specifications: After casing removal and overdrilling, tremie pipe refused at a depth of 46.0 feet. Refusal material likely consisted of filter sand within the bedrock interval of the well.
6. Site cleanup completed: Date: 01/18/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-18-2008



**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-21A (overburden well)      Date Installed: 06/02/2005
2. Coordinates: North: 549807.05 East: 2441639.95      Location: Phase I Area
3. Total Depth (ft): 50.4 Inside Diam. (in): 2.0 Stickup Length (ft): 4.6  
Total Casing Length (ft): 25.0 Screen Length (ft): 30.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: \_\_\_\_\_ Phone No.: \_\_\_\_\_
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/25/2008 Date Completed: 01/29/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 50.4 ft
5. Problems and/or deviations from specifications: Well casing broke off during overdrilling. Retrieved 25 ft of casing and grouted remaining in place.
6. Site cleanup completed: Date: 01/29/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-44A (overburden well) Date Installed: 06/07/2005
2. Coordinates: North: 550225.57 East: 2442337.37 Location: Phase I Area
3. Total Depth (ft): 40.5 Inside Diam. (in): 2.0 Stickup Length (ft): 2.6  
Total Casing Length (ft): 8.1 Screen Length (ft): 35.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/25/2008 Date Completed: 01/29/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 40.5 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/29/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-44B (bedrock well)                      Date Installed: 06/02/2005
2. Coordinates: North: 550230.54 East: 2442335.66      Location: Phase I Area
3. Total Depth (ft): 104.2    Inside Diam. (in): 2.0    Stickup Length (ft): 1.3  
Total Casing Length (ft): 55.5    Screen Length (ft): 50.0    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams                      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_                      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice                      Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/25/2008    Date Completed: 01/29/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 46.0 ft
5. Problems and/or deviations from specifications: After casing removal and overdrilling, tremie pipe refused at a depth of 46.0 feet. Refusal material likely consisted of filter sand within the bedrock interval of the well.
6. Site cleanup completed: Date: 01/29/2008
7. Comments: Removed entire casing length from abandoned well
8. P&A Report Prepared by: [Signature]                      Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-47A (overburden well)      Date Installed: 06/08/2005
2. Coordinates: North: 549788.84 East: 2442637.11      Location: Phase I Area
3. Total Depth (ft): 44.4    Inside Diam. (in): 2.0    Stickup Length (ft): 3.5  
Total Casing Length (ft): 27.9    Screen Length (ft): 20.0    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice      Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/23/2008    Date Completed: 01/25/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 44.4 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/29/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]      Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-63A (overburden well)      Date Installed: 06/06/2005
2. Coordinates: North: 551241.81 East: 2443385.49      Location: Phase II Area
3. Total Depth (ft): 48.8    Inside Diam. (in): 2.0    Stickup Length (ft): 1.8  
Total Casing Length (ft): 20.6    Screen Length (ft): 30.0    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing concrete pad, bollards, well cover, and 2-inch well casing and then tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice      Date: 01/24/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/22/2008    Date Completed: 01/23/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 48.8 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/24/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]      Date: 1-24-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-63B (bedrock well)                      Date Installed: 05/09/2005
2. Coordinates: North: 551229.72 East: 2443376.76      Location: Phase II Area
3. Total Depth (ft): 82.3    Inside Diam. (in): 2.0    Stickup Length (ft): 4.0  
Total Casing Length (ft): 57.4    Screen Length (ft): 28.9    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing concrete pad, bollards, well cover, and 2-inch well casing and then tremie grout
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams                      Phone No: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_                      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice                      Date: 01/24/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/22/2008    Date Completed: 01/23/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 60.0 ft
5. Problems and/or deviations from specifications: After casing removal and overdrilling, tremie pipe refused at a depth of 60.0 feet. Refusal material likely consisted of filter sand within the bedrock interval of the well.
6. Site cleanup completed: Date: 01/24/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]                      Date: 1-24-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-66A (overburden well) Date Installed: 05/04/2005
2. Coordinates: North: 550505.31 East: 2443457.06 Location: Phase II Area
3. Total Depth (ft): 38.8 Inside Diam. (in): 2.0 Stickup Length (ft): 3.5  
Total Casing Length (ft): 17.3 Screen Length (ft): 25.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/21/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/16/2008 Date Completed: 01/21/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 38.8 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/21/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-21-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-74A (overburden well)      Date Installed: 05/12/2005
2. Coordinates: North: 550361.72 East: 2443829.55      Location: Phase II Area
3. Total Depth (ft): 59.3    Inside Diam. (in): 2.0    Stickup Length (ft): 4.0  
Total Casing Length (ft): 18.3    Screen Length (ft): 45.0    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice      Date: 01/21/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/21/2008    Date Completed: 01/21/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 59.3 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/21/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]      Date: 1-21-2008



**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-77A (overburden well)      Date Installed: 06/14/2005
2. Coordinates: North: 550108.71 East: 2443880.98      Location: Phase II Area
3. Total Depth (ft): 35.4 Inside Diam. (in): 2.0 Stickup Length (ft): 4.5  
Total Casing Length (ft): 19.9 Screen Length (ft): 20.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/24/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/24/2008 Date Completed: 01/24/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, over drilling, and tremie grout
4. Actual depth grouted 35.4 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/24/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-24-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-81A (overburden well)      Date Installed: 06/08/2005
2. Coordinates: North: 550981.60 East: 2444131.45      Location: Phase II Area
3. Total Depth (ft): 39.8 Inside Diam. (in): 2.0 Stickup Length (ft): 1.9  
Total Casing Length (ft): 26.7 Screen Length (ft): 15.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. T. Truffant      Date: 01/18/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/15/2008 Date Completed: 01/16/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 39.8 ft
5. Problems and/or deviations from specifications: Staged grouting was required over a period of two working days to bring grout up to the ground surface
6. Site cleanup completed: Date: 01/18/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]      Date: 1-18-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-81B (bedrock well)                      Date Installed: 05/17/2005
2. Coordinates: North: 550976.54 East: 2444127.77      Location: Phase II Area
3. Total Depth (ft): 61.1 Inside Diam. (in): 2.0 Stickup Length (ft): 1.4  
Total Casing Length (ft): 36.5 Screen Length (ft): 26.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams                      Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice                      Date: 01/18/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/15/2008 Date Completed: 01/16/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 36.5 ft
5. Problems and/or deviations from specifications: After casing removal and overdrilling, tremie pipe refused at a depth of 36.5 feet. Refusal material likely consisted of filter sand within the bedrock interval of the well. Staged grouting was required over a period of two working days to bring grout up to the ground surface.
6. Site cleanup completed: Date: 01/18/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]                      Date: 1-18-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-M (overburden well) Date Installed: 01/16/2006
2. Coordinates: North: 550763.86 East: 2443282.27 Location: Phase II Area
3. Total Depth (ft): 35.0 Inside Diam. (in): 2.0 Stickup Length (ft): 5.3  
Total Casing Length (ft): 35.3 Screen Length (ft): 5.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/29/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/16/2008 Date Completed: 01/29/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 35.0 ft
5. Problems and/or deviations from specifications: None encountered
6. Site cleanup completed: Date: 01/29/2008
7. Comments: As of 01/21 pumped 20 bags of Portland cement (4 bags/batch with 6 % bentonite) and grout stabilized at 20 ft bgs. Grouted to ground surface on 01/29. Total of 32 bags of cement used to complete abandonment.
8. P&A Report Prepared by: [Signature] Date: 1-29-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-N (overburden well)                      Date Installed: 01/12/2006
2. Coordinates: North: 549756.30 East: 2440942.87      Location: Phase I Area
3. Total Depth (ft): 25.5    Inside Diam. (in): 2.0    Stickup Length (ft): 4.4  
Total Casing Length (ft): 24.9    Screen Length (ft): 5.0    Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams                      Phone No: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_                      Date: \_\_\_\_\_
11. Approved by:(S&ME): C. T. N. Justice                      Date: 01/21/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/17/2008      Date Completed: 01/21/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 25.5 ft
5. Problems and/or deviations from specifications: Placed additional grout on 01/17 and 01/21 to bring grout up to ground surface
6. Site cleanup completed: Date: 01/21/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature]                      Date: 1-21-2008

**WELL PLUGGING AND ABANDONMENT  
FIELD OPERATIONS PLANNING FORM**

1. Well No.: MW-P (bedrock well) Date Installed: 01/16/2006
2. Coordinates: North: 549822.72 East: 2443392.11 Location: Phase II Area
3. Total Depth (ft): 60.5 Inside Diam. (in): 2.0 Stickup Length (ft): 5.0  
Total Casing Length (ft): 60.5 Screen Length (ft): 5.0 Casing Material: Sch 40 PVC
4. Reason for abandonment: In preparation for construction of gypsum disposal area
5. Required site preparation (removal of bollards, pads, etc.): removal of existing 2-inch well casing and tremie grouting
6. Plugging specification document no: in accordance with S&ME proposal 3107949 R1
7. Health and safety considerations for well abandonment crew: ammonium training, PPE
8. TVA Field Contact: Matt Williams Phone No.: (865) 632-6942
9. Technical oversight: Mark Boggs, P.G. (TVA); Mr. Todd Justice, P.E. (S&ME)
10. Approved by:(TVA): \_\_\_\_\_ Date: \_\_\_\_\_
11. Approved by:(S&ME): C. Todd Justice Date: 01/24/2008

**Field Operations Planning Form**

1. Well abandonment: Date Started: 01/24/2008 Date Completed: 01/24/2008
2. Observations via downhole camera: N/A
3. Actual method used to abandon this well: casing removal, overdrilling, and tremie grout
4. Actual depth grouted 40.0 ft
5. Problems and/or deviations from specifications: After casing removal and overdrilling, tremie pipe refused at a depth of 40.0 feet. Refusal material likely consisted of filter sand within the bedrock interval of the well.
6. Site cleanup completed: Date: 01/24/2008
7. Comments: No additional comments
8. P&A Report Prepared by: [Signature] Date: 1-24-2008

**APPENDIX II**

**GEOTECHNICAL AND AIR-ROTARY BORING LOGS**

PROJECT: TVA Kingston - Gypsum Disposal Area  
Kingston, Tennessee  
S&ME Project No. 1431-08-022

BORING LOG:  
**B-1A**

DATE DRILLED: 1/30/08 ELEVATION: 858.8 FEET  
 DRILLING METHOD: CME 550, 3 1/4" H.S.A. BORING DEPTH: 42.5 FEET  
 LOGGED BY: NJP WATER LEVEL @ TOB: Not Encountered  
 DRILLER: D. Hedges WATER LEVEL @ 24 hrs: Not Encountered

NOTES: Soil descriptions based on visual observation of obtained samples. SPT data was obtained using an automatic hammer drop system.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST (SPT) DATA (blows/ft)			SPT INTERVALS (blows/6 inches)			N VALUE		
							10	20	40	1st	2nd	3rd			
0 - 2.0		Topsoil with roots (2.0 inches)													
2.0 - 5.0		CLAY (CH)- Dark reddish brown to reddish brown; firm to stiff; slightly moist; with manganese nodules and chert fragments; Residuum		854	1	X						2	3	5	8
5.0 - 10.0		CLAY (CH)- Yellowish brown to reddish brown; stiff to very stiff; slightly moist; with black oxide staining and chert fragments; some manganese nodules; Residuum		849	2	X						5	5	7	12
10.0 - 15.0		CLAY (CH)- Yellowish brown to reddish brown; stiff to very stiff; slightly moist; with black oxide staining and chert fragments; some manganese nodules; Residuum		844	3	X						7	10	10	20
15.0 - 20.0		CLAY (CH)- Yellowish brown to reddish brown; stiff to very stiff; slightly moist; with black oxide staining and chert fragments; some manganese nodules; Residuum		839	4	X						6	7	7	14
20.0 - 25.0		CLAY (CH)- Dark brown; firm to very stiff; slightly moist; with black oxide staining and chert fragments; Residuum		834	5	X						6	9	7	16
25.0 - 30.0		CLAY (CH)- Dark brown; firm to very stiff; slightly moist; with black oxide staining and chert fragments; Residuum		829	6	X						2	4	4	8
30.0 - 35.0		CLAY (CH)- Dark reddish brown; firm; slightly moist; with black oxide staining and manganese nodules; Residuum			7	X						2	4	4	8
35.0 - 42.5		CLAY (CH)- Dark reddish brown; firm; slightly moist; with black oxide staining and manganese nodules; Residuum			8	X						4	3	5	8

BORING LOG - TVA DB-022.GPJ S&ME GDT 2/29/08

**NOTES:**

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- BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1588.
- STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
- WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.





PROJECT: **TVA Kingston - Gypsum Disposal Area**  
**Kingston, Tennessee**  
**S&ME Project No. 1431-08-022**

BORING LOG: **B-1A**

DATE DRILLED: **1/30/08** ELEVATION: **858.8** FEET

DRILLING METHOD: **CME 550, 3/4" H.S.A.** BORING DEPTH: **42.5** FEET

LOGGED BY: **NJP** WATER LEVEL @ TOB: **Not Encountered**

DRILLER: **D. Hedges** WATER LEVEL @ 24 hrs: **Not Encountered**

NOTES: Soil descriptions based on visual observation of obtained samples. SPT data was obtained using an automatic hammer drop system.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST (SPT) DATA (blows/ft)			SPT INTERVALS (blows/6 inches)			N VALUE
							10	20	40	1st	2nd	3rd	
40		SILT (ML)- Light brown; very stiff to very hard; with weathered dolomite fragments (completely weathered dolomite); Residium		819	9					2	10	15	25
		Auger Refusal at 42.5 Feet			10					50/2			50/2

BORING LOG - TVA\_08-022.GPJ S&ME.GDT 2/18/08

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3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT: **TVA Kingston - Gypsum Disposal Area**  
**Kingston, Tennessee**  
**S&ME Project No. 1431-08-022**

BORING LOG: **MW-3A**

DATE DRILLED: **2/1/08** ELEVATION: **745.3** FEET

DRILLING METHOD: **CME 550, 3/4" H.S.A.** BORING DEPTH: **28.5** FEET

LOGGED BY: **NJP** WATER LEVEL @ TOB: **10.49**

DRILLER: **D. Hedges** WATER LEVEL @ 24 hrs: **9.00**

NOTES: Soil descriptions based on visual observation of obtained samples. SPT data was obtained using an automatic hammer drop system.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST (SPT) DATA (blows/ft)			SPT INTERVALS (blows/6 inches)			N VALUE	
							10	20	40	1st	2nd	3rd		
0 - 4.0		Topsoil with roots (4.0 inches)												
4.0 - 5.0		CLAY (CH)- Reddish and yellowish brown; firm; slightly moist; with chert fragments; Residuum		740	1									
5.0 - 10.0		CLAY (CH)- Orange brown and reddish brown; stiff; slightly moist to very moist; silty; with manganese nodules; Residuum		735	2									
10.0 - 15.0		CLAY (CH)- Orange brown and reddish brown; stiff; slightly moist to very moist; silty; with manganese nodules; Residuum		730	3									
15.0 - 20.0		CLAY (CH)- Orange brown and reddish brown; stiff; slightly moist to very moist; silty; with manganese nodules; Residuum		725	4									
20.0 - 25.0		CLAY (CH)- Reddish brown to brown; stiff to very hard; wet; with dolomite fragments; Residuum. Note: Starting at sample 5 soil appears to be fully saturated.		720	5									
25.0 - 28.5		Auger Refusal at 28.5 Feet			6									
28.5					7									

BORING LOG - TVA 08-022.GPJ S&ME.GDT 2/28/08

**NOTES:**

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2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1588.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT: **TVA Kingston - Gypsum Disposal Area**  
**Kingston, Tennessee**  
**S&ME Project No. 1431-08-022**

BORING LOG:  
**B-4A**

DATE DRILLED: <b>1/29/08</b>	ELEVATION: <b>767.2</b>	FEET	NOTES: Soil descriptions based on visual observation of obtained samples. SPT data was obtained using an automatic hammer drop system.
DRILLING METHOD: <b>CME 550, 3/4" H.S.A.</b>	BORING DEPTH: <b>18.5</b>	FEET	
LOGGED BY: <b>NJP</b>	WATER LEVEL @ TOB: <b>Not Encountered</b>		
DRILLER: <b>D. Hedges</b>	WATER LEVEL @ 24 hrs: <b>17.94</b>		

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST (SPT) DATA (blows/ft)			SPT INTERVALS (blows/6 inches)			N VALUE
							10	20	40	1st	2nd	3rd	
0 - 2.0		Topsoil with roots (2.0 inches)			1					4	7	8	15
2.0 - 5.0		CLAY (CH)- Reddish brown; stiff to very stiff; slightly moist; with chert fragments; Residuum		762	2					4	6	9	15
5.0 - 10.0				757	3					7	7	10	17
10.0 - 15.0		CLAY (CL)- Brown; very stiff; slightly moist; with chert; silty; Residuum		752	4					8	9	8	17
15.0 - 18.5		Auger Refusal at 18.5 Feet			5					50/2			50/2

BORING LOG - TVA 08-022.GPJ S&ME.GDT 2/18/08

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2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT: **TVA Kingston - Gypsum Disposal Area**  
**Kingston, Tennessee**  
**S&ME Project No. 1431-08-022**

BORING LOG:  
**MW-5A**

DATE DRILLED: 1/28/08	ELEVATION: 757.9	FEET	NOTES: Soil descriptions based on visual observation of obtained samples. SPT data was obtained using an automatic hammer drop system.
DRILLING METHOD: CME 550, 3/4" H.S.A.	BORING DEPTH: 26.0	FEET	
LOGGED BY: NJP	WATER LEVEL @ TOB: 20.11		
DRILLER: D. Hedges	WATER LEVEL @ 24 hrs: 19.96		

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST (SPT) DATA (blows/ft)			SPT INTERVALS (blows/6 inches)			N VALUE
							10	20	40	1st	2nd	3rd	
0 - 2		Topsoil with roots (2 inches)			1					5	7	13	20
2 - 5		CLAY (CH)- Reddish brown; stiff to very stiff; dry to slightly moist; with chert; manganese nodules and black oxide staining; Residuum		753	2					8	14	15	29
5 - 10				748	3					6	12	15	27
10 - 15				743	4					7	7	8	15
15 - 20				738	5					2	3	3	6
20 - 25		CLAY (CH)- Dark reddish brown; firm to hard; moist to wet; with chert; Residuum  Note: No recovery obtained in split spoon sample 7. Spoon possibly kicked off on bedrock pinnacle.		733	6					2	2	3	5
25 - 26		Auger Refusal at 26.0 Feet			7					24	20	16	36

BORING LOG - TVA 08-022.GPJ S&ME.GDT 2/28/08

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2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1588.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT: TVA Kingston - Gypsum Disposal Area  
 Kingston, Tennessee  
 S&ME Project No. 1431-08-022

BORING LOG:  
**B-6A**

DATE DRILLED: 1/28/08 ELEVATION: 777.1 FEET  
 DRILLING METHOD: CME 550, 3/4" H.S.A. BORING DEPTH: 22.5 FEET  
 LOGGED BY: NJP WATER LEVEL @ TOB: Not Encountered  
 DRILLER: D. Hedges WATER LEVEL @ 24 hrs: Not Encountered

NOTES: Soil descriptions based on visual observation of obtained samples. SPT data was obtained using an automatic hammer drop system.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST (SPT) DATA (blows/ft)			SPT INTERVALS (blows/6 inches)			N VALUE	
							10	20	40	1st	2nd	3rd		
0 - 2.0		Topsoil with roots (2.0 inches)			1	⊗								
2.0 - 5.0		CLAY (CH)- Reddish brown; very stiff to hard; slightly moist; with chert; trace manganese nodules; Residuum		772	2	⊗								
5.0 - 10.0		CLAY (CL)- Brown; firm to very stiff; slightly moist; silty; with chert, manganese nodules, and black oxide staining; Residuum		767	3	⊗								
10.0 - 15.0		CLAY (CL)- Brown; firm to very stiff; slightly moist; silty; with chert, manganese nodules, and black oxide staining; Residuum		762	4	⊗								
15.0 - 20.0		SILT (ML)- Light brown; very hard; dry; with weathered dolomite fragments (completely weathered dolomite); Residuum		757	5	⊗								
20.0 - 22.5		Auger Refusal at 22.5 Feet			6	⊗								

BORING LOG - TVA 08-022.GPJ S&ME.GDT 2/18/08

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2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-1B</b>
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<b>DATE DRILLED:</b> 2/11/08	<b>ELEVATION:</b> 858.8 FEET	<b>NOTES:</b> Overburden soil; 0 to 42.5 ft Bedrock; 42.5 ft to 152.0 ft 10" borehole from 0 to 48.0 ft 8" borehole from 48.0 to 110.0 ft 6" borehole from 110.0 to 152.0 ft
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 152.0 FEET	
<b>LOGGED BY:</b> M. Devoe	<b>WATER LEVEL @ TOB:</b> 114.00	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ 24 hrs:</b> 115.50	

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
		Note: Began air-rotary drilling with 10" roller cone bit  Topsoil with roots		
5		CLAY - Reddish brown; firm to stiff; dry to slightly moist; with manganese nodules, and dolomite and chert fragments; Residuum		854
10				849
15		CLAY - Yellow and reddish brown; stiff; slightly moist to moist; with manganese nodules, and dolomite and chert fragments; Residuum		844
20				839
25		CLAY - Dark brown; stiff; slightly moist to moist; with manganese nodules and chert fragments; Residuum		834
30		CLAY - Dark brown; stiff; slightly moist to moist; with silt, manganese nodules and chert fragments; Residuum		829

AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08


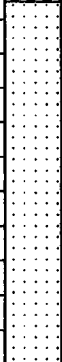

**NOTES:**

1. THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
2. BORING DRILLED IN GENERAL ACCORDANCE WITH ASTM D-5782.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF WELL INSTALLATION AND 24 HRS AFTER INSTALLATION.



PROJECT: TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	BORING LOG: MW-1B
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DATE DRILLED: 2/11/08	ELEVATION: 858.8	FEET	NOTES: Overburden soil; 0 to 42.5 ft Bedrock; 42.5 ft to 152.0 ft 10" borehole from 0 to 48.0 ft 8" borehole from 48.0 to 110.0 ft 6" borehole from 110.0 to 152.0 ft
DRILLING METHOD: Air-rotary; Gus Pech1000	BORING DEPTH: 152.0	FEET	
LOGGED BY: M. Devoe	WATER LEVEL @ TOB: 114.00		
DRILLER: W. Betts	WATER LEVEL @ 24 hrs: 115.50		

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
40		CLAY - Dark brown; stiff; slightly moist to moist; with silt, manganese nodules and chert fragments; Residuum (continued)		819
45		Encountered top of bedrock at 42.5 ft SANDSTONE; gray to tan; fine-grained; Installed and grouted 8" steel casing from ground surface to a depth of 48.0 ft (5.5 ft into rock socket); Allowed 24 hrs for grout to cure Began drilling with 6" hammer/bit from 48.0 to 53.0 ft Note: Drilling rates within bedrock interval using hammer/bit varied from about 1.4 to 1.8 fpm		814
55		Encountered open void from about 53.0 to 79.5 ft Reamed out borehole with 8" hammer/bit to a depth of 80.0 ft Advanced 6" temporary casing to a depth of 80.0 ft with 6" roller cone bit		809
60				804
65				799
				794

AIR ROTARY 08-022.GPJ S&ME.GDT 2/20/08

**NOTES:**

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2. BORING DRILLED IN GENERAL ACCORDANCE WITH ASTM D-5782.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF WELL INSTALLATION AND 24 HRS AFTER INSTALLATION.



PROJECT: TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	BORING LOG: MW-1B
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DATE DRILLED: 2/11/08	ELEVATION: 858.8 FEET	NOTES: Overburden soil; 0 to 42.5 ft Bedrock; 42.5 ft to 152.0 ft 10" borehole from 0 to 48.0 ft 8" borehole from 48.0 to 110.0 ft 6" borehole from 110.0 to 152.0 ft
DRILLING METHOD: Air-rotary; Gus Pech1000	BORING DEPTH: 152.0 FEET	
LOGGED BY: M. Devoe	WATER LEVEL @ TOB: 114.00	
DRILLER: W. Betts	WATER LEVEL @ 24 hrs: 115.50	

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
75		Encountered open void from about 53.0 to 79.5 ft  Reamed out borehole with 8" hammer/bit to a depth of 80.0 ft Advanced 6" temporary casing to a depth of 80.0 ft with 6" roller cone bit (continued)		784
80				779
85		SANDSTONE; gray to tan; fine-grained  Continued drilling with 6" hammer/bit from 80.0 to 95.0 ft  Note: Drilling rates within bedrock interval using hammer/bit varied from about 1.4 to 1.8 fpm		774
90				769
95				764
100		DOLOMITE with interbedded limestone; with chert; gray to light gray; fine-grained; highly fractured  Difficult drilling encountered within this interval; drill rods binding up in borehole from about 100.0 to 102.0 ft; lost cuttings return  Pulled temporary 6" casing in order to ream borehole with 8" hammer/bit to a depth of about 110.0 ft;  Advanced 6" temporary casing to a depth of 105.0 ft with 6" roller cone bit		759

AIR ROTARY 08-022.GPJ S&ME.GDT 2/20/08

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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-1B</b>
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<b>DATE DRILLED:</b> 2/11/08	<b>ELEVATION:</b> 858.8 FEET	<b>NOTES:</b> Overburden soil; 0 to 42.5 ft Bedrock; 42.5 ft to 152.0 ft 10" borehole from 0 to 48.0 ft 8" borehole from 48.0 to 110.0 ft 6" borehole from 110.0 to 152.0 ft
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 152.0 FEET	
<b>LOGGED BY:</b> M. Devoe	<b>WATER LEVEL @ TOB:</b> 114.00	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ 24 hrs:</b> 115.50	

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
110	[Hatched pattern]	DOLOMITE with interbedded limestone; with chert; gray to light gray; fine-grained; highly fractured  Difficult drilling encountered within this interval; drill rods binding up in borehole from about 100.0 to 102.0 ft; lost cuttings return  Pulled temporary 6" casing in order to ream borehole with 8" hammer/bit to a depth of about 110.0 ft;  Advanced 6" temporary casing to a depth of 105.0 ft with 6" roller cone bit <i>(continued)</i>	▽	749
115	[Hatched pattern]		▽	744
120	[Hatched pattern]		▽	739
125	[Hatched pattern]		▽	734
130	[Diagonal hatched pattern]	Encountered clay-filled void from about 125.0 to 152.0 ft		729
135	[Diagonal hatched pattern]			724

AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08

**NOTES:**

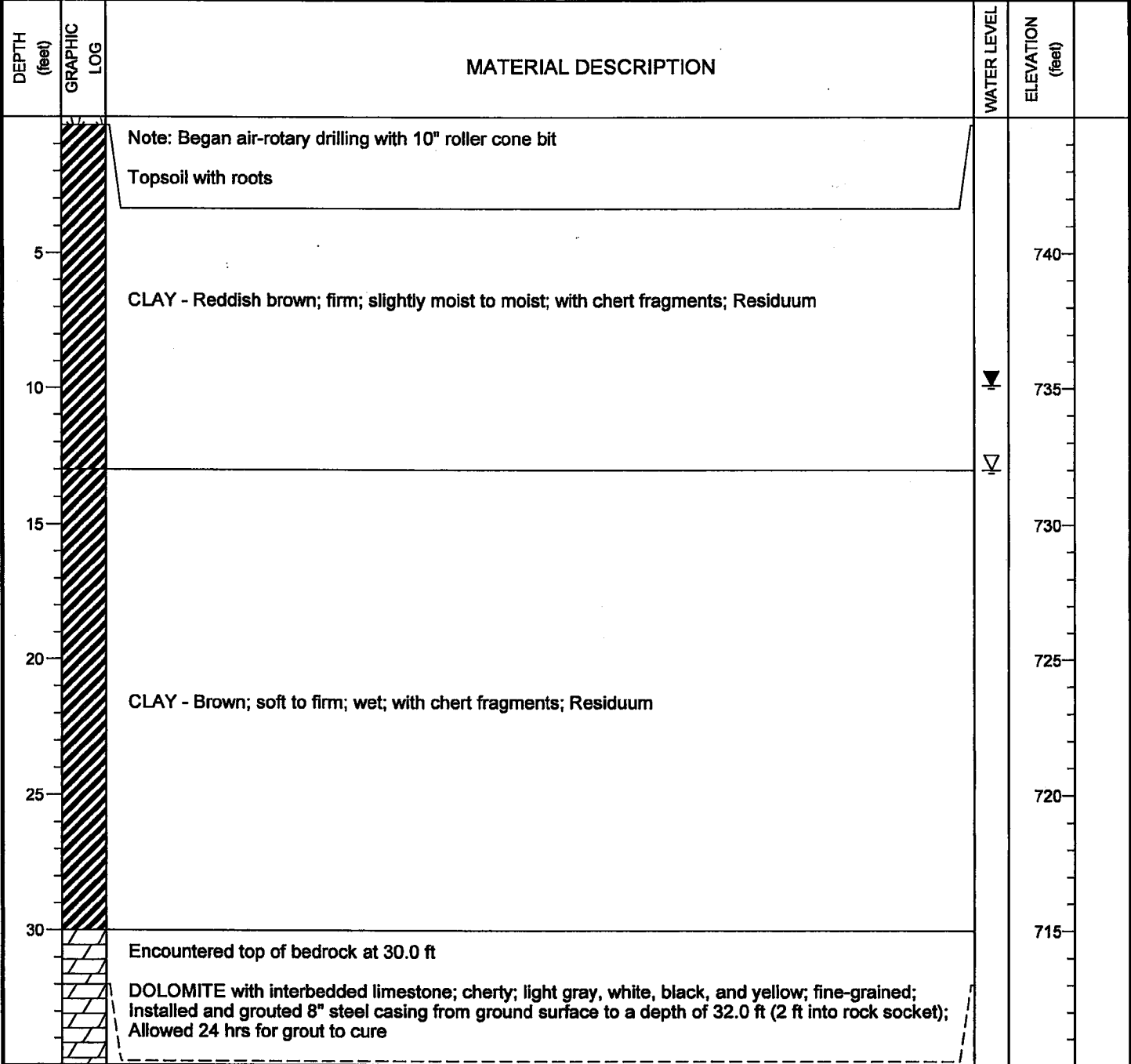
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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-3B</b>
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<b>DATE DRILLED:</b> 1/31/08	<b>ELEVATION:</b> 745.3	<b>FEET</b>
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 59.0	<b>FEET</b>
<b>LOGGED BY:</b> M. Devoe	<b>NOTES:</b>	
<b>DRILLER:</b> W. Betts	Overburden soil; 0 to 30.0 ft	
<b>WATER LEVEL @ TOB:</b> 13.00	Bedrock; 30.0 ft to 59.0 ft	
<b>WATER LEVEL @ 24 hrs:</b> 9.89	10" borehole from 0 to 32.0 ft	
	8" borehole from 32.0 to 41.0 ft	
	6" borehole from 41.0 to 59.0 ft	



AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08

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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-3B</b>
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<b>DATE DRILLED:</b> 1/31/08	<b>ELEVATION:</b> 745.3	<b>FEET</b>
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 59.0	<b>FEET</b>
<b>LOGGED BY:</b> M. Devoe	<b>NOTES:</b> Overburden soil; 0 to 30.0 ft Bedrock; 30.0 ft to 59.0 ft 10" borehole from 0 to 32.0 ft 8" borehole from 32.0 to 41.0 ft 6" borehole from 41.0 to 59.0 ft	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ TOB:</b> 13.00	
	<b>WATER LEVEL @ 24 hrs:</b> 9.89	

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
40	[Hatched pattern]	Began drilling with 6" hammer/bit at a depth of 32.0 ft and advanced to a depth of 59.0 ft  DOLOMITE with interbedded limestone; cherty; light gray, white, black, and yellow; fine-grained;  Note: Drilling rates within bedrock interval from 32.0 to 50.0 ft varied from about 1.4 to 1.8 fpm; Drilling rates within bedrock interval from 50.0 to 59.0 ft varied from about 1.8 to 2.2 fpm  Reamed out borehole with 8" hammer/bit to a depth of 41.0 ft Advanced 6" temporary casing to a depth of 41.0 ft with 6" hammer/bit <i>(continued)</i>		705
45	[Hatched pattern]	DOLOMITE with interbedded limestone; cherty; light gray, white, black, and yellow; fine-grained;		700
50	[Hatched pattern]			695
55	[Hatched pattern]			690
		Boring Terminated at a depth of 59.0 ft		

AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08

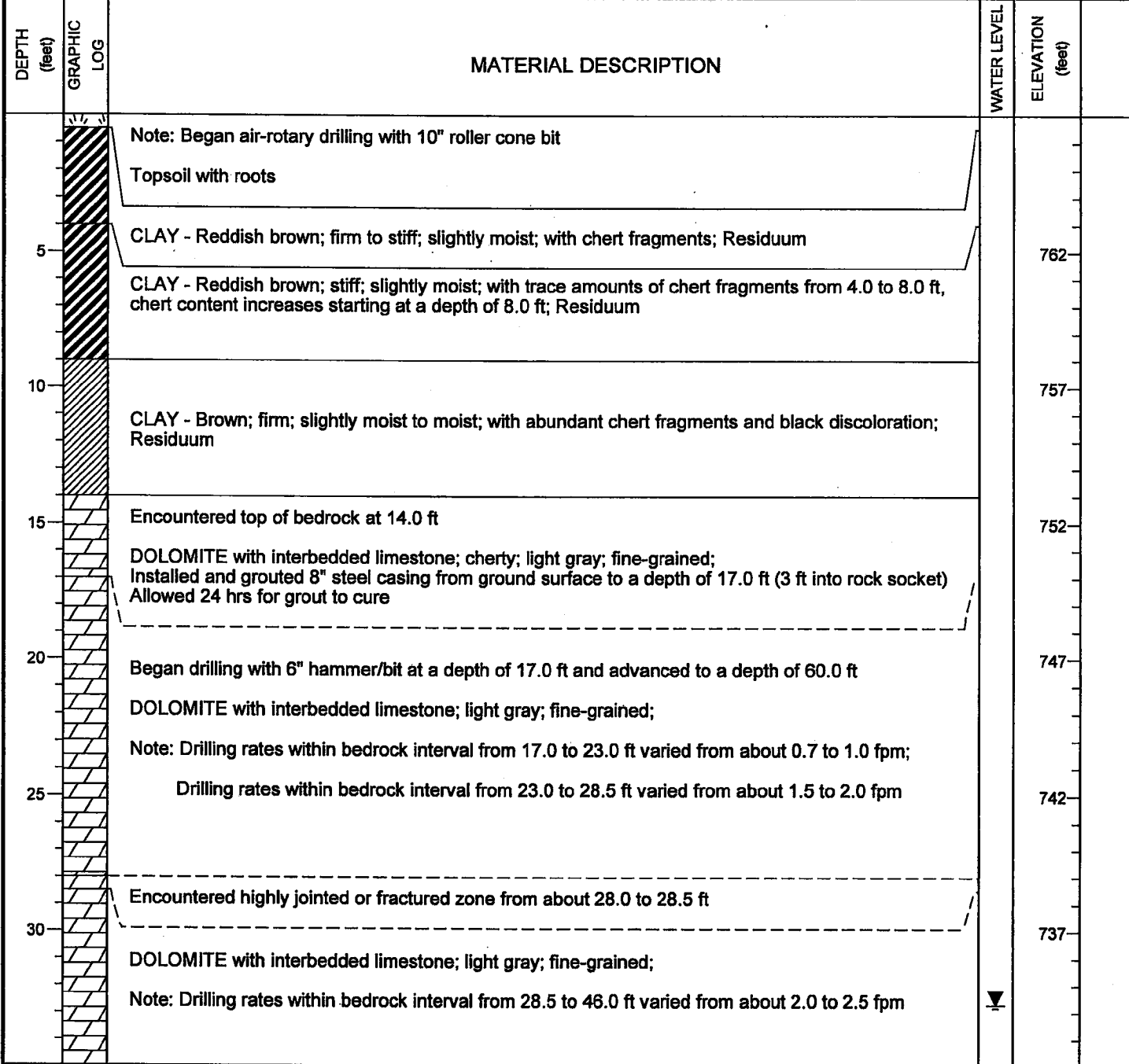
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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-4B</b>
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<b>DATE DRILLED:</b> 1/29/08	<b>ELEVATION:</b> 767.2	<b>FEET</b>
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 80.0	<b>FEET</b>
<b>LOGGED BY:</b> M. Devoe	<b>NOTES:</b> Overburden soil; 0 to 14.0 ft Bedrock; 14.0 ft to 80.0 ft 10" borehole from 0 to 17.0 ft 6" borehole from 17.0 to 80.0 ft	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ TOB:</b> Not Encountered	
	<b>WATER LEVEL @ 24 hrs:</b> 32.70	



AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08

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PROJECT: TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	BORING LOG: <b>MW-4B</b>
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DATE DRILLED: 1/29/08	ELEVATION: 767.2	FEET	NOTES: Overburden soil; 0 to 14.0 ft Bedrock; 14.0 ft to 80.0 ft 10" borehole from 0 to 17.0 ft 6" borehole from 17.0 to 80.0 ft
DRILLING METHOD: Air-rotary; Gus Pech1000	BORING DEPTH: 80.0	FEET	
LOGGED BY: M. Devoe	WATER LEVEL @ TOB: Not Encountered		
DRILLER: W. Betts	WATER LEVEL @ 24 hrs: 32.70		

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
40		DOLOMITE with interbedded limestone; light gray; fine-grained; Note: Drilling rates within bedrock interval from 28.5 to 46.0 ft varied from about 2.0 to 2.5 fpm (continued)		727
45				722
50		DOLOMITE with interbedded limestone; light gray; fine-grained; Note: Drilling rates within bedrock interval from 46.0 to 60.0 ft varied from about 1.8 to 2.3 fpm		717
55		Temporarily terminated boring at a depth of 60.0 ft; Groundwater not discernable; Waited approximately 1 hour to allow groundwater to seep into borehole; Pulled drill rods at the end of the hour and rods were dry		712
60				707
65		DOLOMITE with interbedded limestone; light gray; fine-grained; Note: Pulled drill rods upon termination at 70.0 ft; Groundwater not discernable		702

AIR ROTARY 08-022.GPJ S&ME.GDT. 2/20/08

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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-4B</b>
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<b>DATE DRILLED:</b> 1/29/08	<b>ELEVATION:</b> 767.2 FEET	<b>NOTES:</b> Overburden soil; 0 to 14.0 ft Bedrock; 14.0 ft to 80.0 ft 10" borehole from 0 to 17.0 ft 6" borehole from 17.0 to 80.0 ft
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 80.0 FEET	
<b>LOGGED BY:</b> M. Devoe	<b>WATER LEVEL @ TOB:</b> Not Encountered	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ 24 hrs:</b> 32.70	

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
75	[Hatched pattern]	DOLOMITE with interbedded limestone; light gray; fine-grained;  Note: Terminated boring at a depth of 80.0 ft; Allowed groundwater to seep into borehole overnight in order to discern groundwater depth  Drilling rates within bedrock interval from 60.0 to 80.0 ft varied from about 1.8 to 2.3 fpm		692
80	[Hatched pattern]	Boring Terminated at a depth of 80.0 ft		687

AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08

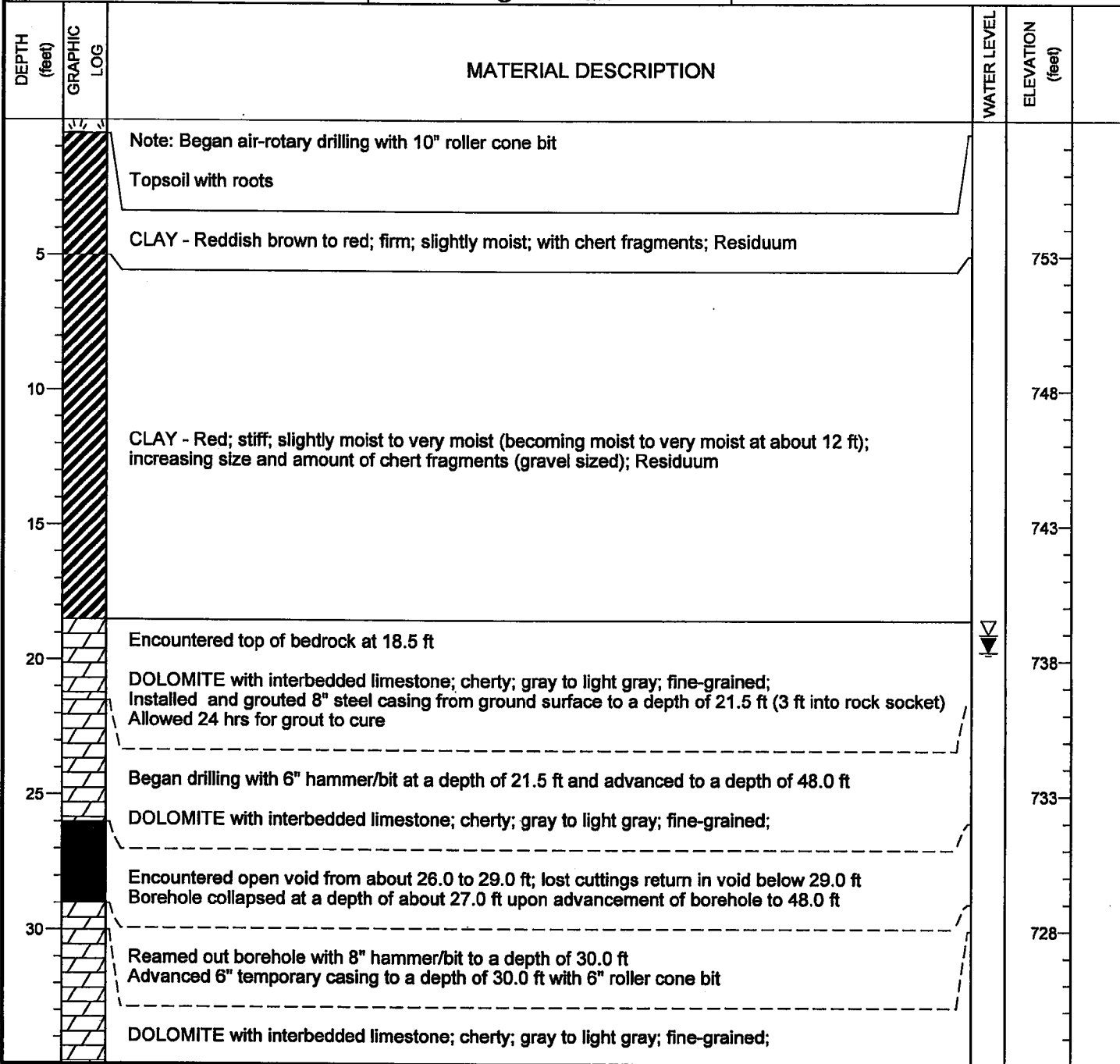
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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-5B</b>
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DATE DRILLED: 1/22/08	ELEVATION: 757.9	FEET	<b>NOTES:</b> Overburden soil; 0 to 18.5 ft Bedrock; 18.5 ft to 58.0 ft 10" borehole from 0 to 21.5 ft 8" borehole from 21.5 to 30.0 ft 8" borehole from 21.5 to 30.0 ft 6" borehole from 30.0 to 58.0 ft
DRILLING METHOD: Air-rotary; Gus Pech1000	BORING DEPTH: 58.0	FEET	
LOGGED BY: M. Devoe	WATER LEVEL @ TOB: 19.02		
DRILLER: W. Betts	WATER LEVEL @ 24 hrs: 19.65		



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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-5B</b>
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<b>DATE DRILLED:</b> 1/22/08	<b>ELEVATION:</b> 757.9 FEET	<b>NOTES:</b> Overburden soil; 0 to 18.5 ft Bedrock; 18.5 ft to 58.0 ft 10" borehole from 0 to 21.5 ft 8" borehole from 21.5 to 30.0 ft 6" borehole from 30.0 to 58.0 ft
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 58.0 FEET	
<b>LOGGED BY:</b> M. Devoe	<b>WATER LEVEL @ TOB:</b> 19.02	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ 24 hrs:</b> 19.65	

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
40	[Hatched pattern]	DOLomite with interbedded limestone; cherty; gray to light gray; fine-grained; (continued)		718
45	[Hatched pattern]			713
50	[Hatched pattern]	Began drilling with 6" hammer/bit from 48.0 to 58.0 ft; regained cuttings return DOLomite with interbedded limestone; cherty; gray to light gray; fine-grained; Note: Drilling rates within bedrock intervals using hammer/bit varied from about 0.2 to 0.7 fpm		708
55	[Hatched pattern]			703
		Boring Terminated at a depth of 58.0 ft		

AIR ROTARY 08-022.GPJ S&amp;ME.GDT 2/20/08

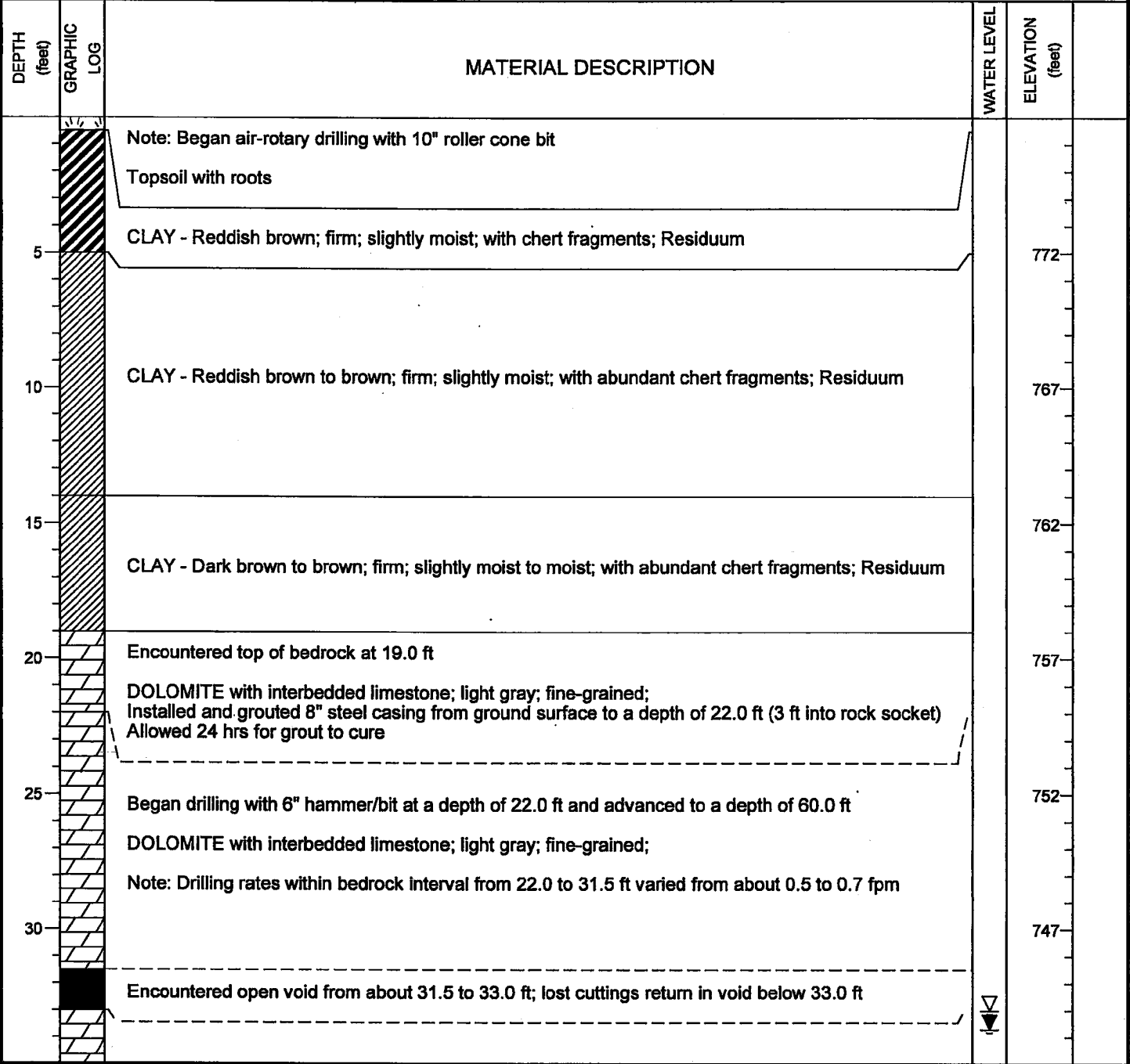
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<b>PROJECT:</b> TVA Kingston - Gypsum Disposal Area Kingston, Tennessee S&ME Project No. 1431-08-022	<b>BORING LOG:</b> <b>MW-6B</b>
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DATE DRILLED: 1/24/08	ELEVATION: 777.1	FEET	<b>NOTES:</b> Overburden soil; 0 to 19.0 ft Bedrock; 19.0 ft to 60.0 ft 10" borehole from 0 to 22.0 ft 6" borehole from 22.0 to 60.0 ft
DRILLING METHOD: Air-rotary; Gus Pech1000	BORING DEPTH: 60.0	FEET	
LOGGED BY: M. Devoe	WATER LEVEL @ TOB: 33.00		
DRILLER: W. Betts	WATER LEVEL @ 24 hrs: 33.70		



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<b>DATE DRILLED:</b> 1/24/08	<b>ELEVATION:</b> 777.1	<b>FEET</b>
<b>DRILLING METHOD:</b> Air-rotary; Gus Pech1000	<b>BORING DEPTH:</b> 60.0	<b>FEET</b>
<b>LOGGED BY:</b> M. Devoe	<b>WATER LEVEL @ TOB:</b> 33.00	
<b>DRILLER:</b> W. Betts	<b>WATER LEVEL @ 24 hrs:</b> 33.70	

**NOTES:**  
 Overburden soil; 0 to 19.0 ft  
 Bedrock; 19.0 ft to 60.0 ft  
 10" borehole from 0 to 22.0 ft  
 6" borehole from 22.0 to 60.0 ft

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)
40	[Hatched pattern]	DOLOMITE with interbedded limestone; light gray; fine-grained;  Note: Drilling rates within bedrock interval from 33.0 to 45.5 ft varied from about 1.0 to 1.5 fpm  Began to regain cuttings return at about 40.0 ft <i>(continued)</i>		737
45	[Hatched pattern]	Encountered open void from about 45.5 to 46.0 ft; lost cuttings return again		732
50	[Hatched pattern]	DOLOMITE with interbedded limestone; light gray; fine-grained;  Note: Drilling rates within bedrock interval from 46.0 to 60.0 ft varied from about 1.0 to 1.5 fpm  Bedrock appears to be heavily fractured and jointed; no cuttings return		727
55	[Hatched pattern]			722
60	[Hatched pattern]	Boring Terminated at a depth of 60.0 ft		717

AIR ROTARY 08-022.GPJ S&ME.GDT 2/20/08

**NOTES:**

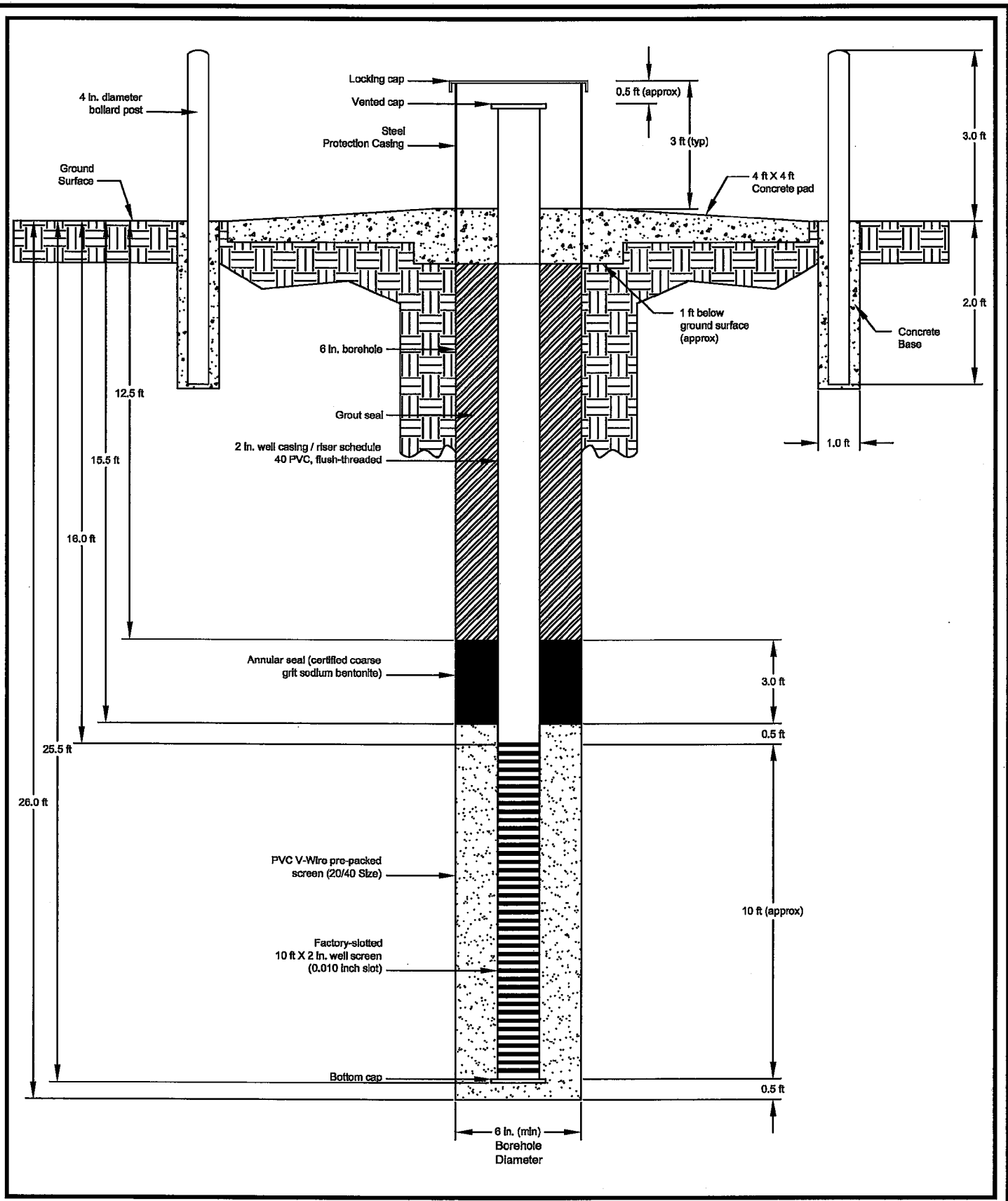
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**APPENDIX III**

**NEWLY INSTALLED MONITORING WELL SCHEMATICS**





TVA Well ID: MW-5A

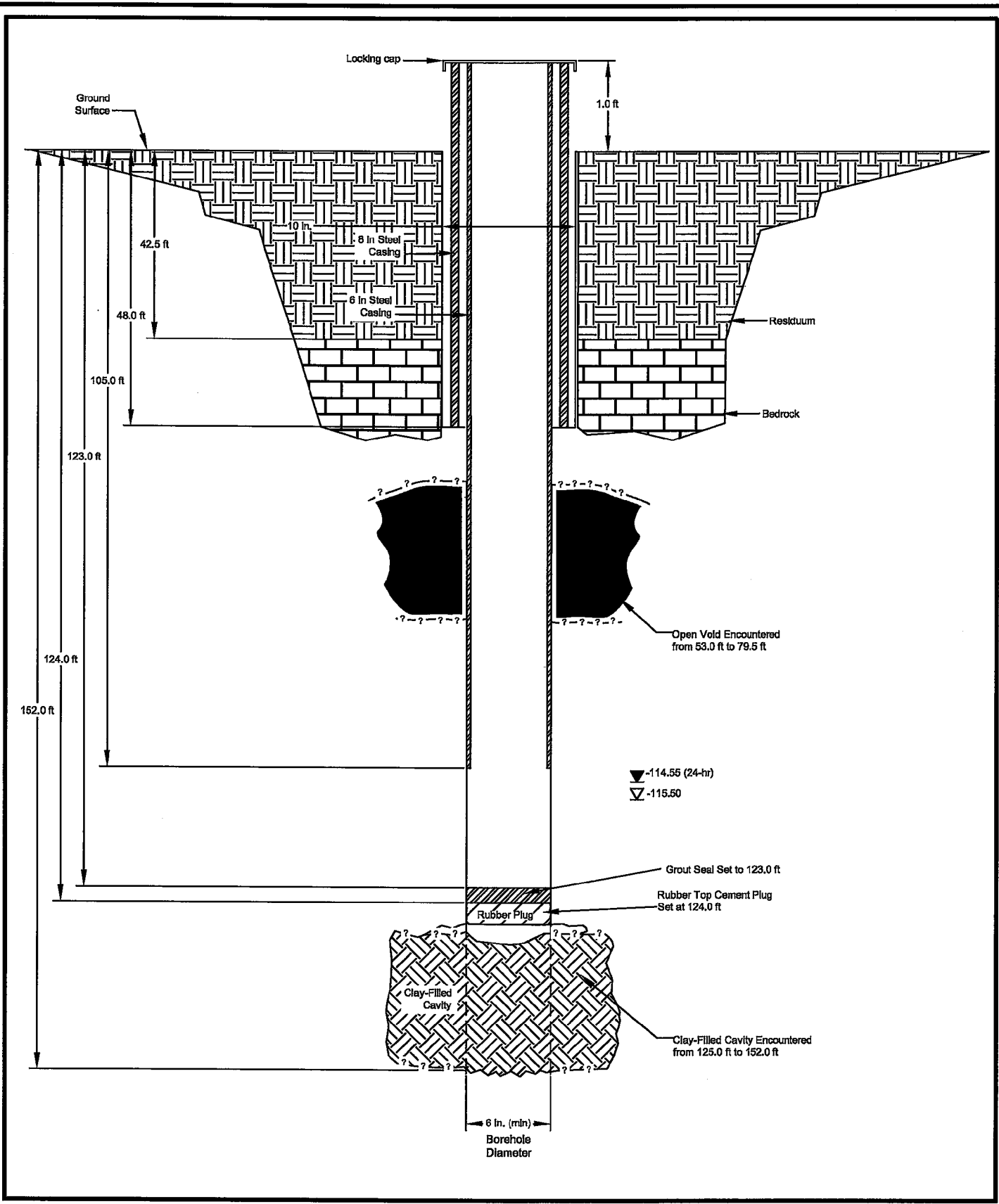
Date Installed: 2-5-08

SCALE:	N.T.S.
CHECKED BY:	CTJ
DRAWN BY:	MAP
DATE:	1-9-2008



Residue Monitoring Well Schematic  
 Monitoring Well Abandonment & Installation  
 Proposed Gypsum Disposal Area  
 TVA Kingston Fossil Plant  
 Kingston, Tennessee

JOB NO: 1431-08-022



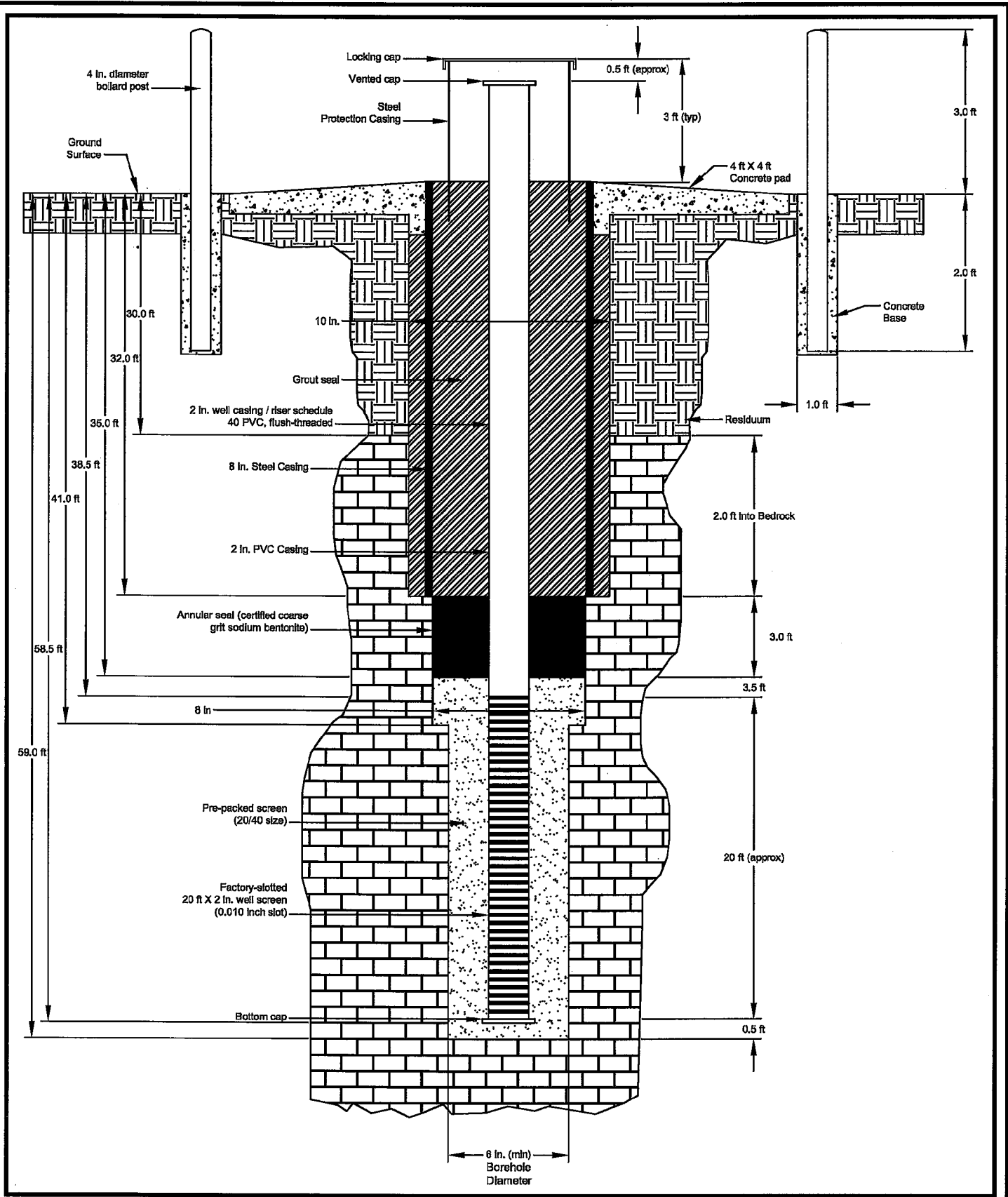
TVA Well ID: MW-1B  
 Date Installed: 2-13-08

SCALE:	N.T.S.
CHECKED BY:	CTJ
DRAWN BY:	MAP
DATE:	1-9-2008



Bedrock Monitoring Well Schematic  
 Monitoring Well Abandonment & Installation  
 Proposed Gypsum Disposal Area  
 TVA Kingston Fossil Plant  
 Kingston, Tennessee

JOB NO: 1431-08-022



TVA Well ID: MW-3B

Date Installed: 1-31-08

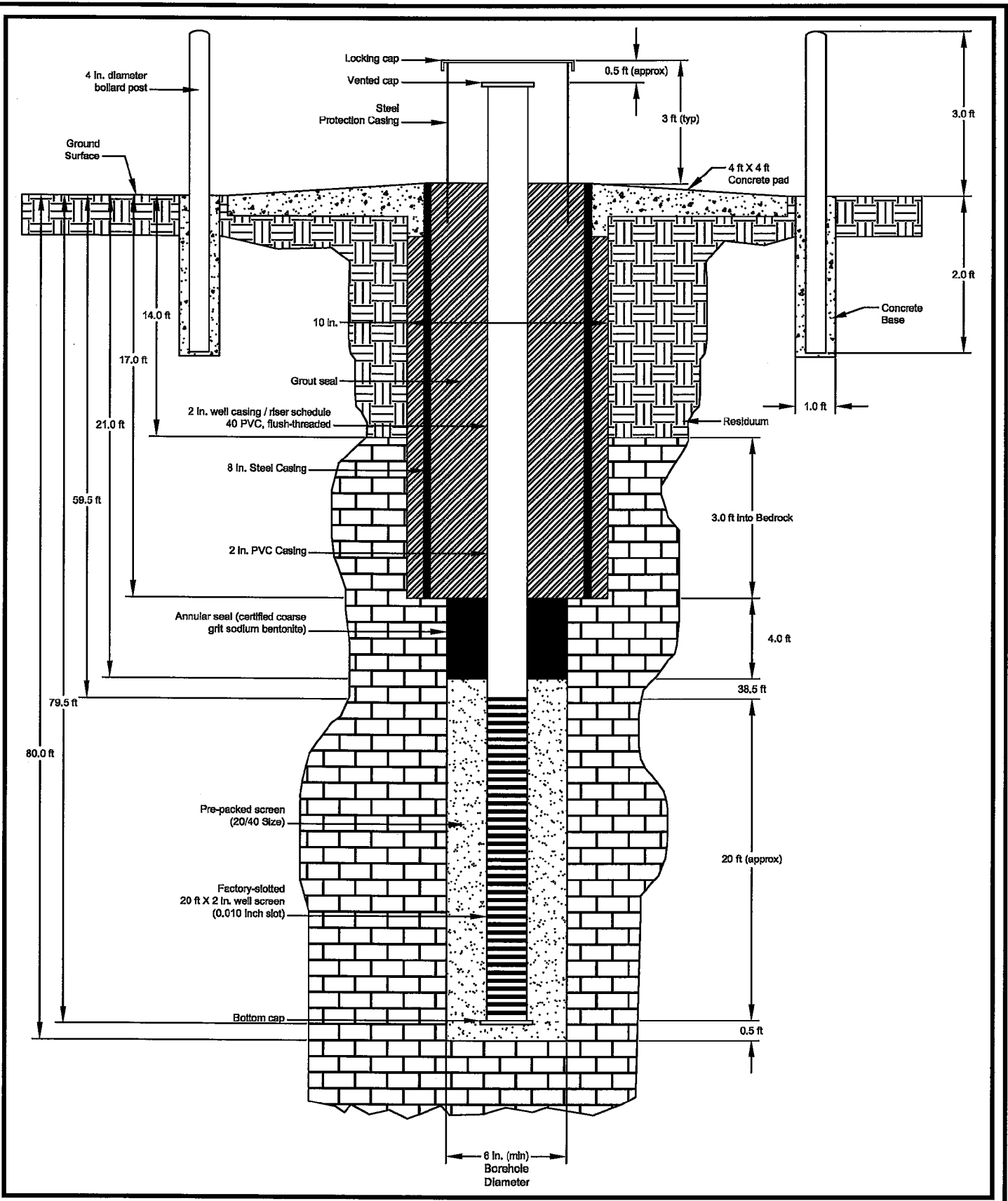
SCALE:	N.T.S.
CHECKED BY:	CTJ
DRAWN BY:	MAP
DATE:	1-9-2006



Bedrock Monitoring Well Schematic  
 Monitoring Well Abandonment & Installation  
 Proposed Gypsum Disposal Area  
 TVA Kingston Fossil Plant  
 Kingston, Tennessee

JOB NO: 1431-08-022





TVA Well ID: MW-4B

Date Installed: 1-29-08

SCALE:	N.T.S.
CHECKED BY:	CTJ
DRAWN BY:	MAP
DATE:	1-9-2008



Bedrock Monitoring Well Schematic  
 Monitoring Well Abandonment & Installation  
 Proposed Gypsum Disposal Area  
 TVA Kingston Fossil Plant  
 Kingston, Tennessee

JOB NO: 1431-08-022



