

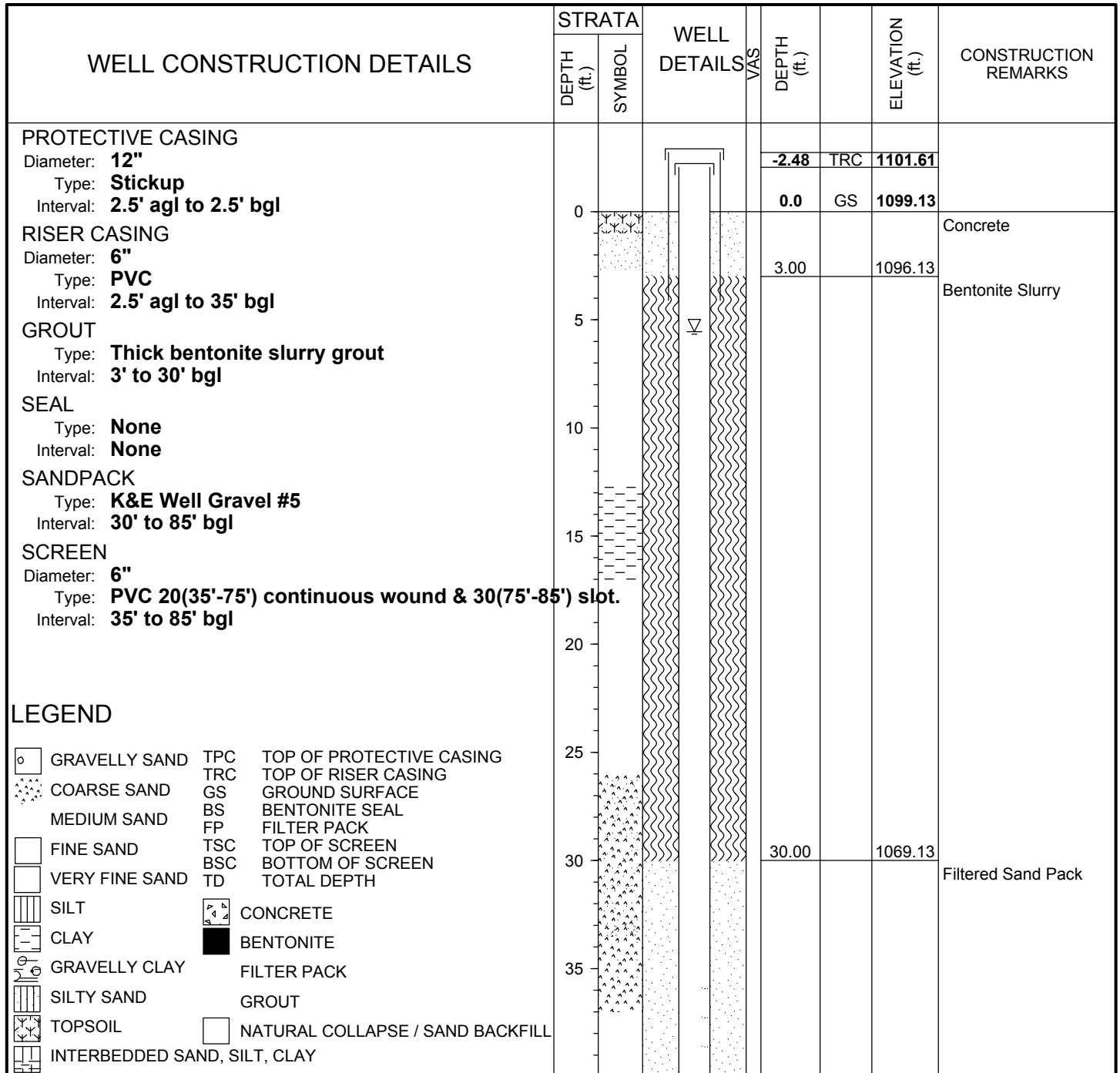
# COMPLETION REPORT OF WELL No. TW-1

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ▽ **5.55** ▽ \_\_\_\_\_ ▽ \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1235** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **10 1/4" HSA**  
 DATE COMPLETED: **July 6, 2000**

GROUND SURFACE ELEVATION: **1099.1**  
 DATUM: **USGS**  
 LOGGED BY: **Joel Henry**



**LEGEND**

- |  |                              |  |                                  |
|--|------------------------------|--|----------------------------------|
|  | GRAVELLY SAND                |  | TPC TOP OF PROTECTIVE CASING     |
|  | COARSE SAND                  |  | TRC TOP OF RISER CASING          |
|  | MEDIUM SAND                  |  | GS GROUND SURFACE                |
|  | FINE SAND                    |  | BS BENTONITE SEAL                |
|  | VERY FINE SAND               |  | FP FILTER PACK                   |
|  | SILT                         |  | TSC TOP OF SCREEN                |
|  | CLAY                         |  | BSC BOTTOM OF SCREEN             |
|  | GRAVELLY CLAY                |  | TD TOTAL DEPTH                   |
|  | SILTY SAND                   |  | CONCRETE                         |
|  | TOPSOIL                      |  | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |  | FILTER PACK                      |
|  |                              |  | GROUT                            |
|  |                              |  | NATURAL COLLAPSE / SAND BACKFILL |



1500 Abbott Road, Suite 210  
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**COMPLETION REPORT OF  
WELL No. TW-1**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Filtered Sand Pack (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85				85.00	1014.13	

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

# COMPLETION REPORT OF WELL No. MW-1d

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ▽ **4.20** ▽  
 DATE: **10-12-00**  
 TIME: **1231**

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1099.4**  
 DATUM: **USGS**  
 LOGGED BY: **Ken Ewers**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
<b>PROTECTIVE CASING</b> Diameter: <b>4"</b> Type: <b>Stickup</b> Interval: <b>2.5' agl to 2.5' bgl</b>	-2.53	TRC	1101.96			
	0.0	GS	1099.43			
<b>RISER CASING</b> Diameter: <b>2"</b> Type: <b>PVC</b> Interval: <b>2.5' agl to 103.5' bgl</b>	2.00		1097.43			Concrete
	5.00					Natural Collapse
<b>GROUT</b> Type: <b>Thick Bentonite Slurry</b> Interval: <b>8' to 19' bgl and 50' to 99.5' bgl</b>	8.00		1091.43			Bentonite Slurry
	19.00		1080.43			Natural Collapse
<b>SEAL</b> Type: <b>None</b> Interval: <b>None</b>						
<b>SANDPACK</b> Type: <b>Natural Collapse</b> Interval: <b>99.5' to 109' bgl</b>						
<b>SCREEN</b> Diameter: <b>2"</b> Type: <b>Slotted PVC</b> Interval: <b>103.5' to 108.5' bgl</b>						

**LEGEND**

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL



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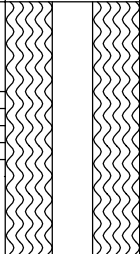
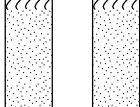
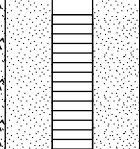
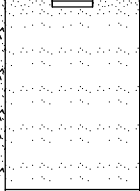

**COMPLETION REPORT OF  
WELL No. MW-1d**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Natural Collapse (continued)
	45						
	50				50.00	1049.43	Bentonite Slurry
	55						
	60						
	65						
	70						
	75						
	80						
	85						

















**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |



WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Bentonite Slurry (continued)
	100				99.50	999.93	Natural Collapse
	105				108.50	990.93	Natural Collapse
	110						Natural Collapse
	115				115.00	984.43	

**LEGEND**

- |   |                              |   |                                  |
|---|------------------------------|---|----------------------------------|
|  | GRAVELLY SAND                | TPC   | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC   | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC   | TOP OF SCREEN                    |
|  | CLAY                         | BSC   | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |  | CONCRETE                         |
|  | TOPSOIL                      |  | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |  | FILTER PACK                      |
|   |                              |  | GROUT                            |
|   |                              |  | NATURAL COLLAPSE / SAND BACKFILL |

# COMPLETION REPORT OF WELL No. MW-1i

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **6.35**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1230** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1100.2**  
 DATUM: **USGS**  
 LOGGED BY: **Ken Ewers**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	CONSTRUCTION REMARKS																																																			
	DEPTH (ft.)	SYMBOL																																																								
<p><b>PROTECTIVE CASING</b>                      Diameter: <b>4"</b>                      Type: <b>Stickup</b>                      Interval: <b>2.5' agl to 2.5' bgl</b></p> <p><b>RISER CASING</b>                      Diameter: <b>2"</b>                      Type: <b>PVC</b>                      Interval: <b>2.5' agl to 33.5' bgl</b></p> <p><b>GROUT</b>                      Type: <b>Thick Bentonite Slurry</b>                      Interval: <b>3' to 29' bgl</b></p> <p><b>SEAL</b>                      Type: <b>None</b>                      Interval: <b>None</b></p> <p><b>SANDPACK</b>                      Type: <b>Natural Collapse</b>                      Interval: <b>29' to 39' bgl</b></p> <p><b>SCREEN</b>                      Diameter: <b>2"</b>                      Type: <b>Slotted PVC</b>                      Interval: <b>33.5' to 38.5' bgl</b></p> <p><b>LEGEND</b></p> <table style="font-size: small; width: 100%;"> <tr> <td></td> <td>GRAVELLY SAND</td> <td>TPC</td> <td>TOP OF PROTECTIVE CASING</td> </tr> <tr> <td></td> <td>COARSE SAND</td> <td>TRC</td> <td>TOP OF RISER CASING</td> </tr> <tr> <td></td> <td>MEDIUM SAND</td> <td>GS</td> <td>GROUND SURFACE</td> </tr> <tr> <td></td> <td>FINE SAND</td> <td>BS</td> <td>BENTONITE SEAL</td> </tr> <tr> <td></td> <td>VERY FINE SAND</td> <td>FP</td> <td>FILTER PACK</td> </tr> <tr> <td></td> <td>SILT</td> <td>TSC</td> <td>TOP OF SCREEN</td> </tr> <tr> <td></td> <td>CLAY</td> <td>BSC</td> <td>BOTTOM OF SCREEN</td> </tr> <tr> <td></td> <td>GRAVELLY CLAY</td> <td>TD</td> <td>TOTAL DEPTH</td> </tr> <tr> <td></td> <td>SILTY SAND</td> <td></td> <td>CONCRETE</td> </tr> <tr> <td></td> <td>TOPSOIL</td> <td></td> <td>BENTONITE</td> </tr> <tr> <td></td> <td>INTERBEDDED SAND, SILT, CLAY</td> <td></td> <td>FILTER PACK</td> </tr> <tr> <td></td> <td></td> <td></td> <td>GROUT</td> </tr> <tr> <td></td> <td></td> <td></td> <td>NATURAL COLLAPSE / SAND BACKFILL</td> </tr> </table>		GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING		COARSE SAND	TRC	TOP OF RISER CASING		MEDIUM SAND	GS	GROUND SURFACE		FINE SAND	BS	BENTONITE SEAL		VERY FINE SAND	FP	FILTER PACK		SILT	TSC	TOP OF SCREEN		CLAY	BSC	BOTTOM OF SCREEN		GRAVELLY CLAY	TD	TOTAL DEPTH		SILTY SAND		CONCRETE		TOPSOIL		BENTONITE		INTERBEDDED SAND, SILT, CLAY		FILTER PACK				GROUT				NATURAL COLLAPSE / SAND BACKFILL	0	0	-2.35	TRC	1102.51	
		GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING																																																						
		COARSE SAND	TRC	TOP OF RISER CASING																																																						
		MEDIUM SAND	GS	GROUND SURFACE																																																						
		FINE SAND	BS	BENTONITE SEAL																																																						
		VERY FINE SAND	FP	FILTER PACK																																																						
		SILT	TSC	TOP OF SCREEN																																																						
		CLAY	BSC	BOTTOM OF SCREEN																																																						
		GRAVELLY CLAY	TD	TOTAL DEPTH																																																						
		SILTY SAND		CONCRETE																																																						
		TOPSOIL		BENTONITE																																																						
		INTERBEDDED SAND, SILT, CLAY		FILTER PACK																																																						
				GROUT																																																						
				NATURAL COLLAPSE / SAND BACKFILL																																																						
		0	0	0.0	GS	1100.16																																																				
	3	Concrete																																																								
	3	Bentonite Slurry																																																								
	29	Natural Collapse																																																								
	29		29.00		1071.16																																																					
	38		38.50		1061.66																																																					
	39	Natural Collapse	39.00		1061.16																																																					



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## COMPLETION REPORT OF WELL No. MW-1i

# COMPLETION REPORT OF WELL No. MW-1s

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **7.28**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1233** \_\_\_\_\_

DRILLING CONTRACTOR: **NA**  
 DRILLING METHOD: **Hand Auger**  
 DATE COMPLETED: **June 29, 2000**

GROUND SURFACE ELEVATION: **1098.9**  
 DATUM: **USGS**  
 LOGGED BY: **M.B. & J.H.**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
<b>PROTECTIVE CASING</b> Diameter: <b>NA</b> Type: <b>NA</b> Interval: <b>NA</b>	0	○			-1.59	TRC	1100.52	
<b>RISER CASING</b> Diameter: <b>2"</b> Type: <b>PVC</b> Interval: <b>1.6' agl to 3.4' bgl</b>	0	○			0.0	GS	1098.93	
<b>GROUT</b> Type: <b>Bentonite Chips</b> Interval: <b>0.5' to 2.5'</b>	5	●			0.50		1098.43	Filtered Sand Pack Bentonite Chips
<b>SEAL</b> Type: <b>None</b> Interval: <b>None</b>	5	■			2.50		1096.43	Filtered Sand Pack
<b>SANDPACK</b> Type: <b>Filter pack sand</b> Interval: <b>2.5' to 8.4' bgl</b>	5	□			8.40		1090.53	
<b>SCREEN</b> Diameter: <b>2"</b> Type: <b>Slotted PVC</b> Interval: <b>3.4' to 8.4' bgl</b>								

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |



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**COMPLETION REPORT OF  
WELL No. MW-1s**

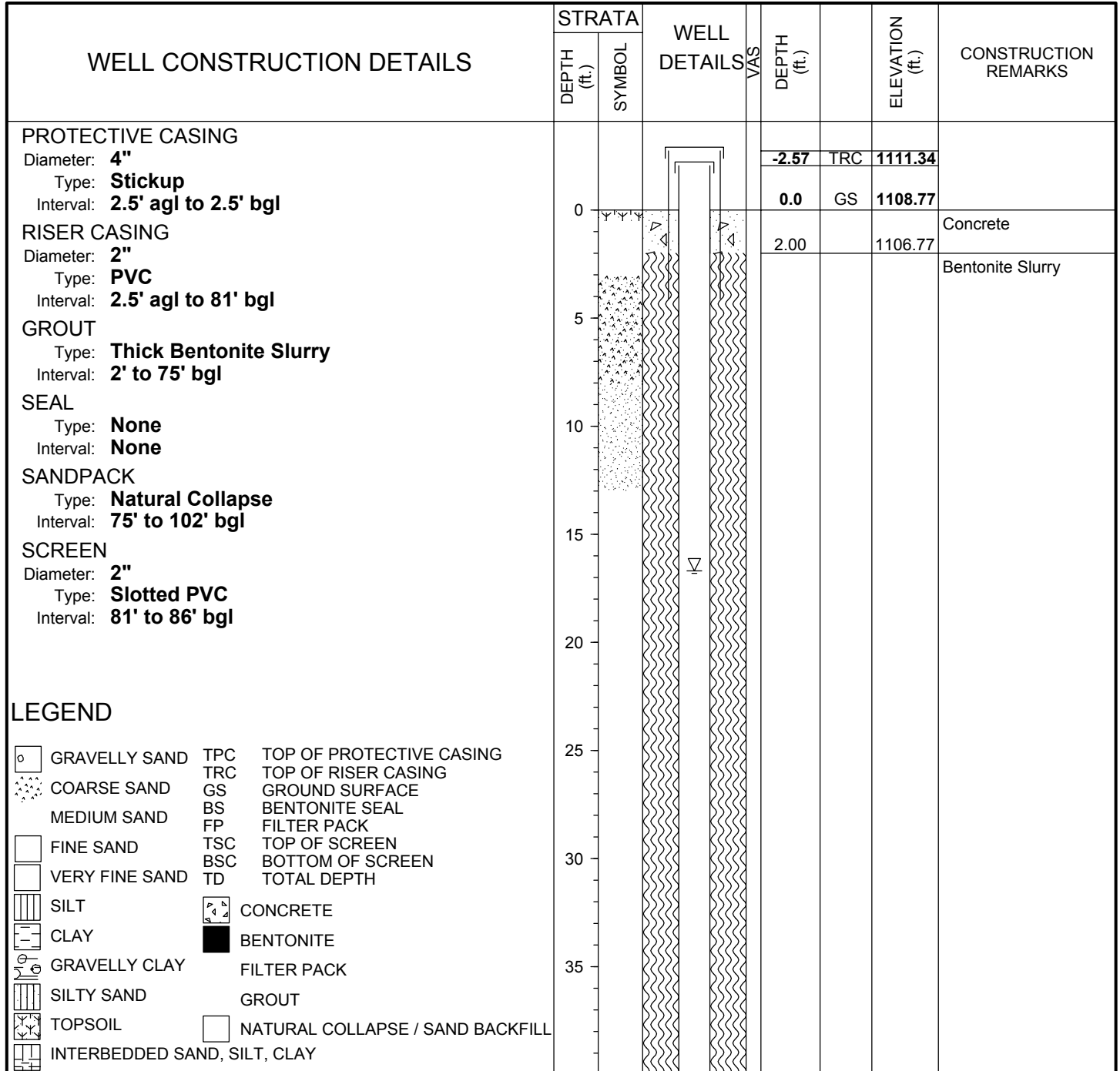
# COMPLETION REPORT OF WELL No. MW-3

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **16.69**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1218** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **June 28, 2000**

GROUND SURFACE ELEVATION: **1108.8**  
 DATUM: **USGS**  
 LOGGED BY: **Ken Ewers**





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**COMPLETION REPORT OF  
WELL No. MW-3**















WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75				75.00	1033.77	Natural Collapse
	80						
	85				86.00	1022.77	Natural Collapse

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Natural Collapse (continued)
	100				102.00	1006.77	

**LEGEND**

- |   |                              |   |                                  |
|---|------------------------------|---|----------------------------------|
|  | GRAVELLY SAND                | TPC   | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC   | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC   | TOP OF SCREEN                    |
|  | CLAY                         | BSC   | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |  | CONCRETE                         |
|  | TOPSOIL                      |  | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |   | FILTER PACK                      |
|   |                              |   | GROUT                            |
|   |                              |  | NATURAL COLLAPSE / SAND BACKFILL |

# COMPLETION REPORT OF WELL No. MW-7

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **53.19**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1241** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **July 18, 2000**

GROUND SURFACE ELEVATION: **1149.1**  
 DATUM: **USGS**  
 LOGGED BY: **Jeff Groncki**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS																																												
	DEPTH (ft.)	SYMBOL																																																
<b>PROTECTIVE CASING</b> Diameter: <b>4"</b> Type: <b>Stickup</b> Interval: <b>2.5' agl to 0.5' bgl</b>	0	-	-	-1.95	TRC	1151.00																																												
<b>RISER CASING</b> Diameter: <b>2"</b> Type: <b>PVC</b> Interval: <b>2.5' agl to 89' bgl</b>	0	-	-	0.0	GS	1149.05																																												
<b>GROUT</b> Type: <b>Thick Bentonite Slurry</b> Interval: <b>0.5' to 84' bgl</b>	5	-	-	0.50		Concrete Bentonite Slurry																																												
<b>SEAL</b> Type: <b>None</b> Interval: <b>None</b>	10	-	-																																															
<b>SANDPACK</b> Type: <b>Natural Collapse</b> Interval: <b>84' to 99' bgl</b>	15	-	-																																															
<b>SCREEN</b> Diameter: <b>2"</b> Type: <b>Slotted PVC</b> Interval: <b>89' to 99' bgl</b>	20	-	-																																															
<b>LEGEND</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td>GRAVELLY SAND</td> <td style="width: 30%;"></td> <td>CONCRETE</td> </tr> <tr> <td></td> <td>COARSE SAND</td> <td></td> <td>BENTONITE</td> </tr> <tr> <td></td> <td>MEDIUM SAND</td> <td></td> <td>FILTER PACK</td> </tr> <tr> <td></td> <td>FINE SAND</td> <td></td> <td>GROUT</td> </tr> <tr> <td></td> <td>VERY FINE SAND</td> <td></td> <td>NATURAL COLLAPSE / SAND BACKFILL</td> </tr> <tr> <td></td> <td>SILT</td> <td></td> <td></td> </tr> <tr> <td></td> <td>CLAY</td> <td></td> <td></td> </tr> <tr> <td></td> <td>GRAVELLY CLAY</td> <td></td> <td></td> </tr> <tr> <td></td> <td>SILTY SAND</td> <td></td> <td></td> </tr> <tr> <td></td> <td>TOPSOIL</td> <td></td> <td></td> </tr> <tr> <td></td> <td>INTERBEDDED SAND, SILT, CLAY</td> <td></td> <td></td> </tr> </table>		GRAVELLY SAND		CONCRETE		COARSE SAND		BENTONITE		MEDIUM SAND		FILTER PACK		FINE SAND		GROUT		VERY FINE SAND		NATURAL COLLAPSE / SAND BACKFILL		SILT				CLAY				GRAVELLY CLAY				SILTY SAND				TOPSOIL				INTERBEDDED SAND, SILT, CLAY			25	-	-			
	GRAVELLY SAND		CONCRETE																																															
	COARSE SAND		BENTONITE																																															
	MEDIUM SAND		FILTER PACK																																															
	FINE SAND		GROUT																																															
	VERY FINE SAND		NATURAL COLLAPSE / SAND BACKFILL																																															
	SILT																																																	
	CLAY																																																	
	GRAVELLY CLAY																																																	
	SILTY SAND																																																	
	TOPSOIL																																																	
	INTERBEDDED SAND, SILT, CLAY																																																	
	30	-	-																																															
	35	-	-																																															



















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**COMPLETION REPORT OF  
WELL No. MW-7**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85				84.00	1065.05	Natural Collapse

**LEGEND**

- |   |                              |   |                                  |
|---|------------------------------|---|----------------------------------|
|  | GRAVELLY SAND                | TPC   | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC   | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC   | TOP OF SCREEN                    |
|  | CLAY                         | BSC   | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |  | CONCRETE                         |
|  | TOPSOIL                      |  | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |  | FILTER PACK                      |
|   |                              |  | GROUT                            |
|   |                              |  | NATURAL COLLAPSE / SAND BACKFILL |



WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Natural Collapse (continued)
					99.00	1050.05	
	100				101.00	1048.05	

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

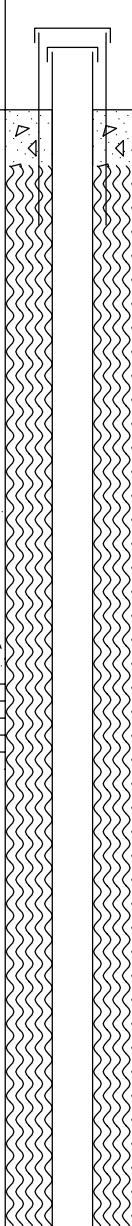
# COMPLETION REPORT OF WELL No. MW-12d

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **46.33**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1316** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **July 25, 2000**

GROUND SURFACE ELEVATION: **1162.6**  
 DATUM: **USGS**  
 LOGGED BY: **J.Henry/G.Fox**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL					
<b>PROTECTIVE CASING</b> Diameter: <b>4"</b> Type: <b>Stickup</b> Interval: <b>3.0' agl to 2.0' bgl</b>	0	○		-2.42	TRC	1164.98	
<b>RISER CASING</b> Diameter: <b>2"</b> Type: <b>PVC</b> Interval: <b>2.5' agl to 105' bgl</b>	0	○		0.0	GS	1162.56	Concrete
<b>GROUT</b> Type: <b>Thick Bentonite Slurry</b> Interval: <b>2.0' to 102' bgl</b>	5	■		2.00		1160.56	Bentonite Slurry
<b>SEAL</b> Type: <b>None</b> Interval: <b>None</b>	10	■					
<b>SANDPACK</b> Type: <b>#5 Filter Pack Sand</b> Interval: <b>103' to 115' bgl</b>	15	□					
<b>SCREEN</b> Diameter: <b>2"</b> Type: <b>Slotted PVC</b> Interval: <b>105' to 115' bgl</b>	20	□					
<b>LEGEND</b> ○ GRAVELLY SAND    TPC TOP OF PROTECTIVE CASING □ COARSE SAND    TRC TOP OF RISER CASING □ MEDIUM SAND    GS GROUND SURFACE □ FINE SAND    BS BENTONITE SEAL □ VERY FINE SAND    FP FILTER PACK □ SILT    TSC TOP OF SCREEN □ CLAY    BSC BOTTOM OF SCREEN □ GRAVELLY CLAY    TD TOTAL DEPTH □ SILTY SAND    ■ CONCRETE □ TOPSOIL    ■ BENTONITE □ INTERBEDDED SAND, SILT, CLAY    □ FILTER PACK □ NATURAL COLLAPSE / SAND BACKFILL □ GROUT	25	□					
	30	□					
	35	□					



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**COMPLETION REPORT OF  
 WELL No. MW-12d**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Bentonite Slurry <i>(continued)</i>
	100				102.00	1060.56	
					103.00	1059.56	Natural Collapse
	105						Filtered Sand Pack
	110						
	115				115.00	1047.56	

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

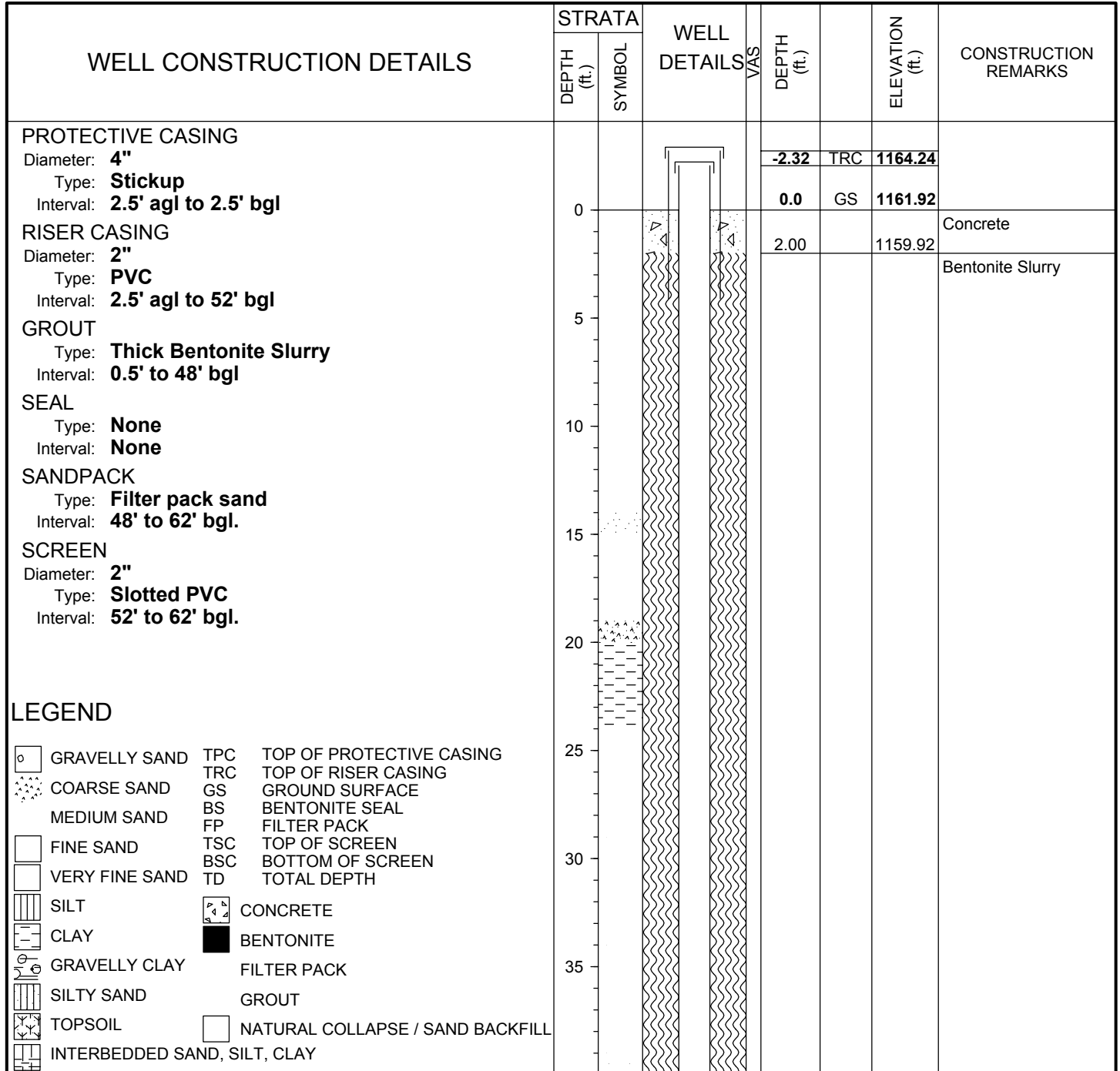
# COMPLETION REPORT OF WELL No. MW-12i

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **45.46**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-12-00** \_\_\_\_\_  
 TIME: **1315** \_\_\_\_\_


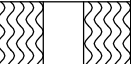



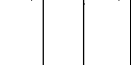










DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **July 27, 2000**

GROUND SURFACE ELEVATION: **1161.9**  
 DATUM: **USGS**  
 LOGGED BY: **Greg Fox**



















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**COMPLETION REPORT OF  
 WELL No. MW-12i**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (continued)
	45						
	48.00				48.00	1113.92	Filtered Sand Pack
	50						
	52.00				52.00	1109.92	
	55						
	60						
	62.00				62.00	1099.92	

**LEGEND**

- |   |                              |   |                                  |
|---|------------------------------|---|----------------------------------|
|  | GRAVELLY SAND                | TPC   | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC   | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC   | TOP OF SCREEN                    |
|  | CLAY                         | BSC   | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |  | CONCRETE                         |
|  | TOPSOIL                      |  | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |  | FILTER PACK                      |
|   |                              |  | GROUT                            |
|   |                              |  | NATURAL COLLAPSE / SAND BACKFILL |

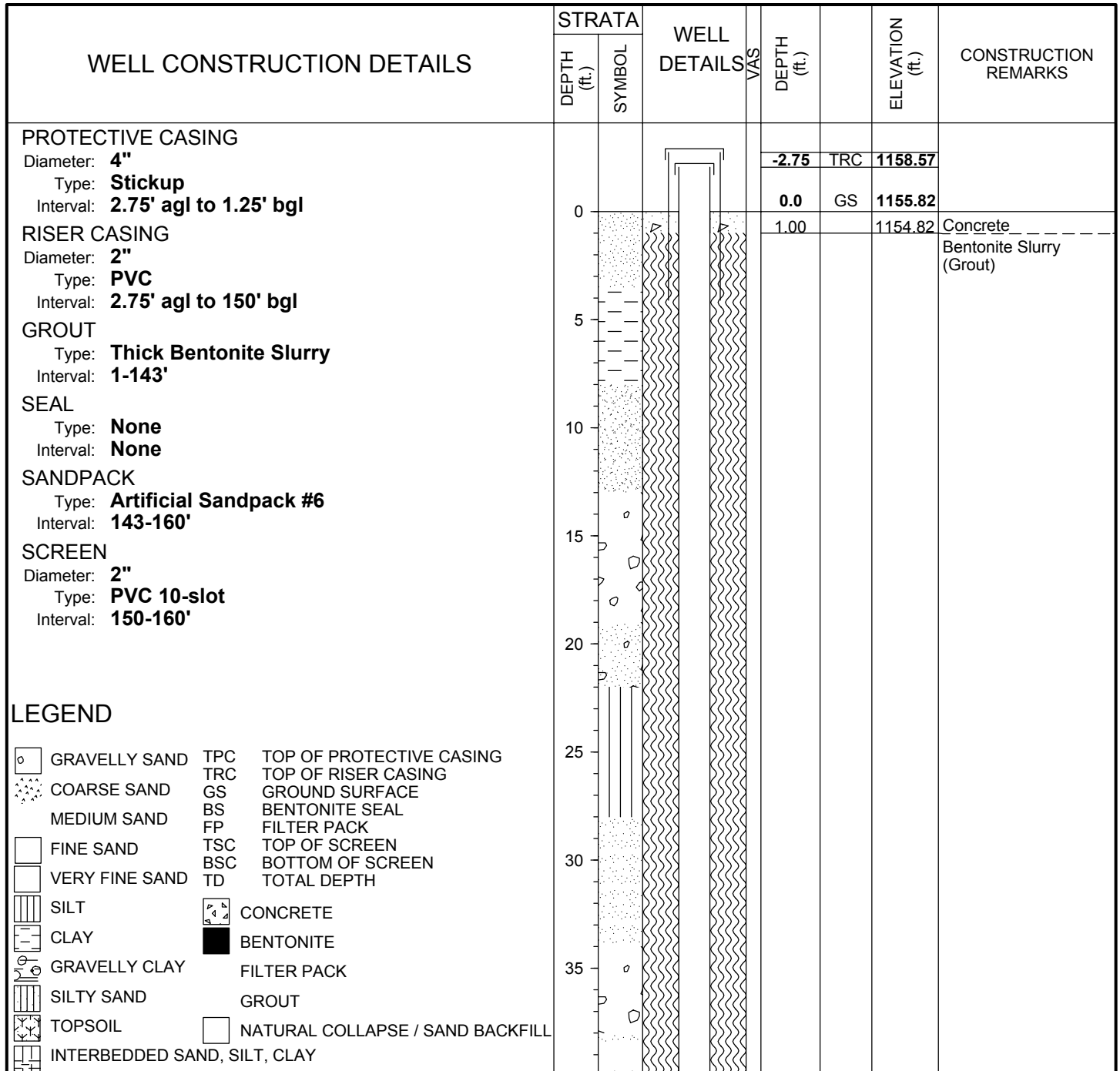
# COMPLETION REPORT OF WELL No. MW-101D

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ▽ **44.00** ▽ \_\_\_\_\_ ▽ \_\_\_\_\_  
 DATE: **10-30-00** \_\_\_\_\_  
 TIME: **NA** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **November 2, 2000**

GROUND SURFACE ELEVATION: **1155.8**  
 DATUM: **USGS**  
 LOGGED BY: **Phil Odenkirk**



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## COMPLETION REPORT OF WELL No. MW-101D

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (Grout) (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |



WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
							Bentonite Slurry (Grout) <i>(continued)</i>
					95		
					100		
					105		
					110		
					115		
					120		
					125		
					130		
					135		
					140		

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	145				143.00	1012.82	Bentonite Slurry (Grout) <i>(continued)</i>
	150						Artificial Sand pack
	155						10 Slot Screen
	160				160.00	995.82	

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

# COMPLETION REPORT OF WELL No. MW-1011

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **44.87**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **2-13-01** \_\_\_\_\_  
 TIME: \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **November 17, 2000**

GROUND SURFACE ELEVATION: **1179.5**  
 DATUM: **USGS**  
 LOGGED BY: **Phil Odenkirk**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	VAS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
<b>PROTECTIVE CASING</b> Diameter: <b>4"</b> Type: <b>Stickup</b> Interval: <b>2.5' agl to 1.5' bgl</b>	0	[Symbol]			-2.30	TRC	1181.77	
	0	[Symbol]			0.0	GS	1179.47	
<b>RISER CASING</b> Diameter: <b>2"</b> Type: <b>PVC</b> Interval: <b>2.5' agl to 65' bgl</b>	1.00	[Symbol]					1178.47	Concrete
<b>GROUT</b> Type: <b>None</b> Interval: <b>None</b>	5	[Symbol]					Quick-grout Bentonite Slurry Grout	
<b>SEAL</b> Type: <b>None</b> Interval: <b>None</b>	10	[Symbol]						
<b>SANDPACK</b> Type: <b>Global-Pack Quartz Sand Pack</b> Interval: <b>58-75'</b>	15	[Symbol]						
<b>SCREEN</b> Diameter: <b>2"</b> Type: <b>PVC 10 slot</b> Interval: <b>65-75'</b>	20	[Symbol]						
	25	[Symbol]						
	30	[Symbol]						
	35	[Symbol]						

**LEGEND**

- |                                       |   |
|---------------------------------------|---|
| [Symbol] GRAVELLY SAND                | TPC TOP OF PROTECTIVE CASING              |
| [Symbol] COARSE SAND                  | TRC TOP OF RISER CASING                   |
| [Symbol] MEDIUM SAND                  | GS GROUND SURFACE                         |
| [Symbol] FINE SAND                    | BS BENTONITE SEAL                         |
| [Symbol] VERY FINE SAND               | FP FILTER PACK                            |
| [Symbol] SILT                         | TSC TOP OF SCREEN                         |
| [Symbol] CLAY                         | BSC BOTTOM OF SCREEN                      |
| [Symbol] GRAVELLY CLAY                | TD TOTAL DEPTH                            |
| [Symbol] SILTY SAND                   | [Symbol] CONCRETE                         |
| [Symbol] TOPSOIL                      | [Symbol] BENTONITE                        |
| [Symbol] INTERBEDDED SAND, SILT, CLAY | [Symbol] FILTER PACK                      |
|                                       | [Symbol] GROUT                            |
|                                       | [Symbol] NATURAL COLLAPSE / SAND BACKFILL |



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**COMPLETION REPORT OF  
WELL No. MW-1011**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Quick-grout Bentonite Slurry Grout (continued)
	45						
	50						
	55						
	58.00					1121.47	Filter Sand Pack
	60						
	65						10 Slot PVC screen
	70						
	75.00					1104.47	
	75						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

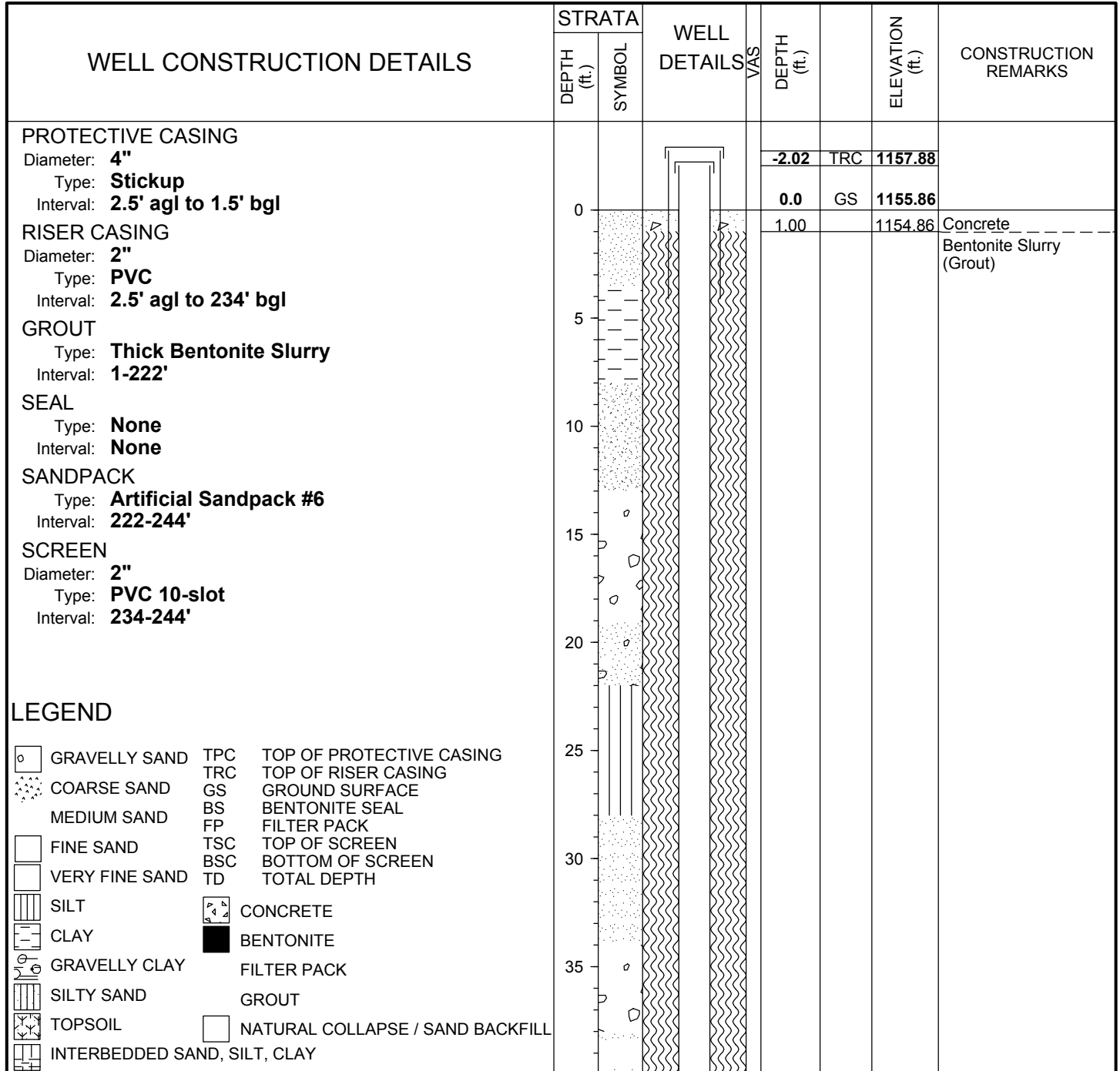
# COMPLETION REPORT OF WELL No. MW-101L

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **44.00**  $\nabla$  \_\_\_\_\_  
 DATE: **10-30-00** \_\_\_\_\_  
 TIME: **NA** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **November 1, 2000**

GROUND SURFACE ELEVATION: **1155.9**  
 DATUM: **USGS**  
 LOGGED BY: **Phil Odenkirk**



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## COMPLETION REPORT OF WELL No. MW-101L

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (Grout) (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
							Bentonite Slurry (Grout) (continued)
					95		
					100		
					105		
					110		
					115		
					120		
					125		
					130		
					135		
					140		

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
							Bentonite Slurry (Grout) <i>(continued)</i>
	145						
	150						
	155						
	160						
	165						
	170						
	175						
	180						
	185						
	190						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |



WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	195						Bentonite Slurry (Grout) <i>(continued)</i>
	200						
	205						
	210						
	215						
	220				222.00	933.86	
	225						Artificial Sandpack and Natural Collapse
	230						
	235						
	240						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	245				244.00	911.86	Artificial Sandpack and Natural Collapse (continued)
					246.00	909.86	Natural Collapse

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

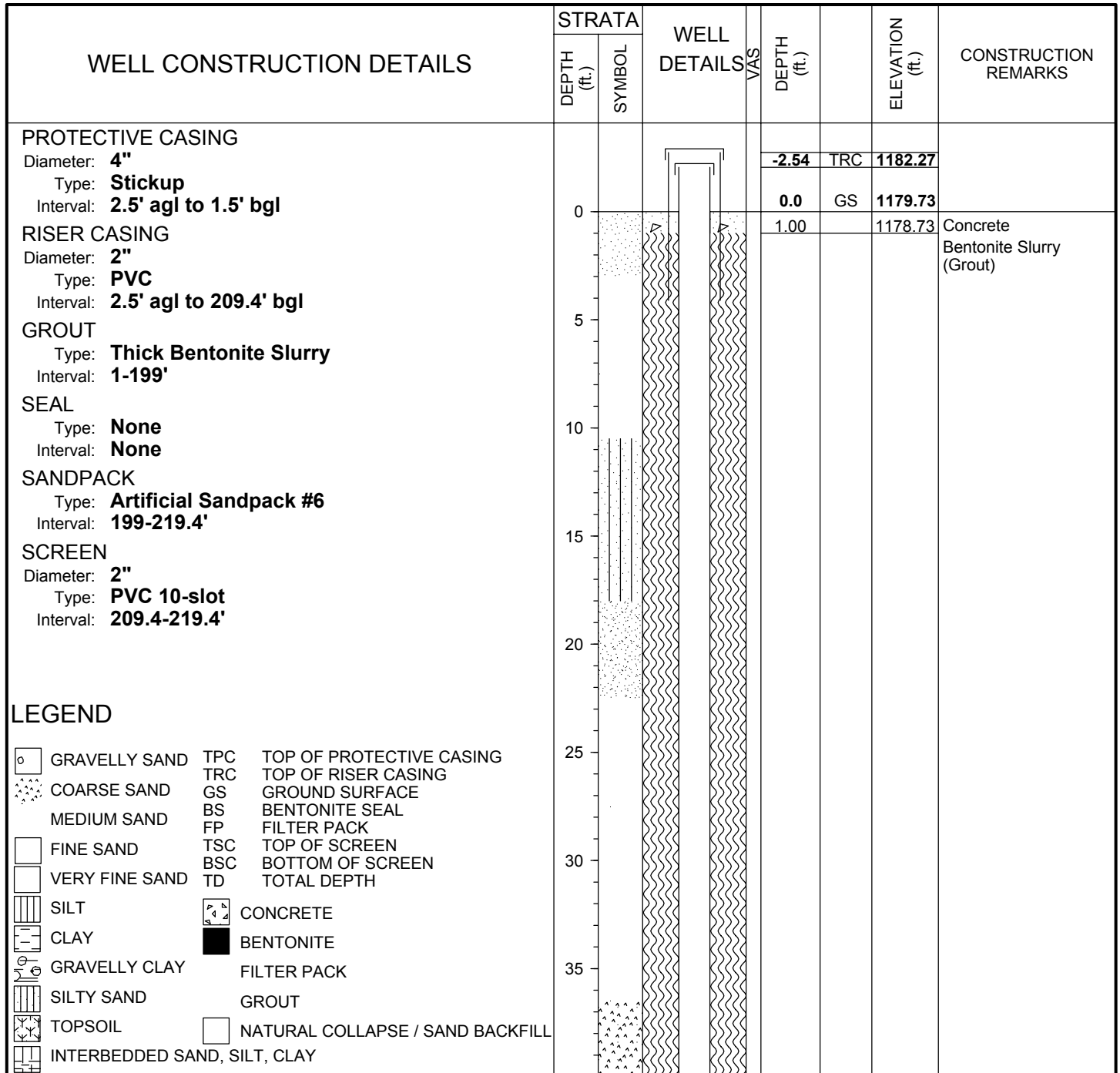
# COMPLETION REPORT OF WELL No. MW-102D

PROJECT: **GSWA: Spring Hill Camp Phase III**  
 PROJECT NO: **4065-005**  
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL:  $\nabla$  **65.00**  $\nabla$  \_\_\_\_\_  $\nabla$  \_\_\_\_\_  
 DATE: **10-30-00** \_\_\_\_\_  
 TIME: **NA** \_\_\_\_\_

DRILLING CONTRACTOR: **Stearns**  
 DRILLING METHOD: **4 1/4" HSA**  
 DATE COMPLETED: **November 1, 2000**

GROUND SURFACE ELEVATION: **1179.7**  
 DATUM: **USGS**  
 LOGGED BY: **Mike Brennan**



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 Fax: (517) 337-0417

## COMPLETION REPORT OF WELL No. MW-102D

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (Grout) (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | CLAY                         | TSC | TOP OF SCREEN                    |
|  | GRAVELLY CLAY                | BSC | BOTTOM OF SCREEN                 |
|  | SILTY SAND                   | TD  | TOTAL DEPTH                      |
|  | TOPSOIL                      |     | CONCRETE                         |
|  | INTERBEDDED SAND, SILT, CLAY |     | BENTONITE                        |
|  |                              |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
							Bentonite Slurry (Grout) <i>(continued)</i>
	95						
	100						
	105						
	110						
	115						
	120						
	125						
	130						
	135						
	140						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

















WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
							Bentonite Slurry (Grout) <i>(continued)</i>
	145						
	150						
	155						
	160						
	165						
	170						
	175						
	180						
	185						
	190						

**LEGEND**

- |  |                              |     |                                  |
|--|------------------------------|-----|----------------------------------|
|  | GRAVELLY SAND                | TPC | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC | TOP OF SCREEN                    |
|  | CLAY                         | BSC | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |     | CONCRETE                         |
|  | TOPSOIL                      |     | BENTONITE                        |
|  | INTERBEDDED SAND, SILT, CLAY |     | FILTER PACK                      |
|  |                              |     | GROUT                            |
|  |                              |     | NATURAL COLLAPSE / SAND BACKFILL |

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	195						Bentonite Slurry (Grout) <i>(continued)</i>
	200				199.00	980.73	Artificial Sandpack
	205						
	210						10 Slot Screen
	215						
	220				219.40	960.33	Natural Collapse
	225						
	230				231.00	948.73	

**LEGEND**

- |   |                              |   |                                  |
|---|------------------------------|---|----------------------------------|
|  | GRAVELLY SAND                | TPC   | TOP OF PROTECTIVE CASING         |
|  | COARSE SAND                  | TRC   | TOP OF RISER CASING              |
|  | MEDIUM SAND                  | GS  | GROUND SURFACE                   |
|  | FINE SAND                    | BS  | BENTONITE SEAL                   |
|  | VERY FINE SAND               | FP  | FILTER PACK                      |
|  | SILT                         | TSC   | TOP OF SCREEN                    |
|  | CLAY                         | BSC   | BOTTOM OF SCREEN                 |
|  | GRAVELLY CLAY                | TD  | TOTAL DEPTH                      |
|  | SILTY SAND                   |   |                                  |
|  | TOPSOIL                      |  | CONCRETE                         |
|  | INTERBEDDED SAND, SILT, CLAY |  | BENTONITE                        |
|   |                              |  | FILTER PACK                      |
|   |                              |  | GROUT                            |
|   |                              |  | NATURAL COLLAPSE / SAND BACKFILL |