

COMPLETION REPORT OF WELL No. DP-1

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

WATER LEVEL: ∇ **0.75** ∇ _____ ∇ _____
 DATE: **11-16-00** _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 16, 2000**

GROUND SURFACE ELEVATION: **1085.2**
 DATUM: **USGS**
 LOGGED BY: **Bernie Harvey**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-3.60	TRC	1088.81	
RISER CASING Diameter: 2" Type: GS Interval: 3.5' agl to 2.25' bgl	0				0.0	GS	1085.21	Natural Collapse
GROUT Type: None Interval: None	5				5.25		1079.96	Stainless Steel Screen
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: Stainless Steel Interval: 2.25-5.25'								

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. DP-1**

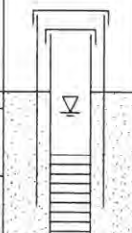


COMPLETION REPORT OF WELL No. DP-2

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

























WATER LEVEL: ∇ **0.75** ∇ _____ ∇ _____
 DATE: **11-16-00** _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 16, 2000**

GROUND SURFACE ELEVATION: **1085.0**
 DATUM: **USGS**
 LOGGED BY: **Bernie Harvey**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-4.04	TRC	1089.06	
RISER CASING Diameter: 2" Type: GS Interval: 3.5' agl to 2.25' bgl	0				0.0	GS	1085.02	Natural Collapse
GROUT Type: None Interval: None								Stainless Steel Screen
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: Stainless Steel Interval: 2.25-5.25'	5				5.25		1079.77	

LEGEND

	GRAVELLY SAND		TOP OF PROTECTIVE CASING
	COARSE SAND		TOP OF RISER CASING
	MEDIUM SAND		GROUND SURFACE
	FINE SAND		BENTONITE SEAL
	VERY FINE SAND		FILTER PACK
	SILT		TOP OF SCREEN
	CLAY		BOTTOM OF SCREEN
	GRAVELLY CLAY		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. DP-2**

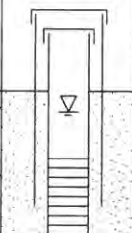


COMPLETION REPORT OF WELL No. DP-3

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

















WATER LEVEL: ∇ **0.75** ∇ _____ ∇ _____
 DATE: **11-16-00** _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 16, 2000**

GROUND SURFACE ELEVATION: **1085.1**
 DATUM: **USGS**
 LOGGED BY: **Bernie Harvey**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-2.79	TRC	1087.93	
RISER CASING Diameter: 2" Type: GS Interval: 2.7' agl to 2.4' bgl	0				0.0	GS	1085.14	Natural Collapse Stainless Steel Screen
GROUT Type: None Interval: None					5.40		1079.74	
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: Stainless Steel Interval: 2.4-5.4'	5							

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. DP-3**

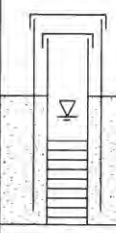

COMPLETION REPORT OF WELL No. DP-5

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

















WATER LEVEL: ∇ **0.75** ∇ _____ ∇ _____
 DATE: **11-17-00** _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 17, 2000**

GROUND SURFACE ELEVATION: **1082.0**
 DATUM: **USGS**
 LOGGED BY: **Bernie Harvey**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL					
PROTECTIVE CASING Diameter: None Type: None Interval: None				-3.59	TRC	1085.58	
RISER CASING Diameter: 2" Type: GS Interval: 3.5' agl to 1.6' bgl	0			0.0	GS	1081.99	Natural Collapse Stainless Steel Screen
GROUT Type: None Interval: None				4.60		1077.39	
SEAL Type: None Interval: None							
SANDPACK Type: None Interval: None							
SCREEN Diameter: 2" Type: Stainless Steel Interval: 1.6-4.6'							

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. DP-5**

COMPLETION REPORT OF WELL No. DP-6

Sheet 1 of 1

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

WATER LEVEL: ▽ **0.75** ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 21, 2000**

GROUND SURFACE ELEVATION: **1081.3**
 DATUM: **USGS**
 LOGGED BY: **Phil Odenkirk**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
PROTECTIVE CASING Diameter: None Type: None Interval: None					-2.52	TRC	1083.82
	0	▽			0.0	GS	1081.30
RISER CASING Diameter: 2" Type: GS Interval: ~2' agl to 3' bgl		▽			4.00		1077.30
GROUT Type: None Interval: None							
SEAL Type: None Interval: None							
SANDPACK Type: None Interval: None							
SCREEN Diameter: 2" Type: Stainless Steel Interval: 3-4'							
LEGEND							
GRAVELLY SAND COARSE SAND MEDIUM SAND FINE SAND VERY FINE SAND SILT CLAY GRAVELLY CLAY SILTY SAND TOPSOIL INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH CONCRETE BENTONITE FILTER PACK GROUT NATURAL COLLAPSE / SAND BACKFILL						



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**COMPLETION REPORT OF
 WELL No. DP-6**

Sheet 1 of 1

COMPLETION REPORT OF WELL No. DP-7

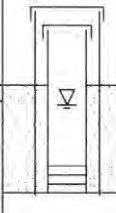
Sheet 1 of 1

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

WATER LEVEL: ▽ **0.75** ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 21, 2000**

GROUND SURFACE ELEVATION: **1080.9**
 DATUM: **USGS**
 LOGGED BY: **Phil Odenkirk**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None				-1.89	TRC	1082.83
	0	▽		0.0	GS	1080.94
RISER CASING Diameter: 2" Type: GS Interval: ~2' agl to 3' bgl						Natural Collapse
GROUT Type: None Interval: None				4.00		1076.94
SEAL Type: None Interval: None						Stainless Steel Screen
SANDPACK Type: None Interval: None						
SCREEN Diameter: 2" Type: Stainless Steel Interval: 3-4'						

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. DP-7**

COMPLETION REPORT OF WELL No. DP-8

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

WATER LEVEL: ▽ **0.75** ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 21, 2000**

GROUND SURFACE ELEVATION: **1079.7**
 DATUM: **USGS**
 LOGGED BY: **Phil Odenkirk**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None				-2.11	TRC	1081.76
	0	▽		0.0	GS	1079.65
RISER CASING Diameter: 2" Type: GS Interval: ~2' agl to 3' bgl						Natural Collapse
GROUT Type: None Interval: None				4.00		1075.65
SEAL Type: None Interval: None						Stainless Steel Screen
SANDPACK Type: None Interval: None						
SCREEN Diameter: 2" Type: Stainless Steel Interval: 3-4'						
LEGEND						
GRAVELLY SAND COARSE SAND MEDIUM SAND FINE SAND VERY FINE SAND SILT CLAY GRAVELLY CLAY SILTY SAND TOPSOIL INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH CONCRETE BENTONITE FILTER PACK GROUT NATURAL COLLAPSE / SAND BACKFILL					



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**COMPLETION REPORT OF
 WELL No. DP-8**

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/06/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/06/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 89F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1			36			(0.0-0.5') 6" of water above surface.		(-3.9-1.2') 2" PVC Schedule 40 Well Casing (1.2-2.2') 2" PVC 10 Slot Well Screen (2.2-2.7') 2" PVC Schedule 40 Well Casing with plug.	
2					(0.5-1.0') CLAY, some silt, low plasticity, slow dilatancy; wet; soft; dark gray (10YR 4/1).				
3					(1.0-1.75') SILT, some clay, low plasticity, rapid dilatancy; little fine sand; wet; very soft; dark brown (10YR 3/3). Note: And Organic material.				
3					(1.75-2.5') CLAY, some silt, low to medium plasticity, no dilatancy; moist; stiff; dark gray (10YR 4/1).				
4						(2.5-3.0') SAND, very fine to fine, round; well sorted; wet; gray (10YR 5/1).			
4						End of boring at 3.0' below water surface.			
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): NA
 Drilling Fluid: None Water Level Finish (ft. btoc.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
 Surface Elev.: 1088.5
 North Coord.: 227104.3
 East Coord.: 19440385.4

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/07/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/07/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 79F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1			39			(0.0-1.75') SILT, non-plastic, rapid dilatancy; moist to wet; very soft; black (10YR 2/1). Note: And Organics, muck.		(-4.25-1.0') 2" PVC Schedule 40 Well Casing (1.0-2.0') 2" PVC 10 Slot Well Screen (2.0-3.0') 2" PVC Schedule 40 Well Casing with plug.	
2					(1.75-2.5') SILT, trace clay, low plasticity, slow dilatancy; moist; medium stiff; black (10YR 2/1).				
3					(2.5-3.25') SAND, very fine to medium, round to subround; well sorted; wet; gray (10YR 5/1).				
4						End of boring at 3.25' bgs.			
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): At surface
 Drilling Fluid: None Water Level Finish (ft. btoc.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1084.5
 North Coord.: 226963.7
 East Coord.: 19439958.3

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/06/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/06/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 89F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1							(0.0-4.0') SILT, low plasticity, rapid dilatancy; moist; very soft; black (10YR 2/1). Note: Some organics, muck.	(-3.7-1.4') 2" PVC Schedule 40 Well Casing (1.4-3.4') 2" PVC 10 Slot Well Screen (3.4-3.8') 2" PVC Schedule 40 Well Casing with plug.	
2			48			Note: Moist to wet from 1.75-2.5' bgs.			
3						Note: Change in color to very dark brown (10YR 2/2) at 2.5' bgs; wet. Note: Wood from 2.75-3.25' bgs.			
4						Note: Auger refusal at 4.0' bgs due to wood.			
5						End of boring at 4.0' bgs.			
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): 2.5' bgs
 Drilling Fluid: None Water Level Finish (ft. bgs.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1085.0
 North Coord.: 226357.4
 East Coord.: 19442009.4

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/06/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/06/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 89F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1							(0.0-1.5') SILT, trace clay, low plasticity, rapid dilatancy; wet; very soft; black (10YR 2/1). Note: Muck, organics.	(-1.38-2.0') 2" PVC Schedule 40 Well Casing	
2						(1.5-3.0') SILT, non-plastic to low plasticity, rapid dilatancy; trace fine sand; moist; very soft; very dark brown (10YR 2/2). Note: Trace wood.			
3			60			(3.0-5.0') SILT, non-plastic, rapid dilatancy; moist; very soft; very dark brown (10YR 2/2).	(2.0-4.0') 2" PVC 10 Slot Well Screen		
4						Note: Large wood pieces at ~4.5' bgs.	(4.0-5.0') 2" PVC Schedule 40 Well Casing with plug.		
5						Note: At 5.0' bgs, Sand, very fine to medium, trace granules, round to subround; poorly sorted; wet; grayish brown (10YR 5/2). End of boring at 5.0' bgs.			
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): At surface
 Drilling Fluid: None Water Level Finish (ft. bgs.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1093.1
 North Coord.: 226784.6
 East Coord.: 19442911.0

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/06/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/06/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 89F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1			36			(0.0-0.25') SILT, low plasticity, rapid dilatancy; little fine sand, well sorted; wet; very soft; black (10YR 2/1). Note: Muck.		(-2.8-1.3') 2" PVC Schedule 40 Well Casing (1.3-2.3') 2" PVC 10 Slot Well Screen (2.3-2.8') 2" PVC Schedule 40 Well Casing with plug.	
2					(0.25-0.5') SAND, fine to medium, round to subround; well sorted; wet; very dark gray (10YR 3/1). Note: Large cobble at 2.0' bgs.				
3					(0.5-2.0') SAND and SILT, very fine to fine, round to subround; well sorted; wet; very dark gray (10YR 3/1). Note: Large cobble at 2.0' bgs.				
					(2.0-2.5') SILT, non-plastic, rapid dilatancy; some sand, very fine to fine; wet; very soft; dark gray (10YR 4/1).				
						(2.5-3.0') PEBBLES, very large, subround to subangular.			
4						End of boring at 3.0' bgs.			
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): At surface
 Drilling Fluid: None Water Level Finish (ft. bgs.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1100.9
 North Coord.: 227177.2
 East Coord.: 19443086.8

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/07/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/07/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 79F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1	[Spiral Drill Bit]		38.4			[Silt Pattern]	(0.0-2.25') SILT, low plasticity, rapid dilatancy; wet; very soft; black (10YR 2/1). Note: Muck. Medium stiff from 2.0-2.25' bgs.	(-3.5-0.92') 2" PVC Schedule 40 Well Casing (0.92-1.92')	[Well Diagram]
2							[Sand Pattern]		
3						End of boring at 3.2' bgs.			
4									
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): At surface
 Drilling Fluid: None Water Level Finish (ft. btoc.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1076.8
 North Coord.: 226690.9
 East Coord.: 19439658.2

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/06/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/06/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 89F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1						(0.0-0.5') SILT, non-plastic, rapid dilatancy; moist; soft; black (10YR 2/1). Note: Trace organics, muck.	(-3.3-1.75') 2" PVC Schedule 40 Well Casing (1.75-3.75') 2" PVC 10 Slot Well Screen (3.75-3.9') 2" PVC Schedule 40 Well Casing with plug.		
2		48			(0.5-2.5') SAND, very fine to fine, round to subround; little silt; well sorted; wet; dark grayish brown (10YR 4/2). Note: Trace organics. Note: Trace granules, subround to subangular from 1.5 to 2.0' bgs.				
3					(2.5-4.0') SILT, non-plastic, rapid dilatancy; trace very fine sand, round; moist to wet; soft; black (10YR 2/1). Note: Some organics.				
4					Note: At 4.0' bgs, Silt, trace clay, low to medium plasticity, slow dilatancy; moist; very soft to soft; grayish brown (10YR 5/2). End of boring at 4.0' below ground surface.				
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): 0.5' bgs
 Drilling Fluid: None Water Level Finish (ft. bgs.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1075.5
 North Coord.: 226768.1
 East Coord.: 19440696.5

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/07/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/07/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 79F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1			38.4			(0.0-2.5') SILT, non-plastic, rapid dilatancy; wet; very soft; black (10YR 2/1). Note: Little organics, wood pieces, and roots.		(-3.79-1.5') 2" PVC Schedule 40 Well Casing	
2					(2.5-2.8') SILT, low plasticity, slow dilatancy; moist; soft; black (10YR 2/1).		(1.5-2.5') 2" PVC 10 Slot Well Screen (2.5-3.04')		
3					(2.8-3.2') SAND, very fine to medium, round to subround; trace coarse sand, subround; well sorted; wet; dark gray (10YR 4/1).		2" PVC Schedule 40 Well Casing with plug.		
4						End of boring at 3.2' bgs.			
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): At surface
 Drilling Fluid: None Water Level Finish (ft. btoc.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1085.0
 North Coord.: 227847.5
 East Coord.: 19439209.5

Soil Boring Log

Project Name: White Pine Springs Date Started: 07/07/2017 Logger: K. Voet
 Project Number: 04065113.0000 Date Completed: 07/07/2017 Editor: K. Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 79F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1			36			(0.0-1.33') SILT, non-plastic, rapid dilatancy; little fine sand, subround; wet; soft; black (10YR 2/1). Note: Muck. Root at 2.0' bgs.		(-3.75-1.5') 2" PVC Schedule 40 Well Casing	
2					(1.33-3.0') SAND, very fine to medium, round to subround; trace to little coarse sand, subround; well sorted; wet; light yellowish brown (10YR 6/4). Note: Some coarse sand from 2.5-3.0' bgs.		(1.5-2.5') 2" PVC Slot Well Screen (2.5-3.0') 2" PVC Schedule 40 Well Casing with plug.		
3						End of boring at 3.0' bgs.			
4									
5									
6									
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: M. Pozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): At surface
 Drilling Fluid: None Water Level Finish (ft. bgs.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
bgs = below ground surface Surface Elev.: 1089.9
 North Coord.: 228767.1
 East Coord.: 19438986.2


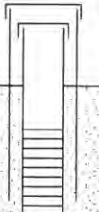


COMPLETION REPORT OF WELL No. Seep 1

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












WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1088.0**
 DATUM: **USGS**
 LOGGED BY: **Jeff Groncki**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL					
<p>PROTECTIVE CASING Diameter: None Type: None Interval: None</p> <p>RISER CASING Diameter: 2" Type: PVC Interval: 3.44' agl to 1.56' bgl</p> <p>GROUT Type: None Interval: None</p> <p>SEAL Type: None Interval: None</p> <p>SANDPACK Type: None Interval: None</p> <p>SCREEN Diameter: 2" Type: 10-Slot PVC Interval: 1.56-4.56' bgl</p>	0			-3.41	TRC	1091.45	
	0			0.0	GS	1088.04	Natural Collapse 10-Slot PVC Screen
	5			4.56		1083.48	

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. Seep 1**

Soil Boring Log

Project Name: White Pine Springs Date Started: 06/19/2015 Logger: P ozniak
 Project Number: 04065113.0000 Date Completed: 06/19/2015 Editor: K Voet
 Project Location: Osceola Township, MI Weather Conditions: Sunny, 70F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	We
1							(0.0-0.33') MUCK.	(-5.1-0.1') 2" PVC Schedule 40 Well Casing (0.1-3.1') 2" PVC 10 Slot We Screen	
2		48				(0.33-4.0') SAND, medium, light brown.			
3									
4									
5							End of boring at 4.0' bgs.		
7									
8									
9									
10									

Drilling Co.: Arcadis Sampling Method: Hand Auger
 Driller: P ozniak Sampling Interval: Continuous
 Drilling Method: Hand Auger Water Level Start (ft. bgs.): NA
 Drilling Fluid: None Water Level Finish (ft. bgs.): NA
 Remarks: Note: Backfill around the well was natural collapse. Converted to Well: Yes No
Well casing constructed 5.1' above ground surface. Surface Elev : 1088.0
bgs = below ground surface North Coord: 226960 6
 East Coord: 19440873.6

SOIL BORING LOG - 2013 \ARCADIS-US-COM\OFFICE\DATA\ANALYSIS\MIPROJECT\04065113.0000\WNA - WPSBORING.LOG\$S\$HC DEPOINTS.GPJ ARCADIS.GDT 7/25/17

COMPLETION REPORT OF WELL No. Seep 2

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

WATER LEVEL: ▾ _____ ▾ _____ ▾ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1083.0**
 DATUM: **USGS**
 LOGGED BY: **Jeff Groncki**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None				-4.57	TRC	1087.61
	0			0.0	GS	1083.04
RISER CASING Diameter: 2" Type: PVC Interval: 4.52' agl to 3.48' bgl				3.48		1079.56
GROUT Type: None Interval: None						
SEAL Type: None Interval: None						
SANDPACK Type: None Interval: None						
SCREEN Diameter: 2" Type: 10-Slot PVC Interval: 0.48-3.48' bgl						Natural Collapse 10-Slot PVC Screen
LEGEND						
GRAVELLY SAND COARSE SAND MEDIUM SAND FINE SAND VERY FINE SAND SILT CLAY GRAVELLY CLAY SILTY SAND TOPSOIL INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH CONCRETE BENTONITE FILTER PACK GROUT NATURAL COLLAPSE / SAND BACKFILL					



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**COMPLETION REPORT OF
 WELL No. Seep 2**

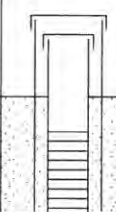

















COMPLETION REPORT OF WELL No. Seep 3

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1083.7**
 DATUM: **USGS**
 LOGGED BY: **Jeff Groncki**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None				-3.72	TRC	1087.45
RISER CASING Diameter: 2" Type: PVC Interval: 3.75' agl to 1.25' bgl	0			0.0	GS	1083.73
GROUT Type: None Interval: None				4.25		1079.48
SEAL Type: None Interval: None						
SANDPACK Type: None Interval: None						
SCREEN Diameter: 2" Type: 10-Slot PVC Interval: 1.25-4.25' bgl						
LEGEND						
 GRAVELLY SAND  COARSE SAND  MEDIUM SAND  FINE SAND  VERY FINE SAND  SILT  CLAY  GRAVELLY CLAY  SILTY SAND  TOPSOIL  INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH  CONCRETE  BENTONITE  FILTER PACK  GROUT  NATURAL COLLAPSE / SAND BACKFILL					



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**COMPLETION REPORT OF
 WELL No. Seep 3**

COMPLETION REPORT OF WELL No. Seep 4

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1085.2**
 DATUM: **USGS**
 LOGGED BY: **Joel Henry**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-4.21	TRC	1089.39	
RISER CASING Diameter: 2" Type: PVC Interval: 4' agl to 1' bgl	0				0.0	GS	1085.18	Natural Collapse PVC Screen
GROUT Type: None Interval: None								
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: PVC Interval: 1-4' bgl								
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. Seep 4**

COMPLETION REPORT OF WELL No. Seep 5

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **July 21, 2000**

GROUND SURFACE ELEVATION: **1092.3**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None	0	[Symbol]			-4.11	TRC	1096.36	
RISER CASING Diameter: 2" Type: PVC Interval: 3' agl to 2' bgl	0	[Symbol]			0.0	GS	1092.25	Natural Collapse
GROUT Type: None Interval: None	5	[Symbol]			7.00		1085.25	PVC Screen
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: PVC Interval: 2-7' bgl								

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. Seep 5**

COMPLETION REPORT OF WELL No. Seep 6

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **July 21, 2000**

GROUND SURFACE ELEVATION: **1106.6**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None				-1.46	TRC	1108.08
RISER CASING Diameter: 2" Type: PVC Interval: 1' agl to 3' bgl	0			0.0	GS	1106.62
GROUT Type: None Interval: None						Natural Collapse
SEAL Type: None Interval: None						PVC Screen
SANDPACK Type: None Interval: None	5					
SCREEN Diameter: 2" Type: PVC Interval: 3-7' bgl				7.00		1099.62
LEGEND						
GRAVELLY SAND COARSE SAND MEDIUM SAND FINE SAND VERY FINE SAND SILT CLAY GRAVELLY CLAY SILTY SAND TOPSOIL INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH CONCRETE BENTONITE FILTER PACK GROUT NATURAL COLLAPSE / SAND BACKFILL					



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**COMPLETION REPORT OF
 WELL No. Seep 6**

COMPLETION REPORT OF WELL No. SW1-DP



















Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **October 30, 2000**

GROUND SURFACE ELEVATION: **1090.0**
 DATUM: **USGS**
 LOGGED BY: **Larry Jordan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-3.40	TRC	1093.41	
	0				0.0	GS	1090.01	Natural Collapse
RISER CASING Diameter: 2" Type: PVC Interval: 2.85' agl to 2.5' bgl					3.50		1086.51	PVC Screen
GROUT Type: None Interval: None								
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: PVC Interval: 2.5-3.5'								
LEGEND								
 GRAVELLY SAND  COARSE SAND  MEDIUM SAND  FINE SAND  VERY FINE SAND  SILT  CLAY  GRAVELLY CLAY  SILTY SAND  TOPSOIL  INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH  CONCRETE  BENTONITE  FILTER PACK  GROUT  NATURAL COLLAPSE / SAND BACKFILL							

MALCOLM PIRNIÉ

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COMPLETION REPORT OF WELL No. SW1-DP

Sheet 1 of 1

COMPLETION REPORT OF WELL No. SW2-DP

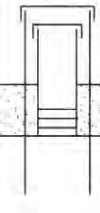
















Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **December 7, 2000**

GROUND SURFACE ELEVATION: **1083.7**
 DATUM: **USGS**
 LOGGED BY: **Bernie Harvey**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-3.00	TRC	1086.73	
	0	▽			0.0	GS	1083.73	
RISER CASING Diameter: 2" Type: PVC Interval: 4' agl to 0.92' bgl					1.92		1081.81	Natural Collapse Stainless Steel Screen
GROUT Type: None Interval: None								
SEAL Type: None Interval: None								
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: PVC Interval: 0.92-1.92' bgl								
LEGEND								
 GRAVELLY SAND  COARSE SAND  MEDIUM SAND  FINE SAND  VERY FINE SAND  SILT  CLAY  GRAVELLY CLAY  SILTY SAND  TOPSOIL  INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH  CONCRETE  BENTONITE  FILTER PACK  GROUT  NATURAL COLLAPSE / SAND BACKFILL							



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**COMPLETION REPORT OF
 WELL No. SW2-DP**

COMPLETION REPORT OF WELL No. SW3-DP




Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 2, 2000**

GROUND SURFACE ELEVATION: **1076.5**
 DATUM: **USGS**
 LOGGED BY: **Bobbi McClead**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS																																	
	DEPTH (ft.)	SYMBOL																																					
PROTECTIVE CASING Diameter: None Type: None Interval: None	0	[Symbol]		-1.62	TRC	1078.13																																	
RISER CASING Diameter: 2" Type: PVC Interval: 1.5' agl to 3.5' bgl	0	[Symbol]		0.0	GS	1076.51																																	
GROUT Type: None Interval: None																																							
SEAL Type: None Interval: None																																							
SANDPACK Type: None Interval: None																																							
SCREEN Diameter: 2" Type: PVC Interval: 3.5-4.5'	4.50	[Symbol]				1072.01																																	
LEGEND <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">[Symbol] GRAVELLY SAND</td> <td style="width: 30%;">TPC TOP OF PROTECTIVE CASING</td> <td style="width: 30%;">[Symbol] CONCRETE</td> </tr> <tr> <td>[Symbol] COARSE SAND</td> <td>TRC TOP OF RISER CASING</td> <td>[Symbol] BENTONITE</td> </tr> <tr> <td>[Symbol] MEDIUM SAND</td> <td>GS GROUND SURFACE</td> <td>[Symbol] FILTER PACK</td> </tr> <tr> <td>[Symbol] FINE SAND</td> <td>BS BENTONITE SEAL</td> <td>[Symbol] GROUT</td> </tr> <tr> <td>[Symbol] VERY FINE SAND</td> <td>FP FILTER PACK</td> <td>[Symbol] NATURAL COLLAPSE / SAND BACKFILL</td> </tr> <tr> <td>[Symbol] SILT</td> <td>TSC TOP OF SCREEN</td> <td></td> </tr> <tr> <td>[Symbol] CLAY</td> <td>BSC BOTTOM OF SCREEN</td> <td></td> </tr> <tr> <td>[Symbol] GRAVELLY CLAY</td> <td>TD TOTAL DEPTH</td> <td></td> </tr> <tr> <td>[Symbol] SILTY SAND</td> <td></td> <td></td> </tr> <tr> <td>[Symbol] TOPSOIL</td> <td></td> <td></td> </tr> <tr> <td>[Symbol] INTERBEDDED SAND, SILT, CLAY</td> <td></td> <td></td> </tr> </table>	[Symbol] GRAVELLY SAND	TPC TOP OF PROTECTIVE CASING	[Symbol] CONCRETE	[Symbol] COARSE SAND	TRC TOP OF RISER CASING	[Symbol] BENTONITE	[Symbol] MEDIUM SAND	GS GROUND SURFACE	[Symbol] FILTER PACK	[Symbol] FINE SAND	BS BENTONITE SEAL	[Symbol] GROUT	[Symbol] VERY FINE SAND	FP FILTER PACK	[Symbol] NATURAL COLLAPSE / SAND BACKFILL	[Symbol] SILT	TSC TOP OF SCREEN		[Symbol] CLAY	BSC BOTTOM OF SCREEN		[Symbol] GRAVELLY CLAY	TD TOTAL DEPTH		[Symbol] SILTY SAND			[Symbol] TOPSOIL			[Symbol] INTERBEDDED SAND, SILT, CLAY								Natural Collapse PVC Screen
[Symbol] GRAVELLY SAND	TPC TOP OF PROTECTIVE CASING	[Symbol] CONCRETE																																					
[Symbol] COARSE SAND	TRC TOP OF RISER CASING	[Symbol] BENTONITE																																					
[Symbol] MEDIUM SAND	GS GROUND SURFACE	[Symbol] FILTER PACK																																					
[Symbol] FINE SAND	BS BENTONITE SEAL	[Symbol] GROUT																																					
[Symbol] VERY FINE SAND	FP FILTER PACK	[Symbol] NATURAL COLLAPSE / SAND BACKFILL																																					
[Symbol] SILT	TSC TOP OF SCREEN																																						
[Symbol] CLAY	BSC BOTTOM OF SCREEN																																						
[Symbol] GRAVELLY CLAY	TD TOTAL DEPTH																																						
[Symbol] SILTY SAND																																							
[Symbol] TOPSOIL																																							
[Symbol] INTERBEDDED SAND, SILT, CLAY																																							



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**COMPLETION REPORT OF
 WELL No. SW3-DP**

Sheet 1 of 1

COMPLETION REPORT OF WELL No. SW5-DP

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **October 30, 2000**

GROUND SURFACE ELEVATION: **1074.8**
 DATUM: **USGS**
 LOGGED BY: **Larry Jordan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None	0	[Symbol]	[Diagram]	-1.70	TRC	1076.51
RISER CASING Diameter: 2" Type: PVC Interval: 1.5' agl to 3.85' bgl	0	[Symbol]	[Diagram]	0.0	GS	1074.81
GROUT Type: None Interval: None	4.85	[Symbol]	[Diagram]	4.85		1069.96
SEAL Type: None Interval: None						
SANDPACK Type: None Interval: None						
SCREEN Diameter: 2" Type: PVC Interval: 3.85-4.85'						PVC Screen
LEGEND						
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <p>[Symbol] GRAVELLY SAND</p> <p>[Symbol] COARSE SAND</p> <p>[Symbol] MEDIUM SAND</p> <p>[Symbol] FINE SAND</p> <p>[Symbol] VERY FINE SAND</p> <p>[Symbol] SILT</p> <p>[Symbol] CLAY</p> <p>[Symbol] GRAVELLY CLAY</p> <p>[Symbol] SILTY SAND</p> <p>[Symbol] TOPSOIL</p> <p>[Symbol] INTERBEDDED SAND, SILT, CLAY</p> </div> <div style="width: 50%;"> <p>TPC TOP OF PROTECTIVE CASING</p> <p>TRC TOP OF RISER CASING</p> <p>GS GROUND SURFACE</p> <p>BS BENTONITE SEAL</p> <p>FP FILTER PACK</p> <p>TSC TOP OF SCREEN</p> <p>BSC BOTTOM OF SCREEN</p> <p>TD TOTAL DEPTH</p> <p>[Symbol] CONCRETE</p> <p>[Symbol] BENTONITE</p> <p>[Symbol] FILTER PACK</p> <p>[Symbol] GROUT</p> <p>[Symbol] NATURAL COLLAPSE / SAND BACKFILL</p> </div> </div>						



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**COMPLETION REPORT OF
 WELL No. SW5-DP**

COMPLETION REPORT OF WELL No. SW6-DP

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **October 30, 2000**

GROUND SURFACE ELEVATION: **1074.2**
 DATUM: **USGS**
 LOGGED BY: **Larry Jordan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS																																																				
	DEPTH (ft.)	SYMBOL																																																								
PROTECTIVE CASING Diameter: None Type: None Interval: None RISER CASING Diameter: 2" Type: PVC Interval: 2.85' agl to 2.5' bgl GROUT Type: None Interval: None SEAL Type: None Interval: None SANDPACK Type: None Interval: None SCREEN Diameter: 2" Type: PVC Interval: 2.5-3.5'	-2.50	TRC	1076.69																																																							
	0.0	GS	1074.19			Natural Collapse																																																				
	3.50		1070.69			PVC Screen																																																				
LEGEND <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%;">GRAVELLY SAND</td> <td style="width: 20%;">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
	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. SW6-DP**

COMPLETION REPORT OF WELL No. SW7-DP



Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **January 15, 2001**

GROUND SURFACE ELEVATION: **1073.2**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
<p>PROTECTIVE CASING Diameter: None Type: None Interval: None</p> <p>RISER CASING Diameter: 2" Type: GS Interval: 4.0' agl to 1.5' bgi</p> <p>GROUT Type: None Interval: None</p> <p>SEAL Type: None Interval: None</p> <p>SANDPACK Type: None Interval: None</p> <p>SCREEN Diameter: 2" Type: Stainless Steel Interval: 1.5-2.5'</p>	0			-3.90	TRC	1077.08	
				0.0	GS	1073.18	

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. SW7-DP**

Sheet 1 of 1

COMPLETION REPORT OF WELL No. SW8-DP

Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **November 21, 2000**

GROUND SURFACE ELEVATION: **1081.1**
 DATUM: **USGS**
 LOGGED BY: **Phil Odenkirk**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
PROTECTIVE CASING Diameter: None Type: None Interval: None				-3.07	TRC	1084.16
	0			0.0	GS	1081.09
RISER CASING Diameter: 2" Type: GS Interval: ~2' agl to 3' bgl						Natural Collapse
				4.00		1077.09
GROUT Type: None Interval: None						Stainless Steel Screen
SEAL Type: None Interval: None						
SANDPACK Type: None Interval: None						
SCREEN Diameter: 2" Type: Stainless Steel Interval: 3-4'						
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			
	SILTY SAND	TSC	TOP OF SCREEN			
	TOPSOIL	BSC	BOTTOM OF SCREEN			
	INTERBEDDED SAND, SILT, CLAY	TD	TOTAL DEPTH			
	CONCRETE					
	BENTONITE					
	FILTER PACK					
	GROUT					
	NATURAL COLLAPSE / SAND BACKFILL					



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**COMPLETION REPORT OF
 WELL No. SW8-DP**

COMPLETION REPORT OF WELL No. SW11-DP

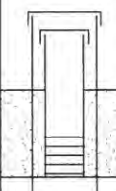
Sheet 1 of 1

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

WATER LEVEL: ▾ _____ ▾ _____ ▾ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **February 7, 2001**

GROUND SURFACE ELEVATION: **1101.9**
 DATUM: **USGS**
 LOGGED BY: **Bernie Harvey**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL				
<p>PROTECTIVE CASING Diameter: None Type: None Interval: None</p> <p>RISER CASING Diameter: 2" Type: GS Interval: 1.75' bgl to 3.5' agl</p> <p>GROUT Type: None Interval: None</p> <p>SEAL Type: None Interval: None</p> <p>SANDPACK Type: None Interval: None</p> <p>SCREEN Diameter: 2" Type: Stainless Steel 7-Slot Interval: 1.75-3.25' bgl</p>	0		-3.81	TRC	1105.67	
			0.0	GS	1101.86	Natural Collapse
			3.25		1098.61	Stainless Steel 7-Slot Screen

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. SW11-DP**

Sheet 1 of 1

COMPLETION REPORT OF WELL No. SW-14-DP

Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **May 31, 2001**

GROUND SURFACE ELEVATION: **1077.0**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL					
PROTECTIVE CASING Diameter: None Type: None Interval: None RISER CASING Diameter: 2" Type: PVC Interval: 2.87' agl to 3.3' bgl GROUT Type: None Interval: None SEAL Type: None Interval: None SANDPACK Type: None Interval: None SCREEN Diameter: 2" Type: PVC Interval: 3.3-4.3' bgl	-2.87	TRC	1079.84				
	0			0.0	GS	1076.97	Natural Collapse
	3.30					1073.67	
	4.30					1072.67	PVC
	5						

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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 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
 WELL No. SW-14-DP**

Sheet 1 of 1

COMPLETION REPORT OF WELL No. SW15-DP

Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **May 31, 2001**

GROUND SURFACE ELEVATION: **1075.7**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
PROTECTIVE CASING Diameter: None Type: None Interval: None					-2.19	TRC	1077.85	
RISER CASING Diameter: 2" Type: PVC Interval: 2.19'agl to 2.75' bgl	0				0.0	GS	1075.66	Natural Collapse
GROUT Type: None Interval: None	5				2.75		1072.91	PVC
SEAL Type: None Interval: None				5.75		1069.91		
SANDPACK Type: None Interval: None								
SCREEN Diameter: 2" Type: PVC Interval: 2.75-5.75' bgl								

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. SW15-DP**

COMPLETION REPORT OF WELL No. Vent 1

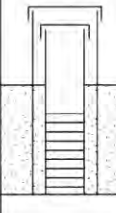
















Sheet 1 of 1

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

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Malcolm Pirnie**
 DRILLING METHOD: **Hand Auger**
 DATE COMPLETED: **June 27, 2000**

GROUND SURFACE ELEVATION: **1090.4**
 DATUM: **USGS**
 LOGGED BY: **Jeff Groncki**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL					
PROTECTIVE CASING Diameter: None Type: None Interval: None	0			-4.64	TRC	1095.04	
RISER CASING Diameter: 2" Type: PVC Interval: 3.93' agl to 1.07' bgl				0.0	GS	1090.40	Natural Collapse PVC Screen
GROUT Type: None Interval: None				4.07		1086.33	
SEAL Type: None Interval: None							
SANDPACK Type: None Interval: None							
SCREEN Diameter: 2" Type: PVC Interval: 1.07-4.07' bgl							
LEGEND							
 GRAVELLY SAND  COARSE SAND  MEDIUM SAND  FINE SAND  VERY FINE SAND  SILT  CLAY  GRAVELLY CLAY  SILTY SAND  TOPSOIL  INTERBEDDED SAND, SILT, CLAY	TPC TOP OF PROTECTIVE CASING TRC TOP OF RISER CASING GS GROUND SURFACE BS BENTONITE SEAL FP FILTER PACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH  CONCRETE  BENTONITE  FILTER PACK  GROUT  NATURAL COLLAPSE / SAND BACKFILL						



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**COMPLETION REPORT OF
 WELL No. Vent 1**

Sheet 1 of 1