



engineers • scientists • architects • constructors  
fishbeck, thompson, carr & huber, inc.

# BOREHOLE LOG

BORING/WELL ID: PLS-08-07

TOTAL DEPTH (ft.): 230'

**PROJECT:** Pall Life Sciences  
**SITE LOCATION:** Ann Arbor, Michigan  
**PROJECT NO.:** F96502  
**PROJECT MANAGER:** James W. Brode, Jr., CPG  
**LOGGED BY:** Todd C. Campbell, CPG

**START DATE:** 12/18/08  
**END DATE:** 12/30/08  
**TOC ELEV.:** NA  
**GROUND ELEV.:** approx. 916'  
**STATIC WATER LVL.:** NA

**DRILLING CO.:** Stearns Drilling  
**DRILLER:** Jerry, Sam, Tony  
**RIG TYPE:** CME 95  
**METHOD OF DRILLING:** Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon, Simulprobe

**NOTES:** Jackson Plaza, Field GPS Coordinates: N42.28243,W083.80399, acc. 25'  
Copyright 2009. All Rights Reserved. Fishbeck, Thompson, Carr & Huber

Static Water Level Page 1 of 4

DESCRIPTION	PID ppm	GRAPHIC LOG	DEPTH (ft. bgl)	Static Water Level	Sample/Recovery	Sample ID	Blow Counts	COMMENTS
-------------	---------	-------------	-----------------	--------------------	-----------------	-----------	-------------	----------

<p>ASPHALT</p> <p>SAND AND GRAVEL: Sand, fine to coarse grained; Gravel; Silt. Brown, moderately sorted, dry</p> <p>Sand, fine to coarse grained (70%); Gravel, fine (20%); Silt (10%). Brown, poorly sorted, loose, wet</p>			0 2 4 6 8 10 12 14 16					Boring PLS-08-07 grouted with bentonite grout after drilling was complete
<p>CLAYEY SILT: Driller notes change</p> <p>Silt (70%); Clay. Brown, well sorted, moist</p>			16 18 20					Simulprobe sample 19-20.5' (<1 ug/L)
<p>SAND AND GRAVEL: Sand, medium to fine grained with some coarse grains (80%); Gravel, fine (20%). Gray, poorly sorted, loose, wet</p> <p>Sand, medium to fine grained; trace Silt. Grayish brown, well sorted, medium dense, wet</p>			20 22 24 26 28 30 32 34 36 38 40	1.2'		4,4,5,6		Simulprobe sample 29'-30.5' (<1 ug/L)
<p>As above</p>			40 42	0.8'		4,7,7		Simulprobe sample 39'-40.5' (14 ug/L)
<p>DIAMICTON: Driller notes Till</p> <p>Silt; Sand, fine grained with trace medium grains (40%); trace Gravel, fine; trace Clay. Grayish brown, moderately sorted, medium stiff, dry</p>			42 44 46 48 50 52 54 56 58	0.5'		3,7,8		Simulprobe sample 50'-51.5' (14 ug/L)



engineers • scientists • architects • constructors  
fishbeck, thompson, carr & huber, inc.

# BOREHOLE LOG

BORING/WELL ID: PLS-08-07

TOTAL DEPTH (ft.): 230'

**PROJECT:** Pall Life Sciences  
**SITE LOCATION:** Ann Arbor, Michigan  
**PROJECT NO.:** F96502  
**PROJECT MANAGER:** James W. Brode, Jr., CPG  
**LOGGED BY:** Todd C. Campbell, CPG

**START DATE:** 12/18/08  
**END DATE:** 12/30/08  
**TOC ELEV.:** NA  
**GROUND ELEV.:** approx. 916'  
**STATIC WATER LVL.:** NA

**DRILLING CO.:** Stearns Drilling  
**DRILLER:** Jerry, Sam, Tony  
**RIG TYPE:** CME 95  
**METHOD OF DRILLING:** Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon, Simulprobe

**NOTES:** Jackson Plaza, Field GPS Coordinates: N42.28243,W083.80399, acc. 25'  
Copyright 2009. All Rights Reserved. Fishbeck, Thompson, Carr & Huber

Static Water Level Page 2 of 4

DESCRIPTION	PID ppm	GRAPHIC LOG	DEPTH (ft. bgl)	Static Water Level	Sample/Recovery	Sample ID	Blow Counts	COMMENTS
-------------	---------	-------------	-----------------	--------------------	-----------------	-----------	-------------	----------

Silt; Sand, fine grained (20%); Gravel, fine (10%); trace Clay. Brown, well sorted, medium stiff, dry			58 60 62 64 66 68				1,2,5,9	
As above, 30% Sand			70	0.2'			3,3,5,7	
SAND: Sand, coarse to fine grained. Gray, moderately sorted, wet			72 74 76 78					
Sand, fine grained; trace Silt. Brown, well sorted, medium dense, wet			80 82 84 86 88	0.3'			5,10	Simulprobe sample 79'-80.5' (13 ug/L) Added approximately 20 gallons of water to augers
Infer Sand, as above			90 92 94 96 98	0'			8,15,29	Simulprobe sample 89'-90.5' (1 ug/L)
Sand, coarse to medium grained with some fine grains (80%); Gravel, fine (20%). Grayish brown, moderately sorted, wet			100 102 104 106 108	1.0'			5,9,14	Simulprobe sample 99'-100.5' (<1 ug/L) Added approximately 30 gallons of water to augers
DIAMICTON: Silt; Sand, fine grained (30%); trace Gravel, fine; trace Clay. Gray, moderately sorted, hard, dry			110 112 114 116	1.1'			11,20,42	Simulprobe sample 109'-110.5' (6 ug/L)



engineers • scientists • architects • constructors  
fishbeck, thompson, carr & huber, inc.

# BOREHOLE LOG

BORING/WELL ID: PLS-08-07

TOTAL DEPTH (ft.): 230'

**PROJECT:** Pall Life Sciences  
**SITE LOCATION:** Ann Arbor, Michigan  
**PROJECT NO.:** F96502  
**PROJECT MANAGER:** James W. Brode, Jr., CPG  
**LOGGED BY:** Todd C. Campbell, CPG

**START DATE:** 12/18/08  
**END DATE:** 12/30/08  
**TOC ELEV.:** NA  
**GROUND ELEV.:** approx. 916'  
**STATIC WATER LVL.:** NA

**DRILLING CO.:** Stearns Drilling  
**DRILLER:** Jerry, Sam, Tony  
**RIG TYPE:** CME 95  
**METHOD OF DRILLING:** Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon, Simulprobe

**NOTES:** Jackson Plaza, Field GPS Coordinates: N42.28243,W083.80399, acc. 25'  
Copyright 2009. All Rights Reserved. Fishbeck, Thompson, Carr & Huber

Static Water Level Page 3 of 4

DESCRIPTION	PID ppm	GRAPHIC LOG	DEPTH (ft. bgl)	Static Water Level	Sample/ Recovery	Sample ID	Blow Counts	COMMENTS
-------------	---------	-------------	-----------------	--------------------	------------------	-----------	-------------	----------

Silt; trace Clay. Grayish brown, well sorted, hard, dry			118					
			120	1.2'		7,31,50 (4")		
			122					
			124					
			126					
			128					
	Silt; Sand, fine grained (40%). Grayish brown, well sorted, hard, dry			130	0.6'		8,10,40	
				132				
				134				
				136				
Silty SAND: Sand, fine grained (60%); Silt (40%). Grayish brown, well sorted, wet (interbedded Clayey Silt seams throughout)		138						
		140	1.3'		8,10,10	Simulprobe sample 139'-140.5' (<1 ug/L)		
		142						
		144						
		146						
	Silty Sand, as above		148					
			150	0.1'		7,7,8	Simulprobe sample 149'-150.5' (1 ug/L) Added approximately 30 gallons of water to augers	
			152					
		154						
SAND: Sand, fine to medium grained (90%); Gravel, fine (10%); trace Silt. Grayish brown, well sorted, wet		156						
		158						
		160	0.4'		110,50 (4")	Simulprobe sample 159'-160' (4 ug/L) Added approximately 30 gallons of water to augers		
		162						
		164						
		166						
SAND AND GRAVEL: Sand, coarse to fine grained (80%); Gravel, fine to 2"; trace Silt. Grayish brown, poorly sorted, wet coarse Gravel/Cobbles throughout		168						
		170	1.1'		100,112	Simulprobe sample 169'-170' (2 ug/L)		
		172						
		174						
		176						



engineers • scientists • architects • constructors  
fishbeck, thompson, carr & huber, inc.

# BOREHOLE LOG

BORING/WELL ID: PLS-08-07

TOTAL DEPTH (ft.): 230'

**PROJECT:** Pall Life Sciences  
**SITE LOCATION:** Ann Arbor, Michigan  
**PROJECT NO.:** F96502  
**PROJECT MANAGER:** James W. Brode, Jr., CPG  
**LOGGED BY:** Todd C. Campbell, CPG

**START DATE:** 12/18/08  
**END DATE:** 12/30/08  
**TOC ELEV.:** NA  
**GROUND ELEV.:** approx. 916'  
**STATIC WATER LVL.:** NA

**DRILLING CO.:** Stearns Drilling  
**DRILLER:** Jerry, Sam, Tony  
**RIG TYPE:** CME 95  
**METHOD OF DRILLING:** Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon, Simulprobe

**NOTES:** Jackson Plaza, Field GPS Coordinates: N42.28243,W083.80399, acc. 25'  
Copyright 2009. All Rights Reserved. Fishbeck, Thompson, Carr & Huber

Static Water Level Page 4 of 4

DESCRIPTION	PID ppm	GRAPHIC LOG	DEPTH (ft. bgl)	Static Water Level	Sample/ Recovery	Sample ID	Blow Counts	COMMENTS
-------------	---------	-------------	-----------------	--------------------	------------------	-----------	-------------	----------

As above			176					
			178					
Cobbles throughout			180	0.8'			18,31,75 (3")	Simulprobe sample 179'-180.5' (2 ug/L)
			182					
			184					
			186					
			188					
As above			190	1.0'			40,75 (3")	Simulprobe sample 189'-190' (2 ug/L)
			192					
			194					
DIAMICTON: Driller notes Till			196					
			198					
Silt; Sand, fine grained (30%); trace Gravel, fine; trace Clay. Grayish brown, moderately sorted, hard, dry			200	0.6'			100 (4")	
			202					
			204					
			206					
			208					
Interbedded Sand seams throughout. Attempted to collect Simulprobe water sample, no water recovered			210	1.3'			18,21,27	
			212					
			214					
		216						
		218						
Silt; Sand, fine grained (30%); trace Gravel, fine; trace Clay. Grayish brown, moderately sorted, hard, dry		220	0.8'			100 (5")		
		222						
		224						
Silt; Clay; Sand, fine grained (10-20%); Gravel, fine (10%). Gray, hard, dry		226	0.1'			150 (1")		
		228						
SHALE: Shale, platy. Gray, hard, dry		230	0.3'			89 (5")		