

Appendix II
EXPLORATORY BORING & TEST-PIT LOGS
KEY CHART (FOR SOIL CLASSIFICATION)



GN Northern Inc.
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BORING NUMBER B-1

PAGE 2 OF 2

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\DRPBOX\5-ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
45	RC				SILTY SAND, (SM) brown, moist to wet, some rounded gravels, [Outwash] (continued)
50			SM	49.5	- becomes highly mottled SILTSTONE, gray, moist, poorly indurated, [Roslyn Formation]
55	RC				- becomes dry, hard/intact
60				59.0	CARBONACEOUS SHALE, dark gray, soft rock, [Roslyn Formation]
65	RC				
70					- with coal seams
75	RC				
80					- becomes highly pulverized, increasing coal content (possible collapsed condition)
85	RC				
86.0				86.0	COAL, black, [Roslyn Formation]
87.5				87.5	SANDSTONE, gray, [Roslyn Formation]
90				90.0	
					- Groundwater not encountered at time of drilling - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc. Bottom of borehole at 90.0 feet.



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BORING NUMBER B-2

PAGE 1 OF 2

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
 DATE STARTED 10/10/17 COMPLETED 10/10/17 GROUND ELEVATION 2227.7 ft HOLE SIZE 8 inches
 DRILLING CONTRACTOR Holt Services Inc. GROUND WATER LEVELS:
 DRILLING METHOD Terra Sonic Track-Mounted Rig AT TIME OF DRILLING ---
 LOGGED BY KAH/MYM CHECKED BY KAH/MYM AT END OF DRILLING ---
 NOTES Approx. GPS Coords.: 47.209947°, -121.000051° AFTER DRILLING ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\DRPBOX\5-ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
5	RC		GP-GM		SILTY SANDY GRAVEL, (GP-GM) gray brown, damp to moist, subangular to rounded, [Outwash]
10					10.0 ----- 2217.7
15	RC		GM		SILTY GRAVEL WITH SAND, (GM) brown, rounded, moist to wet, [Outwash]
20					20.0 ----- 2207.7
25	RC	MC = 10% Fines = 23%	SM		SILTY SAND WITH GRAVEL, (SM) blue, fine grained, moist, [Outwash] - becomes brown/gray brown
30					29.5 ----- 2198.2
35	RC				SILTSTONE, gray, moist with some wet layers, [Roslyn Formation]
40					40.0 ----- 2187.7
45	RC				CARBONACEOUS SHALE, gray to gray brown, [Roslyn Formation]

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CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/11/17 16:54 - C:\USERS\GN NORTHERN\DROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
45					
	RC				46.0 CARBONACEOUS SHALE, gray to gray brown, [Roslyn Formation] (continued) 2181.7 CARBONACEOUS SHALE with COAL seams, dry to damp, pulverized, [Roslyn Formation] - becomes dry
50					
	RC				
55					
	RC				
60					
	RC				- increasing coal content (possible collapsed condition)
65					
					65.0 SANDSTONE, gray, fine grained, hard, [Roslyn Formation] 2162.7 66.0 2161.7

- Groundwater not encountered at time of drilling
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of borehole at 66.0 feet.



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BORING NUMBER B-3

PAGE 1 OF 2

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
 DATE STARTED 10/11/17 COMPLETED 10/11/17 GROUND ELEVATION 2226 ft HOLE SIZE 8 inches
 DRILLING CONTRACTOR Holt Services Inc. GROUND WATER LEVELS:
 DRILLING METHOD Terra Sonic Track-Mounted Rig AT TIME OF DRILLING —
 LOGGED BY KAH/MYM CHECKED BY KAH/MYM AT END OF DRILLING —
 NOTES Approx. GPS Coords.: 47.209475°, -120.999164° AFTER DRILLING —

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN\NORTHERNDROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)
0				-6" TOPSOIL	2225.5
0.5				SILTY SANDY GRAVEL, (GP-GM) brown, moist, [Outwash]	
5	RC	GP-GM			
10					
13.0				SILTSTONE, poorly indurated, [Roslyn Formation]	2213.0
15	RC			SANDSTONE/SILTSTONE, gray, fine grained, hard intact fragments, some pulverized, [Roslyn Formation]	2211.0
15.0					
20				SILTSTONE/CLAYSTONE, gray, damp to moist, soft, pulverized, [Roslyn Formation]	2206.0
25	RC				
30					
32.0				SHALE, light gray to gray, [Roslyn Formation]	2194.0
35	RC				
37.0				CARBONACEOUS SHALE with thin seams of COAL, [Roslyn Formation]	2189.0
40					
45	RC				

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BORING NUMBER B-4

PAGE 1 OF 2

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
 DATE STARTED 10/11/17 COMPLETED 10/12/17 GROUND ELEVATION 2223.8 ft HOLE SIZE 8 inches
 DRILLING CONTRACTOR Holt Services Inc. GROUND WATER LEVELS:
 DRILLING METHOD Terra Sonic Track-Mounted Rig AT TIME OF DRILLING ---
 LOGGED BY KAH/MYM CHECKED BY KAH/MYM AT END OF DRILLING ---
 NOTES Approx. GPS Coords.: 47.209390°, -120.998772° AFTER DRILLING ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\DRP\BOX5-ACTIVE PROJECTS\217-871 WINEMAKERS CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SILTY SANDY GRAVEL, (GP-GM) brown, damp, trace cobbles, [Outwash]
5	RC	GP-GM		
10				
12.5				2211.3
15	RC	SM		GRAVELLY SILTY SAND, (SM) brown, moist, [Outwash]
20				
22.5				2201.3
25	RC			SILTSTONE/CLAYSTONE, gray, moist, soft rock, [Roslyn Formation]
30				
35	RC			
38.0				2185.8
40				CARBONACEOUS SHALE, dark gray, [Roslyn Formation]
45				

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BORING NUMBER B-4

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CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC

PROJECT NAME Winemaker's Cabins at Swiftwater Cellars

PROJECT NUMBER 217-871

PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA

GENERAL_BH / TP / WELL - GINT STD US LAB.GDT. - 12/1/17 16:54 - C:\USERS\IGN NORTHERN\PROJ\BOX5-ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
45	RC			CARBONACEOUS SHALE, dark gray, [Roslyn Formation] <i>(continued)</i>
	RC			
50				- increasing coal content
	RC			
55			55.0	COAL, black, [Roslyn Formation] 2168.8
	RC			
60			61.5	SANDSTONE, light gray, [Roslyn Formation] 2162.3
	RC			
65			66.0	2157.8

- Groundwater not encountered at time of drilling
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of borehole at 66.0 feet.



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BORING NUMBER B-5

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CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
 DATE STARTED 10/12/17 COMPLETED 10/12/17 GROUND ELEVATION 2178.3 ft HOLE SIZE 8 inches
 DRILLING CONTRACTOR Holt Services Inc. GROUND WATER LEVELS:
 DRILLING METHOD Terra Sonic Track-Mounted Rig AT TIME OF DRILLING —
 LOGGED BY KAH/MYM CHECKED BY KAH/MYM AT END OF DRILLING —
 NOTES Approx. GPS Coords.: 47.208211°, -120.995458° AFTER DRILLING —

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\DROPBOX\ACTIVE PROJECTS\217-871 WINEMAKERS CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0					SANDY SILT, (ML) light brown, dry, medium dense, [Outwash]	
4.0	RC	MC = 5% Fines = 68%	ML	[Dotted pattern]		2174.3
5					SILTY SAND, (SM) light brown, dry, very dense, cemented, [Outwash]	
8.0	RC		SM	[Dotted pattern]		2170.3
10					SANDY CLAY, (CL) brown, moist, very stiff, trace gravel, [Outwash]	
12.0	RC	MC = 19% Fines = 61%	CL	[Diagonal hatching]		2166.3
15					SILTY CLAY WITH SAND, (CL-ML) brown to grayish brown, [Outwash]	
21.0	RC	MC = 16% Fines = 74%	CL-ML	[Cross-hatching]		2157.3
25					SILTSTONE, gray, pulverized, [Roslyn Formation] - becomes hard intact rock	
31.0	RC			[X pattern]		2147.3
34.5	RC			[Horizontal hatching]	CARBONACEOUS SHALE, with coal seams, [Roslyn Formation]	2143.8
37.0	RC			[Solid black]	COAL, black, [Roslyn Formation]	2141.3
40					CARBONACEOUS SHALE, [Roslyn Formation] - becomes interbedded with coal	
44.0	RC			[Solid black]	COAL, black, [Roslyn Formation]	2134.3

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BORING NUMBER B-5

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CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
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GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\IGN\NORTHERNDROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
45					
	RC				COAL, black, [Roslyn Formation] <i>(continued)</i>
50					
	RC				SANDSTONE, light gray, [Roslyn Formation]
				51.0	2127.3
				54.0	2124.3

- Groundwater not encountered at time of drilling
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.

Bottom of borehole at 54.0 feet.



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TEST PIT NUMBER TP-1

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
 DATE STARTED 10/3/17 COMPLETED 10/3/17 GROUND ELEVATION 2234 ft TEST PIT SIZE 24 X 96 inches
 EXCAVATION CONTRACTOR Client Provided GROUND WATER LEVELS:
 EXCAVATION METHOD Hitachi 50U Mini-excavator AT TIME OF EXCAVATION —
 LOGGED BY MYM CHECKED BY KAH AT END OF EXCAVATION —
 NOTES Approx. GPS Coords.: 47.208781°, -120.999104° AFTER EXCAVATION —

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERNDROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0.0				FILL: SILTY SANDY GRAVEL, dark brown, damp to moist, crushed, some organics	
0.8					2233.3
1.5	GP-GM			SILTY SANDY GRAVEL, (GP-GM) brown, damp, appears medium dense, with cobbles, subrounded to subangular	2232.5
2.5				SILTY SAND WITH GRAVEL, (SM) brown to reddish brown, moist, appears medium dense, trace clay, trace roots	
5.0		SM		- with decomposed organics, black (from ~3.5'-4')	
				- becomes reddish brown, tree roots to ~5'	
5.5					2228.5
7.5	GP-GM			SILTY SANDY GRAVEL, (GP-GM) brown to reddish brown, moist, appears medium dense to dense, some cobbles	
9.5					2224.5

- Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of test pit at 9.5 feet.



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TEST PIT NUMBER TP-2

PAGE 1 OF 1

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2229.8 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Deere 135G **AT TIME OF EXCAVATION** —
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** —
NOTES Approx. GPS Coords.: 47.209076°, -120.998760° **AFTER EXCAVATION** —

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\PROXIS-ACTIVE PROJECTS\217-871 WINEMAKERS CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0					
2.5	GB	MC = 6% Fines = 5%		SILTY SANDY GRAVEL, (GP-GM) brown dark brown, appears medium dense to dense, with cobbles, subrounded to subangular	
5.0				- becomes interlayered with Sandy Gravel (GP), gray-brown, appears dense, trace boulders	
7.5					
10.0					- becomes dense to very dense, with boulders
			11.0		

2218.8

- Test-pit terminated due to excavator refusal on boulders
 - Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of test pit at 11.0 feet.



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TEST PIT NUMBER TP-3

PAGE 1 OF 1

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2224 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Deere 135G **AT TIME OF EXCAVATION** ---
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** ---
NOTES Approx. GPS Coords.: 47.209377°, -120.998682° **AFTER EXCAVATION** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\DRP\BOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
2.5				SILTY SANDY GRAVEL, (GP-GM) brown, damp, appears medium dense to dense, with cobbles, subrounded to subangular, some roots/rootlets to ~7'
5.0		GP-GM		- becomes interlayered with Poorly Graded Gravel (GP)
7.5				
10.0				
11.0				

2213.0

- Test-pit terminated due to excavator refusal on boulders
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc. Bottom of test pit at 11.0 feet.



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TEST PIT NUMBER TP-5

PAGE 1 OF 1

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2219.6 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Deere 135G **AT TIME OF EXCAVATION** —
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** —
NOTES Approx. GPS Coords.: 47.210046°, -120.999624° **AFTER EXCAVATION** —

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\IGN NORTHERNDROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
2.5				
5.0				
7.5		GP-GM		SILTY SANDY GRAVEL, (GP-GM) gray brown, damp, appears medium dense to dense, with cobbles, interlayered Poorly Graded Gravel (GP), subrounded to subangular
10.0				
12.5				- becomes moist to wet
14.0				

- Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of test pit at 14.0 feet.

2205.6



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TEST PIT NUMBER TP-6

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2234.2 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Deere 135G **AT TIME OF EXCAVATION** ---
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** ---
NOTES Approx. GPS Coords.: 47.210092°, -121.000306° **AFTER EXCAVATION** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\IGN NORTHERNDROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
2.5			GP-GM		APPARENT FILL: SILTY SANDY GRAVEL, (GP-GM) gray brown, damp, appears medium dense to dense, with cobbles, interlayered Poorly Graded Gravel (GP), subrounded to subangular
	GB	MC = 3% Fines = 5%			
5.0					
7.5			GP-GM		SILTY SANDY GRAVEL, (GP-GM) gray brown, damp, appears medium dense to dense, with cobbles, interlayered Poorly Graded Gravel (GP), subrounded to subangular
10.0					
12.5					
14.0					- becomes damp to moist

- Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of test pit at 14.0 feet.



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TEST PIT NUMBER TP-7

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CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2240 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Deere 135G **AT TIME OF EXCAVATION** —
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** —
NOTES Approx. GPS Coords.: 47.210276°, -121.000967° **AFTER EXCAVATION** —

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERN\DR\BOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
					TOPSOIL, silty sand, with roots/rootlets
					2239.5
					SILTY SAND, (SM) brown, fine grained, damp, appears loose to medium dense
	GB	MC = 17% Fines = 37%	SM		2238.5
2.5					SILTY SANDY GRAVEL, (GP-GM) gray brown, damp, appears medium dense to dense, some roots/rootlets to ~7'
5.0					
7.5			GP-GM		- with interlayered Poorly Graded Gravel (GP)
10.0					
12.5					
					13.0

- Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.

Bottom of test pit at 13.0 feet.

2227.0



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TEST PIT NUMBER TP-8

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2186.5 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Hitachi 50U Mini-excavator **AT TIME OF EXCAVATION** ---
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** ---
NOTES Approx. GPS Coords.: 47.208072°, -120.995331° **AFTER EXCAVATION** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\GN NORTHERNDROBOX5-ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0.0					TOPSOIL	2186.0
0.5			SM		SILTY SAND, (SM) brown, fine grained, dry to damp, appears medium dense	2185.5
1.0			ML		SANDY SILT, (ML) brown, dry to damp, appears medium dense to dense, some gravel, some slight to moderate cementation	
2.5	GB	MC = 6% Fines = 58%				
4.0			SM		SILTY SAND WITH GRAVEL, (SM) brown, moist, appears medium dense to dense, some cobbles, some clay, slight to moderate cementation	2182.5
5.0						
7.5						
9.0						2177.5

- Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of test pit at 9.0 feet.



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TEST PIT NUMBER TP-9

PAGE 1 OF 1

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC **PROJECT NAME** Winemaker's Cabins at Swiftwater Cellars
PROJECT NUMBER 217-871 **PROJECT LOCATION** 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA
DATE STARTED 10/3/17 **COMPLETED** 10/3/17 **GROUND ELEVATION** 2182.5 ft **TEST PIT SIZE** 24 X 96 inches
EXCAVATION CONTRACTOR Client Provided **GROUND WATER LEVELS:**
EXCAVATION METHOD Hitachi 50U Mini-excavator **AT TIME OF EXCAVATION** ---
LOGGED BY MYM **CHECKED BY** KAH **AT END OF EXCAVATION** ---
NOTES Approx. GPS Coords.: 47.208284°, -120.995760° **AFTER EXCAVATION** ---















GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 12/1/17 16:54 - C:\USERS\IGN NORTHERN\PROBOX5-ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ











DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0.0						
			SM		TOPSOIL	2182.0
			SM		SILTY SAND, (SM) brown, fine grained, dry to damp, appears medium dense	2181.5
2.5			ML		SANDY SILT, (ML) brown, dry to damp, appears medium dense to dense, some gravel, some slight to moderate cementation	
5.0			SM		SILTY SAND WITH GRAVEL, (SM) brown, moist, appears medium dense to dense, some cobbles, some clay, slight to moderate cementation	2177.5
7.5	GB	MC = 9% Fines = 31%	SM			2175.0

- Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on plan set provided by JUB Engineers, Inc.
 Bottom of test pit at 7.5 feet.

KEY CHART

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N-VALUE					
COARSE-GRAINED SOILS			FINE-GRAINED SOILS		
DENSITY	N (BLOWS/FT)	FIELD TEST	CONSISTENCY	N (BLOWS/FT)	FIELD TEST
Very Loose	0 – 4	Easily penetrated with ½-inch reinforcing rod pushed by hand	Very Soft	0 – 2	Easily penetrated several inches by thumb
Loose	4 – 10	Difficult to penetrate with ½-inch reinforcing rod pushed by hand	Soft	2 – 4	Easily penetrated one inch by thumb
Medium -Dense	10 – 30	Easily penetrated with ½-inch rod driven with a 5-lb hammer	Medium-Stiff	4 – 8	Penetrated over ½-inch by thumb with moderate effort
Dense	30 – 50	Difficult to penetrate with ½-inch rod driven with a 5-lb hammer	Stiff	8 – 15	Indented about ½-inch by thumb but penetrated with great effort
Very Dense	> 50	penetrated only a few inches with ½-inch rod driven with a 5-lb hammer	Very Stiff	15 – 30	Readily indented by thumb
			Hard	> 30	Indented with difficulty by thumbnail

USCS SOIL CLASSIFICATION					
MAJOR DIVISIONS			GROUP DESCRIPTION		
Coarse-Grained Soils <50% passes #200 sieve	Gravel and Gravelly Soils <50% coarse fraction passes #4 sieve	Gravel (with little or no fines)		GW	Well-graded Gravel
		Gravel (with >12% fines)		GP	Poorly Graded Gravel
		Sand (with little or no fines)		GM	Silty Gravel
		Sand (with >12% fines)		GC	Clayey Gravel
	Sand and Sandy Soils >50% coarse fraction passes #4 sieve	Sand (with little or no fines)		SW	Well-graded Sand
		Sand (with >12% fines)		SP	Poorly graded Sand
Fine-Grained Soils >50% passes #200 sieve	Silt and Clay Liquid Limit < 50			ML	Silt
	Silt and Clay Liquid Limit > 50			CL	Lean Clay
	Silt and Clay Liquid Limit > 50			OL	Organic Silt and Clay (low plasticity)
	Silt and Clay Liquid Limit > 50			MH	Inorganic Silt
	Silt and Clay Liquid Limit > 50			CH	Inorganic Clay
	Silt and Clay Liquid Limit > 50			OH	Organic Clay and Silt (med. to high plasticity)
Highly Organic Soils				PT	Peat
				Top Soil	

LOG SYMBOLS		
	2S	2" OD Split Spoon (SPT)
	3S	3" OD Split Spoon
	NS	Non-Standard Split Spoon
	ST	Shelby Tube
	CR	Core Run
	BG	Bag Sample
	TV	Torvane Reading
	PP	Penetrometer Reading
	NR	No Recovery
	GW	Groundwater Table

MODIFIERS	
DESCRIPTION	RANGE
Trace	<5%
Little	5% – 12%
Some	>12%

MOISTURE CONTENT	
DESCRIPTION	FIELD OBSERVATION
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but not visible water
Wet	Visible free water

MAJOR DIVISIONS WITH GRAIN SIZE							
SIEVE SIZE							
12"	3"	3/4"	4	10	40	200	
GRAIN SIZE (INCHES)							
12	3	0.75	0.19	0.079	0.0171	0.0029	
Boulders	Cobbles	Gravel		Sand			Silt and Clay
		Coarse	Fine	Coarse	Medium	Fine	

SOIL CLASSIFICATION INCLUDES

1. Group Name
2. Group Symbol
3. Color
4. Moisture content
5. Density / consistency
6. Cementation
7. Particle size (if applicable)
8. Odor (if present)
9. Comments

Conditions shown on boring and testpits logs represent our observations at the time and location of the fieldwork, modifications based on lab test, analysis, and geological and engineering judgment. These conditions may not exist at other times and locations, even in close proximity thereof. This information was gathered as part of our investigation, and we are not responsible for any use or interpretation of the information by others.

Appendix III
LABORATORY TEST RESULTS

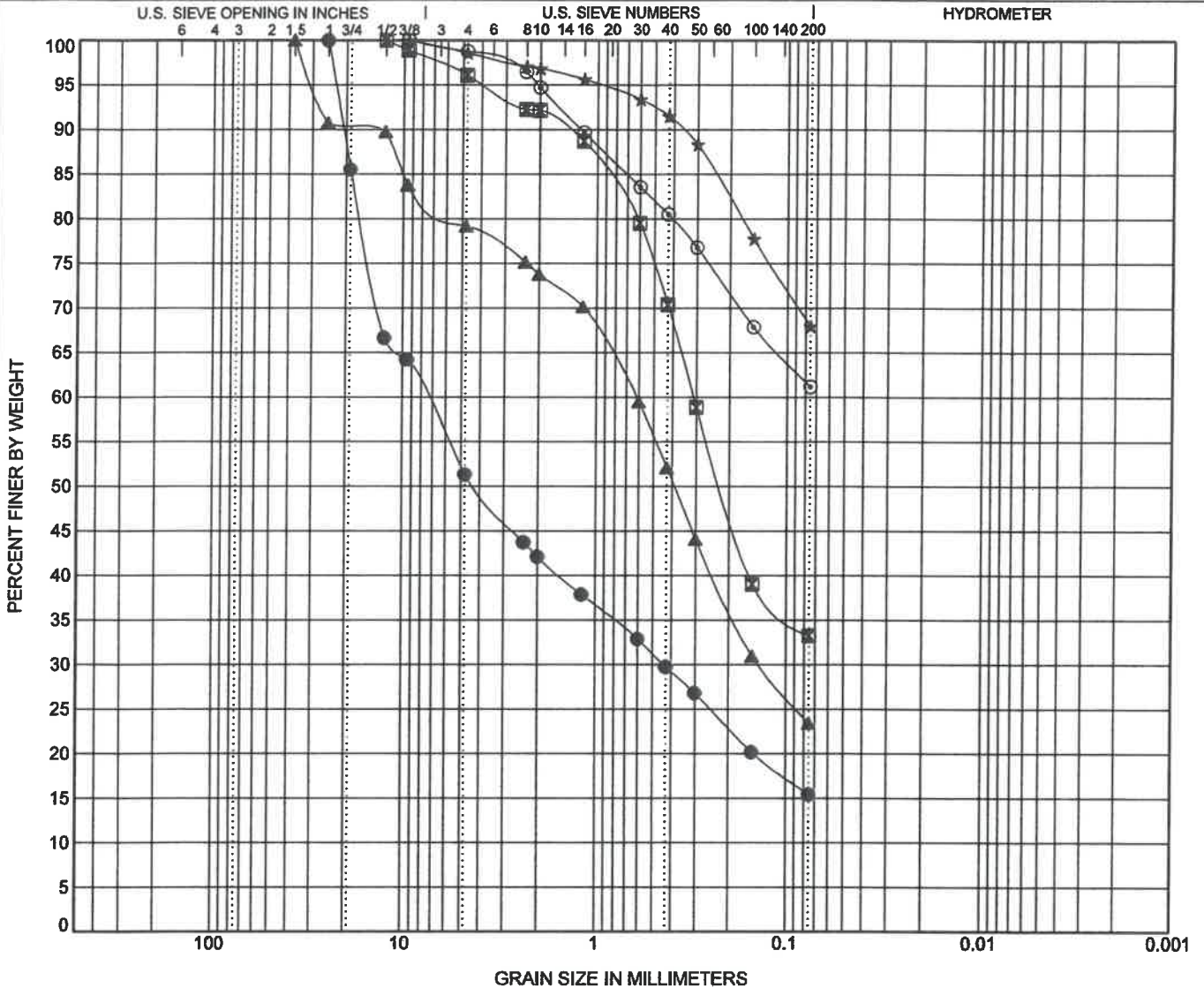


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GRAIN SIZE DISTRIBUTION

CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars

PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● B-1	24.0	SILTY GRAVEL WITH SAND(GM)					
■ B-1	42.0	CLAYEY SAND(SC)					
▲ B-2	20.0	SILTY SAND WITH GRAVEL(SM)					
★ B-5	1.5	SANDY SILT(ML)					
◎ B-5	11.0	SANDY SILT(ML)					

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1	24.0	25	7.569	0.437		48.7	35.9	15.4	
■ B-1	42.0	12.5	0.311			3.9	62.8	33.3	
▲ B-2	20.0	37.5	0.62	0.137		20.8	55.8	23.4	
★ B-5	1.5	9.5				1.4	30.7	67.9	
◎ B-5	11.0	9.5				1.2	37.6	61.2	

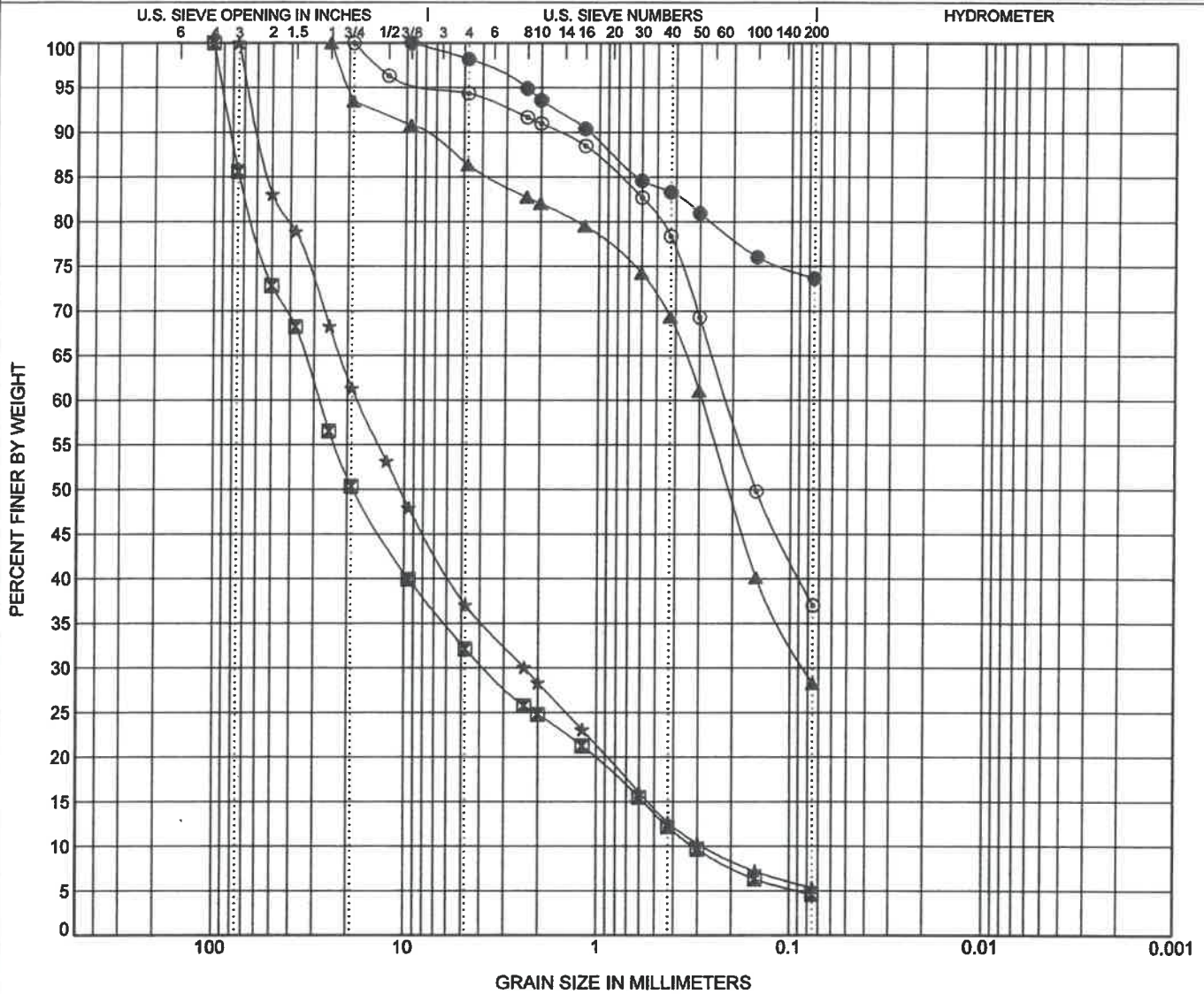
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 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification					LL	PL	PI	Cc	Cu
● B-5	17.0	SILTY CLAY WITH SAND(CL-ML)									
☒ TP-2	2.0	WELL GRADED GRAVEL(GW)								1.60	89.74
▲ TP-4	4.0	SILTY SAND(SM)									
★ TP-6	3.5	POORLY GRADED GRAVEL WITH SILT AND SAND(GP-GM)								1.12	63.57
◎ TP-7	1.0	SILTY SAND(SM)									
BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
● B-5	17.0	9.5				1.8	24.5		73.7		
☒ TP-2	2.0	101.6	28.189	3.759	0.314	53.5	27.5	4.6			
▲ TP-4	4.0	25	0.29	0.083		13.6	58.1	28.2			
★ TP-6	3.5	75	17.759	2.353	0.279	63.0	31.7	5.3			
◎ TP-7	1.0	19	0.216			5.7	57.4	37.0			

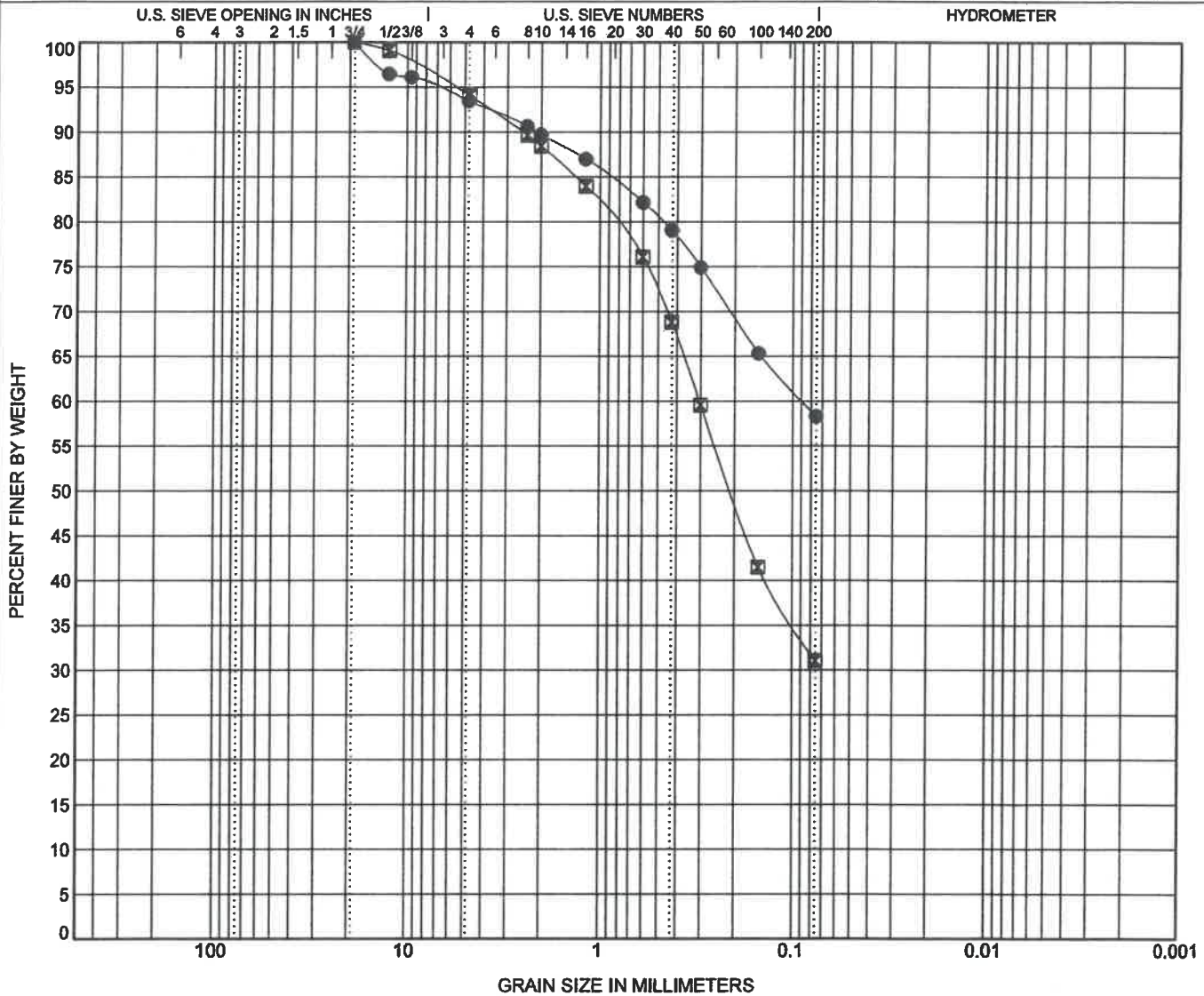
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CLIENT Swiftwater Custom Homes/Swiftwater Cellars Properties, LLC PROJECT NAME Winemaker's Cabins at Swiftwater Cellars
 PROJECT NUMBER 217-871 PROJECT LOCATION 301 Rope Rider Dr., Cle Elum, Kittitas Co., WA



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification					LL	PL	PI	Cc	Cu
● TP-8	1.5	SANDY SILT (ML)									
☒ TP-9	6.0	SILTY SAND (SM)									

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● TP-8	1.5	19	0.089			6.5	35.1	58.3	
☒ TP-9	6.0	19	0.305			5.9	63.1	31.0	

GRAIN SIZE - TEMPLATE - JESSE.GDT - 11/27/17 16:56 - C:\USERS\IGN NORTHERN\DROPBOX\ACTIVE PROJECTS\217-871 WINEMAKER'S CABINS AT SWIFTWATER CELLARS\217-871 LOGS.GPJ

Appendix IV
SITE & EXPLORATION PHOTOGRAPHS



View of site conditions at Area 1 looking south



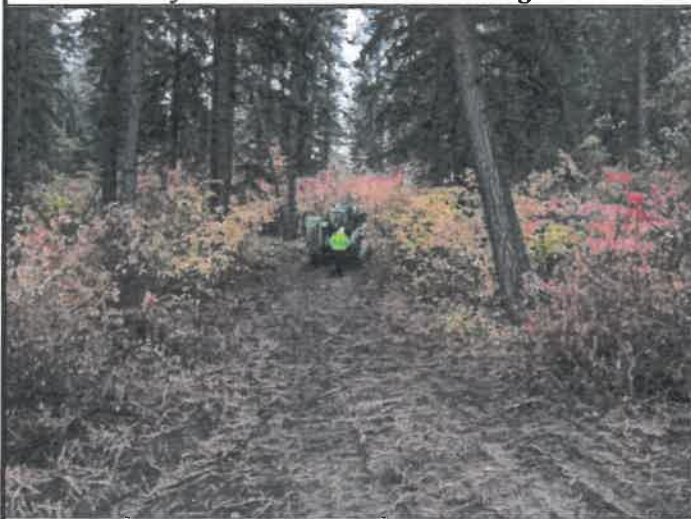
View of site conditions at Area 1 looking east



View of site conditions at Area 1 looking north



View of site conditions at Area 1 looking southeast



View of site conditions and cleared path at Area 2



View of site conditions at Area 2



Job Number: 217-871

Site & Exploration Photographs
 Winemaker's Cabins at Swiftwater Cellars
 301 Rope Rider Drive
 Cle Elum, Kittitas County, Washington

Date
12/1/2017

Mounted By:
MBB

Reviewed By:
KAH

Plate
1



Drilling operations at borehole B-1 in Area 1



Drilling operations at borehole B-1 in Area 1



Samples obtained from borehole B-1, approx. 35' to 45' BGS



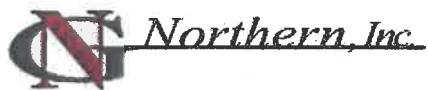
Samples obtained from borehole B-1, approx. 50' to 85' BGS



Drilling operations at borehole B-2 in Area 1



Samples obtained from borehole B-2, surface to ~45' BGS



Job Number: 217-871

Site & Exploration Photographs
Winemaker's Cabins at Swiftwater Cellars
301 Rope Rider Drive
Cle Elum, Kittitas County, Washington

Date
12/1/2017

Mounted By:
MBB

Reviewed By:
KAH

Plate
2



Drilling operations at borehole B-3 in Area 1



Samples obtained from borehole B-3, surface to ~57' BGS



Drilling operations at borehole B-4 in Area 1



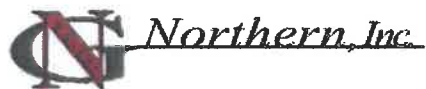
Samples obtained from borehole B-4, surface to ~55' BGS



Drilling operations at borehole B-5 in Area 2



Samples obtained from borehole B-5, surface to ~54' BGS



Job Number: 217-871

Site & Exploration Photographs
Winemaker's Cabins at Swiftwater Cellars
301 Rope Rider Drive
Cle Elum, Kittitas County, Washington

Date
12/1/2017

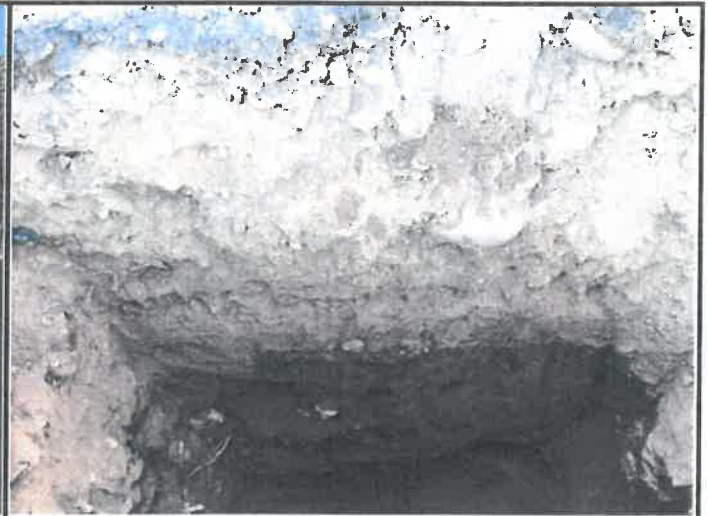
Mounted By:
MBB

Reviewed By:
KAH

Plate
3



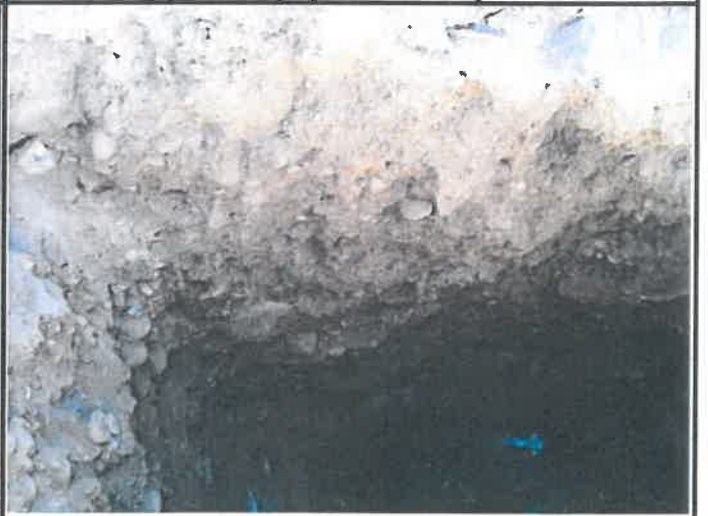
Excavation of test-pit TP-1 in Area 1 looking northeast



Exposed soil profile within test-pit TP-1



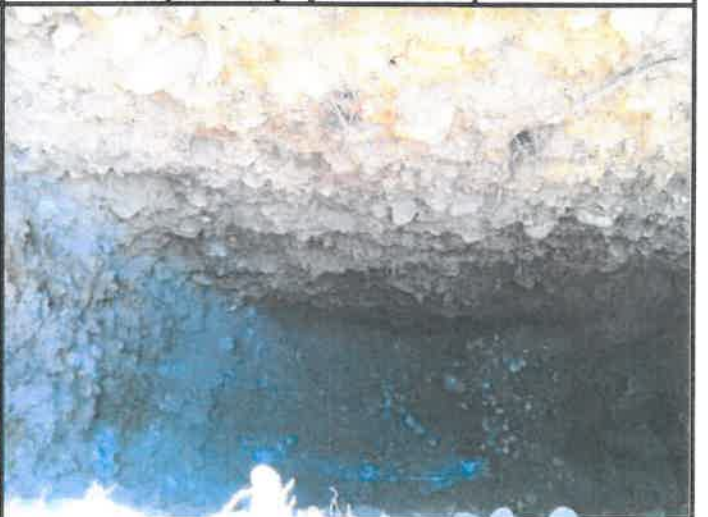
Excavation of test-pit TP-2 in Area 1 looking southeast



Exposed soil profile within test-pit TP-2



Excavation of test-pit TP-3 in Area 1 looking southeast



Exposed soil profile within test-pit TP-3



Job Number: 217-871

Site & Exploration Photographs
 Winemaker's Cabins at Swiftwater Cellars
 301 Rope Rider Drive
 Cle Elum, Kittitas County, Washington

Date
12/1/2017

Mounted By:
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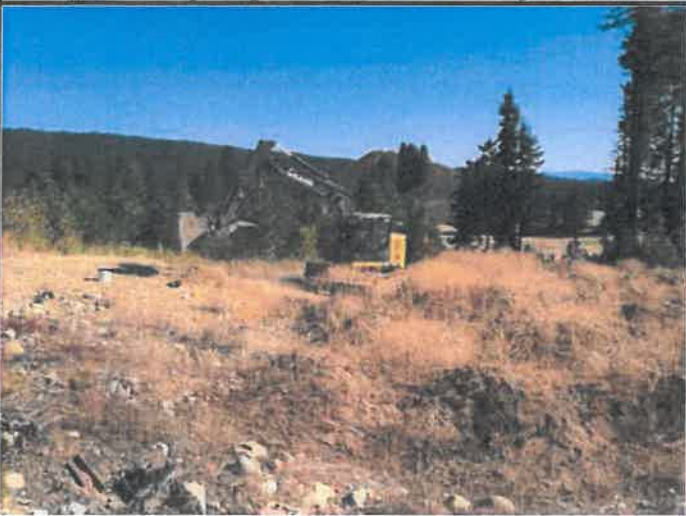
Plate
4



Excavation of test-pit TP-4 in Area 1 looking southeast



Exposed soil profile within test-pit TP-4



Excavation of test-pit TP-5 in Area 1 looking northwest



Exposed soil profile within test-pit TP-5



Excavation of test-pit TP-6 in Area 1 looking northwest



Exposed soil profile within test-pit TP-6



Job Number: 217-871

Site & Exploration Photographs
 Winemaker's Cabins at Swiftwater Cellars
 301 Rope Rider Drive
 Cle Elum, Kittitas County, Washington

Date
12/1/2017

Mounted By:
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Reviewed By:
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Plate
5



Excavation of test-pit TP-7 in Area 1



Exposed soil profile within test-pit TP-7



View of site conditions and spoils from test-pit TP-8 in Area 2



Exposed soil profile within test-pit TP-8



Excavation of test-pit TP-9 in Area 2



Exposed soil profile within test-pit TP-9



Job Number: 217-871

Site & Exploration Photographs
 Winemaker's Cabins at Swiftwater Cellars
 301 Rope Rider Drive
 Cle Elum, Kittitas County, Washington

Date
12/1/2017

Mounted By:
MBB

Reviewed By:
KAH

Plate
6

Appendix V
SLOPE STABILITY ANALYSES OUTPUTS