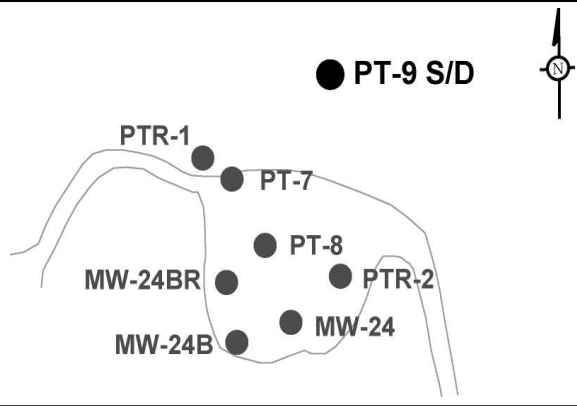


LOG OF BORING PT-9 S/D

PG&E Topock Site Needles, California

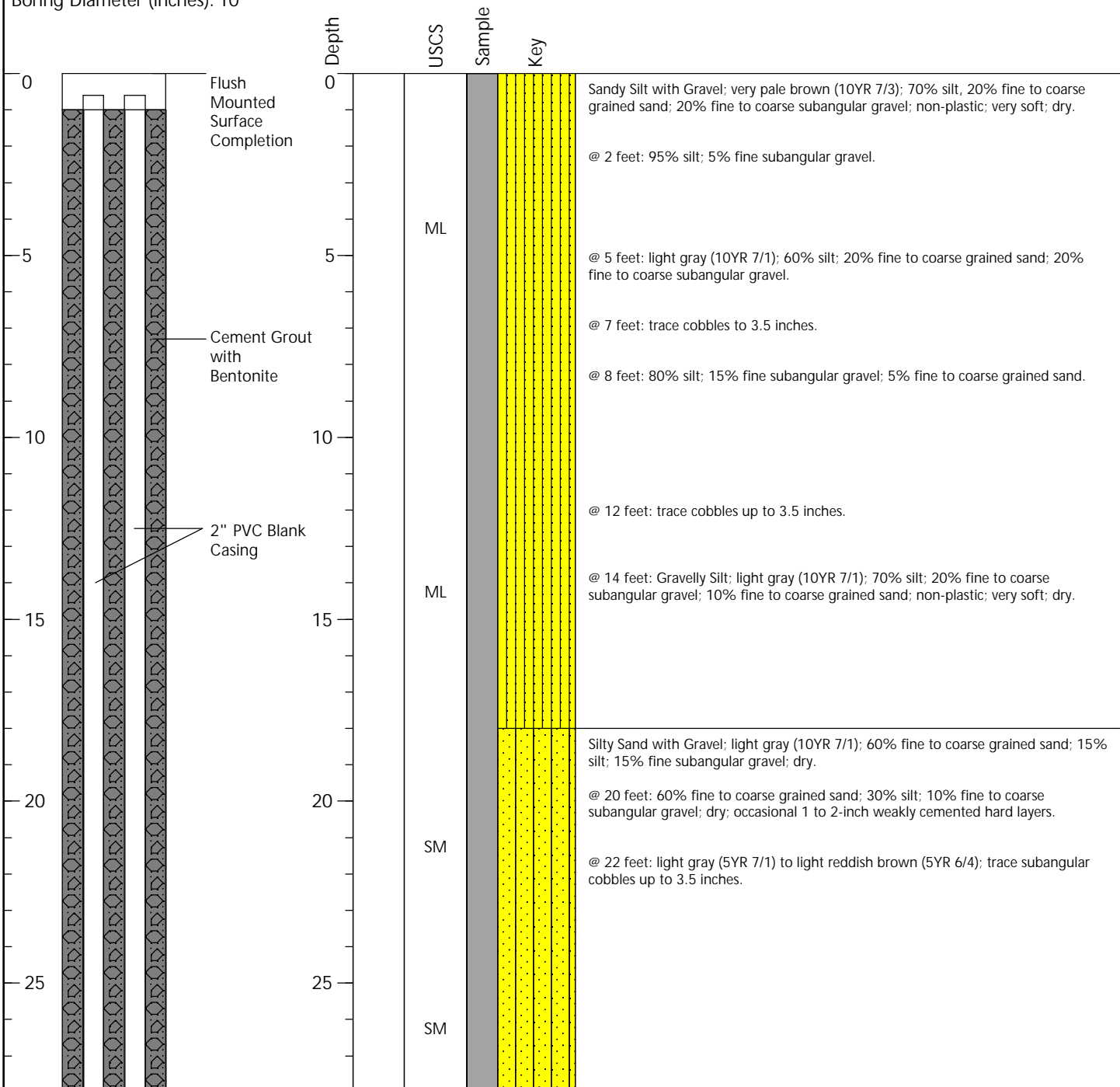


Project No.: RC000689.0004 Date Started: 4 June 2007
 Logged by: Brett Bardsley Date Completed: 6 June 2007
 Drilling Co.: WDC Drilling Method: Rotosonic/Mud Rotary
 Drillers: Rivera, West, Sakioka, Villegas Sample Method: 4" x 6" Core Rod
 Well Permit #2007040408, 2007040406 Driller's License: C57-283326

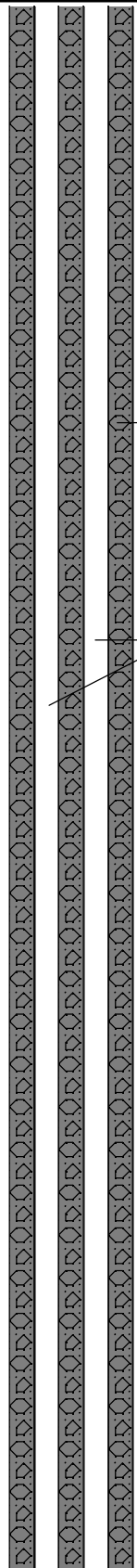
WELL CONSTRUCTION

LITHOLOGIC DESCRIPTION

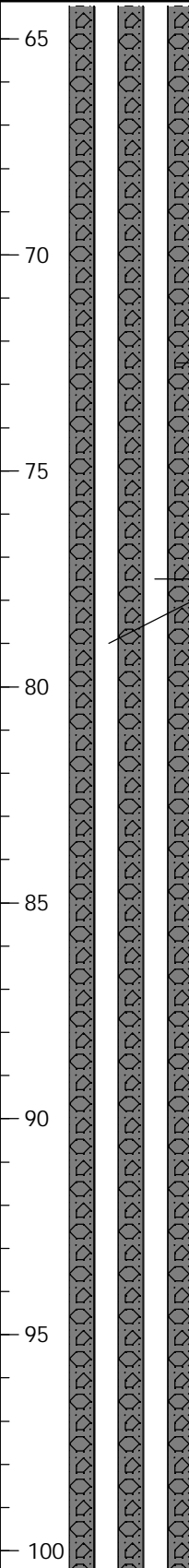
Boring Diameter (inches): 10



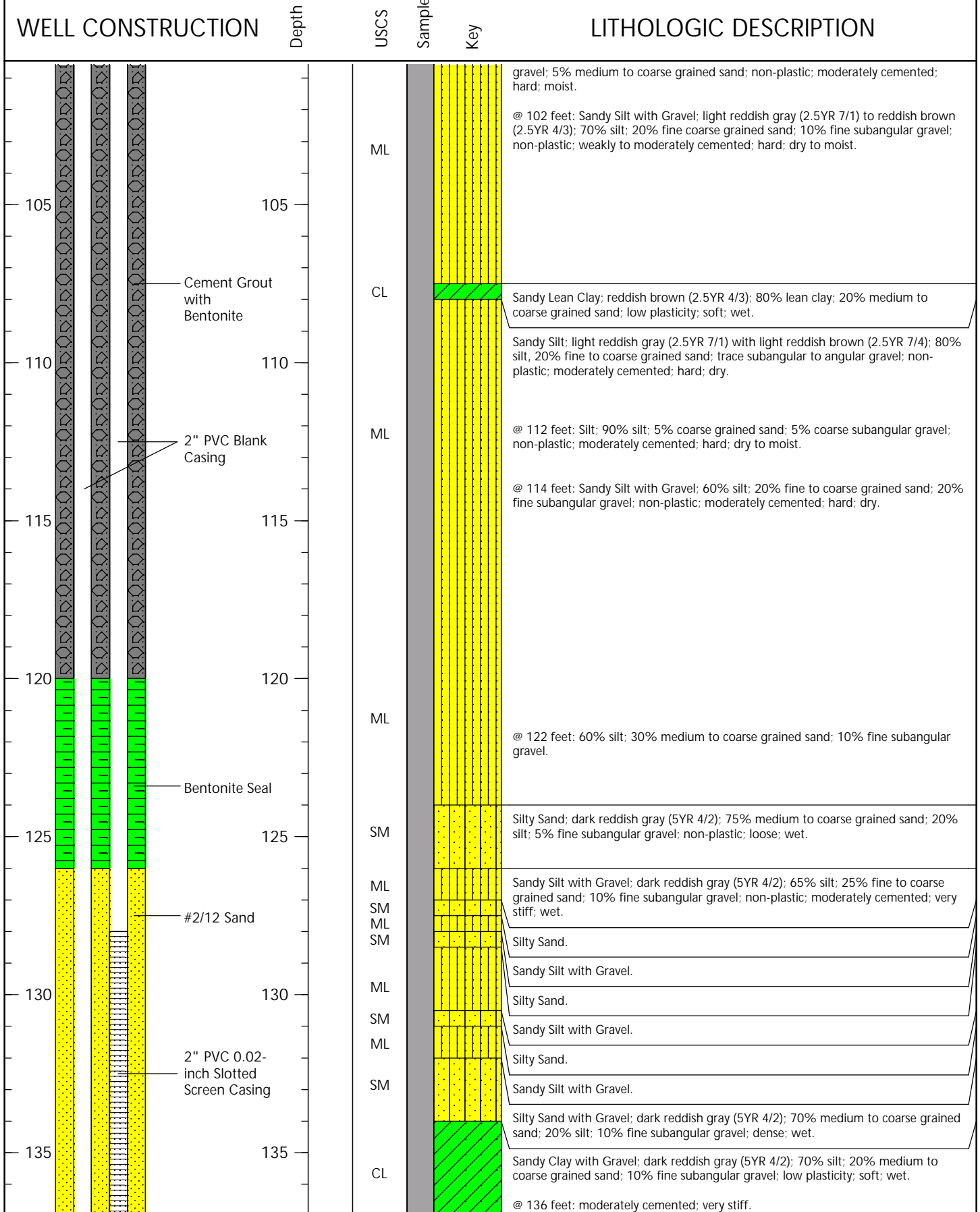
LOG OF BORING PT-9 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
 <p style="margin-left: 100px;">Cement Grout with Bentonite</p> <p style="margin-left: 100px;">2" PVC Blank Casing</p>	30	SM			
	30	ML			Sandy Silt with Gravel; light gray (5YR 7/1) to light reddish brown (5YR 6/4); 60% silt, 20% fine to coarse grained sand; 20% fine subangular gravel; non-plastic with alternating layers ranging from non-cemented very soft to moderately cemented hard material.
	35	ML			@ 36 feet: moderately cemented layers; hard; dense; up to 2.5-inches thick.
	40	SM			Silty Sand with Gravel; light gray (10YR 7/1); 60% fine to coarse grained sand; 30% silt; 10% fine to coarse subangular gravel; hard; dry; occasional 1 to 2-inch weakly cemented hard layers. @ 40 feet: Alternating layers ranging from soft, non-cemented to moderately cemented.
	45	SM			@ 46 feet: reddish gray (10R 6/1) to light red (10R 6/6); 60% fine to coarse grained sand; 30% silt; 10% fine subangular gravel; non-cemented to moderately cemented; soft to hard; dry.
	50	SM			
	55	ML			Silt with Gravel; light gray (5YR 7/1); 85% silt, 10% fine subangular gravel; trace fine to coarse grained sand; non-plastic; soft; dry.
	60	SM			Silty Sand with Gravel.
	60	ML			Sandy Silt with Gravel; light reddish brown (5YR 6/3); 60% silt, 20% fine to coarse grained sand; 20% fine subangular gravel; non-cemented; soft; dry. Occasional 2 to 3-inch hard, moderately cemented layers. @ 62 feet: 70% silt; 30% fine to coarse grained sand; 10% fine subangular gravel.

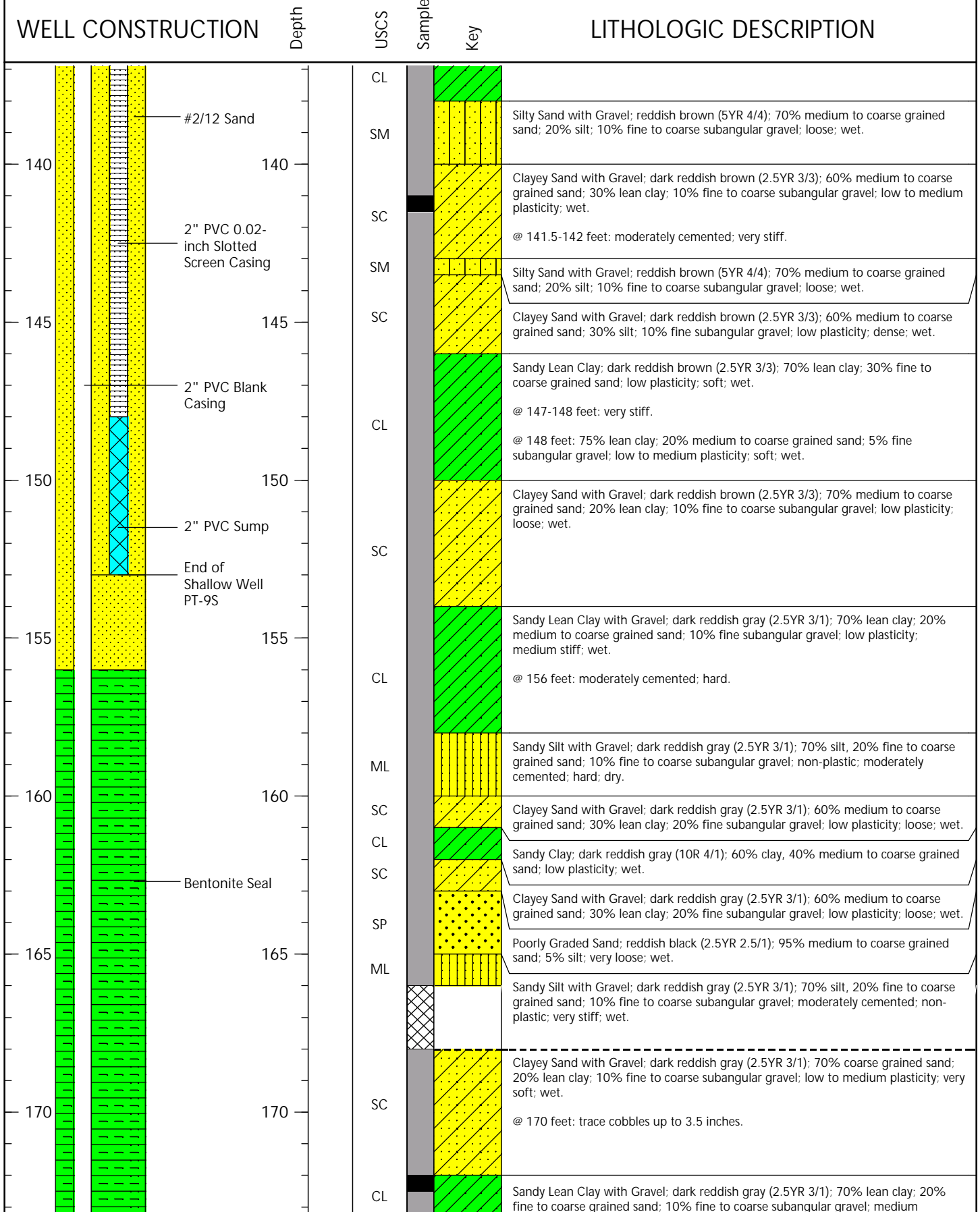
LOG OF BORING PT-9 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
 <p style="margin-left: 100px;">Cement Grout with Bentonite</p> <p style="margin-left: 100px;">2" PVC Blank Casing</p>	65	ML			
	70				
	75	ML			<p>@ 72 feet: reddish brown (2.5YR 4/4) to reddish gray (2.5YR 6/1); 60% silt, 30% fine to coarse grained sand; 10% fine subangular gravel; weak to moderate cementation; non-plastic; dense; very stiff to hard; dry to moist.</p> <p>@ 74 feet: One cemented layer was 6-inches thick.</p>
	80	SC			Clayey Sand; dark reddish gray (10R 4/1); 70% medium to coarse grained sand; 25% lean clay; 5% fine subangular gravel; low plasticity; soft; wet.
	85	CL			Sandy Lean Clay; dark reddish gray (10R 4/1); 80% lean clay; 20% medium to coarse grained sand; low to medium plasticity; very stiff; dense; moist.
	90	ML			<p>@ 90 feet: trace cobbles up to 3.5 inches.</p> <p>@ 92 feet: no cobbles; occasional layers of moderately cemented, very stiff material (1 to 2-inches). The majority is very soft, dry.</p>
	95	SM			Silty Sand; reddish gray to light red (10R 6/6); 55% fine to coarse grained sand; 45% silt; trace fine subangular gravel; dry with occasional moderately cemented, very stiff layers.
	100	ML			<p>Sandy Silt with Gravel; reddish gray (10R 6/1) with light red (10R 6/6); 70% silt, 20% fine to coarse grained sand; 10% fine subangular gravel; non-plastic; soft; dry. Alternating with moderately cemented, very stiff layers.</p> <p>@ 100 feet: Gravelly Silt; reddish brown (2.5YR 4/3); 75% silt; 20% fine subangular</p>

LOG OF BORING PT-9 S/D (Continued)



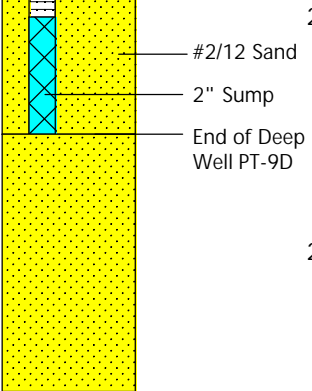
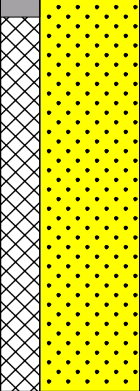

LOG OF BORING PT-9 S/D (Continued)



LOG OF BORING PT-9 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION	
<p style="margin-left: 20px;">Bentonite Seal</p> <p style="margin-left: 20px;">#2/12 Sand</p> <p style="margin-left: 20px;">2" PVC 0.02-inch Slotted Screen Casing</p>	175	CL			plasticity; non-cemented; soft; wet. @ 173 feet: moderately cemented; hard; moist. @ 174 feet: light red areas (2.5YR 7/8); weakly cemented; stiff.	
			SP			Poorly Graded Sand; dark red (2.5YR 3/6); 95% medium to coarse grained sand; 5% silt; trace fine subangular gravel; loose; wet.
		180	CL			Sandy Lean Clay with Gravel; dark red (2.5YR 3/6); 70% lean clay; 20% medium to coarse grained sand; 10% fine subangular gravel; low plasticity; weakly cemented; very stiff; wet. @ 180 feet: moderately cemented; hard. @ 182 feet: weakly cemented layers present (approximately 4-inches thick); medium stiff.
			SP			Poorly Graded Sand; dark red (2.5YR 3/6); 95% medium to coarse grained sand; 5% silt; trace cobbles to 3.5 inches; loose; wet.
		185	CL			Sandy Lean Clay with Gravel; dark red (2.5YR 3/6); 70% lean clay; 20% medium to coarse grained sand; 10% fine subangular gravel; low plasticity; moderately cemented; hard; wet. @ 187.5 feet: White colored moderately cemented zone. @ 188 feet: medium plasticity; not cemented; soft.
			CL			
		190	SP			Poorly Graded Sand; dark red (2.5YR 3/6); 95% medium to coarse grained sand; 5% silt; loose; wet.
			CL			Sandy Lean Clay with Gravel; dark red (2.5YR 3/6); 70% lean clay; 20% medium to coarse grained sand; 10% fine subangular gravel; medium plasticity; non-cemented; soft; wet. Poorly Graded Sand; dark red (2.5YR 3/6); 95% medium to coarse grained sand; 5% silt; loose; wet. Density of sand increases with depth.
			SP			
		195	CL			Sandy Lean Clay with Gravel; dark red (2.5YR 3/6); 70% lean clay; 20% medium to coarse grained sand; 10% fine subangular gravel; low plasticity; moderately cemented; very stiff; wet. @ 196 feet: thin layers of medium plasticity. @ 198 feet: low to medium plasticity; medium stiff; weak cementation.
		200	CL			@ 200 feet: moderate cementation; stiff. @ 202 feet: weak cementation; medium stiff; wet.
		205	SP			Poorly Graded Sand; dark red (2.5YR 3/6); 95% medium to coarse grained sand; 5% silt; loose; wet.
			CL			Sandy Lean Clay with Gravel; dark red (2.5YR 3/6); 70% lean clay; 20% medium to coarse grained sand; 10% fine subangular gravel; low plasticity; weakly cemented; stiff; wet. @ 207 feet: moderately cemented; very stiff.
						Poorly Graded Sand; dark red (2.5YR 3/6); 95% medium to coarse grained sand;

LOG OF BORING PT-9 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
 <p>#2/12 Sand</p> <p>2" Sump</p> <p>End of Deep Well PT-9D</p>	<p>210</p> <p>215</p>	<p>SP</p>			<p>5% silt; loose; wet.</p> <p>Bedrock encountered at 218 feet bgs.</p> <p>Total Depth Explored: 218 feet bgs</p>