APPENDIX B

BOREHOLE LITHOLOGIC LOGS

Proje	ct Nan	ne:	Yerington Groundwater In	I	Boring Nu	mber:	<u> PA-</u>	<u>GW14</u>		
Soil l	Boring		Monitoring Well	Project Number	<u> </u>	12	2625	59.001	Sheet <u>1</u> of	_7
Borir	ng Loca	ation:	Process Area		Elev	vation: 4	495.	0 feet amsl	East: 323470 North: 1546685	;
Drilli	ng Co	ntract	or: WDC	Driller: J. Love	K3	e Started:	2/1	/05	Date Finished: 2/3/05	
Drilli	ng Equ	ıipme	nt: GEFCO 15L with Sonico	r 50K Drill Head	Tota Dep	al th: (feet)	152	2.0	Water Depth: (feet) 122'	******
Samp	oling N	1etho	d: Core Barrel	Borehole Diameter: 6"	🛭 and	l Diameter Material:	N	A	***************************************	
Drilli	ng Me	thod:	Sonic			eened Inter Well Dept		NA		
Well	Seal:	Ber	ntonite and Cement		Slot	Size: N	A	Filter Ma	terial: NA	
Logg	ed By:	******	Gardner	***************************************	Dev	elopment	Meth	od: NA	***************************************	x
	et)	USCS Group Symbol			(Graphic Lo	og			
Depth (feet)	on (fe	S dnc	Description		evel	ogy	fill		Remarks	
Dept	Elevation (feet)	S Gro	2 coonputor		Water Level	Lithology	Backfill		10	
	田田		CY AMENICANE AN COLUMN (A	10.0	≥		77.8			
-		SC	CLAYEY SAND with GRAVEL (0 Moist, dense, no odor. Predominately medium to fine sand v		}			on ASTM N	s of drilled cuttings based Method D-2488 (the aal procedure), grain-size	
-		SM	mm and ~35% silt and clay. The grathe sand is subangular to subrounded	vel is angular to subangular.	7			determination based on the	ons and nomenclature e Unified Soil Classification	
-			plasticity and toughness and do not re SILTY SAND (1-8 feet)	eact to HCl.	7			System. Mu	insell colors described wet.	
-			Dry, medium dense, no odor. Predominately medium to fine sand v mm and ~15% silt and clay. The gra	vith ~5% fine gravel to 15	-			Sharp conta	ects indicated by solid lines,	
-			to subrounded. The fines are nonplar reaction to HCl.	stic and have a strong	-			dashed line.	contacts indicated by	
5-	4490				4					
-										
-					-					
-					7					
-			WELL-GRADED SAND with SILT Dry, very dense, no odor.	T and GRAVEL (8-15 feet)	1					
-		DIVI	Predominately medium to fine sand v mm and ~10% silt and clay. The gra	vel is subangular, the sand is	-					
10-	4485		subangular to subrounded. The fines strong reaction to HCl.	are nonplastic and have a	-				NMENT DESIGN: out: 0 -10 feet	
, - , -					1				Chips: 10 - 152 feet	
-										
-					+					
-					7					
- 5 -					1					
15-	4480		NO RECOVERY		-	<u>૾૾ૺૺૺૺ૾૽૾૽ૺૺ૾ૺ૾ૺ</u>				
-					-					
					4					
<u> </u>					_					
-					-					
-	4475				7					

BORING LOG

PA-GW14 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **2** of . \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SILTY SAND (22-28 feet) Dry, medium dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 15 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. 4470 2.5 WELL-GRADED SAND with SILT and GRAVEL (28-33 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~15% fine gravel to 20 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a 4465 30 strong reaction to HCl. SILTY SAND (33-38 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~10% fine to coarse gravel to 40 mm and ~25% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are 4460 35 nonplastic and have a strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 CL SANDY LEAN CLAY (38-38.5 feet) Moist, soft, no odor. SM Predominately silt and clay with ~35% fine to medium sand and trace fine gravel to 10 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are very dark gray (2.5Y 3/1), and have a weak reaction to HCl. 4455 SILTY SAND (38.5-40 feet) Dry, very dense, no odor, no odor. Predominately medium to fine sand with trace fine gravel to 5 mm and ~45% silt and clay. The gravel and sand are subangular to subrounded. The fines have low plasticity and toughness and have a strong reaction to HCl. SILTY SAND (40-53 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 20 mm and $\sim\!\!40\%$ silt and clay. The gravel and sand are subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. 4450

BORING LOG

PA-GW14 Yerington Groundwater Investigation Boring Number: Project Name: 3 of 7 126259.001 \mathbf{X} Soil Boring Monitoring Well Sheet _ Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4445 **CLAYEY SAND** (53-56 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 20 mm and $\sim 40\%$ silt and clay. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness 4440 and have a weak reaction to HCl. SANDY LEAN CLAY (56-77.5 feet)
Dry, hard, no odor. Laminated to thinly bedded.
Predominately silt and clay with ~40% fine to medium sand and ~5% fine to coarse gravel to 25 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), reaction to HCl varies from none to strong. 4435 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4430 4425

BORING LOG

PA-GW14 Yerington Groundwater Investigation Project Name: Boring Number: 126259.001 \mathbf{X} 4 of _ Monitoring Well Sheet Soil Boring Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4420 SANDY LEAN CLAY (77.5-80 feet) Dry, hard, no odor. Predominately silt and clay with \sim 35% fine to medium sand and \sim 10% fine gravel to 15 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are yellowish red (5YR 4/6), and have a strong reaction to HCl. 4415 80 SANDY LEAN CLAY (80-97.5 feet) Dry, hard, no odor. CL Predominately silt and clay with \sim 35% fine to medium sand and \sim 10% fine gravel to 15 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to 4410 85 4405 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4400 SANDY LEAN CLAY (97.5-104.5 feet) Dry, hard, no odor.

BORING LOG

PA-GW14 Yerington Groundwater Investigation Project Name: Boring Number: 126259.001 \mathbf{X} **5**_ of _ Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 20 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to 4395 100 WELL-GRADED SAND with SILT (104.5-108 feet) Dry, very dense, no odor. SW-105 SM Predominately medium to fine sand with \sim 5% fine gravel to 15 mm and ~10% silt and clay. The gravel and sand are subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. GRAVELLY LEAN CLAY with SAND (108-110 feet) Dry, hard, no odor. Predominately silt and clay with ~20% fine to medium sand and ~30% fine to coarse gravel to 40 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and 4385 toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.

CLAYEY SAND (110-118 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~10% fine gravel to 15 mm and ~35% silt and clay. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. 4380 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT NO RECOVERY 4375 ∇

BORING LOG

PA-GW14 Yerington Groundwater Investigation Boring Number: Project Name: 126259.001 \mathbf{X} **6** of _ Soil Boring Monitoring Well Sheet _ Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4370 125 4365 130-4360 SANDY LEAN CLAY (137-145 feet) Dry to 139.5 and moist to 145, hard, no odor. Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 12 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and do not react to 4355 140 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4350 CLAYEY SAND (145-151 feet) Moist to saturated, very dense, no odor. Predominately medium to fine sand with trace fine to coarse gravel to 25 mm and ~35% silt and clay. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl.

]	Project Name:			Yerington Groundwater Investigation	Boring Number: PA-GW14			
_;	Soil E	Boring	2	Monitoring Well Project Number:			12625	59.001 Sheet <u>7</u> of <u>7</u>
			lool		(Graphic	Log	
	Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Water Level	Lithology	Backfill	Remarks
SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05	-	Eleva:		SANDY LEAN CLAY (151-152 feet) Dry, hard, no odor. Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 20 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are grayish brown (10YR 5/2), and have a weak reaction to HCl.	Water	Litho	Bac	
SONIC								

Proje	ect Nan	ne:	Yerington Groundwater In	vestigation		_ E	Boring	Number	<u> PA-</u>	<u>-GW15</u>	
Soil Boring X Monitoring Well Project Nu								12625	59.001		Sheet <u>1</u> of <u>6</u>
Borii	ng Loc	ation:	Process Area			Elev	ation:	4470.	8 feet amsl	East Nort	th: 324127.669 th: 1546454.143
Drill	ing Co	ntract	or: WDC	Driller: J. Love				ed: 11/	/18/04	Date Finishe	
Drill	ing Eq	uipme	ent: GEFCO 15L with Sonico	or 50K Drill Head		Tota Dep		et) 138	3.0	Water Depth (feet)	135.5'
Sam	pling N	1etho	d: Core Barrel	Borehole Diameter: 6"			l Diam Materi		Ā		
Drill	ing Me	thod:	Sonic				Well I	nterval Depth:	NA		
Well	Seal:	Bei	ntonite and Cement			Slot	Size:	NA	Filter Ma	terial: NA	
Logg	ged By:	C .	. Gardner	······		Dev	elopme	ent Meth	od: NA	***************************************	
	 ਜ਼ੁ	mbol				(Graphic	e Log			
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description			Water Level	Lithology	Backfill		Rem	arks
_	4470	SM	SILTY SAND (0-4.5 feet) Predominately medium to fine sand v	with trace fine gravel to 15					Description on ASTM N	s of drilled cut Method D-248	ttings based
-	1170		mm and ~15% silt and clay. The grasubangular to subrounded. The fine	evel is subangular, the sand is	_				visual-manı	ual procedure) ons and nome	, grain-size
	-		strong reaction to HCl.	-	_					e Unified Soil insell colors de	Classification escribed wet.
-					_				GI .		1.11.
-	}				-				gradational dashed line	cts indicated t contacts indic	ated by
-	-	SW-	WELL-GRADED SAND with SIL	Γ and GRAVEL (4.5-12 feet)					dashed line	•	
5-	4465		Predominately medium to fine sand ~20% fine gravel to 15 mm, and ~10	with ~15% coarse sand, % silt and clay. The gravel	-						
-	1105		is angular to subangular, the sand is The fines are nonplastic and have a s	subangular to subrounded. trong reaction to HCl.	-						
-	-				_						
-					_						
-	-				-						
-	-				-				ABANDON	IMENT DESI	GN·
10-	4460				-				Cement Gro	out: 0 -10 feet	
-	1100				_	$\left\{ \right.$			Bentonite C	Chips: 10 - 138	teet
-]	SM	CLAYEY SAND (12-20 feet)								
-		DIVI	Predominately medium to fine sand gravel to 25 mm and ~35% silt and c	lay. The gravel is	_						
-	1		subangular, the sand is subangular to have medium plasticity and toughner	subrounded. The fines	-						
-			to HCl.		_						
15 -	4455				-						
-	4433				_						
	1				_	1					
					_						
-	-				-	-					
]]	1				-						

BORING LOG

PA-GW15 Project Name: **Yerington Groundwater Investigation** Boring Number: \mathbf{X} 126259.001 **2**_ of _ Monitoring Well Soil Boring Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SM **SILTY SAND with GRAVEL** (20-24 feet) Predominately medium to fine sand with ~15% coarse sand, 4450 \sim 25% fine gravel to 15 mm, and \sim 20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. GM SILTY GRAVEL with SAND (24-33.5 feet) Predominately fine to coarse gravel to 30 mm with ~20% coarse sand, $\sim 15\%$ medium to fine sand, and $\sim 15\%$ silt and clay. The 25 gravel is subangular, the sand is subangular to subrounded. The 4445 fines are nonplastic and have a strong reaction to HCl. 30 4440 CLAYEY SAND with GRAVEL (33.5-41.5 feet) Predominately medium to fine sand with ~15% fine gravel to 15 mm and $\sim 35\%$ silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium 35 plasticity and toughness, are brown (10YR 4/3), and have a 4435 strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4430 SANDY LEAN CLAY (41.5-43 feet)
Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and have a strong reaction to CL SANDY LEAN CLAY (43-48 feet)
Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.

Proje	ect Nan	ne:	Yerington Groundwater Inve	stigation	_ B	Boring N	Number:	<u>PA-(</u>	JW15	
Soil	Boring	2	Monitoring Well □	Project Number:	r: 126259.001 Sheet 3				<u>3</u> of <u>6</u>	
				J	C	Graphic	Log			
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology	Backfill		Remarks	
50-	4420	SC	CLAYEY SAND with GRAVEL (48-5 Predominately medium to fine sand with mm and ~20% silt and clay. The gravel the sand is subangular to subrounded. It plasticity and toughness and have a strong the strong str	n ~15% fine gravel to 15 is angular to subangular, — The fines have medium						
55 —	4415	CL	SANDY LEAN CLAY (54-59.5 feet) Predominately silt and clay with ~45% trace fine gravel to 10 mm. The gravel subangular to subrounded. The fines hat toughness, are dark grayish brown (2.53 reaction to HCl.	is subangular, the sand is — ve medium plasticity and						
60 -	4410	SC	CLAYEY SAND (59.5-64 feet) Predominately medium to fine sand with ~20% fine gravel to 10 mm, and ~20% subangular, the sand is subangular to su medium plasticity and toughness and ha HCl.	silt and clay. The gravel is brounded. The fines have						
95 – 65 – 65 – 65 – 65 – 65 – 65 – 65 –	4405	SC	CLAYEY SAND (64-72.5 feet) Predominately medium to fine sand with mm and ~20% silt and clay. The gravel subangular to subrounded. The fines ha toughness and have a strong reaction to	is subangular, the sand is ve medium plasticity and						
70-	4400			- - - -						

BORING LOG

PA-GW15 Yerington Groundwater Investigation Project Name: Boring Number: 126259.001 \mathbf{X} **4** of _ Soil Boring Monitoring Well Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SP-POORLY GRADED SAND with SILT (72.5-88.5 feet) Predominately medium to fine sand with trace fine gravel to 8 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 75 4395 80 4390 85 4385 SM SILTY SAND with GRAVEL (88.5-94.5 feet)
Predominately medium to fine sand with ~20% fine gravel to 15 mm and $\sim 20\%$ silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4380 SANDY LEAN CLAY (94.5-98 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/4), and have a 4375 strong reaction to HCl. SC CLAYEY SAND (98-103 feet)

BORING LOG

PA-GW15 Yerington Groundwater Investigation Project Name: Boring Number: 126259.001 \mathbf{X} **5** of **6** Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks Predominately medium to fine sand with trace coarse sand to 4 mm and ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. 100 4370 CLAYEY GRAVEL with SAND (103-109.5 feet)
Predominately fine to coarse gravel to 30 mm with ~20% coarse sand, ~15% medium to fine sand, and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and 105 have a strong reaction to HCl. 4365 **CLAYEY SAND** (109.5-118 feet) 110 Predominately medium to fine sand with ~20% coarse sand, ~10% fine gravel to 20 mm, and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. 4360 The fines have medium plasticity and toughness and do not react to HCl. 115 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT POORLY GRADED SAND with SILT (118-119.5 feet) Predominately medium to fine sand with trace fine gravel to 15 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.
SANDY LEAN CLAY (119.5-130.5 feet) CL Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 4350 toughness and have a strong reaction to HCl.

BORING LOG

PA-GW15 Yerington Groundwater Investigation Boring Number: Project Name: 126259.001 \mathbf{X} <u>6</u> of <u>6</u> Soil Boring Monitoring Well Project Number: Sheet _ JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 125 4345 130 4340 CL SANDY LEAN CLAY with GRAVEL (130.5-132 feet)
Predominately silt and clay with ~15% fine to medium sand, ~15% coarse sand, and ~20% fine to coarse gravel to 20 mm. The gravel is angular to subangular, the sand is subangular to CL subrounded. The fines have medium plasticity and toughness, are subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/4), and have a strong reaction to HCl.

SANDY LEAN CLAY (132-138 feet)

Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and trace and are heaver (10YR 5/2). From 132-136 the fines toughness and are brown (10YR 5/3). From 132-136 the fines have a strong reaction to HCl, from 136-138 the fines do not react 135 to HCl. $\overline{\Delta}$ 4335 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05

Proje	ect Nan	ne:	Yerington Groundwater Investigation		_ F	Boring 1	Number:	<u>PA-</u>	<u>GW16</u>
Soil	Boring	2	Monitoring Well ☐ Pr	oject Number:			12625	59.001	Sheet <u>1</u> of <u>6</u>
Borii	ng Loca	ation:	Process Area		Elev	ation:	4480.	3 feet amsl	East: 323640.914 North: 1546875.001
Drill	ing Coi	ntract	or: WDC Driller: J. Love	e	Date	e Starte	d: 11 /	17/04	Date Finished: 11/18/04
Drill	ing Equ	iipme	nt: GEFCO 15L with Sonicor 50K Drill Hea	ıd	Tota Dep		t) 14 4	1.0	Water Depth: (feet) 135'
Samp	pling M	letho	d: Core Barrel Borehole Diamete	r: 6"	Wel and	l Diame Materia	eter al: N	A	
Drill	ing Me	thod:	Sonic			ened Ir Well D		NA	
			atonite and Cement		Slot	Size:	NA	Filter Ma	terial: NA
Logg	ged By:	C.	Gardner		Dev	elopme	nt Meth	od: NA	
******		∞ loqu		***************************************		Sraphic	Log	***************************************	
(feet)	(feet	p Syn			vel	λ;	_		
Depth (feet)	Elevation (feet)	Grou	Description		Water Level	Lithology	Backfill		Remarks
	Ele	USCS Group Symbol			Wai	Ľi	В		
-	4480	SM	SILTY SAND with GRAVEL (0-8.5 feet) Dry, dense, no odor.		+			Description	s of drilled cuttings based Method D-2488 (the
-	-		Predominately medium to fine sand with ~35% fine to cogravel to 30 mm and ~25% silt and clay. The gravel is a	ngular to	┨			visual-manı	ual procedure), grain-size
-			subangular, the sand is subangular to subrounded. The have low plasticity and toughness and have a strong reac	ines	-				e Unified Soil Classification unsell colors described wet.
			HCl.	_	1				
-	-				-			gradational	cts indicated by solid lines, contacts indicated by
				-	1			dashed line	
5-	4475			-	┨				
				-]				
				_	_				
-	-				┨				
-		SC	CLAYEY SAND with GRAVEL (8.5-16.5 feet)		1				
-]	SC	Dry, very dense, no odor. Predominately medium to fine sand with ~20% fine grav	el to 20	}				
10-	4470		mm and ~35% silt and clay. The gravel is subangular, the subangular to subrounded. The fines have medium plast	ne sand is	-				NMENT DESIGN: out: 0 -10 feet
			toughness and have a weak reaction to HCl.	_	1				Chips: 10 - 144 feet
4/6/06	-				┨				
D.GDT				_]				
N&CAL				_	1				
P. B.	-			-	┨				
0 NO 15 -	4465			-	1				
ERING -				_	1				
SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 51 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	SM	SILTY SAND (16.5-18 feet)		-				
O SAM	1		Dry, very dense, no odor. Predominately medium to fine sand with \sim 20% coarse sa	nd,	1				
Ž 00 -	-	CL	~10% fine gravel to 15 mm, and ~20% silt and clay. The is angular to subangular, the sand is subangular to subro	gravel unded.	1				
- MET	-		The fines have low plasticity and toughness and have a streaction to HCl.	trong	-				
SONIC			SANDY LEAN CLAY (18-22 feet) Dry, hard, no odor.		1				

BORING LOG

PA-GW16 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **2** of _ \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4460 Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4/2), and have a weak reaction to HCl. POORLY GRADED SAND with SILT (22-29 feet) Dry, very dense, no odor. SM Predominately medium to fine sand with ~5% fine gravel to 10 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. 25 4455 CLAYEY SAND (29-34.5 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 10 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 30-<u>44</u>50 toughness and have a strong reaction to HCl. **SILTY SAND** (34.5-37.5 feet) 4445 Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 15 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have low plasticity and toughness and have a strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 SANDY LEAN CLAY (37.5-52 feet) Dry, hard, no odor. CL Predominately silt and clay with ~35% fine to medium sand and \sim 5% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong reaction to 4440 4435

BORING LOG

PA-GW16 Project Name: **Yerington Groundwater Investigation** Boring Number: \mathbf{X} 126259.001 3 of 6 Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4430 **CLAYEY SAND** (52-59 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~15% coarse sand, ~10% fine gravel to 10 mm, and ~20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. 4425 SANDY LEAN CLAY (59-62 feet) Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 60 <u>442</u>0 toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. WELL-GRADED SAND with SILT and GRAVEL (62-69 feet) Dry, very dense, no odor. SM Predominately medium to fine sand with ~20% fine gravel to 15 mm and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 and have a weak reaction to HCl. 4415 SANDY LEAN CLAY (69-76.5 feet) Dry, hard, no odor. Predominately silt and clay with ~45% fine to medium sand and 4410 trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 4/4), and have a strong reaction to

BORING LOG

PA-GW16 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of _ \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4405 SM **SILTY SAND** (76.5-80 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~20%coarse sand, trace fine gravel to 8 mm, and ~20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have low plasticity and toughness and have a strong reaction to 4<u>400</u> SM SILTY SAND (80-83 feet) Dry, very dense, no odor. Predominately medium to fine sand with trace fine gravel to 5 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. SANDY LEAN CLAY (83-87.5 feet) CL Dry, hard, no odor. Predominately silt and clay with ~35% fine to medium sand and \sim 5% fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to 85 4395 $HC\bar{1}$ SANDY LEAN CLAY (87.5-92 feet) Dry, hard, no odor. Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. 4390 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT SANDY LEAN CLAY (92-98 feet) Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and \sim 5% fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to 4385 SM SILTY SAND with GRAVEL (98-101 feet)

BORING LOG

PA-GW16 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 <u>5</u> of _ \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks Dry, very dense, no odor. Predominately medium to fine sand with ~20% fine gravel to 20 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic 100 4380 and have a weak reaction to HCl. SM **SILTY SAND** (101-106 feet) Dry, very dense, no odor. Predominately medium to fine sand with \sim 5% fine gravel to 10 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. 105 4375 SM **SILTY SAND** (106-109.5 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 15 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. CL SANDY LEAN CLAY (109.5-110 feet) 43<u>70</u> SC Dry, hard, no odor. Predominately silt and clay with \sim 40% fine to medium sand and \sim 5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.

<u>CLAYEY SAND with GRAVEL</u> (110-114 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~15% fine gravel to 15 mm and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and do not react to HCl CL SANDY LEAN CLAY (114-119 feet) Dry, hard, no odor. 115 4365 Predominately silt and clay with \sim 40% fine to medium sand and \sim 5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT have a strong reaction to HCl. SANDY LEAN CLAYSANDY LEAN CLAY (119-129 feet) Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is angular to subangular, 4360 the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR/3), and have a weak reaction to HCl.

Proje	ect Nan	ne:	Yerington Groundwater Investigation		Boring 1	Number	: <u>P</u> A	<u> 1-GW16</u>		
Soil	Boring	2	Monitoring Well Project Number:	er: 126259.001 Sheet 6					6 of 6	
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Water Level	Crithology (Sapple)	Backfill 607		Rema	rks	
125 -	4355		-	1						
130-	4350	CL	SANDY LEAN CLAY (129-133.5 feet) Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and							
			toughness, are brown (10YR 4/3), and have a strong reaction to HCl.	 - - - -						
135 -	4345		Dry, hard, no odor. Predominately silt and clay with ~35% fine to medium sand and ~10% fine to coarse gravel to 25 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong reaction to HCl.	- - - - - -						
140-	4340	SW- SM	WELL-GRADED SAND with SILT (139-141.5 feet) Dry, hard, no odor. Predominately medium to fine sand with ~10% fine gravel to 15 mm and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl.	- - - -						
		CL	SANDY LEAN CLAY with GRAVEL (141.5-143 feet) Predominately silt and clay with ~30% medium to coarse sand and ~20% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong reaction to HCl. SANDY LEAN CLAY (143-144 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and have a strong reaction to HCl.	-						

BORING LOG

PA-GW17 Boring Number: Project Name: **Yerington Groundwater Investigation** 126259.001 \mathbf{X} Monitoring Well Soil Boring Project Number: of Sheet 324323.859 East: 1546960.448 Boring Location: Process Area Elevation: 4457.6 feet amsl North: Drilling Contractor: WDC Driller: J. Love Date Started: 11/11/04 11/12/04 Date Finished: Total Water Depth: Depth: (feet) 154.0 118' Drilling Equipment: GEFCO 15L with Sonicor 50K Drill Head (feet) Well Diameter and Material: Sampling Method: Core Barrel Borehole Diameter: 6" Screened Interval and Well Depth: NA Drilling Method: **Sonic** Well Seal: Bentonite and Cement Slot Size: NA Filter Material: NA Logged By: C. Gardner NA Development Method: Graphic Log JSCS Group Symbol Elevation (feet) Depth (feet) Water Level Lithology Backfill Remarks Description Descriptions of drilled cuttings based SILTY SAND (0-3 feet) Predominately medium to fine sand with trace fine gravel to 5 mm on ASTM Method D-2488 (the and ~20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification react to HCl. System. Munsell colors described wet. 4455 SM SILTY SAND (3-8.5 feet) Sharp contacts indicated by solid lines, Predominately medium to fine sand with trace fine to coarse gravel to 30 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are gradational contacts indicated by dashed line. nonplastic and have a strong reaction to HCl. 4450 SILTY SAND (8.5-10 feet) Predominately medium to fine sand with ~15% coarse sand, ~10% fine to coarse gravel to 30 mm, and ~20% silt and clay. ABANDONMENT DESIGN: The gravel is subangular, the sand is subangular to subrounded. 10 The fines are nonplastic and have a strong reaction to HCl. Cement Grout: 0 -10 feet SILTY SAND (10-14 feet)
Predominately medium to fine sand with trace fine to coarse Bentonite Chips: 10 - 154 feet gravel to 30 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT nonplastic and have a strong reaction to HCl. 4445 SM SILTY SAND (14-20.5 feet) Predominately medium to fine sand with ~15% coarse sand, ~10% fine to coarse gravel to 30 mm, and ~20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. 4440

BORING LOG

PA-GW17 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **2** of . \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SANDY LEAN CLAY (20.5-26.5 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/3), and have a weak reaction to 4435 25 SANDY LEAN CLAY (26.5-31 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The fines have medium plasticity and toughness, are brown (10YR 4/3), and have a strong reaction to 4430 30 SANDY LEAN CLAY (31-35 feet) Predominately silt and clay with ~50% fine to medium sand and trace coarse sand to 4 mm. The sand is subangular to <u>44</u>25 subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4/2), and have a strong reaction to 35 SANDY LEAN CLAY (35-37 feet) Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark yellowish brown (10YR 4/4), Nand do not react to HCl.

WELL-GRADED SAND with SILT (37-40 feet) 4420 SW-Predominately medium to fine sand with ~15% coarse sand, ~10% fine gravel to 20 mm, and ~10% silt and clay. The gravel SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. SANDY LEAN CLAY (40-48 feet)
Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to 4415

Proje	ect Nan	ne:	Yerington Groundwater Investigation		_ E	Boring N	Number	: <u>PA-C</u>	<u> 3W17 </u>	
Soil	Boring	2	Monitoring Well Project Num	nber:	_		1262	59.001	Sheet	<u>3</u> of <u>7</u>
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology Lithology	Backfill 60		Remarks	
	4410	CL	SANDY LEAN CLAY (48-51.5 feet)	-						
50-			Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark yellowish brown (10YR 4/4), and have a strong reaction to HCl.	-						
	4405	CL	SANDY LEAN CLAY (51.5-58.5 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong reaction to HCl.	-						
55	4400			-						
60-		CL	SANDY LEAN CLAY (58.5-60 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark yellowish brown (10YR 4/4), and have a weak reaction to HCl. NO RECOVERY							
65 —	4395	CL	SANDY LEAN CLAY (62-68.5 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.							
70 —	4390	SM	SILTY SAND (68.5-76 feet) Predominately medium to fine sand with trace coarse sand to 4 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl.	- - - - - - -						

BORING LOG

PA-GW17 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of . \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 75 CLAYEY SAND (76-79 feet) Predominately medium to fine sand with ~5% fine gravel to 10 mm and \sim 35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium 4380 plasticity and toughness and have a strong reaction to HCl. **SILTY SAND** (79-85.5 feet) Predominately medium to fine sand with ~5% fine gravel to 15 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a 80 weak reaction to HCl. 4375 85 SANDY LEAN CLAY (85.5-86.5 feet) Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and 4370 have a strong reaction to HCl SILTY SAND (86.5-88 feet)
Predominately medium to fine sand with ~5% fine gravel to 15 CL mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. SANDY LEAN CLAY (88-95.5 feet) Predominately silt and clay with ~40% fine to medium sand to 1 mm. The sand is subangular to subrounded. The fines have SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT medium plasticity and toughness, are brown (10YR 5/3), and have a weak reaction to HCl. 4365 SANDY LEAN CLAY (95.5-100 feet) Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/4), and have a 4360 strong reaction to HCl.

BORING LOG

PA-GW17 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **5**_ of _ \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Description Remarks 100 SILTY SAND (100-101 feet) Predominately medium to fine sand with ~5% fine gravel to 10 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl.

WELL-GRADED GRAVEL with SILT (100-101 feet) SM Predominately fine to coarse gravel to 30 mm with ~20% coarse sand, ~30% medium to fine sand, and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to GW- subrounded. The fines are nonplastic and have a strong reaction to HCl GM/ **SILTY SAND** (102-103.5 feet) Predominately medium to fine sand with ~5% fine gravel to 10 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic 105 and have a weak reaction to HCl.

WELL-GRADED GRAVEL with SILT (103.5-104 feet) Predominately fine to coarse gravel to 30 mm with ~20% coarse sand, ~30% medium to fine sand, and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction 4350 to HCl. NO RECOVERY 110 4345 SW- WELL-GRADED SAND with SILT (114-120 feet) Predominately medium to fine sand with ~5% fine gravel to 10 mm and \sim 10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic 115 and have a weak reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT <u>43</u>40 SILTY SAND (120-128 feet) Predominately medium to fine sand with trace fine gravel to 8 mm and ~35% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have low plasticity and toughness and have a weak reaction to HCl. 4335

BORING LOG

PA-GW17 Yerington Groundwater Investigation Project Name: Boring Number: 126259.001 \mathbf{X} Monitoring Well <u>6</u> of _ Sheet . Soil Boring Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 125 4330 CLAYEY SAND (128-134 feet) Predominately medium to fine sand with ~10% fine gravel to 10 mm and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a weak reaction to HCl. 130 4325 SM **SILTY SAND** (134-142 feet) Predominately medium to fine sand with ~15% coarse sand, trace fine gravel to 15 mm, and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. 135 The fines are nonplastic and do not react to HCl. 4320 140 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 GW-GM WELL-GRADED GRAVEL with SILT (142-145 feet)
Predominately fine to coarse gravel to 40 mm with ~20% coarse sand, ~20% medium to fine sand, and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. **CLAYEY SAND** (145-151.5 feet) Predominately medium to fine sand with ~10% fine gravel to 20 mm and ~45% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a weak reaction to HCl. 4310

CI SANDY LEAN CLAY (151.5-154 feet) Predominately silt and clay with -35% fine to medium sand and trace fine gravel to 15 mm. The gravel is subangular, the sand is subangular, the sand toughness, are brown (7.5YR 5/4), and have a weak reaction to IICl. Remarks Remar	Proj	ect Nan	ne:	Yerington Groundwater Investigation	Boring Number:					
CI. SANDY LEAN CLAY (151.5-154 feet) Predominately silt and clay with ~3.5% fine to medium sand and trace fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to HCI.	Soil	Boring		Monitoring Well Project Number:			1262	<u>59.001</u> Sheet <u>7</u> of <u>7</u>		
CI. SANDY LEAN CLAY (151.5-154 feet) Predominately silt and clay with ~35% fine to medium sand and trace fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to HCI.			loqu		Ľ	Graphic	Log			
	Depth (feet)	Elevation (feet	USCS Group Syn	Description	Water Level	Lithology	Backfill	Remarks		
AIC METHO	SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05	4305		SANDY LEAN CLAY (151.5-154 feet) Predominately silt and clay with -35% fine to medium sand and trace fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to HCI.						

Proj	ect Nan	ne:	Yerington Groundwater Investigation		Boring 1	Number	<u> PA-</u>	<u>-GW18</u>
Soil	Boring	2	Monitoring Well Project Number	: <u> </u>		1262	59.001	Sheet <u>1</u> of <u>6</u>
Bor	ing Loca	ation:	Process Area	Ele	vation:	4459.	1 feet amsl	East: 324001.08 North: 1547266.533
Dril	ling Co	ntract	or: WDC Driller: J. Love	Dat	e Starte	d: 12	/15/04	Date Finished: 12/16/04
Dril	ling Equ	iipme	nt: GEFCO 15L with Sonicor 50K Drill Head	Tot Dep		t) 130	0.0	Water Depth: (feet) 116'
San	npling M	letho	d: Core Barrel Borehole Diameter: 6"	We and	ll Diam Materi	eter al: N	A	·
Dril	ling Me	thod:	Sonic	Scr	eened Ir Well D	nterval	NA	
			ntonite and Cement	8	t Size:	•		uterial: NA
			Gardner	Dev	zelonme	ent Meth	N. I.	
****		x		*******	Graphic	**********	× × × × × × × × × × × × × × × × × × ×	
eet)	(feet)	Sym		el	>			
Depth (feet)	Elevation (feet)	SCS Group Symbol	Description	Water Level	Lithology	Backfill		Remarks
De	Elev	SCS (Wate	Lit	Ba		
-	+	η	NO RECOVERY				Description	s of drilled cuttings based
]			7			visual-man	Method D-2488 (the ual procedure), grain-size ons and nomenclature
	_			1			based on th	e Unified Soil Classification unsell colors described wet.
	-			-			System: 1410	ansen colors described wet.
	-			1			gradational	acts indicated by solid lines, contacts indicated by
	4455		•	1			dashed line	
5-	-	GW-	WELL-GRADED GRAVEL with CLAY and SAND (5-6 feet) Predominately fine gravel to 15 mm with ~20% coarse sand,		7/400			
	-	GC SM	$_{1}$ ~20% medium to fine sand, and ~10% silt and clay. The gravel	1				
	_	51.1	and sand are angular to subangular. The fines have medium plasticity and toughness and do not react to HCl. SILTY SAND with GRAVEL (6-11 feet)					
	-		Predominately medium to fine sand with ~20% fine gravel to 20 mm and ~20% silt and clay. The gravel is angular to subangular,	-				
]		the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl.					
	4450		•	1			4.0.43.000	A CENTER DEGLEN
10-	-			-				NMENT DESIGN: out: 0 -10 feet
35	-	CL	SANDY LEAN CLAY (11-15 feet)	4	7////		Bentonite C	Chips: 10 - 130 feet
T 4/6/(_	CL	Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 20 mm. The gravel is subangular, the sand is					
VLD.GD	-		subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong	-				
RN&C/]		reaction to HCl.	7				
GPJ B	4445			1				
15-	_	CL	SANDY LEAN CLAY (15-19 feet)	\exists				
YERIN	-		Predominately silt and clay with \sim 45% fine to medium sand and \sim 5% fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and	\dashv				
MPLE	_		subangular to subrounded. The lines have medium plasticity and toughness, are brown (10YR 5/3), and have a weak reaction to HCl.	1				
NO SA	_			\exists				
ПНОВ				7				
SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05	<u>44440</u>	SC	CLAYEY SAND (19-24 feet) Predominately medium to fine sand with trace fine gravel to 10	_				
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BORING LOG

PA-GW18 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **2** of _ \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks mm and ~35% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3) and have a strong reaction to 4435 SANDY LEAN CLAY (24-26.5 feet) CL Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is angular to subangular, 25 the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a weak reaction to HCl. CLAYEY SAND (26.5-29 feet) Predominately medium to fine sand with trace fine gravel to 8 mm and ~35% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. CL SANDY LEAN CLAY (29-34 feet) Predominately silt and clay with ~45% fine to medium sand and \sim 5% fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 30 toughness, are brown (10YR 5/3), and have a weak reaction to GW- WELL-GRADED GRAVEL with SILT and SAND (34-39 feet). GM Predominately fine to coarse gravel to 30 mm with ~20% coarse sand, $\sim 20\%$ medium to fine sand, and $\sim 10\%$ silt and clay. The 35 gravel and sand are angular to subangular. The fines are nonplastic and have a strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 SANDY LEAN CLAY (39-43 feet)
Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to HCl. SANDY LEAN CLAY (43-47 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to $8\,\mathrm{mm}$. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 4415 toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.

Proje	ct Nan	ne:	Yerington Groundwater Investigation	_ F	Boring N	Number:	PA-GW	<u> 18 </u>		
Soil	Boring		Monitoring Well ☐ Project Number:			126259.0	01	Sheet	3 of	f <u>6</u>
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Water Level	Lithology Lithology	Backfill		Remarks		
50-	4410	CL	SANDY LEAN CLAY (47-53.5 feet) Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.							
55 —	4405	CL	SANDY LEAN CLAY (53.5-58 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.	-						
60-	4400	SM SM	Predominately medium to fine sand with ~20% coarse sand, ~10% fine gravel to 15 mm and ~15% silt and clay. The gravel is —							
65 —	4395	CL	subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. SANDY LEAN CLAY (61.5-67 feet) Predominately silt and clay with ~50% fine to medium sand and trace coarse sand to 4 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and do not react to HCl.							
70 —	4390		- CALCOVERT		,,,,,,					

BORING LOG

PA-GW18 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of _ \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SANDY LEAN CLAY (72-77 feet)
Predominately silt and clay with ~45% fine to medium sand and \sim 5% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 4385 toughness, are yellowish brown (10YR 5/4), and do not react to 75 GW WELL-GRADED GRAVEL with SAND (77-82 feet) Predominately fine gravel to 15 mm with ~20% coarse sand, ~25% medium to fine sand, and ~5% silt and clay. The gravel is angular to subangular, the sand is subangular to subangular. The fines are nonplastic and do not react to HCl. 4380 80 GM SILTY GRAVEL with SAND (82-86 feet) Predominately fine gravel to 15 mm with ~20% coarse sand, \sim 15% medium to fine sand, and \sim 15% silt and clay. The gravel is angular to subangular, the sand is angular to subangular. The fines are nonplastic and do not react to HCl. 4375 85 SANDY LEAN CLAY (86-94 feet)
Predominately silt and clay with ~40% fine to medium sand to 2 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl. 4370 90 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT SANDY LEAN CLAY (94-96 feet)
Predominately silt and clay with ~50% fine to medium sand and CL trace coarse sand to 5 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl. 95 SANDY LEAN CLAY (96-100 feet)
Predominately silt and clay with ~45% fine to medium sand and CL ~5% fine gravel to 15 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.

BORING LOG

PA-GW18 Yerington Groundwater Investigation Boring Number: Project Name: 126259.001 \mathbf{X} **5** of **6** Monitoring Well Sheet _ Soil Boring Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4360 100-SW- WELL-GRADED SAND with SILT and GRAVEL (100-104 feet) Predominately medium to fine sand with ~15% fine gravel to 15 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not GRADED SAND with SILT and GRAVEL NO RECOVERY 105 4350 110-4345 115 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05

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0 4340

Project Name: Yerington Groundwater Investigation						_ 1	Boring N	Number	: <u> </u>	<u>-GW10</u>			
So	Soil Boring X			Monitoring Well		Project Number:	12625		59.001	Sheet	6 of	6	
	Deptin (Teet.)	Elevation (feet)	USCS Group Symbol	-	eription	110,000	Water Level	Lithology Lithology			Remarks	01	
	5 —	Elevatio	NSCS Grow	Desc	ripuon						Remarks		

BORING LOG

PA-GW19 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 1 \mathbf{X} Monitoring Well Soil Boring Project Number: of _ Sheet 324348.776 East: Boring Location: Process Area 1547643.036 Elevation: 4434.6 feet amsl North: Drilling Contractor: WDC Driller: J. Love Date Started: 12/5/04 12/6/04 Date Finished: Total Water Depth: Depth: (feet) 117.0 112' Drilling Equipment: GEFCO 15L with Sonicor 50K Drill Head (feet) Well Diameter and Material: Sampling Method: Core Barrel Borehole Diameter: 6" Screened Interval and Well Depth: NA Drilling Method: **Sonic Bentonite and Cement** Slot Size: NA Filter Material: NA Well Seal: Logged By: C. Gardner NA Development Method: Graphic Log SCS Group Symbol Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks Descriptions of drilled cuttings based NO RECOVERY on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System. Munsell colors described wet. Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line. 4430 GM POORLY GRADED GRAVEL with SILT and SAND (8-9 feet) Predominately fine gravel to 15 mm with ~20% coarse sand, ~5% medium to fine sand, and ~10% silt and clay. The gravel is very angular to angular, the sand is subangular to subrounded. The 4425 SM fines are nonplastic and do not react to HCl. SILTY SAND (9-12 feet) ABANDONMENT DESIGN: No odor. Predominately medium to fine sand with ~10% fine gravel to 15 Cement Grout: 0 -10 feet mm and ~35% silt and clay. The gravel is angular to subangular, Bentonite Chips: 10 - 117 feet the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. WELL-GRADED SAND with SILT and GRAVEL (12-17.5 feet) SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT Īw-SM No odor. Predominately medium to fine sand with ~30% fine to coarse gravel to 50 mm and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are 4420 nonplastic and do not react to HCl. SM **SILTY SAND** (17.5-19 feet) Predominately medium to fine sand with \sim 5% fine gravel to 10 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl

BORING LOG

PA-GW19 Project Name: **Yerington Groundwater Investigation** Boring Number: \mathbf{X} 126259.001 **2** of _ Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SILTY SAND (19-33 feet) No odor. Predominately medium to fine sand with $\sim\!\!10\%$ fine gravel to 20mm and ~40% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4410 25 4405 30 SANDY LEAN CLAY (33-39 feet) No odor. CL Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 12 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR /3), and do not react to HCl. 4400 35 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4395 CL SANDY LEAN CLAY (39-42 feet) No odor. Predominately silt and clay with ~30% fine to medium sand and ~5% fine to coarse gravel to 25 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. SM SILTY SAND with GRAVEL (42-45 feet) No odor. Predominately coarse to medium sand with ~20% fine gravel to 20 mm and ~15% silt and clay. The gravel and sand are angular to subangular. The fines are nonplastic and do not react to HCl. 4390 SANDY LEAN CLAY (45-49 feet) Predominately silt and clay with ~30% fine to medium sand and

BORING LOG

PA-GW19 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 <u>3</u> of _ \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4) and do not react to HCl. SANDY LEAN CLAY (49-52 feet) CL 4385 No odor. Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (7.5YR 5/4) and do not react to HCl. SANDY LEAN CLAY (52-55 feet) No odor. CL Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4) and do not react to 4380 55 SANDY LEAN CLAY (55-65 feet) CL No odor. Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is angular to subrounded, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4) and do not react to HCl. 4375 60 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4370 SANDY LEAN CLAY (65-76 feet) No odor. CL Predominately silt and clay with ~40% fine to medium sand and trace fine gravel to 15 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4) and do not react to HCl. 4365

BORING LOG

PA-GW19 Yerington Groundwater Investigation Project Name: Boring Number: \mathbf{X} Monitoring Well 126259.001 4 of _ Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks <u>4360</u> 75 SM SILTY SAND (76-78 feet) Predominately medium to fine sand with $\sim 10\%$ fine to coarse gravel to 30 mm and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. <u>SILTY SAND with GRAVEL</u> (78-82 feet) No odor. Predominately coarse to medium sand with ~40% fine gravel to 15 mm and ~20% silt and clay. The gravel is very angular to subangular, the sand is angular to subangular. The fines are 4355 80 nonplastic and do not react to HCl. NO RECOVERY 4350 85 SM SILTY SAND (87-91 feet) No odor. Predominately medium to fine sand with ~10% fine gravel to 15 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4345 90 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT SM SILTY SAND with GRAVEL (91-100 feet) Predominately medium to fine sand with ~20% coarse sand, ~30% fine to coarse gravel to 50 mm and, ~20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4340

BORING LOG

PA-GW19 Yerington Groundwater Investigation Boring Number: Project Name: <u>5</u> of <u>5</u> 126259.001 \mathbf{X} Monitoring Well Soil Boring Project Number: Sheet . JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4335 100 SM SILTY SAND with GRAVEL (100-107 feet) Predominately medium to fine sand with ~20% coarse sand, ~15% fine to coarse gravel to 25 mm, and ~15% silt and clay. The gravel is angular to subrounded, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4330 105 CLAYEY SAND (107-117 feet)
Predominately medium to fine sand with ~5% fine to coarse gravel to 35 mm and ~40% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. 4325 110-4320 115 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05

Proje	ect Nan	ne:	Yerington Groundwater Investigation		_ I	Boring 1	Number	: <u>PA-</u>	-GW2U
Soil	Boring		Monitoring Well ☐ Proje	ct Number:	_		1262	59.001	Sheet 1 of 5
Borii	ng Loca	ation:	Process Area		Elev	ation:	4436.	0 feet amsl	East: 323922.006 North: 1547845.34
Drill	ing Co	ntract	or: WDC Driller: J. Love		_		d: 11	/30/04	Date Finished: 12/1/04
Drill	ing Equ	uipme	nt: GEFCO 15L with Sonicor 50K Drill Head		Tota Dep		t) 99.	0	Water Depth: (feet) 98'
Samı	pling N	1etho	d: Core Barrel Borehole Diameter:	6"	and	l Diamo Materi	al: N	A	
Drill	ing Me	thod:	Sonic			ened Ir Well D		NA	
Well	Seal:	Ber	ntonite and Cement		Slot	Size:	NA	Filter Ma	ıterial: NA
Logg	ed By:	C.	Gardner		Dev	elopme	nt Meth	od: NA	
******	£	nbol		*****		Graphic	Log		
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology	Backfill		Remarks
-	4435	SW- SM	WELL-GRADED SAND with SILT and GRAVEL (0-3 of Predominately coarse to medium sand with ~20% fine grave 15 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic have a strong reaction to HCl.	el to ne –				on ASTM N visual-mand determination based on the	s of drilled cuttings based Method D-2488 (the ual procedure), grain-size ons and nomenclature e Unified Soil Classification usell colors described wet
-	-		SILTY SAND (3-4.5 feet) Predominately medium to fine sand with ~15% coarse sand ~10% fine gravel to 15 mm, and ~15% silt and clay. The gr is subangular, the sand is subangular to subrounded. The finance low plasticity and toughness and do not react to HCl.	avel -	- - -			Sharp conta	acts indicated by solid lines, contacts indicated by
5	4430		CLAYEY SAND (4.5-10 feet) Predominately medium to fine sand with ~25% fine to coars gravel to 30 mm and ~15% silt and clay. The fines have me plasticity and have a weak reaction to HCl.	ee dium	- - - - -				
10-	4425	CL	SANDY LEAN CLAY (10-13 feet) Predominately silt and clay with ~45% fine to medium sand ~5% fine gravel to 20 mm. The gravel is subangular, the sa subangular to subrounded. The fines have medium plasticit toughness, are yellowish brown (10YR 5/4), and do not reach HCl.	nd is – y and				Cement Gro	NMENT DESIGN: out: 0 -10 feet Chips: 10 - 99 feet
	4420	SC	CLAYEY SAND (13-17 feet) Predominately medium to fine sand with ~25% fine to coars gravel to 30 mm and ~15% silt and clay. The fines have me plasticity and have a weak reaction to HCl.		- - - -				
	- - - - -	SC	CLAYEY SAND (17-23 feet) Predominately medium to fine sand with trace fine gravel to mm and ~40% silt and clay. The gravel is subangular, the subangular to subrounded. The fines have medium plasticit toughness and have a strong reaction to HCl.	and is -	-				

Proje	ect Nan	ne:	Yerington Groundwa	ter Investigation	I	Boring N	Number:	<u> PA-</u>	<u>GW20</u>	
Soil	Boring		Monitoring Well	Project Number	r:		12625	59.001	Sheet	_2 of _5
Depth (feet)	Elevation (feet)	USCS Group Symbol		ription	_	Craphic Fithology	Backfill go T		Remarks	
25-	4415	CL	Predominately silt and clay witrace fine gravel to 10 mm. T subangular to subrounded. The	9 feet) ith ~45% fine to medium sand and he gravel is subangular, the sand is he fines have medium plasticity and on (10YR 5/4), and have a weak						
30-	4405	SC	Predominately medium to fine mm and ~40% silt and clay.	e sand with trace fine gravel to 10 The gravel is subangular, the sand is the fines have medium plasticity and						
35-	1	SW- SM	fine gravel to 10 mm, and \sim 10	th SILT (33-39 feet) e sand with ~15% coarse sand, ~5% lightly silt and clay. The gravel is id is angular to subrounded. The have a strong reaction to HCl.						
40 -	4395	CL	~5% fine gravel to 15 mm. The subangular to subrounded. The toughness, are yellowish brown reaction to HCl. SANDY LEAN CLAY (42-4) Predominately silt and clay wow ~5% fine to coarse gravel to 4	ith ~45% fine to medium sand and he gravel is subangular, the sand is he fines have medium plasticity and on (10YR 5/4), and have a strong 8 feet) hith ~35% fine to medium sand and mm. The gravel is angular to						
45 -	4390		subangular, the sand is subang have medium plasticity and to (10YR 5/4), and have a weak	gular to subrounded. The fines ughness, are yellowish brown reaction to HCl.	-					

BORING LOG

PA-GW20 Project Name: **Yerington Groundwater Investigation** Boring Number: \mathbf{X} 126259.001 3 of 5 Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SANDY LEAN CLAY (48-56 feet)
Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 15 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and 50 have a strong reaction to HCl. 4385 55 4380 SANDY LEAN CLAY (56-57 feet)
Predominately silt and clay with ~35% fine to medium sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl **SANDY LEAN CLAY** (57-59 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 15 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. CLAYEY SAND (59-65.5 feet) 60 Dry, very dense. 4375 Predominately medium to fine sand with ~5% fine gravel to 10 mm and \sim 20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4370 SW-WELL-GRADED SAND with SILT and GRAVEL (65.5-72 SM feet) Dry, very dense. Predominately medium to fine sand with ~20% coarse sand, \sim 25% fine to coarse gravel to 30 mm, and \sim 10% silt and clay. The gravel and sand are angular to subangular. The fines are nonplastic and have a strong reaction to HCl. 4365

BORING LOG

PA-GW20 Yerington Groundwater Investigation Project Name: Boring Number: 126259.001 \mathbf{X} 4 of _ Soil Boring Monitoring Well Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SANDY LEAN CLAY (72-86 feet)
Dry, hard.
Predominately silt and clay with ~40% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. 75 4360 80 4355 85 SANDY LEAN CLAY (86-92 feet) Dry, hard. CL Predominately silt and clay with ~50% fine to medium sand and trace coarse sand to 4 mm. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong reaction to SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 90 4345 POORLY GRADED SAND with SILT (92-98.5 feet)
Predominately medium to fine sand with trace coarse sand to 4 mm and $\sim 10\%$ silt and clay. The sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4340

P	roje	ct Nam	ne:	Yerington Groundwa	ter Investigation		_ E	Boring N	Number	: <u>PA-G</u>	iW20	
S	oil I	Boring	2	Monitoring Well		Project Number:			1262	59.001	Sheet	_5_ of _5_
			lool				(Graphic	Log			
	Depth (feet)	Elevation (feet)	USCS Group Symbol	Desc	cription		Water Level	Lithology	Backfill		Remarks	
מינות וורכל זכל סלאוון בר ובויוזיסן סלינים בי מינים ליסיים בי מינים ליסיים בי מינים ליסיים בי מינים ליסיים בי		4335	CL	SANDY LEAN CLAY (98.5) Dry, hard. Predominately silt and clay w ~5% fine gravel to 15 mm. T the sand is subangular to subr plasticity and toughness, are to HCl.		im sand and subangular, e medium I do not react						

Proje	ct Nan	ne:	Yerington Groundwater Investi	igation	F	Boring 1	Number:	<u> PA-</u>	<u>GW21</u>	
Soil l	Boring		■ Monitoring Well	Project Number:			12625	59.001	Sh	neet <u>1</u> of <u>5</u>
Borir	ng Loca	ation:	Process Area		Elev	ation:	4422.	1 feet amsl	East: North	
Drilli	ing Co	ntract	or: WDC Drill	ler: J. Love			d: 11	/23/04	Date Finished	
Drilli	ing Equ	uipme	nt: GEFCO 15L with Sonicor 50l	K Drill Head	Tota Dep	ıl th: (fee	t) 97.	0	Water Depth: (feet)	81'
Samp	oling N	1etho	d: Core Barrel Bore	ehole Diameter: 6"	and	l Diame Materia	al: N	A		
Drilli	ing Me	thod:	Sonic			ened In Well D		NA		
Well	Seal:	Bei	tonite and Cement		Slot	Size:	NA	Filter Ma	terial: NA	
Logg	ed By:	C .	Gardner		Dev	elopme	nt Meth	od: NA	***************************************	***************************************
	ੂ ਜ਼ਿ	mbol			(Graphic	Log			
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology	Backfill		Remai	rks
-			NO RECOVERY						s of drilled cutti Method D-2488	
-]			_	1			visual-manu determination	ual procedure), gons and nomeno	grain-size clature
-	4420			-	-			based on the System. Mu	e Unified Soil C insell colors des	lassification scribed wet.
-				-	1			Sharp conta	ects indicated by	z golid lines
-				_				gradational dashed line.	contacts indicat	ted by
-					-					
5-				-	1					
-				_	1					
-	4415			-	-					
-		CM	WELL CDADED CAND 14 CHT.	CDAYTH (0.0 C.)	1	• 9 • • •				
-		SW- SM	WELL-GRADED SAND with SILT and Predominately coarse to medium sand with 15 mm and ~10% silt and clay. The grave	$\sim 30\%$ fine gravel to	-					
-		CL	to subangular. The fines are nonplastic and SANDY LEAN CLAY (9-13 feet)	d do not react to HCl.	-			ABANDON	IMENT DESIG	N·
10-			Predominately silt and clay with ~50% fine mm. The sand is subangular to subrounded	d. The fines have			\/\\\\	Cement Gro	out: 0 -10 feet	
-			medium plasticity and toughness, are pale have a weak reaction to HCl.	yellow (5Y 7/4) and _	}			Bentonite C	Chips: 10 - 97 fe	et
-	4410			-	-					
-		C) (CH TW CAND (12.10 C.)		_					
-		SM	SILTY SAND (13-18 feet) Predominately medium to fine sand with ~: mm and ~35% silt and clay. The gravel is	5% fine gravel to 10	-					
-			subangular to subrounded. The fines are n weak reaction to HCl.	onplastic and have a						
15-				_	1					
-				_	+					
-	4405			-	-					
<u> </u>		C) (CH TW CAND (10 27 C)							
-		SM	SILTY SAND (18-27 feet) Predominately medium to fine sand with ~ mm and ~15% silt and clay. The sand is si	10% coarse sand to 4	-					
-			subrounded. The fines are nonplastic and l	have a weak reaction to]					

Proje	ct Nan	ne:	Yerington Groundwater Investigation	1	Boring 1	Number	: P A	A-GW	'21	
Soil	Boring		Monitoring Well Project Number	<u>: _</u>		1262	59.001		Sheet	
	t)	nbol		Ľ	Graphic	Log				
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Water Level	Lithology	Backfill			Remarks	
25 —	4400			-						
-				7						
- - -	4395	SC	CLAYEY SAND (27-30 feet) Predominately medium to fine sand with ~5% fine gravel to 20 mm and ~20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl.							
30-		CL		_						
	4390	CL	Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5Y 5/4) and have a weak reaction to HCl. SANDY LEAN CLAY (31-34 feet) Predominately silt and clay with ~35% fine to medium sand to 2 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5Y 5/4) and have a weak reaction to HCl. SANDY LEAN CLAY (34-38 feet) Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium							
-			plasticity and toughness, are brown (7.5Y 5/4) and have a weak reaction to HCl.	1						
-	4385			- - - -						
-			SILTY SAND with GRAVEL (38-39.5 feet) Predominately medium to fine sand with ~15% fine gravel to 20 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic	-						
40	4380		and have a strong reaction to HCl. SANDY LEAN CLAY (39.5-45 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to HCl.							
-		CL	SANDY LEAN CLAY (45-48 feet) Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is angular to subangular.	_						

BORING LOG

PA-GW21 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 3 of 5 \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/4), and do not react 4375 SANDY LEAN CLAY (48-49 feet)
Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to 50 CL SANDY LEAN CLAY (49-50 feet) Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium 4370 plasticity and toughness, are brown (10YR 4/4), and do not react to HCl SANDY LEAN CLAY (50-51 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to CLAYEY SAND (51-53.5 feet) 55 Predominately medium to fine sand with ~20% coarse sand, ~10% fine gravel to 20 mm and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. 4365 CLAYEY SAND (53.5-57 feet) CL Predominately medium to fine sand to 4 mm with ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness and have a weak reaction to SANDY LEAN CLAY (57-59 feet)
Predominately silt and clay with ~40% fine to medium sand and trace fine gravel to 5 mm. The gravel is subangular, the sand is 60 subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl SANDY LEAN CLAY (59-71.5 feet) Predominately silt and clay with ~50% fine to medium sand and trace coarse sand to 4 mm. The sand is subangular to 4360 subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4355 SANDY LEAN CLAY (71.5-74 feet) Predominately silt and clay with ~35% fine to medium sand and

BORING LOG

PA-GW21 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of _ \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and are brown (10YR 4/3). SANDY LEAN CLAY (74-79 feet) CL Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 8 mm. The gravel is angular to subangular, 75 the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a weak reaction to HCl. <u>4345</u> NO RECOVERY 80 ∇ 4340 85 4335 WELL-GRADED SAND with CLAY and GRAVEL (87-88.5 feet) SW-Predominately medium to fine sand with ~30% coarse sand, ~40% fine gravel to 20 mm and ~10% silt and clay. The gravel is langular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. SILTY SAND (88.5-91 feet) Predominately medium to fine sand with ~20% coarse sand, \sim 10% fine gravel to 20 mm, and \sim 35% silt and clay. The gravel SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT is angular to subangular, the sand is subangular to subrounded. The fines have low plasticity and toughness and have a strong reaction to HCl 4330 SILTY SAND (91-92 feet) Predominately medium to fine sand with trace fine gravel to 8 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl SILTY SAND (92-93 feet) Predominately medium to fine sand with ~5% fine gravel to 10 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl.

POORLY GRADED SAND with SILT (93-94.4 feet) SM Predominately medium to fine sand with trace coarse sand to 4 mm and $\sim 10\%$ silt and clay. The sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to WELL-GRADED SAND with GRAVEL (94.4-94.5 feet) Predominately coarse to medium sand with ~40% fine gravel to 20 mm. The gravel and sand are angular to subangular

Proje	ct Nan	ne:	Yerington Groundwa	ter Investigation		_ B	Boring N	Number	: <u>PA-G</u>	W21	
Soil I	Boring		Monitoring Well	Pro	oject Number:			12625	59.001	_ Sheet <u>5</u> of _	5
Depth (feet)	Elevation (feet)	USCS Group Symbol		ription		Water Level	Lithology Lithology	Backfill 607		Remarks	
	Ele	NSC3	POORLY GRADED SAND Predominately medium to fine mm and ~10% silt and clay. Subrounded. The fines are not HCI. WELL-GRADED SAND wit Predominately coarse to media 20 mm. The gravel and sand SILTY SAND (96.5-97 feet) Predominately medium to fine mm and ~20% silt and clay. The sand is subangular to subrand have a strong reaction to Is	The sand is subangular to applastic and have a weak resum sand with ~40% fine grare angular to subangular. sand with ~5% fine gravel the gravel is angular to subangular. The gravel is angular to subangular.	eaction to et) avel to to 10 angular, plastic						

Proje	ect Nan	ne:	Yerington Groundwater In	nvestigation	I	Boring 1	Number	: <u>PA-</u>	<u>-GW22</u>	
Soil	Boring		Monitoring Well	Project Number	:		1262	59.001	S	heet <u>1</u> of <u>5</u>
Borii	ng Loc	ation:	Process Area		Elev	ation:	4441.	5 feet amsl	East: Nortl	
Drill	ing Co	ntract	or: WDC	Driller: J. Love	×9		d: 11	/22/04	Date Finished	
Drill	ing Eq	uipme	ent: GEFCO 15L with Sonice	or 50K Drill Head	Tota Dep		t) 109	9.0	Water Depth: (feet)	96'
Samj	pling M	1etho	d: Core Barrel	Borehole Diameter: 6"	🛭 and	l Diame Materi	al: N	IA.		
Drill	ing Me	thod:	Sonic			eened Ir Well D		NA		
Well	Seal:	Bei	ntonite and Cement		Slot	Size:	NA	Filter Ma	terial: NA	
Logg	ged By:	XXXXXX	Gardner		Dev	elopme	nt Meth	nod: NA	***************************************	***************************************
) (3)	mbol			(Graphic I	Log			
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology	Backfill		Rema	nrks
	4440	SW- SM	~30% fine gravel to 15 mm, and ~10 and sand are subangular. The fines strong reaction to HCl.	with ~25% coarse sand, % silt and clay. The gravel	-			on ASTM N visual-manu determination based on the System. Mu Sharp conta	s of drilled cutt Method D-2488 ual procedure), ons and nomen e Unified Soil (unsell colors de acts indicated b contacts indica	8 (the grain-size sclature Classification escribed wet.
-	4435	SC	Predominately medium to fine sand mm and ~15% silt and clay. The sat subrounded. The fines have medium have a strong reaction to HCl.	nd is subangular to n plasticity and toughness and .	-					
10-	4430	SW-SM		with ~15% fine to coarse clay. The gravel is a subrounded. The fines are to HCl. T and GRAVEL (9-10 feet) with ~15% fine gravel to 15 avel is angular to subangular,	-			Cement Gro	NMENT DESIC out: 0 -10 feet Chips: 10 - 109	
15 —	4425	SW-SM	WELL-GRADED SAND with SILT feet) Predominately medium to fine sand mm and ~10% silt and clay. The grather sand is subangular to subrounder and have a weak reaction to HCl. SANDY LEAN CLAY (18.5-20 fee Predominately silt and clay with ~40 trace fine gravel to 6 mm. The grave subangular to subrounded. The fines	with ~15% fine gravel to 15 avel is angular to subangular, d. The fines are nonplastic et) % fine to medium sand and el is subangular, the sand is	-					

BORING LOG

PA-GW22 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 2 of 5 \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SM toughness, are brown (10YR 5/3), and have a strong reaction to SILTY SAND with GRAVEL (20-25 feet) Predominately medium to fine sand with ~15% coarse sand, 4420 ~25% fine gravel to 15 mm, and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular. The fines are nonplastic and have a strong reaction to HCl. 25 SANDY LEAN CLAY (25-31 feet)
Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 4415 toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. 30 CLAYEY SAND (31-35 feet) 4410 Predominately medium to fine sand with $\sim 10\%$ fine to coarse gravel to 25 mm and $\sim\!\!20\%$ silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. 35 WELL-GRADED SAND with SILT and GRAVEL (35-38 feet) Predominately medium to fine sand with ~15% fine gravel to 10 mm and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic 4405 and do not react to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 SANDY LEAN CLAY (38-40 feet) Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 20 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HC NO RECOVERY 4400

BORING LOG

PA-GW22 **Yerington Groundwater Investigation** Project Name: Boring Number: 126259.001 \mathbf{X} 3 of 5 Monitoring Well Sheet . Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4395 50 4390 CLAYEY SAND (54-54.5 feet) Predominately medium to fine sand with ~10% fine to coarse gravel to 25 mm and \sim 20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines 55 have medium plasticity and toughness and have a strong reaction WELL-GRADED SAND with GRAVEL (54.5-56.5 feet) Predominately medium to fine sand with ~20% coarse sand, ~15% fine to coarse gravel to 25 mm, and ~5% silt and clay. The gravel is angular to subangular, the sand is subangular. The fines are nonplastic and do not react to HCl. SANDY LEAN CLAY (56.5-64 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong 60 reaction to HCl 4380 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 WELL-GRADED SAND with GRAVEL (64-68 feet) Predominately medium to fine sand with ~20% coarse sand, ~15% fine to coarse gravel to 25 mm, and ~5% silt and clay. The gravel is angular to subangular, the sand is subangular. The fines are nonplastic and do not react to HCl. 4375 **CLAYEY SAND with GRAVEL** (68-71 feet) Predominately medium to fine sand with ~15% fine gravel to 20 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a weak reaction to HCl. NO RECOVERY 4370

BORING LOG

PA-GW22 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of _ \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SANDY LEAN CLAY (74-82 feet)
Predominately silt and clay with ~50% fine to medium sand and CL trace fine to coarse gravel to 25 mm. The gravel is subangular, 75 the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong reaction to HCl. 4365 80 <u>4360</u> GW- WELL-GRADED GRAVEL with SILT and SAND (82-83 feet) GM Predominately fine to coarse gravel to 30 mm with $\sim 20\%$ coarse sand, ~10% medium to fine sand, and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. CLAYEY SAND (83-85 feet) Predominately medium to fine sand with ~10% fine gravel to 20 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium 85 plasticity and toughness and have a strong reaction to HCl. SANDY LEAN CLAY (85-94 feet) Predominately silt and clay with ~50% fine to medium sand and 4355 trace fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and do not react to 90 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4350 SW- WELL-GRADED SAND with SILT and GRAVEL (94-97 feet) Predominately medium to fine sand with ~20% coarse sand, ~15% fine gravel to 20 mm, and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4345 CL SANDY LEAN CLAY (97-99 feet) Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and

BORING LOG

PA-GW22 **Yerington Groundwater Investigation** Project Name: Boring Number: 126259.001 5 of 5 \mathbf{X} Soil Boring Monitoring Well Sheet . Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks toughness, are yellowish brown (10YR 5/4), and have a weak reaction to HCl.

CLAYEY SAND (99-104 feet)

Predominately medium to fine sand with trace fine gravel to 5 mm 100 and ~20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. 4340 POORLY GRADED SAND with SILT (104-106 feet) Predominately medium to fine sand with trace fine gravel to 10 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not 105 react to HCl. SANDY LEAN CLAY (106-109 feet)
Predominately silt and clay with ~45% fine to medium sand and trace fine to coarse gravel to 30 mm. The fines have medium plasticity and toughness, are brown (10YR 5/3), and to not react CL 4335 to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05

Proje	ect Nan	ne:	Yerington Groundwater In	vestigation		_ E	Boring 1	Number	<u>PA-</u>	<u>-GW23</u>	
Soil	Boring		Monitoring Well	Project Num	ber:			1262	59.001		et <u>1</u> of <u>5</u>
Bori	ng Loc	ation:	Process Area			Elev	ration:	4449.	4 feet amsl	East: North:	323892.541 1547627.134
Drill	ing Co	ntract	or: WDC	Driller: J. Love		Date	e Starte	d: 12 ,	/1/04	Date Finished:	12/4/04
Drill	ing Eq	uipme	ent: GEFCO 15L with Sonico	or 50K Drill Head		Tota Dep		t) 114	4.0	Water Depth: (feet)	104'
Sam	pling M	1etho	d: Core Barrel	Borehole Diameter: 6"		Wel and	l Diame Materia	eter al: N	A		
Drill	ing Me	thod:	Sonic				ened In Well D		NA		
Well	Seal:	Bei	ntonite and Cement			Slot	Size:	NA	Filter Ma	terial: NA	
Logg	ged By:	C.	. Gardner			Dev	elopme	nt Meth	od: NA		
		******	***************************************	······		*****	sraphic	*********	***************************************	***************************************	***************************************
(feet)	Elevation (feet)	USCS Group Symbol				vel	şy	_			
Depth (feet)	vatior	Grou	Description			Water Level	Lithology	Backfill		Remarl	KS .
	Ele	USCS				Wa	Li	_ ^m			
-		SC	CLAYEY SAND (0-8 feet) Predominately medium to fine sand	with ~5% fine gravel to 15					Description on ASTM	s of drilled cuttin Method D-2488 (ngs based
	_		mm and ~20% silt and clay. The grasubangular to subrounded. The fines	ivel is subangular, the sand is have medium plasticity and	_				visual-man determinati	ual procedure), gons and nomence	rain-size ature
.	-		toughness and have a strong reaction	to HCl.	_	\cdot				e Unified Soil Cl unsell colors desc	
					_	1			Sharn conta	acts indicated by	solid lines
	1				-				gradational dashed line	contacts indicate	ed by
.	4445				-	1			dustrou irre	•	
5-					-						
	1				-						
-	1				_	\cdot					
]	SC	CLAYEY SAND with GRAVEL (8	-15 feet)							
	1		Predominately medium to fine sand ~25% fine gravel to 15 mm, and ~15	with ~15% coarse sand,	_						
10	4440		is angular to subangular, the sand is The fines have medium plasticity and	subangular to subrounded.	-	1			ABANDON	NMENT DESIGN	J :
10-]		strong reaction to HCl.		-]				out: 0 -10 feet Chips: 10 - 114 fe	et
. (9/02	1				_	1				pu. 10 11 11	••
GDT 4	1				-						
«CALD.	}				_						
BRN.	1,425				_	1					
6 15 -	4435				-	1					
RINGTO	-	SW- SM	WELL-GRADED SAND with SIL Predominately medium to fine sand	with ~5% fine gravel to 15	-	ł					
LE YE	1		mm and ~10% silt and clay. The grasubangular to subrounded. The finestrong reaction to HCl.	s are nonplastic and have a	-	1					
SAMF	1		stong reaction to ITC1.			1					
OD NC	-	SM	SILTY SAND (18-26 feet)			-					
SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 C1 L	1420		Predominately medium to fine sand ~10% fine gravel to 15 mm, and ~15	% silt and clay. The gravel	_	1					
SONIC .	4430		is angular to subangular, the sand is The fines have low plasticity and tou		-	1					

BORING LOG

PA-GW23 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 2 of 5 \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks reaction to HCl. <u>4</u>425 25 SANDY LEAN CLAY (26-29 feet) Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. 4420 CL SANDY LEAN CLAY (29-32 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 30 toughness, are yellowish brown (10YR 5/4), and have a weak reaction to HCl. SANDY LEAN CLAY (32-34 feet) Predominately silt and clay with ~40% fine to medium sand and trace fine gravel to 5 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to 4415 CL SANDY LEAN CLAY (34-36.5 feet) Predominately silt and clay with ~50% fine to medium sand and 35 trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a weak reaction to HCL CLAYEY SAND (36.5-39 feet) Predominately medium to fine sand with ~5% gravel and ~20% SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. 4410 CL SANDY LEAN CLAY (39-48 feet)
Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 5 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to 4405

BORING LOG

PA-GW23 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 3 of 5 \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SW- WELL-GRADED SAND with SILT (48-48.5 feet) Predominately medium to fine sand with ~20% coarse sand, CL ~10% fine gravel to 15 mm, and ~10% silt and clay. The gravel SW is angular to subangular, the sand is subangular to subrounded. 4400 is angular to subangular, the sand is subangular to subrounded. SM The fines are nonplastic and have a strong weak reaction to HCl.

SANDY LEAN CLAY (48.5-49 feet)

Predominately silt and clay with ~40% fine to medium sand and 50 trace fine gravel to 5 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a weak reaction to WELL-GRADED SAND with SILT (49-53 feet) Predominately medium to fine sand with ~20% coarse sand, ~10% fine gravel to 15 mm, and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong weak reaction to HCl. CLAYEY SAND (53-59 feet) 4395 Predominately medium to fine sand with ~5% gravel and ~20% silt and clay. The gravel is subangular, the sand is subangular to 55 subrounded. The fines have medium plasticity and toughness and do not react to HCl. 4390 CL SANDY LEAN CLAY (59-64 feet) Predominately silt and clay with ~45% fine to medium sand and \sim 5% coarse sand to 4 mm. The sand is subangular to 60 subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. 4385 CL SANDY LEAN CLAY (64-69 feet) SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT Predominately silt and clay with ~45% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a weak reaction to HCl. SANDY LEAN CLAY (69-76 feet) 4380 CL Thinly bedded to laminated. Predominately silt and clay with ~40% fine to medium sand and trace coarse sand to 3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are strong brown (7.5YR 5/6), and have a strong reaction to HCl.

	Proje	ct Nan	ne:	Yerington Groundwater Investigation		В	oring N	Jumber:	PA-C	fW23	
	Soil l	Boring		Monitoring Well ☐ Project Num	nber: .			12625	59.001	Sheet	_4 of _5
	Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology Lithology	Backfill [®]		Remarks	
-		4375	SC	CLAYEY SAND (76-84 feet) Predominately medium to fine sand with trace gravel and ~35% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a weak reaction to HCl.	-	M					
	85 —	4365	CL	SANDY LEAN CLAY (84-89.5 feet) Predominately silt and clay with ~40% fine to medium sand and trace coarse sand to 3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a weak reaction to HCl.	1.1.1.1.1.1						
מיטיר בייטיק אינים פיוטיוסים	90 — - - - - -		SM	WELL-GRADED SAND with SILT (89.5-94 feet) Predominately medium to fine sand with trace fine gravel to 8 mm and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.							
	- 95 - - - -	4355	CL	SANDY LEAN CLAY (94-102.5 feet) Predominately silt and clay with ~50% fine to medium sand and trace coarse sand to 4 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and have a weak reaction to HCl.							

Proje	ct Nan	ne:	Yerington Groundwater Investigation		_ E	Boring N	Number	: <u>PA-(</u>	<u>GW23</u>		
Soil I	Boring	2	Monitoring Well Proje	ect Number:			12625	59.001	Sheet	5 of 5	5_
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology Lithology	Backfill ©		Remarks		
100 —	4340		CLAYEY SAND (102.5-107 feet) Predominately medium to fine sand with ~5% gravel and ~islt and clay. The gravel is angular to subangular, the sand subangular to subrounded. The fines have medium plasticit toughness and have a weak reaction to HCl. SANDY LEAN CLAY (107-114 feet) Predominately silt and clay with ~50% fine to medium sand trace fine gravel to 8 mm. The gravel is subangular, the sar subangular to subrounded. The fines have medium plasticit toughness, are yellowish brown (10YR 5/4), and do not real HCl.	- - - -	ightharpoonup						

Proj	ect Nan	ne:	Yerington Groundwater In	vestigation		Boring	g Number	<u> PA-</u>	<u>-GW24</u>	
Soil	Boring		Monitoring Well	Project Numb	er: _		1262	59.001	:	Sheet <u>1</u> of <u>6</u>
Bori	ng Loca	ation:	Process Area		Ele	vation	4472.	6 feet amsl	Eas Not	t: 323643.464 th: 1547275.767
Dril	ling Co	ntract	or: WDC	Driller: J. Love			ted: 11	/15/04	Date Finishe	
Dril	ling Equ	uipme	ent: GEFCO 15L with Sonice	or 50K Drill Head	To De		eet) 129	9.0	Water Depti (feet)	h: 126'
Sam	pling N	1etho	d: Core Barrel	Borehole Diameter: 6"		ll Diai l Mate		Ā		***************************************
Dril	ling Me	thod:	Sonic				Interval Depth:	NA		
Wel	l Seal:	Bei	ntonite and Cement		Slo	t Size:	NA	Filter Ma	terial: NA	
Log	ged By:	C .	. Gardner	·····	De	velopn	nent Meth	od: NA	***************************************	***************************************
	et)	mbol			F	Graph	ic Log			
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description		Water Level	Lithology	Backfill		Ren	narks
	Ele	OSCS			Wa					
		SM	SILTY SAND (0-10 feet) No odor.		1			Description on ASTM N	s of drilled cu Method D-248	ttings based 88 (the
	1		Predominately medium to fine sand ~10% fine gravel to 20 mm, and ~20	% silt and clay. The gravel	1			visual-man determinati	ual procedure ons and nome), grain-size enclature
	4470		is angular to subangular, the sand is The fines are nonplastic and do not r	subangular to subrounded. eact to HCl.	\exists				e Unified Soil insell colors d	Classification lescribed wet.
	14470				4			Sharn conta	acts indicated	by solid lines,
					1			gradational dashed line	contacts indic	cated by
_	-				-					
5-					7					
	4465				-					
					\exists					
					1					
10-	1								NMENT DESI	
	-	SM	No odor. Predominately medium to fine sand	with 100/ Emata accura	4				out: 0 -10 feet Chips: 10 - 129	
			gravel to 30 mm and ~20% silt and c subangular, the sand is subangular to	elay. The gravel is angular to	7					
	4460		nonplastic and do not react to HCl.		4					
					_					
	-				-					
15-		GP-	POORLY GRADED GRAVEL wi	th SILT and SAND (15.23	4	₩ 1				
			feet) No odor.	(13-23						
	-		Predominately fine to coarse gravel t and ~10% silt and clay. The gravel	is angular to subangular, the	-					
	4455		sand is subangular to subrounded. I do not react to HCl.	ne tines are nonplastic and	7					
	1				7					
	1				_					

Proje	ect Nan	ne:	Yerington Groundwater Investigation		В	oring N	Jumber:	<u> PA</u>	<u>-GW2</u>	4	
Soil	Boring	2	✓ Monitoring Well ☐ Project Num	nber:			12625	59.001		Sheet	2 of 6
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	-	Water Level	Lithology Lithology	Backfill 607		R	emarks	
	4450	SM	SILTY SAND (23-30 feet) No odor. Predominately medium to fine sand with ~10% fine gravel to 15								
25 -	4445		mm and \sim 20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.								
	4440	SM	SILTY SAND with GRAVEL (30-33 feet) No odor. Predominately medium to fine sand with ~20% coarse sand, ~15% fine to coarse gravel to 30 mm, and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.	-							
35-		SC	CLAYEY SAND (33-39 feet) Predominately medium to fine sand with ~5% gravel and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl.								
	4435										
40 —	4430		CLAYEY SAND (39-40 feet) Very dense, no odor. Predominately medium to fine sand with trace coarse sand to 3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. CLAYEY SAND (40-46 feet) No odor. Predominately medium to fine sand with ~10% fine gravel to 20 mm and ~35% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl.								
45 -	-			4							

BORING LOG

PA-GW24 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 <u>3</u> of _ \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SILTY SAND with GRAVEL (46-52 feet) SM No odor. Predominately medium to fine sand with ~15% coarse sand, 4425 ~20% fine gravel to 20 mm, and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4420 SW WELL-GRADED SAND (52-56 feet) No odor. Predominately medium to fine sand with \sim 15% coarse sand, \sim 5% fine gravel to 20 mm, and \sim 5% silt and clay. The gravel is angular to subangular, the sand is angular to subrounded. The fines are nonplastic and do not react to HCl. 55 SANDY LEAN CLAY (56-58 feet) Dry, stiff, no odor. Predominately silt and clay with $\sim\!\!25\%$ fine to medium sand and ~5% fine gravel to 20 mm. The gravel is angular to subangular, 4415 the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/4), and have a SM strong reaction to HCl SILTY SAND with GRAVEL (58-62 feet) No odor. Predominately medium to fine sand with ~20% coarse sand, \sim 20% fine gravel to 10 mm, and \sim 20% silt and clay. The gravel 60 is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. CLAYEY SAND (62-65 feet) 4410 Predominately medium to fine sand with ~10% fine gravel to 15 mm and ~40% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 plasticity and toughness and have a strong reaction to HCl. NO RECOVERY 4405 SANDY LEAN CLAY (69-75 feet) Dry, hard, no odor. Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 5 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to HCl.

BORING LOG

PA-GW24 **Yerington Groundwater Investigation** Project Name: Boring Number: 126259.001 \mathbf{X} 4 of _ Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4400 75 CLAYEY SAND (75-80 feet) No odor. Predominately medium to fine sand with ~10% fine to coarse gravel to 30 mm and ~45% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. 4395 80 NO RECOVERY 4390 85 4385 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4380 SM SILTY SAND (92-96 feet) Predominately medium to fine sand with trace fine gravel to 20 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. SILTY SAND (96-100 feet) No odor. Predominately medium to fine sand with \sim 15% coarse sand, \sim 10% fine gravel to 15 mm, and \sim 15% silt and clay. The gravel 4375 is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.

BORING LOG

PA-GW24 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **5** of **6** \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 100 CL SANDY LEAN CLAY (100-104 feet) Predominately silt and clay with ~40% fine to medium sand and trace fine gravel to 8 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a weak 4370 reaction to HCl. SANDY LEAN CLAY (104-106 feet) CL Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and 105 trace fine gravel to 5 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness.
<u>SILTY SAND with GRAVEL</u> (106-114 feet) SM Predominately medium to fine sand with ~20% coarse sand, 4365 \sim 15% fine gravel to 20 mm, and \sim 15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 110 <u>4360</u> CLAYEY SAND (114-122 feet) Predominately medium to fine sand with $\sim 10\%$ fine gravel to 10 115 mm and ~20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 plasticity and toughness and do not react to HCl. 4355 4350 SM **SILTY SAND** (122-124.5 feet) Predominately medium to fine sand with ~10% fine gravel to 12 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.

F	roje	ect Name: Yerington Groundwater Investigation				_ E	Boring N	Number	<u> PA-(</u>	<u>GW24</u>		
			2	Monitoring Well		Project Number:			1262	59.001	Sheet	<u>6</u> of <u>6</u>
	Depth (feet)	Elevation (feet)	USCS Group Symbol	Desc	ription		Water Level	Lithology day	Backfill ©		Remarks	
	25 —	4345	SC	CLAYEY SAND No odor. Predominately medium to fine and ~20% silt and clay. The sand is subangular to subroun plasticity and low toughness a	sand with trace fine gragravel is angular to suba ded. The fines have mend do not react to HCl.	avel to 8 mm angular, the exclusion —						

Project Na	Project Name: Yerington Groundwater Investigation					Boring Number: PA-GW25							
Soil Borin	Soil Boring X Monitoring Well Project Number												
Boring Location: Process Area						East: 324622.6 North: 154730							
Drilling Contractor: WDC Driller: J. Love						Date Started: 12/6/04 Date Finished: 12/7							
Drilling E	quipme	ent: GEFCO 15L with Sonico	r 50K Drill Head		Total Water Depth: (feet) 119.0 (feet) 96'					^{1:} 96'			
Sampling	Sampling Method: Core Barrel Borehole Diameter: 6"						Well Diameter and Material: NA						
Drilling M							Screened Interval and Well Depth: NA						
Well Seal:	Well Seal: Bentonite and Cement					Slot Size: NA Filter Material: NA							
Logged B	ged By: C. Gardner						Development Method: NA						
Ð.	loqu						Graphic Log						
Depth (feet) Elevation (feet)	Description Description				Water Level	Lithology	Backfill		narks				
50NOC WELHOD NO SAMPLE YERRING ON GAD BRAKKCALD GO A 4430 BRAKCALD GO A 4430 BRAKKCALD GO A 4430 BRAKKCALD GO A 4430 BRAKKCALD	5 SM 5 CL CL	SM SILTY SAND (0-7.5 feet) No odor. Predominately medium to fine sand with ~15% coarse sand, ~10% fine gravel to 20 mm, and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. CL SANDY LEAN CLAY (7.5-11 feet) No odor. Predominately silt and clay with ~30% fine to medium sand and ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and are brown (10YR 5/3). SM SILTY SAND (11-16 feet) No odor. Predominately medium to fine sand with ~10% fine to coarse gravel to 30 mm and ~40% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.						on ASTM N visual-manu determination based on the System. Mu Sharp contagradational dashed line. ABANDON Cement Gro	unsell colors ducts indicated lucontacts indicated	88 (the), grain-size enclature Classification lescribed wet. by solid lines, cated by			

BORING LOG

PA-GW25 Project Name: **Yerington Groundwater Investigation** Boring Number: \mathbf{X} 126259.001 2 of 5 Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks ~5% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to HCl. CLAYEY SAND (21.5-24 feet) SC No odor. 4415 Predominately medium to fine sand with ~15% coarse sand, ~10% fine to coarse gravel to 40 mm, and ~40% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl.
SANDY LEAN CLAY (24-27 feet) No odor. 25 Predominately silt and clay with ~30% fine to medium sand and ~10% fine gravel to 12 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a weak reaction to HCl. SANDY LEAN CLAY (27-42.5 feet) CL 4410 No odor. Predominately silt and clay with $\sim\!\!30\%$ fine to medium sand and ~10% fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to HCl. 30 4405 35 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4400 4395 CLAYEY SAND (42.5-54 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 12 mm and ~40% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl.

BORING LOG

PA-GW25 Yerington Groundwater Investigation Project Name: Boring Number: 3 of 5 126259.001 \mathbf{X} Soil Boring Monitoring Well Sheet . Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4390 50 4385 NO RECOVERY 55 4380 SANDY LEAN CLAY (58-65 feet) No odor. CL Predominately silt and clay with ~30% fine to medium sand and ~5% fine gravel to 20 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to 60 4375 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 WELL-GRADED SAND with SILT and GRAVEL (65-75 feet) Very dense, no odor.
Predominately medium to fine sand with ~20% coarse sand, \sim 30% fine gravel to 20 mm, and \sim 10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. 4370

BORING LOG

PA-GW25 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of _ \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks 4365 75 SANDY LEAN CLAY (75-76 feet) No odor. CL Predominately silt and clay with ~30% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is toughness, are brown (10YR 5/3), and have a weak reaction to HCl. subangular to subrounded. The fines have medium plasticity and 4360 CLAYEY SAND (76-80 feet) Predominately medium to fine sand with ~15% coarse sand, ~5% fine gravel to 15 mm and ~40% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a weak reaction to HCl.
CLAYEY SAND with GRAVEL (80-82.5 feet) 80 SC Predominately medium to fine sand with ~15% fine gravel to 12 mm and ~45% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughnessand have a strong reaction to HCl. WELL-GRADED SAND with SILT and GRAVEL (82.5-85.5 feet) SM Dry, no odor. Predominately medium to fine sand with ~20% coarse sand, \sim 30% fine to coarse gravel to 25 mm, and \sim 10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 85 SM SILTY SAND (85.5-93 feet) Predominately medium to fine sand with \sim 10% fine gravel to 15 mm and \sim 20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic 4350 and have a strong reaction to HCl. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4345 WELL-GRADED SAND (93-98 feet) Predominately medium to fine sand with ~10% fine gravel to 12 mm and ~5% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. 4340 SC CLAYEY SAND (98-107 feet)

BORING LOG

PA-GW25 **Yerington Groundwater Investigation** Project Name: Boring Number: \mathbf{X} 126259.001 5 of 5 Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks Predominately medium to fine sand with ~10% fine gravel to 20 mm and \sim 25% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 100 toughness and have a weak reaction to HCl. 4335 105 WELL-GRADED SAND with SILT (107-114 feet) SW-SM No odor. Predominately medium to fine sand with ~20% coarse sand, \sim 10% fine gravel to 10 mm, and \sim 10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. 110 4325 SANDY LEAN CLAY (114-115 feet) Predominately silt and clay with ~35% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and 115 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 toughness, are brown (10YR 5/3), and have a weak reaction to **CLAYEY SAND** (115-155.5 feet) Predominately medium to fine sand with trace fine gravel to 10 4320 mm and ~45% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and do not react to HCl. <u>SILTY SAND</u> (115.5-119 feet) No odor. Predominately medium to fine sand with ~10% fine to coarse gravel to 25 mm and ~15% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.

Project Name: Yerington Groundwater Investigation						_ F	Boring 1	Number	: <u>PA-</u>	-GW2	<u> 26 </u>		
Soil	Boring	2	Monitoring Well	Project Numl	ber:			1262	59.001			et 1 of 5	
Borii	Boring Location: Process Area						ation:	4447.	7 feet amsl			324776.886 1546808.852	
Drill	ing Co	ntract	or: WDC	Driller: J. Love		Date Started: 12/			/13/04	Date Fin		12/14/04	
Drill	Drilling Equipment: GEFCO 15L with Sonicor 50K Drill Head						Total Water Depth: Depth: (feet) 115.0 (feet) 105'						
Samı	oling N	1ethoo	d: Core Barrel	Borehole Diameter: 6"	ജ_	and	l Diam Materi	al: N	A	*************	*********	***************************************	
Drill	ing Me	thod:	Sonic		124		ened II Well D		NA				
Well Seal: Bentonite and Cement						Slot Size: NA Filter Material: NA							
Logg	ed By:	C .	. Gardner			Dev	elopme	nt Meth	od: NA	**********		***************************************	
	et)	lodm					Graphic	Log					
Depth (feet)	Elevation (feet)	USCS Group Symbol	Description			Water Level	Lithology	Backfill	Remarks		TS .		
		SM	SILTY SAND (0-5 feet)		_				Description	s of drille	d cuttin	gs based	
-	4445	Sivi	Dry, loose to medium dense, no odor Predominately medium to fine sand of fine gravel to 15 mm and ~15% silt a sand are subangular to subrounded. do not react to HCl.	with ~15% coarse sand, ~5% and clay. The gravel and	- - - - -				on ASTM N visual-manu determination based on the System. Mu Sharp conta gradational dashed line.	the rain-size ature assification ribed wet.			
5 —	4440	SW-SM	WELL-GRADED SAND with SILT Dry, very dense, no odor. Predominately coarse to medium san gravel to 40 mm and ~10% silt and c subangular, the sand is subangular to nonplastic and do not react to HCl. SANDY LEAN CLAY (7.5-18 feet) Dry, hard, no odor. Predominately silt and clay with ~35 ~5% fine gravel to 10 mm. The grav the sand is subangular to subrounded plasticity and toughness, are brown (strong reaction to HCl.	ad with ~25% fine to coarse clay. The gravel is a subrounded. The fines are					Cement Gro	OONMENT DESIGN: Grout: 0 -10 feet te Chips: 10 - 115 feet			
-	4430	GW- GM	WELL-GRADED GRAVEL with S Dry, very dense, no odor. Predominately fine to coarse gravel to										
-			medium sand and ~10% silt and clay	7. The gravel is angular to	_								

BORING LOG

PA-GW26 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 2 of 5 \mathbf{X} Monitoring Well Soil Boring Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks nonplastic and have a strong reaction to HCl. 4425 25 SANDY LEAN CLAY (26-33 feet) Dry, hard, no odor. Predominately silt and clay with ~35% fine to medium sand and ~5% fine to coarse gravel to 25 mm. The gravel is subangular, 4420 the sand is subangular to subrounded. The fines have low plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. 30 4415 SANDY LEAN CLAY (33-34 feet) Dry, hard, no odor. CL Predominately silt and clay with ~30% fine to medium sand and trace fine gravel to 10 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium 35 plasticity and toughness, are dark gray (10YR 4/1), and have a weak reaction to HCl. WELL-GRADED SAND with SILT and GRAVEL (34-37.5 feet) Dry, dense, no odor. Predominately medium to fine sand with ~15% fine to coarse gravel to 40 mm and ~10% silt and clay. The gravel and sand are SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. CL SANDY LEAN CLAY (37.5-40 feet) Dry, hard, no odor. Predominately silt and clay with ~45% fine to medium sand and trace fine gravel to 5 mm. The gravel is angular to subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark yellowish brown (10YR 4/4), and have a strong reaction to HCl. CLAYEY SAND (40-46 feet) Dry, very dense, no odor. Predominately medium to fine sand with trace fine gravel to 10 mm and ~45% silt and clay. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness 4405 and have a weak reaction to HCl.

BORING LOG

PA-GW26 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 3 of 5 \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SM SILTY SAND (46-48 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 15 4400 mm and $\sim 20\%$ silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl.

CLAYEY SAND with GRAVEL (48-51.5 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~15% fine to coarse gravel to 30 mm and ~15% silt and clay. The gravel is angular to 50 subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. **CLAYEY SAND** (51.5-54.5 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine to coarse 4395 gravel to 30 mm and ~35% silt and clay. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. SANDY LEAN CLAY (54.5-66 feet) 55 Dry, hard, no odor. Predominately silt and clay with ~50% fine to medium sand and trace coarse sand to 3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4/2), and have a strong reaction to <u>439</u>0 60 4385 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 POORLY GRADED SAND with SILT (66-74 feet) Dry, medium dense, no odor. Predominately medium to fine sand with trace fine gravel to 12 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not 4380 react to HCl.

BORING LOG

PA-GW26 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **4** of _ \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Description Remarks 4375 SANDY LEAN CLAY (74-85 feet) Dry, hard, no odor. Predominately silt and clay with \sim 45% fine to medium sand and 75 trace fine gravel to 8 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a weak reaction to HCl. 4370 80 4365 85 WELL-GRADED SAND with SILT (85-87 feet) Dry, very dense, no odor. SM Predominately medium to fine sand with $\sim 10\%$ fine to coarse gravel to 25 mm and ~10% silt and clay. The gravel and sand are subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. SILTY SAND with GRAVEL (87-90.5 feet) <u>436</u>0 Dry, very dense, no odor. Predominately medium to fine sand with ~15% coarse sand, ~15% fine to coarse gravel to 35 mm, and ~15% silt and clay. The gravel and sand are subangular to subrounded. The fines have low plasticity and toughness and have a weak reaction to SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT SANDY LEAN CLAY (90.5-93 feet) Dry, hard, no odor. Predominately silt and clay with ~45% fine to medium sand and trace fine to coarse gravel to 25 mm. The gravel and sand are subangular to subrounded. The fines have medium plasticity and toughness and are brown (10YR 5/3). 4355 WELL-GRADED SAND with SILT (93-97 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~10% fine to coarse gravel to 25 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. SANDY LEAN CLAY (97-98 feet) CL Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and -5% fine gravel to 10 mm. The gravel and sand are subangular to

BORING LOG

PA-GW26 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 5 of 5 \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks SM subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. WELL-GRADED SAND with SILT (98-99 feet) Dry, very dense, no odor. 100 \overline{SM} Predominately medium to fine sand with ~10% fine to coarse gravel to 25 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to HCl. SANDY LEAN CLAY (99-100 feet) Dry, hard, no odor. Predominately silt and clay with ~40% fine to medium sand and 1~5% fine gravel to 10 mm. The gravel and sand are subangular to 4345 subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl. |
SILTY SAND (100-108.5 feet) Dry, very dense, no odor. Predominately medium to fine sand with ~5% fine gravel to 15 mm and ~40% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have low plasticity and ∇ 105 toughness and have a weak reaction to HCl. 4340 POORLY GRADED SAND with SILT (108.5-113.5 feet) Dense, no odor. Predominately medium to fine sand with trace coarse sand to 3 mm and ~10% silt and clay. The sand is subangular to 110 subrounded. The fines are nonplastic and do not react to HCl. 4335 SANDY LEAN CLAY (113.5-114.5 feet) Hard, no odor. Predominately silt and clay with ~35% fine to medium sand and SP- \sim 5% fine gravel to 15 mm. The fines have medium plasticity and 115 toughness, are yellowish brown (10YR 5/4), and do not react to POORLY GRADED SAND with SILT (114.5-115 feet) Dense, no odor. SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT Predominately medium to fine sand with trace coarse sand to 3 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic and do not react to HCl.

Proje	ect Nan	ne:	Yerington Groundwater	Investigation	F	Boring 1	Number	: <u>PA-</u>	<u>-GW27</u>				
Soil	Boring		Monitoring Well □	Project Number:	: <u> </u>		1262	59.001	S	Sheet <u>1</u> of <u>5</u>			
Bori	ng Loc	ation:	Process Area		Elev	ation:	4440.	8 feet amsl	East Nort				
Drill	ing Co	ntract	or: WDC	Driller: J. Love	Date	e Starte	d: 1/3	3/05	Date Finishe				
Drill	ing Equ	uipme	ent: GEFCO 15L with Sonic	or 50K Drill Head	Tota Dep	th: (fee	t) 109	9.0	Water Depth (feet)	106'			
Sam	pling N	1etho	d: Core Barrel	Borehole Diameter: 6"	Well Diameter and Material: NA								
Drill	ing Me	thod:	Sonic		XI ~	ened In Well D		NA					
Well	Seal:	Ber	ntonite and Cement		Slot Size: NA Filter Material: NA								
Logg	ged By:	XXXXXX	Gardner	***************************************	Development Method: NA								
	(F)	Inbol				Graphic	Log						
Depth (feet)	Elevation (feet)	USCS Group Symbol	Descriptio	Description Water Level Lithology Backfill					Remarks				
5-	4440	SW-SM	WELL-GRADED SAND with SII Predominately medium to fine sand ~30% fine gravel to 15 mm, and ~1 is angular to subangular, the sand i nonplastic and do not react to HCl. SILTY SAND (5-10 feet) Predominately medium to fine sand mm and ~35% silt and clay. The g the sand is subangular to subround plasticity and toughness and have a	d with ~20% coarse sand, 10% silt and clay. The gravel s subangular. The fines are d with ~10% fine gravel to 10 gravel is angular to subangular, ed. The fines have low				on ASTM M visual-mant determination based on the System. Mu Sharp contagradational	Descriptions of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System. Munsell colors described wet. Sharp contacts indicated by solid lines gradational contacts indicated by dashed line.				
10-	4430	CL SW-	SANDY LEAN CLAY (10-14 feet Predominately silt and clay with ~5 trace fine gravel to 10 mm. The graval to subrounded. The fin toughness, are brown (10YR 5/3), HCl. WELL-GRADED SAND with SII	50% fine to medium sand and avel is subangular, the sand is es have medium plasticity and and have a strong reaction to		• • • • • • •		Cement Gro	NMENT DESIG out: 0 -10 feet Chips: 10 - 109				
15-	4425	SM	reet) Predominately medium to fine sand ~15% fine to coarse gravel to 25 m The gravel is angular to subangular subrounded. The fines are nonplas HCl. SANDY LEAN CLAY [15.5-16 fe] Predominately silt and clay with ~5 trace fine gravel to 10 mm. The gravel to subrounded. The fin toughness, are brown (10YR 5/3), and HCl. SILTY SAND with GRAVEL [16] Predominately medium to fine sand ~35% silt and clay. The gray and ~35% silt and clay. The gray of the sand read read read read read read read rea	at with ~20% coarse sand, m, and ~10% silt and clay. r, the sand is subangular to tic and have a weak reaction to set) 50% fine to medium sand and avel is subangular, the sand is es have medium plasticity and and have a strong reaction to -21 feet) 1 with ~15% fine gravel to 15									

BORING LOG

PA-GW27 Project Name: **Yerington Groundwater Investigation** Boring Number: 126259.001 **2** of _ \mathbf{X} Monitoring Well Sheet Soil Boring Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks the sand is subangular to subrounded. The fines have low plasticity and toughness and have a strong reaction to HCl. 4420 CL SANDY LEAN CLAY (21-24 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. WELL-GRADED SAND with SILT (24-28 feet) Predominately medium to fine sand with ~10% fine gravel to 15 mm and ~10% silt and clay. The gravel is angular to subangular, 25 the sand is angular to subrounded. The fines are nonplastic and 4415 have a weak reaction to HCl. CL SANDY LEAN CLAY (28-36.5 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 10 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong 30 reaction to HCl. 4410 35 4405 SILTY SAND with GRAVEL (36.5-38 feet) Predominately medium to fine sand with ~20% fine gravel to 15 mm and ~15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 and have a strong reaction to HCl. SANDY LEAN CLAY (38-40 feet) Predominately silt and clay with ~40% fine to medium sand and ~5% fine gravel to 15 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl 4400 SILTY SAND (40-44 feet) Predominately medium to fine sand with ~20% coarse sand, \sim 10% fine gravel to 15 mm, and \sim 30% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic, are brown (7.5YR 5/4), and have a strong reaction to HCl. SANDY LEAN CLAY (44-58 feet) Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to

BORING LOG

PA-GW27 Yerington Groundwater Investigation Project Name: Boring Number: 3 of 5 126259.001 \mathbf{X} Soil Boring Monitoring Well Sheet . Project Number: JSCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks HCl. 50 4390 55 4385 SILTY SAND (58-66 feet) Predominately medium to fine sand with ~5% fine gravel to 15 mm and ~35% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have low plasticity and have a weak reaction to HCl. 60 4380 SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05 4375 SANDY LEAN CLAY (66-70 feet)
Predominately silt and clay with ~50% fine to medium sand and trace fine gravel to 8 mm. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and have a strong reaction to SILTY SAND with GRAVEL (70-73.5 feet)
Predominately medium to fine sand with ~20% coarse sand, 4370 \sim 30% fine gravel to 15 mm, and \sim 15% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl.

BORING LOG

PA-GW27 Project Name: **Yerington Groundwater Investigation** Boring Number: \mathbf{X} 126259.001 **4** of _ Soil Boring Monitoring Well Project Number: Sheet SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks POORLY GRADED SAND with SILT (73.5-75 feet)
Predominately medium to fine sand with trace fine gravel to 8 mm and ~10% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines are nonplastic and do not 75 react to HCl. SANDY LEAN CLAY (75-78.5 feet)
Predominately silt and clay with ~50% fine to medium sand to 2 4365 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4/2), and have a strong reaction to HCl. SILTY SAND with GRAVEL (78.5-86 feet) Predominately medium to fine sand with ~20% coarse sand, \sim 15% fine gravel to 20 mm, and \sim 35% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines 80 are nonplastic and have a strong reaction to HCl. 4360 85 4355 SILTY SAND (86-90.5 feet)
Predominately medium to fine sand with trace coarse sand to 4 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic and have a weak reaction to SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4350 SM SILTY SAND with GRAVEL (90.5-97.5 feet) Predominately medium to fine sand with ~15% fine gravel to 15 mm and ~20% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and have a strong reaction to HCl. 4345 CLAYEY SAND (97.5-105 feet) Predominately medium to fine sand with ~5% fine gravel to 15

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PA-GW27 Yerington Groundwater Investigation Project Name: Boring Number: <u>5</u> of <u>5</u> 126259.001 \mathbf{X} Soil Boring Monitoring Well Sheet Project Number: SCS Group Symbol Graphic Log Elevation (feet) Depth (feet) Water Level Lithology Backfill Description Remarks mm and ~20% silt and clay. The gravel is subangular, the sand is subangular to subrounded. The fines have medium plasticity and toughness and have a strong reaction to HCl. 100 4340 SW-4335 SM WELL-GRADED SAND with SILT and GRAVEL (105-107.5 feet) 105 ∇ Predominately medium to fine sand with ~15% coarse sand, ~20% fine gravel to 10 mm, and ~10% silt and clay. The gravel is angular to subangular, the sand is subangular to subrounded. The fines are nonplastic and do not react to HCl. SILTY SAND (107.5-109 feet)
Predominately medium to fine sand with trace coarse sand to 3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness and do not react to HCl SONIC METHOD NO SAMPLE YERINGTON.GPJ BRN&CALD.GDT 4/6/05