EXTRACTION WELL DECOMMISSIONING CHERRY FARM SITE (NYSDEC SITE NO. 9-15-063) RIVER ROAD SITE (NYSDEC SITE NO. 9-15-031)

Tonawanda, New York

SUBMITTED TO:



DEC 13 2004

NYSDEC REG 9

REL UNDER

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

SUBMITTED BY:

CHERRY FARM/RIVER ROAD SITE Potentially Responsible Parties

PREPARED BY:

PARSONS

180 Lawrence Bell Drive, Suite 104 Williamsville, New York 14221 (716) 633-7074 Fax (716) 633-7195

December 2004

EXTRACTION WELL DECOMMISSIONING CHERRY FARM SITE (NYSDEC SITE NO. 9-15-063) RIVER ROAD SITE (NYSDEC SITE NO. 9-15-031)

Tonawanda, New York

Submitted To:

New York State Department of Environmental Conservation Division of Hazardous Waste Remediation

Submitted By:

Cherry Farm/River Road Site Potentially Responsible Parties

Prepared By:

PARSONS

180 Lawrence Bell Drive, Suite 104 Williamsville, New York 14221 Phone: (716) 633-7074 Fax: (716) 633-7195

REVIEWED AND APPROVED BY:

Project Manager:	Mark S. Raybuch	12/1/04	
, , ,		Date	
Technical Manager:	Itephen S. Rossello	12/1/04	
		Date	-

December 2004

OBJECTIVE

Nine of the 11 deep extraction wells at the Cherry Farm/River Road Site (Site) will be properly abandoned. This action will minimize the potential for vertical migration of chemical constituents along the wells and well construction materials. This work plan has been prepared to document the procedures for well decommissioning and surface restoration. It has been prepared in adherence to the New York State Department of Environmental Conservation (NYSDEC) Guidance Document entitled "Groundwater Monitoring Well Decommissioning Procedures" dated April 2003.

BACKGROUND

A total of eleven (11) groundwater extraction wells ranging from 38 to 54 feet in depth were installed at the Site in 1996. The wells were installed, at the locations depicted on Figure 1, as groundwater extraction/remediation wells. The wells are constructed of 8-inch diameter stainless steel screen and riser. Monitoring well construction/boring logs are included as Appendix A and a summary of well dimensions and specifications is included as Table 1. These wells were completed at the surface with rectangular concrete well vaults approximately 4.5 feet in depth in order to house remedial equipment and piping and protect the equipment during the period of operation. A typical well construction/vault construction schematic is included as Figure 2.

In April 2004, Parsons recommended permanent shut-down and decommissioning of the 11 deep aquifer extraction wells, based on results of a groundwater upwelling study, completed in December 2002. Based on the results of the groundwater upwelling study, the discontinued use of the intermediate/deep groundwater extraction system will not have an adverse impact on the quality of the groundwater upwelling to the Niagara River. In a letter dated November 19, 2004, NYSDEC accepted the permanent shut-down of nine of the extraction wells.

SCOPE OF WORK

Introduction

Nine of the 11 extraction wells and vaults will be properly abandoned. RW-1, 2, 3, 6, 7, 8, 9, 10, and 11 will be abandoned. RW-4 and 5 will remain in place temporarily, but will not be operated. This work plan describes the activities associated with the well decommissioning program in accordance with NYSDEC guidance and standard engineering practices.

The well decommissioning activities will be conducted in general accordance with the guidance provided in the NYSDEC April 2003 document, as previously referenced. Anticipated tasks include selection of the well decommissioning method, preparation of a task-specific addendum to the existing Health and Safety Plan, and well decommissioning.

Well Decommissioning Method

The first step in selecting the well decommissioning process consists of reviewing all pertinent site information. This includes boring and well logs, field inspection sheets, and

PARSONS

laboratory analytical results performed on the site's soil and groundwater samples. This site information forms the basis for decisions throughout the decommissioning process. Field inspection of the wells prior to decommissioning will also be performed to verify the characteristics and conditions of the wells.

The primary rationale for well decommissioning is to prevent contaminant migration along the disturbed construction zone created by the well boring. This requires selection of a decommissioning procedure that takes into account factors such as:

- 1) The hydrogeological conditions at the well site.
- 2) The presence or absence of contamination in the groundwater in multiple zones.
- 3) The well construction details.

The four primary options for well decommissioning procedures approved by the NYSDEC consist of:

- 1) Casing pulling.
- 2) Over-drilling.
- 3) Grouting the casing in-place.
- 4) Perforating the casing followed by grouting in-place.

Parsons has evaluated Site data, as well as extraction well dimensions and specifications, and proposes decommissioning using a modification of the "grouting the casing in-place" procedures for the following reasons:

- 1) Well construction materials and dimensions, including well vault construction (see Figure 2) would make it difficult or impossible to entirely remove the casing or over-drill the casing.
- 2) Analytical data indicate lower concentrations of dissolved constituents with depth. The grouting in-place option will limit disturbance to the entire formation while still providing adequate protection against potential future vertical migration of chemical constituents.

Health and Safety

All field activities will be conducted in accordance with the existing January 2000 site-specific Health and Safety Plan (HASP) for operations, maintenance, and monitoring activities.

Materials Handling and Disposal

It is anticipated that most materials (other than displaced groundwater) can be directly disposed or cleaned and disposed offsite as construction/demolition material. This would include well casings and ancillary piping. Any water generated during abandonment will be transported to the onsite groundwater treatment plant for appropriate treatment and discharge.

Well Decommissioning

Any subsurface utilities will be located by contacting the Underground Facilities Protective Organization (UFPO) prior to doing any field work. As-built construction drawings will also be utilized to locate subsurface piping or electrical conduits. Field work will be performed in accordance with the HASP referenced above.

PARSONS

Electrical wiring in four of the extraction well vaults is connected to the sumps in the shallow groundwater extraction trench. This wiring and equipment will be removed from the well vaults and reinstalled at the surface near the vaults. Other electrical wiring and components associated with the extraction wells will be properly decommissioned.

The screened portion of each extraction well will be pressure-grouted either by sealing off the screened intervals with a packer or sealing the wells off at the well-head. This will be done to ensure that the pore space of the sand filter packs are filled, to form an effective barrier to potential vertical migration. The grout mixture typically used for backfilling is the standard grout mixture referenced in the NYSDEC guidance (Section 9.0) consisting of one 94-pound bag Type I Portland cement, 3.9 pounds powdered bentonite, and 7.8 gallons of potable water. This mixture results in a grout with a bentonite content of four percent by weight. A slow setting grout mixture or setting inhibitor may be required for pressure-grouting of the screened portion of each extraction well, to assure that grout enters and fills the pore space within the filter pack.

A mixing plant or similar equipment will be used to assure consistent, uniform grout mixture to the required specifications. Grout will be placed into the borehole at sufficient pressure to ensure complete infiltration of the filter pack (at least 2 times the hydrostatic pressure of the water column inside each well.) Volumes required to completely fill the inside of each well and the surrounding borehole (of the screened interval) will be calculated prior to the start of each well abandonment. An attempt will be made to inject a volume of grout that is at least 1.5 times greater than the actual casing (below the seal) and filter pack pore space volume. This will provide a safety factor, and ensure that the entire filter pack is sealed.

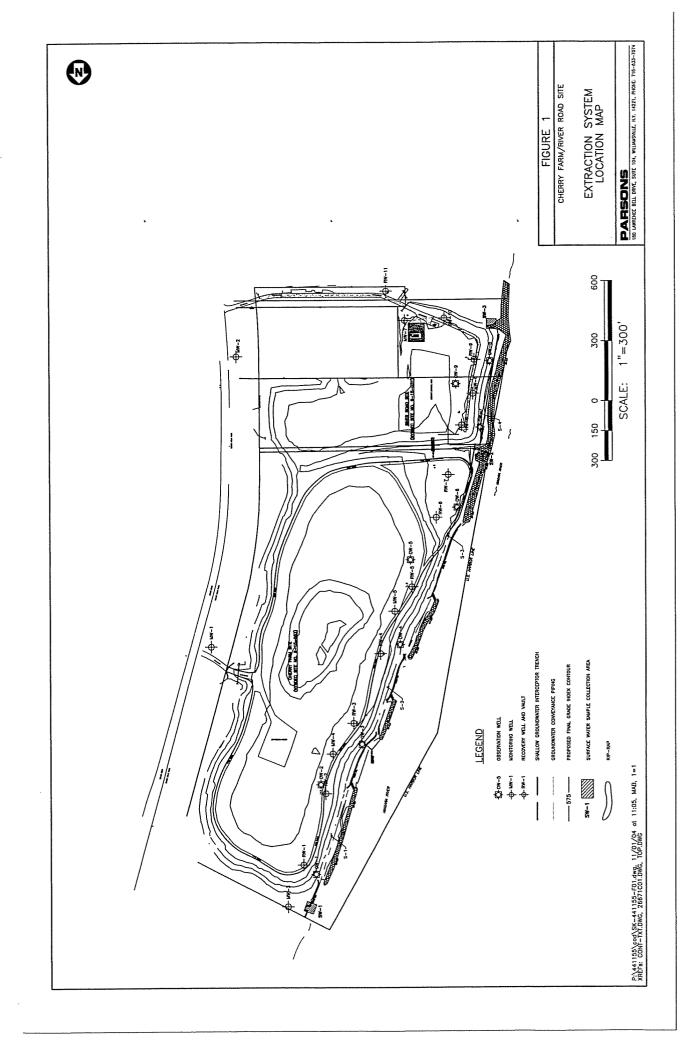
Following pressure grouting of the screened interval, the entire casing of each well will be tremie grouted up to the point at which the well riser meets the bottom of the well vault (typically 4.5 feet below grade). The remaining portion of the riser (within the vault) will be removed, along with all other remedial piping/equipment, and properly disposed offsite.

Any groundwater displaced during grout placement will be pumped via suction lift to a holding tank, and transported to the onsite groundwater treatment plant for treatment and discharge. At this time, the rate of settling will be observed. When the grout level stabilizes, the tremie pipe will be removed from the hole. As each section is removed, grout will be added to keep the desired level.

Upon completion of grouting, the final grout level must be at the interface with the bottom of the vault. The location will be evaluated after at least 24 hours, to confirm the grout level. If the level has fallen a foot or more, additional grout will be added.

Backfilling the Well Vaults

Refer to Figure 2 for typical as-built well vault specifications. Parsons proposes removal and off site disposal of all piping and non-salvageable equipment in each vault, including the access hatches and vent risers which stick up above grade, followed by placement of clean compactable fill, filling the vault to within one (1) foot of grade level, then placement of topsoil to match surrounding grade. Fill will be placed in one foot lifts and compacted.



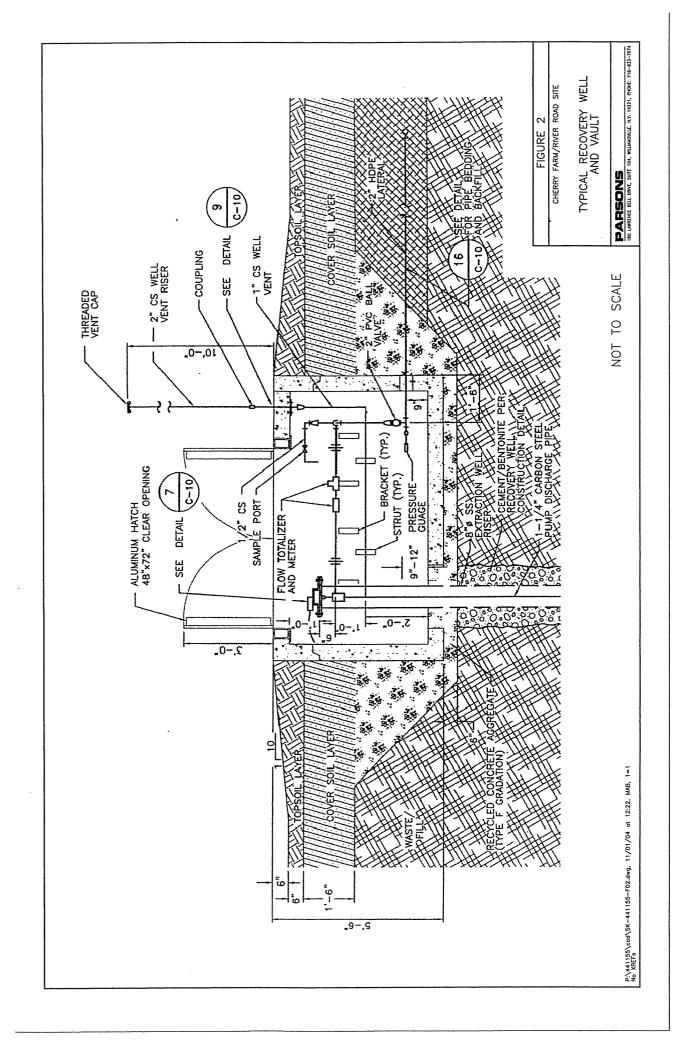


TABLE 1
Cherry Farm/River Road
Recovery Well Construction Data

_		_			٠,	9	7	7	7	2	_	25	4	2	٠,	_
	7		Septh		17.	17.	17.	17.7	17.	=	_	7	2	17.5	17.	
	ring drill) (Top	Elevation I	-	563.97	563.92	563.97	562.91	562.86	558.9	559.1	557.79	558.82	565.3	564.4	
- 1	bgs dt	,	Depth											22.5		
	Bentonite Sen	Bottom	Elevation		558.97	558.72	557.82	558.31	558.56	555.9	. 555.2	553.42	553.92	560.3	559	
	_		Depth									.,		22.5		
	g drill) (2	Тор	Elevation		558.97	558.72	557.82	558.31	558.56	555.9	555.2	553.42	553.92	560.3	529	
	(bgs durin		Depth		49.35	52.6	52.63	53.02	55.49	39.86	39.77	51.04	51.04	45.48	44.32	
	Filter Pack	Bottom	Elevation I		532.47	529.22	529.67	528.81	526.56	530.9	530.9	532.79	532.82	537.8	536.9	
	(I)	=	Depth		27.85	27.7	28.8	27.2	27.7	19.2	19.3	34.37	34.15	26.3	26.2	
	riser in vault	Top	Elevation		553.97	554.12	553.5	554.63	554.35	551.56	551.37	549,46	549.71	86'98	555.02	
	om top of ri		Depth		42.85	47.8	48,95	47.3	47.7	34.3	34.4	44.47	44,15	36.4	36.3	
	Screen (fr	Bottom	Elevation		538.97	534.02	533,35	534.53	534.35	536.46	536.27	539.36	539.71	546.88	544.92	
ations	Elevation	Well	=		533.97	529,02	528.35	529.53	529.35	531.46	531.27	534.36	534.71	541.88	539.92	
Asbuilt Elevations	Top	of Riser	Elevation		581.82	581.82	582.30	581.83	582.05	570.76	570.67	583.83	583.86	583.28	581.22	
1	Well	otal Denth	at Riser		47.85	52.8	53.95	52.3	52.7	39.3	39.4	49.47	49.15	41.4	41.3	
	Cut	T T			2.1	2.3	-	2.8	23	0.8	0.7	5.8	1.75	3.7	3.8	*****
	Total	Length	(E)		49.95	55.1	\$5.25	55.1	55	40.1	40.1	55.27	50.9	45.1	45.1	
	ᆫ				15	20.1	20.15	20 1	20	15.1	15.1	10	0	10.1	10.1	
	Length of Length of	Right + Summ			34.95	35	35.1	35	35	25	25	45.17	40.9	35	35	
	Well		apth (R)		46.5	510	52 65	2 3	. 5	38.5	38.0	48.37	47.9	21.5	42	!
	-		E		40	: 6	\$ 5	, 5	45	30.5	30.2	205	Ç	45	45	:
		Decrees Ground Surface	at Drill Dr		581 47	581 22	23.185	580.61	580 56	570.4	570.1	582 79	587.82	587.8	581.9	}
		Danning.	Well		P.W.1	2.W-2	2 Ma	P.W.d	BW-5	9-Ma	7-MB	BW.8	B.W.9	W-10	RW-11	:

(1) Screen depths and elevations were determined from the length of the well screen and riser and the as-built elevation of the top of the riser as-built in the well wault.
(2) Filter pack and bentonite seal depths and elevations were determined during well installation, measuring from a ground surface reference point of known elevation.

APPENDIX A

WELL LOGS

					PARSONS ENGINEERING SCIENCE	
Contractor:	SJB SERV	ICES			DRILLING RECORD	BORING NO. RW - 1
Driller:	ART KOSE	E				
Inspector:	GEORGE I	IERMANC	Ε		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location: Northwest Corner - Cherry Farm
Method:	VARIED					
					Weather Sunny,	_
GROUNDWA	ATER	OBSERVA	TIONS			
Date	- 				Date/Time Start 9/10/96 0930hrs	-
From	-				Date (Figure Figure) 0/1/2/06 1520 has	
DTW					Date/Time Finish 9/16/96 1530 hrs FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery			
	-			<u> </u>		
	+					
				ļ ————		2.1' riser cut to
—	1			<u> </u>		fit vault
	1	0				581.47 elevation
				1		
	SS-1	1	15	8	Black, Brown, Tan, medium to fine Sand, some (-) Silt,	
				14	trace(+) roots, moist	
		2		9		
				6		
	SS-2	3	12	6	Black, Brown, medium to fine Sand, trace (+) Silt, trace (-)	
				8	clay, trace (-) fine Gravel, trash, plastic, moist	
		4		7		5'
				4		
	SS-3	5	12	3	Black, Tan, medium to fine Sand, loose, moist,	
		<u></u>		5		
ļ	_	6	<u> </u>	6		
<u> </u>			 	7	Died To and the second control of	Cement / Bentonite
-	SS-4	7	4	7	Black, Tan, medium to fine Sand, cardboard, moist,	Grout
				8 6		Groun
		8	 	1		
<u> </u>	SS-5	9	12	3	Black, medium to fine Sand, trace (-) glass, moist, cement	
	33-3	-	12	5	black, modelin to fine band, face (-) glass, moist, comen	
		10		4		
	<u> </u>	1		1	1	
	SS-6	11	17	3	Black and Tan, medium to fine Sand, wet	8" ID, Sch 10, 304
	1		T	5	1	Stainless Steel Well
		12		1	1	Riser
				3		
	SS-7	13	15	4	Black and Tan, medium to fine Sand, trace (-) Slag, wet	
				3]	
		14		4]	
				1	_	
	SS-8	15	20	3	Black and Tan, medium to fine Sand, trace (+) Silt, wet	
		ļ	<u> </u>	4		
		16	<u> </u>	5		
			ļ	2		
	SS-9	17	24	3	Black and Tan, medium to fine Sand, trace (+) Silt, to 17.5'	
STAND	ARD PENE				SUMMARY: Depth and elevation noted at time	
1		PLIT SPC			borehole was drilled	
<u></u>	A = AUG	GER CUT	TINGS			

BORING NO. RW - KOSKE RGE HERMANCE PROJECT NAME Cherry Farm/River Road Sheet 2 of 3 75-85 TRAC PROJECT NUMBER 726673.41 Location: Weather Sunny, OBSERVATIONS PROJECT NUMBER 9/10/96 0930brs	
REGE HERMANCE PROJECT NAME Cherry Farm/River Road Sheet 2 of 3 75-85 TRAC PROJECT NUMBER 726673.41 Location: Weather Sunny, OBSERVATIONS	
75-85 TRAC PROJECT NUMBER 726673.41 Location: Weather Sunny, OBSERVATIONS	
Weather Sunny, OBSERVATIONS	
Weather Sunny, OBSERVATIONS	
OBSERVATIONS	
Date/Time Start 9/10/96 0930hrs	
,	
Date/Time Finish 9/16/96 1530 hrs	,
aple Sample Inches SPT FIELD IDENTIFICATION OF MATERIAL WELL CONSTRUCTION	N
D. Depth Recovery	
	17.5'
18 2 Top of Marsh Deposit at 17.5'	
WOH	nite
-10 19 14 WOH Gray, medium to fine Sand, some Silt, trace roots, wet, loose,	
1 roots in black Sand and Silt	
20 1	
8* ID, Sch	10, 304
-11 21 12 2 Gray, medium to fine Sand, some (-) Silt, trace () roots, wet Stainless St	Steel We
₹ Rise	er
22 4	
1	_ 22.5
-12 23 18 1 Gray, medium to fine Sand, some (-) Silt, trace () roots, wet	
dilatent Morie 00	0 Sand
24 2	
WOR USE TO SEE THE SEE	_ 24.5
-13 25 18 2 Gray, medium to fine Sand, some (-) Silt, wet	
1 dilatent Morie 0	0 Sand
26 4	
	_ 26.5
Gray, medium to fine Sand, some (-) Silt, wet	
11 dilatent, loose at bottom Morie 0	n a
20 14	o Sand
3-15 29 20 11 Gray, medium to fine Sand, some Silt, trace (-) fine Gravel,	
13 wet, dilatent, gravel at 29.5' 30 19 8" ID, Sch	10 20
	JIU 3101
7 dilatent, 32 9	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
3-17 33 12 7 Gray, medium to fine Sand, some (-) Silt, wet	
6 dilatent,	
34 5 Morie 0	0 Sand
G-18 35 24 7 Gray, medium to fine Sand, some (-) Silt, wet	
7 dilatent,	
36 10 matches	
OND ON	n 10, 30
WOR 8-1D, Sch 5-19 37 24 WOH Gray ,medium to fine Sand, trace Silt, wet, dilatent Stainless S	
Screen, 0.0	
28 1 WOR Depth and elevation noted at time borehole was drilled	

					PARSONS ENGINEERING SCIENCE	nontricato DW 1	
Contractor:	SJB SERV				DRILLING RECORD	BORING NO. $RW - 1$	
Driller:	ART KOSK				Programmer Character Form/Piver Bood	Sheet 3 of 3	
Inspector:	GEORGE I		E		PROJECT NAME Cherry Farm/River Road PROJECT NUMBER 726673.41	Sheet 3 of 3 Location:	
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location.	
Method:	VARIED				Weather Sunny,		
		ongeniii	27010		weather Sumy,		
GROUNDWA	TER	OBSERVA	HONS	·	Date/Time Start 9/10/96 0930hrs		
Date					bate/fine start // ////////////////////////////////	┥ .	
From	-				Date/Time Finish 9/16/96 1530 hrs		
DTW Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION	
	I.D.	Depth	Recovery]			
Reading	SS-20	39	14	WOR	Gray medium to fine Sand, trace(+) Silt, trace (+) Clay, some		
	55-20			 	layering, soft, wet	8" ID, Sch 10,	304
		40		WOH	,	Stainless Steel	
	 			WOR		Screen, 0.010" S	Slots
	SS-21	41	18		Gray medium to fine Sand, some Silt in layers, trace Clay		
				2	for the last 6"	4	1.5'
	1	42		3			
	1	<u> </u>		1		Morie 0 Sa	nd
	SS-22	43	6	1	Gray, Tan, Silt and Clay, wet		
				1		│ │ ↓ │ │ │ │	
		44		1		8" ID, Sch 10,	304
				WOR		Stainless Steel	Well
	SS-23	45	6	WOR	Gray, Tan, Silt and Clay, wet	Riser / Sum	p
				WOR			
		46		WOR			
				WOR		4	6.5'
	SS-24	47	0	WOR	No Recovery		
				2		Morie 0 Sa	nd
		48		2			48'
			<u> </u>				
				<u> </u>			
			ļ	ļ			
			ļ	<u> </u>			
			<u> </u>	ļ			
				<u> </u>	-		
			ļ	ļ		İ	
		<u> </u>	<u> </u>	ļ	-	ļ	
			ļ	<u> </u>	-		
		<u> </u>	<u> </u>	<u> </u>	-		
	<u> </u>	<u> </u>	1		-		
	-	ļ	<u> </u>	 	-		
<u></u>	4	<u> </u>		<u> </u>	-		
	ļ	<u> </u>	 	 	-		
		<u> </u>	<u> </u>	 	-		
			<u> </u>		-		
		<u> </u>	 	 	4		
		<u> </u>	<u> </u>	 	-		
<u></u>	_	<u> </u>	 	 	4		
<u></u>		<u> </u>	 	 	-		
		 	 	 	4		
		<u></u>	<u></u>	<u></u>		1	
STAND	ARD PENE				SUMMARY: Depth and elevation noted at time		
[SPLIT SPO			borehole was drilled		
	A = AU	GER CUT	TINGS				

					PARSONS ENGINEERING SCIENCE	populavo PW 2
Contractor:	SJB SERV	CES			DRILLING RECORD	BORING NO. RW - 2
Driller:	ART KOSK				Ol F/Diseas Dood	
Inspector:	GEORGE I	IERMANCI	E		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location: Northwest Corner - Cherry Farm
Method:	VARIED				Washing Committee of Agencies	
					Weather Sunny, 60 degrees	
GROUNDWA	ATER	OBSERVA	TIONS		Date/Time Start 9/16/96 0815hrs	
Date					Date/Time Start 9/16/96 0815hrs	•
From	_				Date/Time Finish 9/18/96 1130 hrs	
DTW			Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Photovac	Sample I.D.	Sample Depth	Recovery	311		
Reading	1.0.	Бера	Recovery			
	_					
<u> </u>						
	1					2.3' riser cut
						to fit vault
		0				581.22 gs elev.
				5		
<u> </u>	SS-1	1	15	17	Black, medium to fine Sand, some (-) Silt, wood, moist	
				12		
		2		16		
				17		
	SS-2	3	24	21	Black, medium to fine Sand, some Silt, wood, trace (-) Clay,	
				29	moist, fill	
		4		31		5'
				10		
	SS-3	5	24	5	Black, medium to fine Sand, little Silt, trace Slag, wood,	
				4	moist	
		6	· .	4		
		ļ		3		
	SS-4	7	24	4	Black, fine Sand, little(+) Silt, fill, wet at 7 feet	Cement / Bentonite
				3		Grout
		8		2	-	
			1.0	1/12	The transfer of the second second (1) Cile second 511	
	SS-5	9	18	 	Black, medium to fine Sand, trace (+) Silt, wet, fill	
	_	10		1 1	-	
	-	10	<u> </u>	1		
	SS-6	11	20	1	Black, medium to fine Sand, little (+) Silt, trace very fine,	8" ID, Sch 10, 304
	33-0	111	1 20	1	gravel, wet, fill	Stainless Steel Well
	_	12	†	 ' 1		Riser
	1	 	†	i	1	
	SS-7	13	24	1	Black, medium to fine Sand, little Silt, wet, fill	
				1	1	
		14		2	1	
				1		
	SS-8	15	24	1	Black, medium to fine Sand, little (-) Silt, trace Clay, wet, fill	
				5]	
		16		6]	
				1		
	SS-9	17	24	1	Black, medium to fine Sand, little (-) Silt, wet to 17.3'	
STANE	OARD PENE	TRATIO	N		SUMMARY: Depth and elevation noted at time	
	SS = 5	SPLIT SPO	OON		borehole was drilled	
l	A = AU	GER CUT	TINGS			<u> </u>

					PARSONS ENGINEERING SCIENCE	nonniavo DIV 3
Contractor:	SJB SERV	······································			DRILLING RECORD	BORING NO. RW - 2
Driller:	ART KOSE				PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3
Inspector:	CME 75-85		t		PROJECT NAME Cherry Farm/River Road PROJECT NUMBER 726673.41	Location:
Rig Type: Method:	VARIED	TRAC			TROUBLE TENDER	
	1,4420				Weather Sunny, 60 degrees	
GROUNDWA	TER	OBSERVA	TIONS			
Date					Date/Time Start 9/16/96 0815hrs	_
From					,	3
DTW	_				Date/Time Finish 9/18/96 1130 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery	7	then stained black and gray fine Sand and Silt, trace Clay, roots,	17.5'
	 	18		5	Top of Marsh Deposit at 17.3'	17.5
		10		1	Top of Maisir Doposit at 17.5	Bentonite
	SS-10	19	16	2	Gray, medium to fine Sand, some Silt, trace (+) roots,	
				2	grass, wet	
		20		3		
				2		8* ID, Sch 10, 304
	SS-11	21	12	1	Gray, medium to fine Sand, some Silt, trace (+) roots, wet	Stainless Steel Well
				1	-	Riser
	ļ	22	<u> </u>	2	1	22.5
	SS-12	23	14	2	Gray, medium to fine Sand, some (-) Silt, trace () roots to	22.0
	33-12	23	1	1	22.5', wet, dilatent	Morie 00 Sand
	 	24		2		
	1			2		24.5
	SS-13	25	12	1	Gray, medium to fine Sand, some Silt, wet	
				2	dilatent	Morie 0 Sand
	_	26		1		
	 			2	, , , , , , , , , , , , , , , , , , ,	26.00
	SS-14	27	24	5	Gray, medium to fine Sand, some Silt, wet	26.9
		28	 	6	dilatent, some color bands	Morie 0 Sand
	-	20	 	3	1	4
	SS-15	29	6	10	Gray, medium to fine Sand, some (+) Silt, wet	
				13	dilatent	
		30		13		8" ID, Sch 10, 304
			ļ	7		Stainless Steel Well
	SS-16	31	22	10	Gray, medium to fine Sand, trace (+) Silt, wet	Screen, 0.010" Slots
	_		<u> </u>	7	dilatent,	
	 	32	 	8	1	
	SS-17	33	24	12	Gray, fine Sand, little (-) Silt, wet	
	35-17			14	dilatent,	
		34		16		Morie 0 Sand
				10]	
	SS-18	35	24	14	Gray, fine Sand, little (-) Silt, wet	
			<u> </u>	14	dilatent,	
	_	36	<u> </u>	14	-	
	100:00		1	8	Commendation to Sing Good Blade Gift to 27 States Com-	8" ID, Sch 10, 304 Stainless Steel Wel
	SS-19	37	24	7 2	Gray, medium to fine Sand, little Silt, to 37.5' then Gray medium to fine Sand layers with Clayey Silt, wet, dilatent	Stainless Steel Wei
	1	38	 	3	mediani to inio band layers with Clayey blit, wer, thatelit	Scient, 0.070 Sibis
		1-30	 	3	1	
		<u> </u>		1		
STAND.	ARD PENE	TRATIO	N		SUMMARY: Depth and elevation noted at time	
		PLIT SPC			borehole was drilled	
	A = AU	GER CUT	TINGS			AND THE RESERVE OF THE PARTY OF

Cosmoctor SJB SERVICES DRILLING RECORD BORING NO. RW - Driller: ART KOSKE Inspector: GEORGE HERMANCE PROJECT NAME Cherry Farm/River Road Sheet 3 of 3	10, 304 teel Well
Inspector: GEORGE HERMANCE	10, 304 teel Well
Rig Type: CME 75-85 TRAC PROJECT NUMBER 726673.41 Location:	10, 304 teel Well
Weather Sunny, 60 degrees	10, 304 teel Well
Weather Sunny, 60 degrees	10, 304 teel Well
Date	10, 304 teel Well
Date	10, 304 teel Well
From Photovac Sample Inches SPT FIELD IDENTIFICATION OF MATERIAL WELL CONSTRUCTION SS-20 39 14 2 Gray medium to fine Sand layered with tanish Clayey Silt wet, dilatent SS-21 41 12 2 Same as 38' to 40' Date/Time Finish 9/18/96 1130 hrs FIELD IDENTIFICATION OF MATERIAL WELL CONSTRUCTION WELL CONSTRUCTION 8* ID, Sch Stainless St Screen, 0.0'	10, 304 teel Well
Date/Time Finish 9/18/96 1130 hrs	10, 304 teel Well
Photovac Sample LD. Depth Recovery	10, 304 teel Well
Reading LD. Depth Recovery	10, 304 teel Well
SS-20 39 14 2 Gray medium to fine Sand layered with tanish Clayey Silt 8° ID, Sch Stainless St Screen, 0.01 SS-21 41 12 2 Same as 38' to 40' Sseries Stainless St Screen, 0.01 Stainless St Stainless St Screen, 0.01 Stainless St Screen, 0.01 Stainless St Stainless St Screen, 0.01 Stainless St Stainless St Screen, 0.01 Stainless St Stainle	teel Well
2 wet, dilatent 8" ID, Sch Stainless St Screen, 0.0! SS-21 41 12 2 Same as 38' to 40' 40 4 4 4 5 5 5 5 6 6 6 6 6 6	teel Well
Stainless St Screen, 0.01 SS-21 41 12 2 Same as 38' to 40'	teel Well
Screen, 0.00 SS-21 41 12 2 Same as 38' to 40'	
SS-21 41 12 2 Same as 38' to 40'	
35-21 41 12 2 Same as 30 to 40	IU" Siots
,	
42 3	
Morie 0	Sand
SS-22 43 12 3 Gray medium to fine Sand layered with tanish Clayey Silt	
5 wet, dilatent	
44 6	
SS-23 45 12 1 Same as 42' to 44'	
3	
46 3	
SS-24 47 6 1 Same as 44' to 46'	46.9'
	Sand
48 1	
SS-25 49 6 3 Running Sand, Clayey Silt in Shoe of Spoon	
5	
50 6 8* ID, Sch	10, 304
Stainless S	teel Well
SS-26 51 0 1 Running Sand Riser / S	Sump
52 14	51.9'
	54'
	•
	
	
	
STANDARD PENETRATION SUMMARY: Depth and elevation noted at time	
SS = SPLIT SPOON borehole was drilled	
A = AUGER CUTTINGS	

C	SJB SERV	ICES			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 3
Contractor: Driller:	ART KOSI					
Inspector:	GEORGE I		F		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3
Rig Type:	CME 75-85				PROJECT NUMBER 726673.41	Location: Northwest Center - Cherry Farm
dethod:	VARIED					
104104.	1111022				Weather Sunny,	
ROUNDW	ATER	OBSERVA	ZIONS			7
Date	1	OBOBIE			Date/Time Start 9/19/96 0855hrs	
rom						•
otw					Date/Time Finish 9/23/96 1000 hrs	
Photovac	Sample	Sample	inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery			
			,			
						1.9' riser cut
	 					to fit vault
		0				581.67 gs elev.
				3		
	SS-1	1	18	4	Black and Tan medium to fine Sand, dry, loose	
				4	, •.	
		2		5		
		<u> </u>		3		
	SS-2	3	16	4	Black, some Tan, medium to fine Sand, trace (-) Silty	
				6	Clay, damp, loose	
		4		7	•	5'
				4		
	SS-3	5	22	10	Brown clay then Black medium to fine Sand and SILT, trace	
				18	(-) Clay, then back to medium to fine Sand, damp	
		6		25		
				12		
	SS-4	7	20	11	Black and Tan medium to fine Sand, some(-) Silt, trace (-)	Cement / Bentonit
				10	Clay, damp to moist	Grout
		8		9		
				3		
	SS-5	9	16	3	Black and Tan medium to fine Sand, little (-) Silt, damp	
			<u> </u>	3		
		10		3		
				1		
	SS-6	11	20	1	Black and brown medium to fine Sand, little Silt, trace (-)	8* ID, Sch 10, 304
		<u> </u>	<u> </u>	2	Clay, wet at 10.5'	Stainless Steel Well
		12	ļ	2		Riser
		<u> </u>	<u> </u>	50		
	SS-7	13	8	50/.3	Black and gray medium to fine Sand (slag), slag in shoe of	
		<u> </u>	<u> </u>		spoon, wet	
		14	<u> </u>			
			<u> </u>	18	10.	
	SS-8	15	6	50/.3	Black, tan, red Slag, Sand, Silt, moist, wet	
·····		ļ		 	easy drill past 15'	
		16	<u> </u>	<u> </u>	-	
		 	 	25		
	SS-9	17	16	38	Black, brown, white, gray, Slag and Sand, some Silt	
STANE	DARD PENE	TRATIO	N		SUMMARY: Depth and elevation noted at time	
	SS = S	SPLIT SPO	OON		borehole was drilled	
	A = AU	GER CUT	TINGS			

Oriller: A nspector: C Rig Type: C	ART KOSK GEORGE H CME 75-85 VARIED	E ERMANCI	F		DRILLING RECORD	BORING NO. RW - 3
nspector: C Rig Type: C Method: V GROUNDWATE Date From	GEORGE H	ERMANCI				
Rig Type: C Method: N GROUNDWATE Date From	CME 75-85		.		PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3
GROUNDWATE		I KAC.			PROJECT NUMBER 726673.41	Location:
GROUNDWATE Date	VARIED				PROJECT NUMBER 120073.41	Locator
Date From					Weather Sunny,	
Date From		OBSERVA	TIONE		weatter Sunty,	
From	:K (JBSERVA	HONS		Date/Time Start 9/19/96 0855hrs	
			,)	-
)[W					Date/Time Finish 9/23/96 1000 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery			1
Kraumg	1.0.	Depta		28	Top of Marsh Deposit at 17.5', Brown silty Sand, wet	
		18		8	•	17.7'
				3		Bentonite
	SS-10	19	16	4	Black, medium to fine Sand and Silt, little roots, to 18.5',	
				3	wet 18.5', to 20' Gray, medium to fine SAND, little Silt, trace	
		20		4	roots, wet	
				3		8" ID, Sch 10, 304
	SS-11	21	15	2	Gray, medium to fine Sand, some (-) Silt, trace (-) roots, wet	Stainless Steel Well
				2	dilatent	Riser
		22		2		
				2		
	SS-12	23	12	2	Gray, medium to fine Sand, little Silt, trace (-) roots to 23'	
				2	wet, dilatent	
		24		3		23.85
				8		
	SS-13	25	0	4	No Recovery	
				4	.]	Morie 00 Sand
		26		2		25.85
				2	_	
	SS-14	27	18	1	Gray, medium to fine Sand, little Silt, trace (-) very fine	
				2	Gravel, wet, dilatent	
		28	<u> </u>	4	_	27.85
			ļ	5		
	SS-15	29	10	8	Gray, medium to fine Sand, little Silt, trace fine Gravel, and	Morie 0 Sand
			ļ	7	wet dilatent, fine Sand and Silt	01 D C+ 40 204
		30	ļ	8	4	8" ID, Sch 10, 304 Stainless Steel Well
	22.46		<u> </u>	10	C V A S S S A L A S S S A L A S S S A L A S S A S A	Screen, 0.010" Slots
	SS-16	31	2	8	Gray medium to fine Sand and Silt, wet, dilatent	Screen, 0.010 Sides
		- 32	 	10	-	
		32	 	9	-	
	00.17	22	10	6	Gray medium to fine Sand, little Silt, trace (-) very fine	
	SS-17	33	18	9	Gravel, wet, dilatent	
		3.4	_	12	- Graver, well dilateric	Morie 0 Sand
	ļ	34	 	13	1	Mone o Sand
	SS-18	35	0	13	No Recovery	
	22-19	33	 	10	11.0 1.0001019	
		36	 	10	1	
	<u> </u>	- 30		6	1	8" ID, Sch 10, 304
	SS-19	37	18	4	Gray medium to fine Sand, trace (-) Silt, wet, dilatent	Stainless Steel Wel
	33-17	 	+	4	1	Screen, 0.010" Slots
	-	38	 	5	1	
	 	- 30	+	3	1	
STANDAI		TRATIO			SUMMARY: Depth and elevation noted at time borehole was drilled	

Contractor:	SJB SERV	ICES			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 3
Driller:	ART KOSK					
Inspector.	GEORGE 1		E		PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location:
Method:	VARIED					
					Weather Sunny,	
GROUNDWA'	TER	OBSERVA	TIONS			
Date	Ī				Date/Time Start 9/19/96 0855hrs	
From					>	ヿ 、
DTW	-				Date/Time Finish 9/23/96 1000 hrs	,
	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Photovac		-	Recovery	".		
Reading	SS-20	Depth 39	18	1	Gray medium to fine Sand layered with Gray brown Clayey	
	33-20	39	10	2	Silt, wet, dilatent, spacing <0.05'	8" ID, Sch 10, 304
	 	40			Shi, wei, dilatent, spacing <0.05	Stainless Steel Well
		40		3	1	Screen, 0.010" Slots
				1	<u> </u>	Screen, 0.010 Siois
	SS-21	41	14	1	Same as 38' to 40'	
			<u> </u>	5	-	
		42	<u> </u>	4	1	
				5		Morie 0 Sand
	SS-22	43	16	3	Gray medium to fine Sand layered with a red gray Silty Clay/	
				2	Clayey Silt, wet, dilatent, spacing about 0.1'	
		44		2		
				1		
	SS-23	45	18	1	Same as 42' to 44'	
		l	<u> </u>	2	1	
		46		1	1	
	 			3	1	
	SS-24	47	12	2	Same as 44' to 46', thicker layering	
	100-2-7	- 	 	1	-	Morie 0 Sand
	-	48		2	1	47.85'
		40	 	2	-	***************************************
	SS-25	49	8	1	Gray red Silty Clay/Clayey Silt, wet, dilatent	
	33-23	+	 ° -	3	some fine Sand stringers	8" ID, Sch 10, 304
			 	+	Some time Sand stringers	Stainless Steel Well
	_	50	 	1	4	Riser / Sump
	ļ	 	 	3		Risel / Sump
	SS-26	51	20	2	Same as 48' to 50'	
			-	1	4	
		52	1	11	4	
		ļ	<u> </u>	<u> </u>		
				<u> </u>		52.85
		<u> </u>	<u> </u>	<u> </u>		
						54'
]	
					_	
		Ī	1		7	
					7	
		T	1			
<u></u>	1			1		
	-		1	1	1	
	_	 	 	1	7	
	-	 	1	1	1	
		 	 	+	†	
	_	 	+	+	-	
		<u> </u>		<u> </u>		
					Post, and dame.	
STAND	ARD PENI				SUMMARY: Depth and elevation noted at time	
		SPLIT SP			borehole was drilled	
	A = AU	GER CUT	TINGS			

					PARSONS ENGINEERING SCIENCE	
Contractor:	SJB SERV	ICES			DRILLING RECORD	BORING NO. RW - 4
Driller:	ART KOS	Œ				
Inspector:	GEORGE I	IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location: Cherry Farm
Method:	VARIED				W. J	
		00000011	TOM		Weather Sunny, Cool	-
GROUNDW/	ATER	OBSERVA	TIONS		Date/Time Start 9/25/96 1000hrs	
Date	-				Date Time start 9/25/90 Toolins	-
From	+				Date/Time Finish 9/27/96 1000 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	1.D.	Depth	Recovery			
· · · · · · · · · · · · · · · · · · ·						
						2.8' riser cut to
				<u> </u>		fit in vault
		0				580.61' gs elev.
	90 1	1	18	3	Brown Clayey Silt, trace Sand, trace very fine Gravel, moist	
	SS-1	1	10	2	Joseph Clayey Birl, trace Ballu, trace very fille Graver, moist	
		2		4		
				6		
	SS-2	3	18	7	Brown Clayey Silt to 2.5', then Black and Tan fine Sand, little	
				19	Silt, trace Slag, gravel, moist	
		4		22		5'
				5		
	SS-3	5	14	13	Black, Tan, Red medium to fine Sand, little Silt, slag, wood,	
				17	damp	
		6		29		
	00.4		12	27	Died. Ton Velley, Bed for Cond lints filt also wood	Cement / Bentonite
	SS-4	7	12	18	Black, Tan, Yellow, Red fine Sand, little Silt, slag, wood, moist, fill	Grout Grout
	-	8		14	inoist, ini	G.O.I.
	-	<u> </u>		5		
	SS-5	9	16	5	Black and Tan, medium to fine Sand, little Silt, trace Slag	
				2	moist, fill	
		10		2		
				3		
	SS-6	11	24	12	Black fine Sand, little (-) Silt, trace Slag, fill, damp to wet	8" ID, Sch 10, 304
			ļ	6	1	Stainless Steel Well
<u></u>		12	-	3	-	Riser
		12	10	3	Dlack Ten medium to fine Sand trace (IN Sile wat MADI	
	SS-7	13	18	4	Black, Tan, medium to fine Sand, trace (+) Silt, wet, NAPL, fill	
	_	14	 	1		
<u> </u>	+	1	 	1	1	
	SS-8	15	24	1	Black red and Brown, fine Sand, Silty Clay, wet, soft, NAPL	
				1	stench	
		16		1		16'
				woh		Bentonite
	SS-9	17	24	woh	Stained Clayey Silt, Marsh Deposit changes to gray Sand and	
STAND	ARD PENE	TRATIO	N		SUMMARY: Depth and elevation noted at time	
		SPLIT SPC			borehole was drilled	
L	A = AUG	GER CUT	TINGS			

	cm crn1/	icee			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 4		
Contractor: Driller:	ART KOSK			***************************************	DRIBBING RECORD	DOLARIO NO.		
Inspector:	GEORGE I		E		PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3		
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location:		
fethod:	VARIED							
					Weather Sunny, Cool	_		
ROUNDWA	TER	OBSERVA	TIONS					
)ate	-				Date/Time Start 9/25/96 1000hrs	┪		
rom	-				Date/Time Finish 9/27/96 1000 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	LD.	Depth	Recovery	31.				
		•		WOH	Silt with roots at 18'.			
		18		1				
				1/18		Bentonite		
	SS-10	19	15		Gray, medium to fine Sand, little Silt, wet, roots			
		20		3		0110 011 40 004		
	00.11		20	2	Construction to fine Send little () Silt was reads	8" ID, Sch 10, 304 Stainless Steel Well		
	SS-11	21	20	3	Gray, medium to fine Sand, little (-) Silt, wet, roots	Riser		
		22		6				
·····				2				
	SS-12	23	20	4	Gray fine Sand, little (-) Silt, wet, dilatent			
				2		Morie 00 Sand		
		24		5				
	<u> </u>			1		24.3		
	SS-13	25	24	2	Gray fine Sand, some (-) Silt, wet, dilatent			
·	ļ			1		Morie 0 Sand		
		26		3	-	26.3		
	SS-14	27	24	5	Gray fine Sand, some (-) Silt, wet, dilatent	20.3		
	33-14	21	-24	3	oray fine band, some (-) one, wer, unatent			
	+	28		8				
				2				
	SS-15	29	18	7	Gray fine Sand, little (+) Silt, trace fine Gravel, wet	Morie 0 Sand		
				9				
		30		13		8" ID, Sch 10, 304		
· · · · · · · · · · · · · · · · · · ·				6		Stainless Steel Well		
	SS-16	31	20	7	Gray fine Sand, little (-) Silt, trace (-) fine Gravel, wet, dilatent	Screen, 0.010" Slots		
			 	8				
	+	32	 	13 8	1			
	SS-17	33	12	4	Gray fine Sand, wet, dilatent			
	1 33 17			5				
	1	34		5]	Morie 0 Sand		
				10]			
	SS-18	35	16	11	Gray fine Sand, trace (+) Silt, trace (-) very fine Gravel, wet			
		ļ	<u> </u>	10	dilatent			
		36	<u> </u>	11	4			
	1	<u> </u>	<u> </u>	7		8" ID, Sch 10, 304		
	SS-19	37	24	4	Gray fine Sand, little (-) Silt, trace (-) very fine Gravel, roots	Stainless Steel Wel		
	 	38	 	3	and shells, Silt banding at 37.8'	Screen, 0.010" Slots		
	 	38	-	1	1			
STANDA	ARD PENE	TRATIO		· · · · · · · · · · · · · · · · · · ·	SUMMARY: Depth and elevation noted at time borehole was drilled			

Contractor:	SJB SERVI	ICES			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 4		
Driller:	ART KOSK	E.						
Inspector:	GEORGE I	IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3		
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location:		
Method:	VARIED							
					Weather Sunny, Cool			
GROUNDWA	TER	OBSERVA	TIONS					
Date					Date/Time Start 9/25/96 1000hrs			
From		,			>	,		
DTW		.,			Date/Time Finish 9/27/96 1000 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	LD.	Depth	Recovery					
	SS-20	39	14	2	Gray medium to fine Sand interbedded with Brown, Tan			
				2	Clayey Silt spaced at 0.1', sand beds vary in thickness	8" ID, Sch 10, 304		
		40		4	,	Stainless Steel Well		
	-		<u> </u>	4		Screen, 0.010" Slots		
<u> </u>	SS-21	41	22	4	Gray medium to fine Sand, trace Silt bands, wet, dilatent			
<u> </u>	30 21		 -	5	· · · · · · · · · · · · · · · · · · ·			
<u> </u>	+	42	1	5				
	-	72	ļ	4		Morie 0 Sand		
	GC 22	43	20	1	Gray fine Sand, interbedded with 0.1' thick layers of Silty Clay	1 4		
 	SS-22	43	1 20	5	wet			
	-		 	2	l wet			
		44		1				
	00.03	45	16	 	Too Siles Clay interhedded with Gray fine Sand Wat			
	SS-23	45	16	3	Tan Silty Clay, interbedded with Gray fine Sand, wet			
	-		╂					
		46	 	1 woh/18		46.3'		
			 ,,	Won/18	4	40.3		
<u> </u>	SS-24	47	18		Same as 44' to 46', but Gray fine Sand and Silt	Morie 0 Sand		
			ļ			Willie o Sand		
ļ	<u> </u>	48	ļ	1				
				1	441. 491			
	SS-25	49	6	1	Same as 46' to 48'	08 ID Cab 40 204		
<u> </u>			ļ	1		8" ID, Sch 10, 304		
	_	50	ļ	1		Stainless Steel Well		
			_	1	400 400 4	Riser / Sump		
	SS-26	51	12	1	Same as 48' to 50' to refusal	51.3'		
				1		51.8'		
		52	 	50/.2		31.8		
	_ <u> </u>		 	ļ	4			
	-	<u> </u>	ļ	<u> </u>				
			<u> </u>	 				
<u> </u>			ļ	<u> </u>	-			
			<u> </u>	<u> </u>				
	<u> </u>			 	-			
			 	<u> </u>	1			
		<u> </u>	ļ	ļ	1			
				<u> </u>	_			
		<u> </u>	<u> </u>					
			<u> </u>					
	1			<u> </u>	_			
			<u> </u>					
			ļ	1	_			
					_			
STAND	ARD PENE				SUMMARY: Depth and elevation noted at time			
		SPLIT SPO			borehole was drilled			
	A = AU	GER CUT	TINGS					

					PARSONS ENGINEERING SCIENCE			
Contractor:	SJB SERV	ICES			DRILLING RECORD	BORING NO. RW - 5		
Driller:	ART KOSE	Œ						
Inspector:	GEORGE I	IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3		
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location: Cherry Farm		
Method:	VARIED				Washing Claude Dain Wind 60 degrees			
					Weather Cloudy, Rain, Wind, 60 degrees			
GROUNDWA	TER	OBSERVA	TIONS		Date/Time Start 9/27/96, 1545 hrs.			
Date					Date/Time Start 9/2/190, 1943 ins.	•		
DTW DTW					Date/Time Finish 9/30/96 1505 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL DIAGRAM		
Reading	L.D.	Depth	Recovery					
						, ,		
						2.3' riser cut to		
						fit in vault		
		0				580.56' gs elev.		
	<u> </u>		ļ	4				
	SS-1	1	10	4	Black and Brown, medium to fine Sand, moist			
	-			3				
	_{	2	ļ	2				
	1		12	6	District Description to fine Condessist			
	SS-2	3	12	19 19	Black and Brown, medium to fine Sand, moist			
	-	4		13		5'		
		4		4				
	SS-3	5	16	7	Black and Tan, medium to fine Sand, moist			
	00-3		1-10-	7	John Mile Tall, medium to fine band, more			
	+	6	†	5	1			
	1			3	1			
	SS-4	7	16	3	Black and Tan, medium to fine Sand, trace red fine Sand,	Cement / Bentonite		
				3	moist	Grout		
		8		3		Z-		
				1				
	SS-5	9	10	2	Black and Tan, medium to fine Sand, trace red fine Sand,			
				2	moist fill			
		10	ļ	1	-			
		ļ		2				
	SS-6	11	15	1	Dark Brown, black, fine Sand, little Silt	8" ID, Sch 10, 304 Stainless Steel Well		
	1	12	 	2	1	Stainless Steel Well Riser		
ļ	+	12	 	20	1	Riser		
	SS-7	13	24	21	same as 10' to 12'			
 	33-1	13	+	19	June 40 10 to 12			
-	_	14	†	15	1			
	_	 	†	2	1			
<u> </u>	SS-8	15	18	5	same as 10' to 12'			
	T	 		4				
		16		5	1			
				2]	Bentonite		
	SS-9	17	24	2	16' to 17' fill as above	17'		
STAND	ARD PENE	TRATIO	N		SUMMARY: Depth and elevation noted at time			
	SS = 5	SPLIT SPO	OON		borehole was drilled			
	A = AU	GER CUT	TINGS					

PARSONS

	cip cept/	CEC			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 5		
Contractor: Oriller:	ART KOSK				Didden G Ideold			
uspector:	GEORGE H				PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3		
ig Type:	CME 75-85				PROJECT NUMBER 726673.41	Location:		
lethod:	VARIED							
					Weather Cloudy, Rain, Wind, 60 degrees			
ROUNDWA	TER	OBSERVA	TIONS			1		
ate					Date/Time Start 9/27/96, 1545 hrs.	_		
rom					· ·	•		
TW					Date/Time Finish 9/30/96 1505 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	LD.	Depth	Recovery					
				1	17' to 18' dark red and brown Clay, fuel/salvent odor			
		18		1				
				woh/18		Bentonite		
	SS-10	19	20		Dark red and brown Clay, oily odor, slight sheen, trace			
					organics			
		20		20				
				1/12		8" ID, Sch 10, 304		
	SS-11	21	14	<u> </u>	Brown Black stained Clayey Silt, soft, wet, dilatent, NAPL	Stainless Steel Wel		
				1		Riser		
		22	ļ	1		22'		
				woh/24				
	SS-12	23	24		Same as 20' to 22'			
						Morie 00 Sand		
		24				24'		
				1		1		
	SS-13	25	20	1	Brown and Gray, Clayey Sand, little Silt, wet, soft, all gray last 6			
				1		Morie 0 Sand		
		26	<u> </u>	1				
			<u> </u>	3				
	SS-14	27	18	5	Gray fine Sand and Silt, wet, dilatent			
	-			9				
	_	28		9				
				3	G G G I	Morie 0 Sand		
	SS-15	29	12	5	Gray fine Sand, some Silt, wet, dilatent	With a Said		
		70		6		8" ID, Sch 10, 304		
		30		5		Stainless Steel Wel		
	CC 16	21	18	3	Gray fine Sand, little (-) Silt, wet, dilatent	Screen, 0.010" Slots		
	SS-16	31	18	6	Gray fine Sand, fittle (-) Sirt, wet, difatent	Sereca, o.oro Sios		
	+	22	 	5	†			
	-	32	 	7	1			
	SS-17	33	24	4	Same as 30' to 32'			
	33-1/	در ا		8				
	-	34	1	9	1	Morie 0 Sand		
	1		 	8	1			
	SS-18	35	10	12	Gray fine Sand, little Silt, wet, dilatent			
	33-16	-	 '`	13				
	1	36	†	13	1			
	+	ا ``	 	8	1	8" ID, Sch 10, 304		
	SS-19	37	10	10	Gray fine Sand, little Silt, wet, dilatent	Stainless Steel We		
	35-19	 	├ ``	12		Screen, 0.010" Slot		
	-	38	 	14	†			
			t	13	1			
STAND	ARD PENE	TRATIO			SUMMARY: Depth and elevation noted at time borehole was drilled			

					PARSONS ENGINEERING SCIENCE	populavo DW 5
Contractor:	SJB SERV				DRILLING RECORD	BORING NO. RW - 5
Driller.	ART KOSK				PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3
Inspector:	GEORGE H		E		PROJECT NAME Cherry Farm/River Road PROJECT NUMBER 726673.41	Location:
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 120013.41	Education.
Method:	VARIED				Weather Cloudy, Rain, Wind, 60 degrees	
GROUNDWA	TED	OBSERVA	TIONS		Treation Straig, Talif, White Co. 1981	-1
Date	I	OBSERVA	110113		Date/Time Start 9/27/96, 1545 hrs.	
From	1				>	7
DTW					Date/Time Finish 9/30/96 1505 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery			
	SS-20	39	12	11	Gray medium to fine Sand, little Silt, wet, dilatent	
				6		8" ID, Sch 10, 304
		40		3		Stainless Steel Well
				5		Screen, 0.010" Slots
	SS-21	41	10	7	Dark gray medium to fine Sand, layers of Silt, wet, dilatent	
	 			9		
ļ		42		11		Maria 0 Sand
	00.00		 ,,	5	Same a 40' to 42'	Morie 0 Sand
<u> </u>	SS-22	43	12	4 9	Same a 40' to 42'	
<u> </u>		44	 	12		
				2		
	SS-23	45	0	2	No Recovery, Wash Only	
	100 23	-15	Ť	2		
		46		1		46'
				1		
	SS-24	47	6	3	Tan, brown Silty Clay layers with gray black medium to fine	
				4	Sand, 'interbeds	Morie 0 Sand
		48		6		
			<u> </u>	1		
	SS-25	49	6	2	Same as 46' to 48' with more Silt	
ļ				2	_	8" ID, Sch 10, 304
	_	50		3		Stainless Steel Well Riser / Sump
	00.06		10	1	Gray and Tan fine Sand and Silt, trace (+) Clay, wet, dilatent	Riser / Sump
 	SS-26	51	10	5	Gray and Tan time Sand and Sir, trace (1) Cray, wer, dilatent	, , , , , , , , , , , , , , , , , , ,
	-	52		9	-	52'
	-	1 32		† –		
	-					
	1		 		1	
	1]	
					_	
				<u> </u>	_	
<u> </u>		<u> </u>	1	<u> </u>	4	
		<u> </u>		<u> </u>	<u> </u>	
		 	 	<u> </u>	4	
<u></u>		<u> </u>		 	-	
		<u> </u>		 	-	
		 	1			
		 	-	 	4	
-		 	+	+	1	
STAND	ARD PENE				SUMMARY: Depth and elevation noted at time borehole was drilled	
		SPLIT SPO GER CUT			ordina no amed	

					PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 6
Contractor:	SJB SERVI				DIGENIGRECORD	
Driller:	ART KOSK				PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3
Inspector:	GEORGE H		<u> </u>		PROJECT NUMBER 726673.41	Location: Cherry Farm/ RiverRoad
Rig Type:	CME 75-85	IRAC			PROJECT NORIBER 120010.41	
Method:	VARIED				Weather Rain, 45 degrees	
CROINIDIN	ATED	OBSERVA	TIONS		Tradici Trans, 15 asgress	†
GROUNDW/ Date	AIEK	OBSERVA	110/13		Date/Time Start 10/21/96, 0823 hrs.	
From	-				>	1 .
DTW					Date/Time Finish 10/22/96 1700 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL DIAGRAM
Reading	I.D.	Depth	Recovery			
Ktanag						
						0.8' riser cut to
						fit in vault
		0				570.40' gs elev.
				woh		
	SS-1	1	18	5	Black medium to fine Sand, some Silt, wet, dilatent	
				4		
		2		4		
				2		
	SS-2	3	24	1	Brown, Black medium to fine Sand for 6", then Gray Clay for	
				1	12", then Red Clay for 6", Very strong odor "moth balls"	
		4		1		5'
				woh/24		
	SS-3	5	0		No Recovery	
				ļ		
		6				
				woh/24		
<u> </u>	SS-4	7	18		Red, Brown Silty Clay, trace (-) Sand, trace (-) Gravel, wet, soft	
				<u> </u>	Strong "moth ball" odor	Grout
ļ		8		_		
				1		01 ID Cab 40 204
	SS-5	9	24	1/18"	Red, Brown Clay and Silty Clay, naphthalene? odor, wet, soft	8" ID, Sch 10, 304 Stainless Steel Well
		-	<u> </u>	-		Riser
		10	-	+		/
	00.6	1 11	24	1/18"	Red, Brown Silt and Clay to 11', top of Marsh at 11', Black fine	
	SS-6	11	1 24	1/10	Sand and Silt, little(-) Clay, wet, soft, gray at 12'	11.5'
		12	 	 	Joung and Dirg inner(*) Diay, weg sore, gray at 12	/
	_	1-1-	 	woh/24		
	SS-7	13	6	11011124	Black and Gray fine Sand, Black Silty Clay, wet, soft.	Bentonite
	33-1	1,5	+	1		
 		14	1			
 	_	 	1	1	1	14.5'
	SS-8	15	18	3	Gray medium to fine Sand, trace (+) Silt, wet, dilatent	
	1 55.5	 	† <u></u>	3		Morie 00 Sand
		16	1	4	1	16'
		† Ť	1	3		
 	SS-9	17	18	2	Gray medium to fine Sand, trace (+) Silt, wet, dilatent	Morie 0 Sand
		1				
STANI	DARD PENE	TRATIO	N		SUMMARY: Depth and elevation noted at time	
3.7.11		SPLIT SPO			borehole was drilled	
		GER CUT				

	ar arnii				PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 6		
	ART KOSK							
Oriller: nspector:	GEORGE H		:		PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3		
	CME 75-85				PROJECT NUMBER 726673.41	Location:		
Rig Type:	VARIED	nose						
region.	Trades				Weather Rain, 45 degrees			
GROUNDWAT	TER (OBSERVA'	TIONS			7		
Date					Date/Time Start 10/21/96, 0823 hrs.			
From	1	,			>	1 .		
otw	1 1				Date/Time Finish 10/22/96 1700 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	LD.	Depth	Recovery					
				4				
	1	18		3				
	$\dagger - \dagger$			2		18.5'		
	SS-10	19	10	3	Gray medium to fine Sand, little (-) Silt, wet, dilatent			
	100-10	17	10	3		Morie 0 Sand		
	+	20		3				
	 	20		2		8" ID, Sch 10, 304		
	SS-11	21	12	4	Gray fine Sand, trace (+) Silt, trace (-) very fine Gravel, wet	Stainless Steel Well		
	00-11	۷۱	1.2	4	dilatent	Screen, 0.010" Slots		
	1	22		8	unaun			
	┼┤	22		2				
					G			
	SS-12	23	24	6	Same as 20' to 22'			
				7				
	-	24		7				
				2	, , , , , , , , , , , , , , , , , , ,			
	SS-13	25	14	4	Gray medium to fine Sand, trace Silt, trace (+) very fine Gravel,			
			ļ	4	wet, dilatent	Maria O Cand		
		26		9		Morie 0 Sand		
				2				
	SS-14	27	6	4	Gray medium to fine Sand, trace (-) Silt, wet, dilatent			
				10				
		28	<u> </u>	12				
				5				
	SS-15	29	12	7	Gray and Black Clay and fine Sand, trace (+) Silt, wet	8" ID, Sch 10, 304		
				7		Stainless Steel We		
		30	<u> </u>	10		Screen, 0.010" Slot		
				9				
	SS-16	31	0	2	No Recovery			
			ļ	4	_			
		32		4				
				3				
	SS-17	33	6	2	Tan Silty Clay, wet, dilatent, soft			
				1		33.5		
		34		1		Morie 0 Sand		
				2				
	SS-18	35	18	4	Tan Silty Clay, some fine Sand in layers, wet, soft			
				2				
		36		3				
				1		8" ID, Sch 10, 304		
	SS-19	37	19	1	Gray, Tan Silty Clay, some Sand and Silt layers, wet	Stainless Steel Well		
				2]	Riser/Sump		
	1	38		1	1			
	- 		1	5	1			
		<u> </u>	<u> </u>	<u> </u>				
	ADD BEST	TDATIO	×		SUMMARY: Depth and elevation noted at time			
CT A SITE					construct. Population of the color motor at time			
STANDA		PLIT SPO			borehole was drilled			

					PARSONS ENGINEERING SCIENCE					_
Contractor:	SJB SERV	ICES			DRILLING RECORD	BORING	G NO.		RW - 6	5
Driller:	ART KOSE	Œ								
Inspector:	GEORGE I	HERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet	3	of	3	
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location:				
Method:	VARIED									
					Weather Rain, 45 degrees	_				
GROUNDWAT	TER	OBSERVA	TIONS							
Date					Date/Time Start 10/21/96, 0823 hrs.	1				
From			,		,		•			
DTW					Date/Time Finish 10/22/96 1700 hrs					
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL		WELL C	ONST	RUCTION	
Reading	I.D.	Depth	Recovery			<u> </u>	N			
	SS-20	39	12	7	Tan Silty Clay to 38.5', then to 39.5' broken coarse to fine Sand		-		Morie 0 S	
				30	and 'Gravel, Green Shale at 39.5', Top of Rock at 39.5'	ļ		<u> </u>		39.5'
	ļ	40		50/0						
	<u> </u>									
	ļ	ļ	ļ	<u> </u>						
	<u> </u>	<u> </u>	ļ							
	<u> </u>		<u> </u>							
	<u> </u>	ļ	<u> </u>	<u> </u>						
	<u> </u>		ļ							
	<u> </u>					}				
	<u> </u>		ļ							
	ļ		ļ	 						
		-	-	<u> </u>		1				
	 	ļ								
			<u> </u>							
	ļ	ļ	<u> </u>							
	-	ļ	ļ	 	-					
		 	-	<u> </u>						
	-	<u> </u>	<u> </u>	<u> </u>	1					
	 			<u> </u>	-					
	 			<u> </u>	-					
	 		-	 						
	 			<u> </u>	1					
	+	┼──	<u> </u>		1					
	-	 		<u> </u>	1					
	<u> </u>	 	-	 						
		 	<u> </u>	<u> </u>	1					
	 	 	<u> </u>		1					
	 	 	†	1	1	-				
	1			1	1					
	1	1	1	1						
	1	1	1		1					
	1			1	1					
	1	1	1			1				
	1	1			1					
	1			1	1					
	1	T	1		1					
	1	1	1							
	1	1			1					
	1	1	1		1	-				
	1	1	1	ĺ	1	i				
	1	1	1						-	
STAND	ARD PENI	ETRATIO	N		SUMMARY: Depth and elevation noted at time					
		SPLIT SPO			borehole was drilled					
1		GER CUT								

	410 CED14	cre			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 7
Contractor:	SJB SERVI				DIGDING	
Oriller:	GEORGE H				PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3
nspector:					PROJECT NUMBER 726673.41	Location: Cherry Farm/ RiverRoad
ig Type:	CME 75-85	IRAC			PROJECT HOMELY	
fethod:	VARIED				Weather Partly Sunny, 45 degrees	
		opernita	TTONE		Treatile	1
ROUNDWA	TER	OBSERVA	IIONS		Date/Time Start 10/23/96, 0854 hrs.	
Date	-				Date Time Start	,
rom	┪				Date/Time Finish 10/24/96 1700 hrs	
otw					FIELD IDENTIFICATION OF MATERIAL	WELL DIAGRAM
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	
Reading	I.D.	Depth	Recovery			
	-					
						1
						0.71
						0.7' riser cut to
						fit in vault
		0				570.10' gs elev.
				5		
	SS-1	1	12	12	Black medium to fine Sand, trace (-) Silt, Slag, moist	
				15		
		2		15		
				50/0		
	SS-2	3	0		Probably Slag	
		4				5'
				5		
	SS-3	5	16	4	Black Slag for 8", then Black Gray fine Sand and Silt, trace (+)	
				2	roots, top of marsh deposit, reworked, wet	·
		6		2		
			<u> </u>	3		
	SS-4	7	6	4	Brown, Gray medium to fine Sand, trace (+) Silt, trace roots,	Cement / Bentonit
	35-4		╁╌	2	wet	Grout
		8	 	3	1""	
		l °	 	1		
	SS-5	9	16	1	Gray fine Sand and Silt, trace (+) roots, marsh deposit	8" ID, Sch 10, 304
	32-3	1 9	10	3	Oray time band and bird trace (*) room, materi deposit	Stainless Steel Well
		10	<u> </u>	4		Riser
	_	10				
		1,,	-	5	Same as 8' to 10'	11.0
	SS-6	11	6	+	Same as 0 to 10	
		 	-	3	1	
ļ		12	 	4	-	
		 	 	2	Governation to Sing Sand Little() Sile trace () roots wat	Bentonite
	SS-7	13	14	1	Gray medium to fine Sand, little(-) Silt, trace (-) roots, wet,	Demonite
			<u> </u>	3	dilatent	
		14	<u> </u>	5	4	
		 	 	2	1	14.9
	SS-8	15	16	1	Gray medium to fine Sand, little Silt, wet, dilatent	
		<u> </u>		1	-	Morie 00 Sand
		16	<u> </u>	1	-	+
				4	_	
	SS-9	17	24	5	Same as 14' to 16'	17'
STAND	OARD PENI	ETRATIC	N		SUMMARY: Depth and elevation noted at time	
	SS = 3	SPLIT SP	OON		borehole was drilled	
	A ATT	GER CUT	TINGS			

	arn centu	are			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO.	RW - 7		
Contractor:	SJB SERVI				DAIDEING RECORD	1			
Driller:	ART KOSK				PROJECT NAME Cherry Farm/River Road	Sheet 2	of 3		
Inspector:	GEORGE H		t .			Location:	01 3		
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location.			
Method:	VARIED				D. J. C. and J. Lance				
					Weather Partly Sunny, 45 degrees	-			
GROUNDWA'	TER	OBSERVA	TIONS						
Date					Date/Time Start 10/23/96, 0854 hrs.	-			
From '					,		,		
DTW					Date/Time Finish 10/24/96 1700 hrs	ļ			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CO	NSTRUCTION		
Reading	I.D.	Depth	Recovery						
				5					
		18		8					
				6					
	SS-10	19	24	3	Gray, fine Sand, trace (+) Silt, wet, dilatent		18.9'		
				6			Morie 0 Sand		
		20		5					
			T	3]		8* ID, Sch 10, 304		
	SS-11	21	10	4	Gray, fine Sand, trace (+) Silt, trace(-) very fine Gravel, wet,		Stainless Steel Well		
				8	dilatent		Screen, 0.010" Slots		
	 	22		11	1				
	1			15	1		/		
	SS-12	23	24	12	Gray, medium to fine Sand, trace (-) Silt, trace (+) very fine				
	00-12			11	Gravel, wet		=		
	-	24		8	Glatol, not				
	-	24		8					
	SS-13	25	12	8	Gray, medium to fine Sand, little Silt, trace (-) very fine Gravel				
	29-13	23	12	5	wet, dilatent				
		20			wet, unatent		Morie 0 Sand		
		26		3	-{				
ļ	 		 	6	Di i - 1 C - 5 - 0 - 1 - 1 Cile 4 Heter	3.3			
	SS-14	27	6	5	Black and Gray fine Sand and Silt, wet, dilatent				
<u></u>		ļ	 	6	-				
		28	 	10		5244271110			
			ļ	5					
	SS-15	29	6	4	Same as 26' to 28' with some Silt stringers		8" ID, Sch 10, 304		
			ļ	7	_		Stainless Steel Well		
		30	ļ	10	_		Screen, 0.010" Slots		
			ļ	5	_				
	SS-16	31	12	7	Black and Gray medium to fine Sand, some Silt, trace (+) very		1		
				6	fine Gravel, wet				
		32	<u> </u>	8			Morie 0 Sand		
				5					
	SS-17	33	16	3	Same as 30' to 32'				
				4					
		34		4			33.9'		
				3					
	SS-18	35	6	4	Dark gray medium to fine Sand, some Silt, trace(-) very fine				
				5	Gravel to 35' then Tan Silty Clay, wet				
		36		7					
				1			8" ID, Sch 10, 304		
 	SS-19	37	6	3	Gray Tan Silt and Silty Clay, wet		Stainless Steel Well		
	 	<u> </u>	T	2	1	1 +	Riser/Sump		
	1	38	†	3	1		•		
	1	1	1	5	1				
-		<u> </u>	<u> </u>						
					Double and allowed an add at time				
STAND.	ARD PENE				SUMMARY: Depth and elevation noted at time				
		SPLIT SPO			borehole was drilled				
<u> </u>	A = AUC	GER CUT	HNGS						

				***************************************	PARSONS ENGINEERING SCIENCE	
Centractor:	SJB SERV	ICES			DRILLING RECORD	BORING NO. RW - 7
Driller:	ART KOSI					
Inspector:		IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3
	CME 75-85				PROJECT NUMBER 726673.41	Location:
Rig Type:	VARIED	Tiere			***************************************	
Method:	VARGED				Weather Partly Sunny, 45 degrees	
CDOUBIDITAT	ren	ODCEDVA	TIONS			
GROUNDWAT	EK	OBSERVA	IIONS		Date/Time Start 10/23/96, 0854 hrs.	
Date	<u> </u>	 	 		pater fine state 1023/20, 0034 inc.	-
From	 		 		Date/Time Finish 10/24/96 1700 hrs	
DTW					FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery		The City of 20 21d and Court Chale	38.9'
	SS-20	39	12	4	Tan gray Silt to 39.2' then Green Shale,	
	ļ		<u> </u>	50/.2	Top of rock at 39.2'	39.2
	<u> </u>	40	 			Morie 0 Sand
				<u> </u>		Morie o Sand
	<u> </u>	ļ	 			1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
			<u> </u>	<u> </u>		8" ID, Sch 10, 304
	 				-	Stainless Steel Well
	ļ					Riser/Sump
		ļ	<u> </u>		-	
	1	<u> </u>	ļ		<u>{</u>	
	ļ	<u> </u>	ļ		-	
	ļ	ļ	<u> </u>	ļ	_	
					4	
	ļ	ļ			-	
		ļ		<u> </u>		
	ļ	<u> </u>		ļ		
			<u> </u>			
		<u> </u>		<u> </u>	-	
	ļ	ļ	<u> </u>	ļ	4	
	ļ	ļ			4	
					4	
	ļ		<u> </u>		_	
	ļ	ļ	<u> </u>		4	
	ļ				4	
<u> </u>			<u> </u>			
					4	
		<u> </u>				
				ļ	4	
					4	
	1		<u> </u>		4	
			 		4	
		ļ		<u> </u>	4	
		_		<u> </u>	4	
						
			<u> </u>	<u> </u>	_	
			<u> </u>		_	
	_				_	
					_	
					_	
STAND	ARD PEN	ETRATIC	ON		SUMMARY: Depth and elevation noted at time	
	SS =	SPLIT SP	OON		borehole was drilled	
1	A A1	GER CIT	TINGS			

					PARSONS ENGINEERING SCIENCE	DIV 9			
Contractor:	SJB SERV	CES			DRILLING RECORD	BORING NO. RW - 8			
Driller:	ART KOSK	E				gran a same			
aspector:	GEORGE H	IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3			
ig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location: Cherry Farm			
fethod:	VARIED								
					Weather Overcast, 60 degrees				
ROUNDW	ATER	OBSERVA	TIONS		10/1/05 15001				
)ate		•			Date/Time Start 10/1/96, 1628 hrs.	>			
rom					Date/Time Finish 10/4/96 1025 hrs				
otw					FIELD IDENTIFICATION OF MATERIAL	WELL DIAGRAM			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	W EDE DIAGRAM			
Reading	I.D.	Depth	Recovery						
	_		<u> </u>						
	_		<u> </u>			5,8' riser cut			
						fit in vaul			
		0	<u> </u>			582.79' gs elev.			
	_	U		7					
	SS-1	1	20	17	Black , Brown, Gray, wood, slag and Sand, moist				
	33-1	1	20	8	black, blown, Gray, wood, stag and band, most				
		2		7					
	_			17					
	SS-2	3	12	10	Gray, Black, Slag, some Sand, moist				
	33-2	3	12	50	Gray, Diack, Blag, some band, moise				
		4	<u> </u>	50/.2		5'			
				50/0					
	SS-3	5	0	30.0	No Recovery				
	33-3		├	 	1.0 1.050 1.057				
		6	-						
	_		 	50/.5					
	SS-4	7	6	1	Slag and Brick	Cement / Bento			
	00 1	<u> </u>	 			Grout			
		8							
		<u> </u>		50/.4	1				
	SS-5	9	3	ļ	Slag, moist				
		<u> </u>							
		10			1				
				50	1				
	SS-6	11	12	50	Gray, Brown, Black, Green Slag, wet	8" ID, Sch 10, 30			
				50/0	1	Stainless Steel We			
		12				Riser			
				29					
	SS-7	13	12	50	Gray, Brown, Black, Green Slag, wet				
				50/0					
		14							
				45	_				
	SS-8	15	10	50/.4	Gray and Tan Slag, wet				
		16							
				34					
	SS-9	17	12	35	Gray Slag, wet				
						-			
STAN	DARD PENI	ETRATIO	N		SUMMARY: Depth and elevation noted at time				
		SPLIT SP			borehole was drilled				
	A = AU	GER CUT	TINGS						

					PARSONS ENGINEERING SCIENCE	DW 9		
Centractor:	SJB SERVICES				DRILLING RECORD	BORING NO. RW - 8		
Driller:	ART KOSKE				Cham Form/Bivor Bond	Sheet 2 of 3		
Inspector:	GEORGE H		E		PROJECT NAME Cherry Farm/River Road PROJECT NUMBER 726673.41	Location:		
Rig Type:	CME 75-85 TRAC				PROJECT NUMBER 726673.41	Location		
Method:	VARIED				Weather Overcast, 60 degrees			
CDOLDIDIVA:	TED	OBSERVA	TIONS		Weather Overess, or degrees			
GROUNDWA Date	TEK T	OBSERVA	TIONS		Date/Time Start 10/1/96, 1628 hrs.			
From	1		>		>	,		
DTW					Date/Time Finish 10/4/96 1025 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	1.10.	Depth	Recovery					
				50/.4				
		18						
				14		Cement /Bentonite		
	SS-10	19	15	18	Gray Slag, wet to 19', then Black Silty Sand and Clay, trace roots	Grout		
				4	to 20'			
		20	<u> </u>	3		8" ID, Sch 10, 304		
	00.11		 , _	2	Dark Gray fine Sand and Silt, trace (+) roots, wet, trace (-)	Stainless Steel Well		
	SS-11	21	12	1		Riser		
	+	22	<u> </u>	1	Clay			
		22	 	2				
	SS-12	23	24	1	Gray, Brown fine Sand and Silt, wet, trace (+) roots			
	33-12	20		2	, 51.5), 2.10 Ha and 2.112 112 113, 113, 114			
	 	24		2				
				1				
	SS-13	25	20	2	Gray fine Sand, some Silt, trace (+) roots, wet	25'		
				1				
		26		4		Bentonite		
				1				
	SS-14	27	18	1	Gray fine Sand, some Silt, wet, dilatent			
				1				
		28		1				
				2				
	SS-15	29	24	1	Gray fine Sand, some (-) Silt, trace (-) roots, wet, dilatent	29.37'		
	-			2	-	27.51		
		30	 	3	·	Morie 00 Sand		
	SS-16	31	24	2 2	Gray fine Sand, some (-) Silt, wet, dilatent	4		
	22-10	31	- 24	5	Gray Time Daties, Bonie () Ditty West difficult	31.37		
		32	1	5				
	-	 	1	2	1			
	SS-17	33	24	2	Same as 30' to 32'			
	1			2]	33.37		
		34		1		Morie 0 Sand		
				8	_			
	SS-18	35	20	10	Gray fine Sand, little (+) Silt, trace (-) very fine Gravel, wet,			
		ļ	<u> </u>	12	dilatent			
		36		13	1			
		<u> </u>		7	4	8" ID, Sch 10, 304		
	SS-19	37	24	9	Same as 34' to 36'	Stainless Steel Well		
		 		1 7		Screen, 0.010" Slots		
<u> </u>		38	-	11	-			
		<u></u>		2				
STAND	ARD PENE	TRATIO	on .		SUMMARY: Depth and elevation noted at time			
JIMIND		SPLIT SP			borehole was drilled			
		GER CUT						

PARSONS ENGINEERING SCIENCE RW - 8 BORING NO. DRILLING RECORD SJB SERVICES Driller: ART KOSKE PROJECT NAME Cherry Farm/River Road GEORGE HERMANCE 726673.41 Location: PROJECT NUMBER CME 75-85 TRAC Rig Type: Method: Overcast, 60 degrees Weather GROUNDWATER OBSERVATIONS Date/Time Start 10/1/96, 1628 hrs. 10/4/96 1025 hrs Date/Time Finish WELL CONSTRUCTION FIELD IDENTIFICATION OF MATERIAL SPT Inches Gray fine Sand, little Silt, trace (+) Clay, trace (-) very fine 39 12 SS-20 8" ID, Sch 10, 304 Gravel, wet, dilatent Stainless Steel Well 40 4 Screen, 0.010" Slots 3 SS-21 41 4 Same as 38' to 40' 2 5 42 Morie 0 Sand 7 Gray medium to fine SAND, trace (+) Silt, wet SS-22 43 8 43.37 10 11 44 8" ID, Sch 10, 304 4 Stainless Steel Well Tan Clayey Silt with gray fine Sand layers, wet SS-23 45 6 Riser / Sump 2 2 46 2 Tan Silty Clay, trace (-) fine Sand in layers, wet, soft 47 12 1 Morie 0 Sand 3 1 48 48.37' Depth and elevation noted at time SUMMARY: STANDARD PENETRATION borehole was drilled SS = SPLIT SPOON A = AUGER CUTTINGS

Contractor:	tor: SJB SERVICES				PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 9		
Driller:	ART KOSK							
Inspector:	GEORGE HERMANCE				PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3		
					PROJECT NUMBER 726673.41	Location: River Road		
Rig Type: Method:	CME 75-85 TRAC VARIED							
Mediod.	VAIGLE				Weather Partly Cloudy, 40 degrees			
GROUNDWA	TED	OBSERVA	TIONS					
Date	I I	ODBERTA	110.1.5		Date/Time Start 10/4/96, 1527 hrs.			
-	+				•	,		
From	+				Date/Time Finish 10/9/96 1715 hrs			
DTW				corr.	FIELD IDENTIFICATION OF MATERIAL	WELL DIAGRAM		
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL			
Reading	I.D.	Depth	Recovery					
<u> </u>	-							
	_							
						0.7' riser cut to		
						1 1 1		
						fit in vault		
		0				582.82' gs elev.		
				6				
	SS-1	1	6	9	Black fine Sand, Silt, Slag, dry fill			
				11		1 1		
		2		6				
				5				
	SS-2	3	6	5	Black and Red fine Sand, Slag, Gravel, dry fill			
				5				
		4		11		5'		
		· ·		6				
	SS-3	5	12	10	Red and Tan brick, Slag, fill, moist			
	1 35-3		 -	6	,			
	-	6	 	6				
-		-	 	8				
<u> </u>	00.4	-	12	12	Blue, white, Black, Tan, Slag, Sand, moist fill	Cement / Bentonite		
	SS-4	7	12		Blue, Willie, Black, Tall, Slag, Salle, Holse III	Grout		
			<u> </u>	10				
	_	8	 	7				
		 	-	4	Die de en J Diede Class maries			
	SS-5	9	8	6	Black and Pink, Slag, moist			
				9				
		10	<u> </u>	7				
		<u> </u>	<u> </u>	4	D 1 91 11-1 92 19 19 1	07 10 5-4 40 304		
	SS-6	11	12	4	Broken Slag, black Silt and Sand, moist	8" ID, Sch 10, 304		
		<u> </u>	<u> </u>	4	-	Stainless Steel Well		
		12	ļ	4	1	Riser		
		<u> </u>	ļ	8	1			
	SS-7	13	14	4	Black and Red Broken Slag, Sand, some Silt, wet at 13'			
				3]			
		14		50/.4				
				1]			
	SS-8	15	6	4	Black Slag, wet			
				8				
		16		6]			
	-	1	1	4	1			
	SS-9	17	12	3	Black Slag, wet to 17'. Then Black fine Sand and Silt, wet,			
	1 00-7		<u> </u>	<u> </u>	1 - 0			
					SUMMARY: Depth and elevation noted at time			
STAND	DARD PENI				SUMMARY: Depth and elevation noted at time borehole was drilled			
1		SPLIT SP			DOIGHOIC WAS UTHICU			
L	A = AU	GER CUT	TINGS					

	SJB SERVI	CEC			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 9
ontractor:						
riller:	GEORGE H				PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3
spector.			<u> </u>		PROJECT NUMBER 726673.41	Location:
g Type:	VARIED	IRAC			TROSECT NOMBER	
ethod:	VARGED				Weather Partly Cloudy, 40 degrees	
ROUNDWA	reo .	OBSERVA	ZIONS			
ate		ODOUR			Date/Time Start 10/4/96, 1527 hrs.	
rom	1				>	
TW					Date/Time Finish 10/9/96 1715 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	I.D.	Depth	Recovery	511		
Resume	1.25.	Берга		2	roots, 'Top of Marsh Deposit at 17'	
	\vdash	18		2	,	
		10		18		Cement /Bentonite
	SS-10	19	0		No Recovery	Grout
	33-10	17	<u> </u>	50/0	110 10001019	
	1	20		30/0		
		20	 	1		8" ID, Sch 10, 304
	SS-11	21	18	1	Gray fine Sand, little Silt, trace (+) roots, wet, dilatent	Stainless Steel Wel
	23-11		10	2		Riser
	1	22	 	2	†	
	1	44		1	1	
	SS-12	23	18	2	Gray fine Sand, little Silt, trace (+) roots, wet, dilatent	
	33-12	23	10	2	oray fine band, fittle birg trace (*) room, weg enterin	
	-	24	-	2		24.0
· · · · · · · · · · · · · · · · · · ·	-	24	 	2		
	SS-13	25	12	3	Gray fine Sand, little Silt, trace (-) roots, wet, dilatent	
	33-13	23	12	5	Totaly fine band, fine one, nase () food, well and the	
		26		8		Bentonite
	+	20	 	8	-	
	SS-14	27	20	14	Gray fine Sand, little (-) Silt, wet, dilatent	
	33-14	21	1-20	13	Olay fine band, finds () bird, wed, distribution	
	+	28	 	13		
		20	 	5	i	
	SS-15	29	16	8	Gray fine Sand, trace (+) Silt, wet, dilatent	28.9
	33-13		+	9	10.5,	
	_	30	 	10	1	
		- 30	╁	5		Morie 00 Sand
	SS-16	31	15	8	Same as 28' to 30'	30.9
	35-10		1	10		
		32	1	13	1	
·	+		1	5	1	
	SS-17	33	22	9	Gray medium to fine Sand, trace (-) Silt, wet, dilatent	32.9
	1	<u> </u>	1 	12	1	
		34	1	18	1	Morie 0 Sand
	1		1	13	1	
	SS-18	35	18	12	Gray medium to fine Sand, trace (-) Silt, trace (-) very fine	
	1	T	1	11	Gravel, wet, dilatent	
	1	36	1	13	1	
		†		15	1	8" ID, Sch 10, 304
	SS-19	37	16	12	Same as 34' to 36'	Stainless Steel We
	T	1		10	1	Screen, 0.010" Slot
		38		14	7	
	1	1		7		
STAND	ARD PENI				SUMMARY: Depth and elevation noted at time	
		SPLIT SP			borehole was drilled	
		GER CUT				

					PARSONS ENGINEERING SCIENCE	DIV 0		
Contractor:	SJB SERVICES				DRILLING RECORD	BORING NO. RW - 9		
Driller:	ART KOSK	E			or a Disabord			
Inspector:	GEORGE HERMANCE CME 75-85 TRAC				PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3 Location:		
Rig Type:					PROJECT NUMBER 726673.41	Location:		
Method:	VARIED				N. d. Party Claudy 40 domos			
					Weather Partly Cloudy, 40 degrees	1		
GROUNDWA	TER	OBSERVA	TIONS		Date/Time Start 10/4/96, 1527 hrs.			
Date	-	`			Date/Time Staft 10/4/90, 1327 ms.	┪、		
From					Date/Time Finish 10/9/96 1715 hrs			
DTW	-		Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Photovac	Sample LD.	Sample Depth	Recovery	3F1	The beautiful to the second of	1		
Reading	SS-20	39	15	7	Gray medium to fine Sand, little (-) silt, trace(-) very fine			
	35-20		1.5	6	Gravel, wet, dilatent	8" ID, Sch 10, 304		
		40		7		Stainless Steel Well		
·····	1			5		Screen, 0.010" Slots		
	SS-21	41	20	7	Gray medium to fine Sand, trace (+) very fine Gravel, trace (-)			
				5	Silt, wet			
	1	42		11				
				6		Morie 0 Sand		
	SS-22	43	24	10	Same as 40' to 42'	42.9'		
				7				
		44		8				
				6		8" ID, Sch 10, 304		
	SS-23	45	24	4	Gray fine Sand and Silt, trace Clay, wet	Stainless Steel Well		
			ļ	3	1	Riser / Sump		
		46	<u> </u>	4	-			
				2				
	SS-24	47	12	3	Gray medium to fine Sand, layered with Tan Silty Clay, wet	Morie 0 Sand		
			 	1	4	47.9'		
		48	ļ	2	1 1			
			-	 	-			
		 	 	 	-			
		ļ	<u> </u>	<u> </u>	4			
	-	 	 	<u> </u>	-			
				1	†			
		 		 	1			
				 	-			
		 	 	1	1			
		<u> </u>	1					
					-			
					1			
					1			
]			
					_			
					_	Value		
				<u> </u>	_			
					4			
	<u> </u>	<u> </u>		1	4			
		ļ	1	 	4			
				 	4			
		1	_	ļ	4			
				<u> </u>				
STANI	DARD PEN				SUMMARY: Depth and elevation noted at time			
		SPLIT SP			borehole was drilled			
	A = AU	GER CUT	TINGS					

	ntractor: SJB SERVICES				PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 10		
Contractor: Oriller:	ART KOSK							
aspector:					PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3		
ig Type:	CME 75-85 TRAC				PROJECT NUMBER 726673.41	Location: River Road		
ethod:	VARIED							
					Weather Clear, Cold, Calm, 40 degrees			
ROUNDWA	ATER	OBSERVA	TIONS					
ate			3		Date/Time Start 10/15/96, 0800 hrs.			
rom								
rw	_				Date/Time Finish 10/18/96 1130 hrs	WELL DIAGRAM		
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL DIAGRAM		
Reading	1.D.	Depth	Recovery					
	-							
								
						3.7' riser cut to		
						fit in vault		
		0				582.80' gs elev.		
				5				
	SS-1	1	2	10	Fill, soil, rock chips, coarse ground, dry			
				11				
		2		8	•			
				20				
	SS-2	3	4	50/0	Fill as above, soil, gravel, rock debris, dry			
				<u> </u>		5'		
		4		3				
	SS-3	5	6	3	light to dark gray, fine to medium Sand, little gravel, angular			
	33-3		-	6	dry			
		6		6				
				11				
	SS-4	7	18	27	6 to 6.5' as above	Cement / Bentoni		
W MMSAIR				40	6.5' to 8' light gray salt and pepper fine Sand, medium Gravel	Grout		
	,	8		35	angular, lime like odor, loose, damp			
				50/.5				
	SS-5	9	2		Light Gray, Pink, Green Fill, fine to medium Sand, fill, rock	*		
			ļ	<u> </u>	chips, lime odor, damp			
		10		<u> </u>				
		-	<u> </u>	40	Light gray gravel and Sand, as above	8" ID, Sch 10, 304		
	SS-6	11	12	50/.2	Light gray gravet and ballet, as above	Stainless Steel Well		
		12		 	1	Riser		
		1		10				
	SS-7	13	4	50/.5	Strong alkali odor, gray fill as above			
]	4		
		14						
				50/.4				
	SS-8	15	4		Light gray salt and pepper loose Sand and Gravel, damp,			
			<u> </u>	<u> </u>	alkali odor, damp	Cement / Benton		
		16	ļ	ļ	4	Grout		
		 	 	40	line Cand and the control and the			
	SS-9	17	12	50/.3	light gray fine to medium Sand, medium gravel, angular			
					P. d. and dame!			
STAND	DARD PENE	TRATIO SPLIT SPO			SUMMARY: Depth and elevation noted at time borehole was drilled			

	SJB SERVI	CES			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 10
ontractor: Friller:	ART KOSKE					
	GEORGE H				PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3
ispector:	CME 75-85				PROJECT NUMBER 726673.41	Location:
ig Type: lethod:	VARIED	Tione				
etnou:	VARIED				Weather Clear, Cold, Calm, 40 degrees	
ROUNDWA	TED (OBSERVA	ZNOTT			7
ate	T I	JUSTICAL	1		Date/Time Start 10/15/96, 0800 hrs.	
rom				,	•	7 ,
TW					Date/Time Finish 10/18/96 1130 hrs	
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION
Reading	LD.	Depth	Recovery			
Resumg	1 125	Depta			trace to little Silt, wet at 16.5'	17.5'
		18			,	
				1		
	SS-10	19	20	2	18' to 18.5' as above, 18.5' to 20' through black fine Sand,	
	1 22 10			2	trace dark brown, gray, black, fine Sand and Silt, organic	Bentonite
	1	20		1	deposits	
				4	•	8" ID, Sch 10, 304
	SS-11	21	15	2	Black fine Sand and Silt, trace (-) Clay, trace (+) roots, wet	Stainless Steel Well
				2		Riser
	1	22		1		
				3		22.5'
	SS-12	23	18	5	Black fine Sand and Silt, trace (-) Clay, wet	
				4		
		24		6		Morie 00 Sand
				2		24.5'
	SS-13	25	15	1	Black fine Sand and Silt,trace (-) Clay, wet and dilatent	
				3		
		26		2		Morie 0 Sand
				3		26.5'
	SS-14	27	18	2	Black fine Sand and Silt to 26.5' then Gray fine Sand, little Silt	
				6	wet, dilatent	
		28		7		
			<u> </u>	2		
	SS-15	29	14	5	Gray fine Sand, little Silt, wet, dilatent, trace (-) roots in layers	8" ID, Sch 10, 304
				5		Stainless Steel We
		30		8		Screen, 0.010" Slot
				5		
	SS-16	31	10	7	Gray medium to fine Sand, little (-) Silt, wet, dilatent	<u> </u>
		<u> </u>	<u> </u>	9	-	
		32	 	12	-	
		<u> </u>	ļ	5	1	
	SS-17	33	18	7	Same as 30' to 32'	
		<u> </u>	-	9	-	Morie 0 Sand
		34	<u> </u>	12	4	8" ID, Sch 10, 304
	 	 	 	4	Commendation to Fine CANID trace (IN City and diletent	Stainless Steel Well
	SS-18	35	12	3	Gray medium to fine SAND, trace (+) Silt, wet, dilatent,	Screen, 0.010" Slots
		1	 	6	-	Scient, 0.010 Sios
		36	 	4	-	36.5°
			+	1 7	Grant modium to fine SANID little (±) Silt in some levers wet	30.3
	SS-19	37	14	7	Gray medium to fine SAND, little (+) Silt in some layers, wet,	
		 	 	8	dilatent	
		38	 	5	4	
		<u> </u>	<u> </u>	6		
					Double and elevation metad at times	
STAND	ARD PENE				SUMMARY: Depth and elevation noted at time borehole was drilled	
	22 = 22	SPLIT SP	JUN		ootenoie was diffied	

Contractor:	SJB SERVI	CES			PARSONS ENGINEERING SCIENCE DRILLING RECORD	BORING NO. RW - 10		
Driller:	ART KOSK							
Inspector:	GEORGE HERMANCE CME 75-85 TRAC				PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3		
Rig Type:					PROJECT NUMBER 726673.41	Location:		
Method:	VARIED							
					Weather Clear, Cold, Calm, 40 degrees			
GROUNDWA	TER	OBSERVA	TIONS					
Date					Date/Time Start 10/15/96, 0800 hrs.			
From'					>	,		
DTW					Date/Time Finish 10/18/96 1130 hrs			
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	LD.	Depth	Recovery					
	SS-20	39	12	4	Gray fine Sand with layers of Silt, trace (+) Clay, wet, dilatent			
				2		8" ID, Sch 10, 304		
		40		3		Stainless Steel Well		
				3		Riser / Sump		
	SS-21	41	12	2	Gray fine Sand Layered with Tan Silty Clay, wet, dilatent			
				1		41.5'		
		42		3	_	1		
				2]	Morie 0 Sand		
	SS-22	43	15	3		Borehole Cave-In		
				1	Same as 40' to 42'	1		
		44	ļ	3				
			ļ	8				
	SS-23	45	10	5	Gray medium to fine SAND layered with Tan Silty Clay, wet			
			ļ	6				
		46		4	-			
				5	<u> </u>			
	SS-24	47	18	3	Same as 44' to 46'			
		<u> </u>	ļ	5	-			
		48	 	2	-			
		ļ			-			
		ļ	-	-	-			
	_				1			
 		 			1			
		 			1			
					1			
		†			7			
					1			
					1			
					7			
					_			
		ļ <u> </u>		<u> </u>	_			
					_			
					4			
		<u> </u>			_			
	_				4			
			 		-			
				+	4			
		<u> </u>						
STANE	DARD PEN				SUMMARY: Depth and elevation noted at time			
		SPLIT SP			borehole was drilled			
	A ≖ AU	GER CUT	TINGS					

	on septimen				PARSONS ENGINEERING SCIENCE	BORING NO. RW - 11			
Contractor:	SJB SERV				DRILLING RECORD	BORNGNO. KW-11			
Oriller.	ART KOSK		-		PROJECT NAME Cherry Farm/River Road	Sheet 1 of 3			
aspector:	GEORGE I CME 75-85		<u> </u>		PROJECT NUMBER 726673.41	Location: River R			
ig Type: fethod:	VARIED	IKAC			AKOBO NOMBA				
ethou.	VARGED				Weather Partly Cloudy, 40 degrees				
ROUNDWA	ATER	OBSERVA	TIONS						
ate	01/0	0/00			Date/Time Start 10/10/96, 1135 hrs.				
rom	,				,				
TW					Date/Time Finish 10/14/96 1600 hrs				
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WEI	LL DIAGRAM		
Reading	I.D.	Depth	Recovery						
						1 1 1	3.8' riser cut to		
							fit in vault		
			ļ				581.90' gs elev.		
		0		1		-	331.70 g3 0101.		
	SS-1	1	12	1	Brown Clayey Silt, trace fine Gavel, moist, cover soil				
	33-1	1	12	2	brown Clayby Birt, trace time daver, moist, cover con				
		2		3					
				5					
	SS-2	3	20	6	Brown, Black Silty Clay, Black fine Sand, Slag, fill				
				9	moist				
		4		25			5'		
				25					
	SS-3	5	6	50/.2	Bricks, Fill		:		
			ļ						
		6	<u> </u>						
			ļ	14			Cement / Bentonit		
	SS-4	7	16	24	Black, White, Blue, Gray, Slag and fine Sand, moist		Grout		
		<u> </u>		15			Groun		
		8		19					
	SS-5	9	16	13	Brown fine Sand, gray Slag, cement slag, damp				
	33-3	-	10	12	Drown into Sand, gray Stag, Semon Stag, amile	*			
		10	<u> </u>	10	1				
				6	1				
	SS-6	11	14	5	Brown fine Sand, gray Slag, cement slag, damp		8" ID, Sch 10, 304		
				13]		Stainless Steel Well		
		12		7			Riser		
				8	_				
	SS-7	13	2	50/.1	Brown fine Sand and Slag, wet, spoon is wet at 14'				
		<u> </u>	<u> </u>	<u> </u>	_				
		14		 	1				
		 	 	19	G SI				
	SS-8	15	8	50/.4	Gray Slag, wet		Cement / Bentoni		
		12	 	 	-		Grout		
		16	 	9	1				
	SS-9	17	6		Slag, wet				
	1 23-3	1 1/	1 -	1 30/.4	James 1744				
CT 4 N'	n i DD DESI	יידי מידי	N.		SUMMARY: Depth and elevation noted at time				
SIANI	DARD PENI	SPLIT SP			borehole was drilled				
		GER CUT				***************************************			

		***************************************			PARSONS ENGINEERING SCIENCE			
Contractor:	SJB SERVICES				DRILLING RECORD	BORING NO. RW - 11		
Driller:	ART KOSK	Œ						
Inspector.	GEORGE H	IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 2 of 3		
Rig Type:	CME 75-85 TRAC				PROJECT NUMBER 726673.41	Location:		
Method:	VARIED							
					Weather Partly Cloudy, 40 degrees	-		
GROUNDWA'	TER	OBSERVA	TIONS					
Date	ļ	,			Date/Time Start 10/10/96, 1135 hrs.	-		
From	-				Day (Firm Finish 10/14/06 1600 hm	'		
DTW					Date/Time Finish 10/14/96 1600 hrs FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION		
Reading	I.D.	Depth	Recovery			17.5'		
	+	18						
		10		4				
	SS-10	19	24	3	Slag for 0.5' then Black Gray fine Sand and Silt, trace (+) roots,			
				2	trace (-) Clay. wet	Bentonite		
		20		2				
				3		8" ID, Sch 10, 304		
	SS-11	21	0	2	No recovery	Stainless Steel Well		
				3		Riser		
		22	ļ	2	_			
				2				
	SS-12	23	8	3	Dark gray and Black, Sandy Silt, wet, trace (+) roots	22.9'		
	_			4		Morie 00 Sand		
<u></u>	<u> </u>	24	<u> </u>	3	4	Wione of Sand		
	1		12	2	Constructed fine Sand same () Silt wat diletent	25.1'		
	SS-13	25	12	4	Gray laminated fine Sand, some (-) Silt, wet, dilatent			
	-	26		7		Morie 0 Sand		
	-	1 20	<u> </u>	7				
	SS-14	27	18	7	Gray fine Sand, little Silt, wet, dilatent	27'		
				11	1			
		28		13				
				4]			
	SS-15	29	16	5	Gray fine Sand, trace (+) Silt, wet, dilatent	8" ID, Sch 10, 304		
				7		Stainless Steel Well		
		30	<u> </u>	8		Screen, 0.010" Slots		
				7				
	SS-16	31	12	8	Gray fine Sand, trace (+) very fine Gravel, Trace (-) Silt, wet			
	+	32	 	5	-			
	-	1 32	 	5	1			
	SS-17	33	15	6	Gray medium to fine Sand to 33', then Gray fine Sand layered			
	100-17	1	 	7	with light gray clayey silt, wet			
		34	1	10	1	Morie 0 Sand		
			1	2]			
	SS-18	35	12	5	Gray fine Sand layered with light gray clayey silt, wet			
				3				
		36		2	_			
				5		8* ID, Sch 10, 304		
	SS-19	37	18	3	Same as 34' to 36'	Stainless Steel Well		
		 	 	2	-	Screen, 0.010" Slots		
<u></u>		38		2	4			
		<u> </u>	<u> </u>	2		<u> </u>		
					Double and alexander store			
STAND.	ARD PENE				SUMMARY: Depth and elevation noted at time			
		SPLIT SPO			borehole was drilled			
<u> </u>	A = AU	GER CUT	1 II NO 5					

					PARSONS ENGINEERING SCIENCE		
Contractor:	SJB SERV	ICES			DRILLING RECORD	BORING NO. RW - 11	_
Driller:	ART KOSE	Œ					
Inspector:	GEORGE I	IERMANC	E		PROJECT NAME Cherry Farm/River Road	Sheet 3 of 3	_
Rig Type:	CME 75-85	TRAC			PROJECT NUMBER 726673.41	Location:	_
Method:	VARIED						
					Weather Partly Cloudy, 40 degrees	_	
GROUNDWAT	ER	OBSERVA	TIONS				
Date					Date/Time Start 10/10/96, 1135 hrs.	_	
From			,		,	•	
DTW					Date/Time Finish 10/14/96 1600 hrs		-
Photovac	Sample	Sample	Inches	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL CONSTRUCTION	
Reading	I.D.	Depth	Recovery				
	SS-20	39	17	2	Same as 36' to 38'	0.10 0.140	
				2		8" ID, Sch 10, 3	- 1
		40		3		Stainless Steel \	1
		<u></u>		4		Riser / Sump	
	SS-21	41	20	2	Tan, Gray Silty Clay with fine Sand lamina, wet		
	 	10		1		4:	,
	ļ	42	ļ	1		Morie 0 Sand	- 1
	100.00	10	16	1 2	Same as 40' to 42'	World o Sain	.
	SS-22	43	16	<u>3</u> 5	Same as 40' to 42'	1	- 1
	ļ	44		3			
		44		2		:	
	SS-23	45	14	20	Tan, Gray Silty Clay to 45' then Green Shale, TOR at 45'		
	33-23	1 43	14	50/.2	Tan, dray birty clay to 45 their dreen bilate, 10km is		
	 	 		307.2			١
<u> </u>		 	 	-	1		l
	 			<u> </u>	1		
	 		 	<u> </u>			
	 	ļ		<u> </u>			
	+		<u> </u>	 	•		
	<u> </u>		<u> </u>		1		
		 	<u> </u>				
		·			1		İ
	1				1		
			1				l
							l
							[
							ı
		1					
		<u> </u>			4		
			ļ	 	4		
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	 -		
		<u> </u>		<u> </u>	4		
		<u> </u>	1	1	4		
	ļ		<u> </u>	<u> </u>	4		
		<u> </u>	<u> </u>	_	4		
			 	<u> </u>	4		
	1			ļ	4		
		<u></u>		<u> </u>			
STAND	ARD PEN				SUMMARY: Depth and elevation noted at time		
1		SPLIT SP			borehole was drilled		
1	A = A11	GER CUT	TINGS				- 1