Appendix D

Soil Boring Logs & Well Records

BRAUN^{5M}

			t BL-04-04	733			BORING:			S	T-1	
1st A	venu	e and	ng Center I East Lake S innesota	Street			LOCATIO	ON: Se	e atta	ached	sketch.	
RILL	ER:	Scott	McLean	METHOD:	3 1/4" HSA Aut	ohammer	DATE:	6/22	2/04		SCALE:	1" = 4'
Depth feet 0.0	AS' Sym				ption of Materia D2488 or D248			BPF	WL	PID ppm	Tests o	or Notes
0.5	FILL	\bowtie	3" Bituminou	s over 3" Aggr	egate Base.							
2.5	FILL		Silty Clay, wi	ith brick fragm	ents, dark brown	, moist.		V 5		1.1		
	FILL		Poorly Grade moist.	d Sand, fine to	medium grained	l, brown to lig	ht brown, _	X 3		1.1		
5.0								10		0.3		
			END OF BOI				l s				i a	
			REFUSAL A	T 5 FEET.		Ä						
						2	_					
							4					
							~					
							=					
			*				_					
-							-					
							-	4				
							-					
							_					
							_					
							-					
					22		_					
	3											

BRAUN⁵⁶

			t BL-04-0	4733			BORING:			S	Г-1А	
21st A	venu	e and	ing Center d East Lake innesota	Street			LOCATIO	N: Se	e atta	ached	sketch.	
ORILLI	ER:	Scott	McLean	METHOD:	3 1/4" HSA Autoha	ımmer	DATE:	6/22	2/04		SCALE:	1" = 4
Depth feet 0.0	AS7 Sym	27.0	B.W. I.V.	(ASTM	ption of Materials D2488 or D2487)			BPF	WL	PID ppm	Tests	or Notes
	Α		Diffied direc	ny to 7 leet and	then started sampl	ing.	-				-	
7.0	FILL		Poorly Grade fragments, b	ed Sand, fine to a rick, brown-gray	medium grained, w /, moist.	vith concrete		16		0.3		
12.0	SP		DOODLY G									
	31		moist.	Kaded Sand,	fine to medium gr	ained, light	brown,	16		0.0		
22.0							— <u>X</u>	13		0.0	141	
26.0	SP		POORLY GI Sandstone, b	RADED SAND, rown-orange, mo	fine to medium gra	ained, with	_ _ 	45		0.0		
27.5	SP		POORLY GF fragments, br	RADED SAND, rown, moist.	fine to medium gra	ained, with	Granite X	100		0.3		
-			END OF BO									
							+					

INTERTEC

Braun Project BL-04-04733 BORING: ST-2 Hi-Lake Shopping Center LOCATION: See attached sketch. 21st Avenue and East Lake Street Minneapolis, Minnesota DRILLER: Scott McLean METHOD: 3 1/4" HSA Autohammer DATE: 6/22/04 SCALE: 1'' = 4'Depth feet **ASTM** Description of Materials **BPF** WL PID Tests or Notes 0.0 Symbol (ASTM D2488 or D2487) ppm Drilled directly to 27.5 feet and then started sampling. BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 27.5 100 0.3 SP POORLY GRADED SAND, fine to medium grained, brown, moist. 40 2.2 CL LEAN CLAY with SAND, brown-gray, moist. BL-04-04733 Braun Intertec Corporation ST-2 page 1 of 2

BRAUN

Hi-Lal	ke Sh	oppi	t BL-04-04 ng Center l East Lake S				BORING:				(cont.)	
			innesota									
DRILLE	ER:	Scott	McLean	METHOD:	3 1/4" HSA Autohamme		DATE:	6/22	2/04		SCALE:	1" = 4
Depth feet 32.0	AS7 Sym				otion of Materials D2488 or D2487)			BPF	WL	PID	Tests	or Notes
34.0			LEAN CLAY	with SAND, b	rown-gray, moist. <i>(cont</i>	inued)	IK -				7	
_ :	SC		CLAYEY SA waterbearing.	ND, fine to med	dium grained, brown, w	ret to	-	13		0.8		
39.0	CL		LEAN CLAY	with SAND an	d GRAVEL, orange-br	own, n	noist.	59		1.3		
			END OF BOI				-					
				oorary well in bo	orehole.		-					
				down 33 feet.			-	ŀ				
-0:					e from temporary well.		-					
			Boring was th	en backfilled w	ith bentonite grout.		-					
							=					
							4					
							4					
-							_					
							4					
							4					
							,_					
							7					
							8-7					
							=					
							-					
-,							-					
							-					
							4					
							-					
-04-04733								1				

		ect BL-04-0	4733		ВС	DRING:			S	ST-3	
21st A	venue a	ping Center and East Lake	Street		LC	CATIO	DN: Se	ee att	ached	sketch.	
Minne	apolis,	Minnesota		*							
DRILLE	ER: Sc	ott McLean	METHOD:	3 1/4" HSA Autohamme	r DA	ATE:	6/2	2/04		SCALE:	1'' = 4'
Depth feet 0.0	ASTM Symbo			ption of Materials D2488 or D2487)			BPF	WL	PID ppm	1	or Notes
	FILL	SIlty Sand v		medium grained, with or	ganics, bla	ack,			PPIII		
	- 🔉	moist.				72-					
3.0	8		ii)			-	2		0.3		
	FILL	Silty Sand,	fine to coarse gra	ined, black, moist.							
-	8								0.2		
_							4		0.3		
7.0	8					-					
	FILL	Poorly Grad	led Sand with Sil	t, fine grained, light bro	wn, moist.		7		0.0		
						1					
							7		0.0		
		8					\	i a	0.0		
						-					
		8					14		0.3		
						1					
		8					15		0.7		
		×				_	13		J.,		
		8									
		8				٦					
19.0		<u> </u>								1	
_	SP	POORLY G moist.	RADED SAND,	fine to coarse grained,	ight brown	n,	4		0.0		
						7			0.0		
						1			v		
]					
						.]					
_							8		0.3		
0						1					
							c				
ē							*	10			
E											
_							21		0.7		
31.0	GP.										
	SP										

		BL-04-04'	733		ВО	RING:		S	T-3	(cont.)	
Hi-Lake S 21st Aven Minneapo	ue and	East Lake S	treet		LOG	CATIC	N: Se	e atta	ched	sketch.	ž.
DRILLER:	Scott N	McLean	METHOD:	3 1/4" HSA Autohammer	DA	TE:	6/22	2/04		SCALE:	1'' = 4'
	STM mbol		(ASTM	otion of Materials D2488 or D2487)			BPF	WĻ	PID ppm	Tests	or Notes
-		brown, moist t	ADED SAND, o waterbearing	fine to coarse grained, vg. (continued)	vith Gravel	, - - - -	25		0.7		
40.5		Groundwater of Collected groundwater	orary well in bottom 38.2 feet.				<u>N</u>	4.			
-											

			t BL-04-04'	733			BORING:			S	T-4	
21st A	venue	and	ng Center East Lake S nnesota	treet			LOCATIO	DN: Se	e atta	ched	sketch.	
DRILL	ER: S	cott l	McLean	METHOD:	3 1/4" HSA Autohamr	ner	DATE:	6/23	3/04	-	SCALE:	1" = 4'
Depth feet	ASTN				tion of Materials			BPF	WL	PID	I .	or Notes
0.0	Symb	OI	2" Ditumina		D2488 or D2487)					ppm		
0.5	FILL		SIlty Sand, fin moist.	over 3" Aggrege to medium gr	gate Base. ained, with a trace of	f Gravel,	black,					
_							1	3		0.7		¥
4.5	FILL		Silty Sand, fin	e grained, brow	n, moist.			9		0.3		
7.0	SP-		POORLY GR	ADED SAND v	vith SILT, fine grain	ed, light	brown,	14		0.0		
lon of abt	SM		moist.				1					
explanat								4		0.3		
Descriptive Terminology sheet for explanation of abbreviations) 10.2								6		0.0		
14.5 —	SP		POORLY GRA	ADED SAND,	fine grained, light br	own, mo	ist	7		0.3		
scriptive							=					
19.5							=					
	SP		POORLY GRA trace of Gravel	ADED SAND, 1 , brown, moist.	nedium to coarse gra	ained, wi	ith a	20		0.3		
24.5 24.5 24.5 25.00 2							-					
24.5	Š		No sample reco	overy.				100				
4733,GPJ B							-					
30.5							-					
29.5	SC		CLAYEY SAN	ND, fine to med	ium grained, brown,	moist.		7		1.1		
BL-04-0473	13				Braun Intertee Corp	poration						ST-4 page 1 of 2



			t BL-04-04 ng Center	4/35			BORING:				(cont.)	
21st A	venu	e and	l East Lake innesota	Street			LOCATIO	ON: Se	e atta	ached	sketch.	
DRILLE	ER:	Scott	McLean	METHOD:	3 1/4" HSA Autohar	mmer	DATE:	6/23	3/04		SCALE:	1" = 4"
Depth feet 32.0	AST Sym		CLAVEVS	(ASTM I	ion of Materials 02488 or D2487)			BPF	WL	PID ppm	Tests	or Notes
- 34.5			(continued)	AND, line to med	ium grained, brow	n, moist.	_					
39.5			No sample re	ecovery.			- - - -	100				
- 44.5	CL		LEAN CLA	Y with SAND and	l GRAVEL, gray,	moist.		100	×	0.9		
45.5	SP		POORLY Gl Gravel, orang	RADED SAND, 1 ge -brown, waterb	nedium to coarse gearing.	grained, wi	th _	30		0.9		
			Groundwater Collected gro	porary well in boo down 31.3 feet. oundwater sample	rehole. from temporary v th bentonite grout.							
									ia i			
L-04-04733					Braun Intertec Co							ST-4 page

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		ct BL-04-04	733		BORING:			S	T-5	
21st A	venue an	ing Center d East Lake S	treet		LOCATIO	DN: Se	e atta	ached	sketch.	
Minne	eapolis, M	Iinnesota								
DRILLE	ER: Scot	t McLean	METHOD:	3 1/4" HSA Autohammer	DATE:	6/23	3/04		SCALE:	1" = 4'
Depth feet 0.0	ASTM Symbol		(ASTM	ption of Materials D2488 or D2487)		BPF	WL	PID ppm		or Notes
	SC- SM	Silty Clayey S moist.	Sand, fine to m	edium grained, dark brown-	black,					
- ½				g	-	3		25.3		
-						9		3.7		
-						11		29.7		
9.0	SP- SM	POORLY GR. moist.	ADED SAND	with SILT, fine grained, lig	ht brown,	13		0.9		
-					.]	18		0.7	-	Ä
-					-	16		1.0		
- - 19.0	SP	POORLY CD	ADED GAND						,	
-	SP	moist.	aded Sand,	fine to coarse grained, light	brown,	20		1.8		
24.0	SP	POORLY GRA	ADED SAND,	fine to medium grained, bro	own, moist.					
-				<u> </u>	-	8		1.3		
						18		0.8		
L-04-04733	3			Braun Intertec Corporation	10-				S	T-5 page l of

	-	t BL-04-04'	/33			BORING	:	S	T-5	(cont.)	
		ng Center I East Lake S	treet		Ī	LOCATIO	DN: Se	e atta	ached	sketch.	
Minneap											
DRILLER	: Scott	McLean	METHOD:	3 1/4" HSA Autohammer		DATE:	6/23	3/04		SCALE:	1'' = 4'
Depth feet	ASTM		Descri	otion of Materials			BPF	WL	PID	Tacte	or Notes
	Symbol		(ASTM	D2488 or D2487)			DI I	""	ppm		
-		POORLY GRA	ADED SAND,	fine to medium grained	, brow	n, moist.					
34.0 S	SC ///	CLAYEY SAN	ND, fine to me	dium grained, brown-gra	ay, mo	ist.					
					•	_	18		19.5		
=						9-					
_						-					
39.0						11 12-					
C	CL //	LEAN CLAY,	with Gravel, b	prown-gray, moist.			100		1.3		
or ab							100		1.5		
ation											
xplan											
44.0											
one Ci	LS	SANDY LEAN	N CLAY, with	Gravel, brown-gray, mo	oist.		49		0.3		
ology			3								
						_					
2						_					
39.0 Co	ic //	CLAVEVSAN	II) fine to me	dium grained, gray, wet.							
0.	LS	SANDY LEAN	CLAY, with	Gravel, brown, moist.			59		0.0		
- I		100				-				ж.	
-						-					
-						=					
54.0 SC 55.5	C-	SILTY CLAYI	EY SAND, fine	e to medium grained, bro	own,						
	М	waterbearing.					17		1.3		
		EMD OF BODI				-					
BKAUN.GD		END OF BORI		and als		+					
		Installed tempo Groundwater d	-			4					
74-04				e from temporary well.		-					
			-	ith bentonite grout.		-					
		- orme was allo	Juoniiiiou W	in comonic grout.		7					
A L						7					
BL-04-04733				Braun Intertec Corpora	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						T-5 page 2 of 2

Appendix E

Water Supply Well Logs

MINNESOTA DEPARTMENT OF HEALTH Unique No. 00201086 1991/09/11 **Update Date** WELL AND BORING RECORD County Name Hennepin **Entry Date** 1991/08/24 Minnesota Statutes Chapter 1031 Township Name Township Range Dir Section Subsection Well Depth Date Well Completed **Depth Completed** ft. 700 ft. 1905/00/00 29 24 W 36 CAACDD 700 Well Name C.M. ST. P. AND P. RR CO **Drilling Method** Contact's Name C.M. ST. P. AND P. RR CO Well Hydrofractured? Yes No **Drilling Fluid** From ft. to ft. MINNEAPOLIS MN Use Industrial **Hole Diameter** Casing **Drive Shoe?** Yes N **Casing Diameter** Weight(lbs/ft) GEOLOGICAL MATERIAL **COLOR HARDNESS** FROM TO 0 in. to 20 SOIL AND SURFACE MATE 56 0 in. to 50 ft TRENTON LIMESTONE 56 84 0 in. to 234 ft ST. PETER SANDSTONE 84 250 SHAKOPEE DOLOMITE 250 260 ft. Screen ft. to **NEW RICHMOND SANDSTO** Open Hole From 267 260 Make ONEOTA DOLOMITE Туре 390 267 JORDAN SANDSTONE 390 478 ST. LAWRENCE SANDSTON 478 655 FRANCONIA SANDSTONE 655 700 Static Water Level ft. from Date PUMPING LEVEL (below land surface) hrs. pumping ft. after g.p.m. Well Head Completion Pitless adapter mfr Model Casing Protection 12 in. above grade ☐ At-grade(Environmental Wells and Borings ONLY) Grouting Information Well grouted? **Nearest Known Source of Contamination** direction type Well disinfected upon completion? Yes No Pump Not Installed Date Installed Mfr name Model HP Volts 0 Drop Pipe Length ft. Capacity g.p.m Type Any not in use and not sealed well(s) on property? Yes Was a variance granted from the MDH for this Well? Yes USGS Quad: St Paul West Elevation 845 Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. Aquifer: **MTPL** Alt Id: License Business Name

Name of Driller

Report Copy

MINNESOTA DEPARTMENT OF HEALTH Unique No. 00201087 **Update Date** 1991/09/11 WELL AND BORING RECORD County Name Hennepin **Entry Date** 1991/08/24 Minnesota Statutes Chapter 1031 Township Name Township Range Dir Section Subsection Well Depth Depth Completed **Date Well Completed** 995 ft. 995 1917/00/00 29 W CABACD 24 36 Well Name CM. ST. P AND P. RR CO. **Drilling Method** Contact's Name CM, ST, P AND P, RR CO. **Drilling Fluid** Well Hydrofractured? Yes No 200 From ft. ft. to MINNEAPOLIS MN Use Industrial Casing Drive Shoe? Yes N **Hole Diameter Casing Diameter** Weight(lbs/ft) GEOLOGICAL MATERIAL **COLOR HARDNESS** FROM TO 20 in. to 54 ft SAND AND GRAVEL 16 12 in. to 243 ft HARDPAN AND BOULDERS 55 6 in. to 512 LIMESTONE 55 96 SHALE AND SANDSTONE 96 104 Open Hole From SANDSTONE Screen ft. to ft. 104 210 Make Type SHALE 210 225 SHALE AND SANDSTONE 225 255 **HARDROCK** 255 295 SANDSTONE 295 300 Static Water Level 55 ft. from Land surface Date 1917/00/00 HARDROCK 300 370 PUMPING LEVEL (below land surface) ft. after hrs. pumping g.p.m. SANDSTONE SOFT 370 426 Well Head Completion WHITE SHALE AND SANDS 426 450 Pitless adapter mfr Model COARSE SANDSTONE 450 460 Casing Protection 12 in. above grade SHALE AND SAND 460 500 At-grade(Environmental Wells and Borings ONLY) SHALE 500 645 Grouting Information Well grouted? Yes No SANDSTONE 645 715 SHALE 715 805 SANDSTONE 805 844 SHALE AND SANDSTONE 844 865 SANDSTONE 865 920 **Nearest Known Source of Contamination** ft direction type SANDSTONE RED/Y 920 955 Well disinfected upon completion? Yes No SANDSTONE RED 955 975 Pump Not Installed Date Installed SANDSTONE YELLO 975 985 Mfr name SANDSTONE RED 985 990 Model HP Volts 0 SANDSTONE YELLO 990 995 Drop Pipe Length ft. g.p.m Capacity REMARKS, ELEVATION, SOURCE OF DATA, etc. Type CASING: 020 TO 0054;012 TO 0243;006 TO 0512. Any not in use and not sealed well(s) on property? Was a variance granted from the MDH for this Well?

Yes ☐ No USGS Quad: St Paul West Elevation 845 Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. Aquifer: **MTPL** Alt Id: License Business Name **Report Copy** Name of Driller

Unique No. 00201088	DEPARTMENT OF HEALTH Update Date 1991/09/11
County Name Hennenin	D BORING RECORD a Statutes Chapter 1031 Entry Date 1991/08/24
Township Name Township Range Dir Section Subsection	Well Depth Depth Completed Date Well Completed
29 24 W 36 DCCBAC	427 ft. 427 ft. 1949/01/31
Well Name MPLS MOLINE	Drilling Method
Contact's Name MPLS MOLINE	Drilling Fluid Well Hydrofractured? Yes No
LAKEST & HIAWATHA LM MINNEAPOLIS MN	From ft. to ft.
IVIINIVEAPOLIS IVIN	Use Industrial
	Casing Drive Shoe?
GEOLOGICAL MATERIAL COLOR HARDNESS FROM TO	Casing Diameter Weight(lbs/ft)
DRIFT SAND AND ROCKS 48	16 in. to 51 ft
PLATTEVILLE LIME 48 81	12 in. to 256 ft
ST. PETER SAND 81 248	_
SHAKOPEE LIME 248 365	
JORDAN SAND 365 425	Screen Open Hole From ft. to ft.
ST. LAWRENCE 425 427	Make Type
	Static Water Level ft. from Date
	PUMPING LEVEL (below land surface) ft. after hrs. pumping g.p.m.
	Well Head Completion Pitless adapter mfr Model Casing Protection 12 in. above grade
	At-grade(Environmental Wells and Borings ONLY)
	Grouting Information Well grouted? Yes No
	^
	Nearest Known Source of Contamination
	ft. direction type Well disinfected upon completion? Yes No
	Pump Not Installed Date Installed Mfr name
	Model HP Volts
REMARKS, ELEVATION, SOURCE OF DATA, etc.	Drop Pipe Length ft. Capacity g.p.m
CASING: 016 TO 0051;012 TO 0256.	Туре
	Any not in use and not sealed well(s) on property?
USGS Quad: St Paul West Elevation 840	Was a variance granted from the MDH for this Well? Yes No
Aquifer: MTPL Alt Id:	Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
Report Copy	License Business Name Name of Driller

BRAUN" INTERTEC

		t BL-04-04	733		BORING	:		S	T-5	
21st A		ng Center I East Lake S innesota	Street		LOCATI	ON: Se	ee atta			
DRILLE	ER: Scott	McLean	METHOD:	3 1/4" HSA Autohammer	DATE:	6/2	3/04		SCALE:	1" = 4"
Depth feet 0.0	ASTM Symbol		(ASTM I	tion of Materials D2488 or D2487)		BPF	WL	PID ppm	Tests	or Notes
-	SC- SM	moist.	and, fine to med	dium grained, dark brov	vn-black, -	3		25.3 3.7		
9.0	SP- SM	POORLY GR moist.	ADED SAND W	vith SILT, fine grained,	light brown,	11		0.9		
				,	-	18		1.0		
19.0	SP	POORLY GRAmoist.	ADED SAND, f	ine to coarse grained, li	ght brown,	20		1.8	å	
24.0	SP	POORLY GRA	ADED SAND, fi	ne to medium grained,	brown, moist.	8		1.3		
-				X		18		0.8		

BRAUN"

Hi-Lal 21st A	ke Sl venu	opp e an	et BL-04-04 ing Center d East Lake innesota				BORING				sketch.)
DRILLE	ER:	Scott	McLean	METHOD:	3 1/4" HSA Autoha	ammer	DATE:	6/2	3/04		SCALE:	1" = 4
Depth feet 32.0	AS' Syn	TM ibol	DOODY II O	(ASTM	tion of Materials D2488 or D2487)			BPF	WL	PID		or Notes
34.0			(continued)	RADED SAND,	fine to medium gr	ained, brov	vn, moist.					
=	SC		CLAYEY SA	AND, fine to med	ium grained, brov	wn-gray, me	oist.	18		19.5	14	
39.0	- CY		I Fill CL i I				-					is d
-	CL		LEAN CLAY	(, with Gravel, b	own-gray, moist.			100		1.3		
44.0	CLS		SANDY LEA	N CLAY, with (Gravel, brown-gra	y, moist.						
40.0					n		-\ - - -	49		0.3		
49.0	SC CLS		CLAYEY SA SANDY LEA	ND, fine to med N CLAY, with C	um grained, gray Gravel, brown, mo	, wet. ist.		59		0.0	3	
54.0	SC-		SILTY CLAY	EY SAND, fine	to medium graine	ed, brown						
55.5	SM		waterbearing.			,,	X	17		1.3		
			END OF BOR Installed temp	RING. orary well in bor	ehole.		- 1					
				down 39.7 feet.]					
-					from temporary v				. 3	•		
							-					
4-04733					Braun Intertec C	orporation				1		ST-5 nage 2

			t BL-04-03				BORING	(ST-K	
Hi-La Hiaw	ake Sh atha a	oppi and I	ake Street	ATION edevelopmen	t		LOCATIO	ON: Se	ee attac	hed sketch.	
Minn DRILI			innesota McLean	METHOD:	2 1/48 TICA A +-1 -		DATE		2/0.4	I GOALD	411 41
Depth		30011	Wickean	METHOD:	3 1/4" HSA Autoha	mmer	DATE:	5/1.	2/04	SCALE:	1" = 4'
feet 0.0	AS'	TM nbol			ption of Materials D2488 or D2487)			BPF	WL	Tests or	Notes
1.0	FILL		FILL: 4 inch		us over 7 inches of A	Aggregate	Base.				
_	FILL		FILL: Silty S Sand, dark br	and, fine- to mo	edium-grained, with	a layer of	Clayey				
=			9	,				7			5
- 5							_			2	
 -							_	8			
6.0	SP	***	POORLY GR	ADED SAND.	fine-grained, brown	n, moist. lo	oose to				
= S	5202		medium dens	e.	(Alluvium)	,, 1	-	8			
→ 77				·			+	T.V			
-							-	V 7			
								¥ ′		10	
								6			
-:							_				5 * 1
_							_	10			
_ (_				
-							-				
Dist.							_				
							_				
							-	9			
							Ī				
_											
24.0			DOCDY :- 2								
_	SP		of Gravel, bro	wn, moist, med	fine- to medium-gra lium dense.	ained, with	n a trace	14			
2				- (Alluvium)		-				
							=				
=							-				
29.0	SP-	Ш	POORLY GR	ADED SAND	with SILT, fine-grai	ned,			Δ		
	SM		reddish-browr	n, waterbearing,	medium dense. Alluvium)		-	29			
-				•			-				
L-04-036	22	E-FED			Braun Intertec Corporati	on Dioomin	oton.	1			ST-K page 1 of



	n Proj	ect BL-04-0			BORING:	}	ST-	K (cont.))
		ICAL EVAL	UATION Redevelopmen:	t	LOCATIO	ON: Se			
Hiawa	tha and	Lake Street							
DRILLI		Minnesota ott McLean	METHOD:	3 1/4" HSA Autohammer	DATE:	5/1	2/04	SCALE:	1'' = 4'
Depth					3			1	
feet 32.0	ASTM Symbo	1		otion of Materials D2488 or D2487)		BPF	WL	Tests or	Notes
34.0		POORLY C reddish-bro	wn, waterbearing,	with SILT, fine-grained, medium dense. um) (continued)					
-	SP- SM	POORLY C with Gravel	and cobbles, brow	with SILT, fine- to coarse- wn, wet, very dense. cial Outwash)	grained,	51			¥5
			,	,	-				12
					_				
					-				
-					<u> </u>	64			
]				
44.0	CL	SANDY LE	AN CLAY, with	a trace of Gravel, dark gra	v. moist				
-		very stiff.		Glacial Till)	,,, <u> </u>	29			
					124				
]				
49.0	HALE	WEATHER	ED SHALE, gray	maint hand			-		
-	"IAL	WEATHER	ED SHALE, gray	, moist, nard.	<u> </u>	59			
					-			:3	
					=				
54.1									
_		END OF BO			\ <u></u>	00-1/2			
			al on bedrock at a	th 30 feet of hollow-stem	auger in the				
		ground.			auger in the				
0		Boring imm	ediately backfille	ed with bentonite grout.					
=					_	e l			
			w.		4				
					-				
					+				

			t BL-04-03				BORING	ě		ST-N	
Hi-La	ke Sh	oppi	CAL EVALUATION CENTER OF THE CONTROL		ıt		LOCATIO	DN: Se	ee attac	ched sketch.	
			Lake Street innesota	_							
DRILL		_	McLean	METHOD:	3 1/4" HSA Autohammer		DATE:	5/12	2/04	SCALE:	1'' = 4'
Depth feet	AS	гм		Descri	ption of Materials			BPF	WL	Tests or	Notes
0.0	Sym			(ASTM	D2488 or D2487)	Ю		БГГ	WL	1 6515 01	Notes
0.7	FILL				us over 4 inches of Aggre edium-grained, with Grav						
_	FILL		\laver of Clave	y Sand, black,	moist. ed, dark brown, moist.						
-				, g	ou, danc oronn, moist		_	4			
В.							-				
_							-	7			
							+				
							-	7			
9.0					E		_	N N			
9.0	SP	×××	POORLY GR	ADED SAND,	fine- to medium-grained	, bro	wn,]			
-			moist, mediur	n dense. ((Alluvium)			10			
							-				
			u a					18			
							_	9			
								1			
_											
19.0	SP		POORI V GR	ADED SAND	fine- to coarse-grained, v	with a	tross of				
			Gravel, brown	, moist, mediu	m dense.	WILII a	i trace or	24			
-				((Alluvium)		-				
-				2							
24.0							-				
24.0	SM		SILTY SAND	, fine-grained,	brown, moist, medium de	ense.					
_				(Alluvium)		\dashv	19			
							-				
_							-				
29.0							* =		Ā		
	SP		POORLY GRA waterbearing,	ADED SAND,	fine-grained, reddish-bro	wn,		16	*		
					Alluvium)			10			
BL-04-0362	2				Braun Intertec Corporation, Bl	oomin	eton				ST-N page 1 of 2



Hi-Lak Hiawat	ke Sh tha a apoli:	oppi nd L s, M Scott	McLean POORLY GR waterbearing	Descri (ASTM RADED SAND, medium dense (Alluv D, with Gravel a	3 1/4" HSA Auto ption of Material D2488 or D2483 , fine-grained, red	s 7) dish-brown,	DATE:		2/04	SC	ALE:	1'' = 4' Notes
Depth feet 32.0 34.0	AST Sym	CM.	POORLY GF waterbearing	Descri (ASTM RADED SAND, medium dens (Alluv D, with Gravel a	ption of Material D2488 or D248; fine-grained, red e. rium) (continued)	s 7) dish-brown,	DATE:					
feet 32.0 34.0	Sym		waterbearing SILTY SANI	(ASTM RADED SAND, , medium dense (Alluv D, with Gravel a	D2488 or D2487, fine-grained, red e. rium) (continued)	7) dish-brown,		BPF	WL		Tests or	Notes
3 3 8	SM		waterbearing SILTY SANI	, medium dens (Alluv D, with Gravel a	e. rium) <i>(continued)</i>	ŕ						
3 3 8	SM		SILTY SANI dense.		and cobbles, reddi		=	C .				
39.0				(1	Glacial Till)	ish-brown, me	oist,	34		Đ		æ
	CL		SANDY LEA	AN CLAY, with	a trace of Gravel	olive wet h	ard					
40.0	SP		POORLY GF	RADED SAND, grayish-brown,	fine- to coarse-g fine- to coarse-g waterbearing, ver acial Outwash)	rained, with C		00/8"				
2 2								(1 00/7"			j.	
49.0							-					
50.5	CL		END OF BOI	RING.	a trace of Gravel Glacial Till) ith 50 feet of holl		— <u> </u>	68			-	
			ground.		ed with bentonite		-					
_							_					
							-					

BRAUN

Brau		ojec	t BL-04-03				BORING	:		ST-P	
			CAL EVALU ing Center R		ent		LOCATI	ON: Se	ee attach	ned sketch.	
Hiawa	atha a	ınd L	ake Street								
DRILL			innesota McLean	METHOD	: 3 1/4" HSA Auto	hammer	DATE:	5/1:	2/04	SCALE:	1" = 4"
Depth		-		METHOD	, 5174 1107171410	Hammer -	DATE.	3/1.	2/04	SCALE.	1 -4
feet 0.0	_			(AST	ription of Materials M D2488 or D2487	7)		BPF	WL	Tests or	Notes
	FILL		FILL: Silty S black, moist.	and, fine- to	medium-grained, w	ith a trace of	f Gravel, - -	X 4			28
4.0	SP- SM		POORLY GR with a trace of	of Gravel, bro	D with SILT, fine- town, moist. (Possible Fill)	to medium-g	rained, —	6			*
7.0	SP		POORLY GR medium dens	ADED SAN	D, fine-grained, bro (Alluvium)	wn, moist, le	oose to	7			
-								12			
							_	6			
19.0	SM		SILTY SANE reddish-brown), fine- to me n, moist, very	dium-grained, with dense. (Glacial Till)	Gravel,	-	79			
					(Glacial Till)				Δ		
SI								⊠100/5'			
_							-	₹ 58			
-04-0362	22		#		Braun Intertec Corpo		_				ST-P page 1



	ect BL-04-03		BORING	r:	ST-	P (cont.)	
Hi-Lake Shop	ICAL EVALU. pping Center Roll I Lake Street Minnesota		LOCATI	ON: Se	ee attach	ned sketch.	
ORILLER: So	ott McLean	METHOD: 3 1/4" HSA Autohamm	er DATE:	5/1:	2/04	SCALE:	1'' = 4'
Depth feet ASTM 32.0 Symbo		Description of Materials (ASTM D2488 or D2487)		BPF	WL	Tests or	Notes
34.0	SILTY SAND reddish-brown	O, fine- to medium-grained, with Grave n, moist, very dense. (Glacial Till) (continued)	il, 				
CL	SANDY LEA	N CLAY, wet, gray, hard. (Glacial Till)	-	36			
39.0 SP	POORLY GR grayish-brown	ADED SAND, fine- to coarse-grained n, waterbearing, very dense. (Glacial Outwash)	, with Gravel,	58		*	
44.0 CL	SANDY LEA very stiff.	N CLAY, with a trace of Gravel, gray, (Glacial Till)	moist to wet,	26			
50.5			-	30			
	ground.	RING. ed at 23 feet with 50 feet of hollow-st diately backfilled with bentonite grou	-				
-			- -				
			-				