

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1070 SS (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **920.0** Hennepin Co. Coordinates: **N 149985 E 499317**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, trace roots, brown (A-1-b)	FILL	12	M	SS	14					
2	FILL, mixture of silty sand and sandy lean clay, a little gravel, trace roots, brown (A-2-4)		6	M	SS	12	9				
4	SAND, a little gravel, fine to medium grained, light brown, moist, dense (SP) (A-3)	COARSE ALLUVIUM	32	M	SS	14					
5			34	M	SS	14					
6	SAND WITH GRAVEL, medium to fine grained, light brown to brown, moist, dense to medium dense (SP) (A-1-b)		17	M	SS	12					
7			25	M	SS	12					
8			29	M	SS	14					
9			26	M	SS	12					
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22	CLAYEY SAND, a little gravel, brown, stiff to firm (SC) (A-2-4)	TILL	12	▼	SS	16	11				
23			8	M	SS	18	13				
24											
25	SILTY SAND, a little gravel, brown, medium dense to loose (SM/SC) (A-2-4)		17	M/W	SS	18					
26											
27			9	M/W	SS	16					
28											
29											
30											
31	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29½'	3.25" HSA	5/17/13	9:56	26.0	24.5	24.7		24.5	
		5/17/13	10:21	26.0	24.5	24.4		23.7	
BORING COMPLETED: 5/17/13		5/17/13	10:30	26.0	24.5	24.4		23.4	
DR: SG LG: JJ Rig: 1C		5/17/13	10:40	26.0	24.5	24.3		23.3	

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 5/21/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1071 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **889.8** Hennepin Co. Coordinates: **N 155534 E 510922**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mixture of silty sand with gravel and silty sand with organic fines, pieces of concrete, trace roots, brown, black and grayish brown (A-2-4)	FILL	94	M	X	SS	17						
2													
3													
4	LEAN CLAY, brown, firm (CL) (A-6)	FINE ALLUVIUM	19	M	X	SS	18						
5									26				
6	SAND WITH SILT, a little gravel, fine to medium grained, brown and light brown, moist, medium dense (SP-SM) (A-3)	COARSE ALLUVIUM	5	M	X	SS	18						
7													
8													
9	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense, a lens of fine grained sand with silt (SP) (A-1-b)		19	M	X	SS	20						
10													
11	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, medium dense (SP-SM) (A-3)		23	M	X	SS	18						
12													
13	SAND WITH SILT, a little gravel, medium to fine grained, light brown, moist to waterbearing, medium dense, a lens of fine grained sand (SP-SM) (A-1-b)		16	M	X	SS	17						
14													
15	SANDY LEAN CLAY, a little gravel, brown, stiff (CL) (A-6)	TILL	14	M	X	SS	19						
16													
17	END OF BORING		15	M	X	SS	18	13					
18													
19													
20			14	M	X	SS	20	13					
21													

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/11/13	12:40	19.0	17.0	17.5		16.4	
		6/11/13	12:50	19.0	17.0	16.7		16.1	
BORING COMPLETED:	6/11/13	6/11/13	1:00	21.0	19.5	21.0		20.6	
DR: SG	LG: SB	Rig: 1C							

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT-WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1072 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **894.2** Hennepin Co. Coordinates: **N 155298 E 510407**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS							
							WC	DEN	LL	PL	%-#200			
1	FILL, mostly silty sand with gravel, a little clayey sand, trace roots, brown, grayish brown and black (A-1-b)	FILL	23	M		SS	18							
2														
3	FILL, mostly sand with silt, a little gravel, pieces of brick, light brown (A-1-b)	COARSE ALLUVIUM	29	M		SS	18							
4	SAND WITH SILT, a little gravel, fine to medium grained, light grayish brown, moist, medium dense (SP-SM) (A-3)													
5			31	M		SS	18							
6	SAND, a little gravel, medium to fine grained, light grayish brown, moist, dense (SP) (A-1-b)													
7	SAND WITH GRAVEL, medium to fine grained, light brown, a little gray, moist, medium dense, a lens of silt at 10 1/2' (SP) (A-1-b)		17	M		SS	16							
8														
9			17	M		SS	17							
10														
11			18	M		SS	19							
12	SAND, fine to medium grained, light brown, moist, medium dense (SP) (A-3)													
13			26	M		SS	18							
14	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)													
15			24	M		SS	18							
16	SAND, a little gravel, medium to coarse grained, brown, moist to about 19' then waterbearing, medium dense (SP) (A-1-b)													
17			12	W		SS	18							
18														
19														
20														
21														
END OF BORING														

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19 1/2'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		6/11/13	1:45	21.5	19.5	19.5		19.2	
		6/11/13	1:55	21.5	19.5	19.5		19.2	
BORING COMPLETED: 6/11/13									
DR: SG LG: SB Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1073 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **898.6** Hennepin Co. Coordinates: **N 155027 E 509876**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with gravel, a little clayey sand, brown and dark brown (A-2-4)	FILL	16	M	X	SS	7					
2	FILL, mostly gravelly sand with silt, brown (A-1-b)		16	M	X	SS	15	4				8
3					X							
4					X							
5	FILL, mostly sand with silt and gravel, a little clayey sand, dark brown, a little black (A-1-b)		11	M	X	SS	15	9				10
6					X							
7	CLAYEY SAND, a little gravel, trace roots, dark brown, stiff (SC) (A-6)	TILL			X			17				
8	LEAN CLAY, brown, stiff (CL) (A-6)	FINE ALLUVIUM	9	M	X	SS	13	19				
9					X							
10	SAND WITH GRAVEL, fine to medium grained, light brown, a little brown, moist, medium dense, a lens of fine to medium grained sand with silt (SP) (A-1-b)	COARSE ALLUVIUM	18	M	X	SS	18					
11					X							
12	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		25	M	X	SS	17					
13					X							
14					X							
15					X							
16					X							
17	GRAVEL WITH SILT AND SAND, brown, moist, very dense (GP-GM) (A-1-b)		52	M	X	SS	5					
18					X							
19					X							
20	GRAVELLY SAND, medium to coarse grained, brown, moist, dense (SP) (A-1-b)		32	M	X	SS	15					
21					X							
END OF BORING												

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		6/11/13	3:00	21.5	19.5	21.0		None	
BORING COMPLETED: 6/11/13									
DR: SG LG: SB Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1074 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **904.1** Hennepin Co. Coordinates: **N 154785 E 509326**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly sand with silt and gravel, a little silty sand and clayey sand, brown, a little dark brown (A-1-b)	FILL	25	M	X	SS	16					
2												
3			19	M		SS	14	4				8
4												
5												
6												
7												
8												
9												
10												
11												
12			SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL		27	M	X	SS	4		
13												
14	SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	13	M	X	SS	12					
15												
16												
17												
18												
19												
20												
21			15	M	X	SS	8					
21	END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
DEPTH	DRILLING METHOD	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/12/13	12:30	21.5	19.5	21.4		None	
BORING COMPLETED: 6/12/13									
DR: JM LG: SHS Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1075 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **909.4** Hennepin Co. Coordinates: **N 154516 E 508775**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand with organic fines, a little gravel, trace roots, dark brown (A-2-4)	FILL	23	M	SS	16					
2	FILL, mostly silty sand with gravel, pieces of brick, dark brown (A-1-b)	FINE ALLUVIUM	9	M	SS	14	25				
3	LEAN CLAY, trace roots, dark brown to brown, stiff (CL) (A-6)										
4		COARSE ALLUVIUM	42	M	SS	12					
5	SAND WITH SILT AND GRAVEL, possible cobbles, fine to medium grained, light brown, moist, dense to very dense (SP-SM) (A-1-b)										
6											
7											
8		COARSE ALLUVIUM	53	M	SS	0					
9	SAND WITH GRAVEL, medium to fine grained, brown, moist, very dense to medium dense (SP) (A-1-b)										
10											
11		COARSE ALLUVIUM	23	M	SS	16					
12	SAND WITH SILT AND GRAVEL, possible cobbles, fine to medium grained, brown, moist, very dense (SP-SM) (A-1-b)										
13		COARSE ALLUVIUM	71	M	SS	4					
14	SAND WITH GRAVEL, medium to coarse grained, light brown, moist, dense (SP) (A-1-b)										
15		COARSE ALLUVIUM	31	M	SS	12					
16	SAND WITH GRAVEL, medium to coarse grained, light brown, moist, dense (SP) (A-1-b)										
17		COARSE ALLUVIUM	36	M	SS	16					
18	SAND WITH GRAVEL, medium to fine grained, light brownish gray to light grayish brown, moist, dense (SP) (A-1-b)										
19		COARSE ALLUVIUM	33	M	SS	16					
20											
21											
END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/25/13

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/12/13	2:15	21.5	19.5	21.5		None	
BORING COMPLETED: 6/12/13									
DR: JM LG: SHS Rig: 1C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1076 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **911.8** Hennepin Co. Coordinates: **N 154248 E 508243**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with gravel, a little clayey sand, pieces of brick, ashes/cinders, trace roots, black, dark brown and gray (A-2-4)	FILL	19	M	X	SS	16					
2	FILL, mostly clayey sand, a little gravel and sand with silt, dark brown, a little light brown and black (A-6, A-1-b)		12	M		SS	16	16				
3		COARSE ALLUVIUM			X							
4	SAND WITH GRAVEL, fine to medium grained, light grayish brown, moist, dense (SP) (A-1-b)		33	M		SS	14					
5												
6	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		23	M		SS	14					
7												
8	GRAVELLY SAND, medium to fine grained, grayish brown, moist, dense (SP) (A-1-b)		34	M		SS	4					
9												
10	SAND, fine to medium grained, light brown, moist, medium dense, lenses of fine grained sand and medium to fine grained sand (SP) (A-3)		15	M		SS	14					
11												
12	SAND WITH GRAVEL, medium grained, light grayish brown, moist, medium dense (SP) (A-1-b)		16	M		SS	16					
13												
14												
15												
16												
17												
18												
19												
20	SAND, a little gravel, fine to medium grained, light brown and light grayish brown, moist, medium dense (SP) (A-3)	29	M	SS	16							
21	END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/12/13	3:12	21.5	19.5	21.5		None	
BORING COMPLETED: 6/12/13									
DR: JM LG: SHS Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1077 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **913.2** Hennepin Co. Coordinates: **N 154004 E 507731**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly clayey sand with organic fines and gravel, a little silty sand, trace roots, dark brown, a little gray (A-2-4)	FILL	11	M		SS	6					
2												
3	FILL, mixture of silty sand and clayey sand, a little gravel, trace roots, dark brown and brown (A-2-4)		10	M		SS	8	9				
4												
5	FILL, mixture of clayey sand and silty sand, with gravel, brown, a little dark brown (A-6, A-2-4)		10	M		SS	10	12				
6												
7		COARSE ALLUVIUM										
8	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		29	M		SS	16					
9												
10	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, moist, medium dense (SP-SM) (A-1-b)		24	M		SS	12					
11												
12	SAND WITH GRAVEL, medium grained, grayish brown, moist, medium dense (SP) (A-1-b)		16	M		SS	14					
13												
14	SAND WITH GRAVEL, medium to fine grained, light grayish brown, moist, medium dense (SP) (A-1-b)		16	M		SS	4					
15												
16												
17	SAND, a little gravel, medium to fine grained, light grayish brown, moist, medium dense (SP) (A-1-b)	11	M		SS	16						
18												
19												
20	SAND, a little gravel, fine to medium grained, light grayish brown, moist, medium dense (SP) (A-3)	16	M		SS	4						
21												
END OF BORING												

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/12/13	4:00	21.5	19.5	21.5		None	
BORING COMPLETED: 6/12/13									
DR: JM LG: SHS Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT-WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1078 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **918.1** Hennepin Co. Coordinates: **N 153465 E 506624**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand with organic fines, a little gravel, trace roots, black (A-2-4)	FILL	28	M	SS	8	24				
2	FILL, mostly silty sand with gravel, a little lean clay, brown, a little black and dark brown (A-1-b)		21	M	SS	12	10				19
3											
4											
5	LEAN CLAY, trace roots, brown, a little black, firm (CL) (A-6)	FINE ALLUVIUM	6	M	SS	12	23				
6											
7	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, medium dense, a lens of fine grained sand with silt (SP-SM) (A-3)	COARSE ALLUVIUM	19	M	SS	10					
8											
9	SAND WITH SILT, medium to fine grained, brown, moist, medium dense (SP-SM) (A-1-b)		11	M	SS	16					
10											
11	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, moist, medium dense, laminations of clayey sand (SP-SM) (A-1-b)		16	M	SS	18					
12											
13	SAND WITH GRAVEL, medium to fine grained, grayish brown, moist, medium dense (SP) (A-1-b)		30	M	SS	14					
14											
15	GRAVELLY SAND, medium grained, brown, moist, medium dense (SP) (A-1-b)		21	M	SS	12					
16											
17	SAND, a little gravel, medium to fine grained, brown, moist, medium dense (SP) (A-1-b)		21	M	SS	18					
18											
19											
20											
21											
END OF BORING											

DEPTH: DRILLING METHOD

WATER LEVEL MEASUREMENTS

0-19½' 3.25" HSA

DATE

TIME

SAMPLED DEPTH

CASING DEPTH

CAVE-IN DEPTH

DRILLING FLUID LEVEL

WATER LEVEL

6/14/13

1:23

21.5

19.5

21.5

None

BORING COMPLETED: 6/14/13

DR: JM LG: SHS Rig: 1C

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1079 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **915.2** Hennepin Co. Coordinates: **N 153205 E 506088**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, ashes/cinders, dark brown and black (A-2-4)	FILL	18	M	SS	12					
2	SAND WITH SILT, a little gravel, fine to medium grained, light brown, a little brown, moist, dense, a lens of sand with silt and gravel (SP-SM) (A-3)	COARSE ALLUVIUM	39	M	SS	18					
3											
4	SAND WITH GRAVEL, fine to medium grained, light grayish brown, moist, dense (SP) (A-1-b)		46	M	SS	16					
5											
6	SAND, medium grained, light grayish brown, a little brown, moist, medium dense, laminations of silt (SP) (A-1-b)		20	M	SS	18					
7											
8	SAND, medium to fine grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		19	M	SS	12					
9											
10	SAND, a little gravel, medium grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		17	M	SS	10					
11											
12	SAND WITH GRAVEL, medium to fine grained, light grayish brown, moist, medium dense (SP) (A-1-b)		20	M	SS	16					
13											
14	GRAVELLY SAND, medium to fine grained, light brown, moist, very dense (SP) (A-1-b)		71	M	SS	10					
15											
16	GRAVELLY SAND, medium grained, brown, moist, dense (SP) (A-1-b)		40	M	SS	8					
17											
18	END OF BORING										
19											
20	END OF BORING										
21											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
DEPTH	DRILLING METHOD	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/14/13	2:30	21.5	19.5	21.5		None	
BORING COMPLETED: 6/14/13									
DR: JM LG: SHS Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1080 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **913.5** Hennepin Co. Coordinates: **N 152946 E 505541**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with gravel, a little sand, pieces of bituminous, dark brown, a little brown (A-1-b)	FILL	19	M	X	SS	10					
2												
3	FILL, mostly gravelly sand with silt, a little silty sand, dark brown, a little brown (A-1-b)		26	M		SS	12	5				9
4												
5	FILL, mostly sand with silt and gravel, dark brown, a little brown (A-1-b)		19	M		SS	14	4				8
6												
7												
8	FILL, mostly sand with gravel, a little sand with silt, light brown, a little brown (A-1-b)		18	M		SS	16					
9												
10	SAND, a little gravel, fine grained, light brown, moist, medium dense, laminations of silt (SP) (A-3)	COARSE ALLUVIUM	21	M	X	SS	12					
11												
12	SAND, a little gravel, medium to fine grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		20	M		SS	10					
13												
14												
15												
16												
17												
18	GRAVELLY SAND WITH SILT, possible cobble at 18½', medium to coarse grained, brown, moist, dense (SP-SM) (A-1-b)		42	M	X	SS	10					
19												
20	SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b)		18	M	X	SS	14					
21												
END OF BORING												

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		6/17/13	9:35	21.5	19.5	21.3		None	
BORING COMPLETED: 6/17/13									
DR: JM LG: SHS Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1081 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **911.7** Hennepin Co. Coordinates: **N 152677 E 504983**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mixture of gravelly silty sand and sand with silt, dark brown and brown, a little black (A-1-b)	FILL	15	M		SS	12					
2	FILL, mostly sand with silt and gravel, a little sand, light brown, a little brown (A-1-b)		15	M		SS	14	4				5
3	FILL, mostly sand, a little gravel, silty sand and clayey sand, light brown and brown, a little dark brown (A-1-b)		11	M		SS	16					
4			15	M		SS	4					
5			12	M		SS	12					
6			14	M		SS	14					
7			14	M		SS	10					
8			15	M		SS	4					
9			9	M		SS	10					
10	FILL, mostly gravelly sand with silt, a little clayey sand (A-1-b)											
11	FILL, mostly gravelly sand with silt, brown and dark brown (A-1-b)											
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
END OF BORING												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		6/17/13	10:08	21.5	19.5	21.3			None
BORING COMPLETED: 6/17/13									
DR: JM LG: SHS Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1082 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **911.0** Hennepin Co. Coordinates: **N 152431 E 504459**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly gravelly silty sand, a little ashes/cinders, dark brown and light brown, a little black (A-1-b)	FILL	20	M	SS	12					
2											
3	FILL, mostly sand with silt and gravel, a little silt, brown (A-1-b)		19	M	SS	10					
4											
5	FILL, mostly sand with gravel, a little lean clay, light brown, a little brown (A-1-b)		12	M	SS	16					
6											
7											
8	FILL, mostly sand with silt and gravel, a little clayey sand, brown, a little dark brown (A-1-b)		17	M	SS	12					
9											
10	FILL, mostly sand with silt and gravel, a little lean clay, brown (A-1-b)		9	M	SS	10					
11											
12											
13	FILL, mostly sand with gravel, a little silt, light brown, a little brown (A-1-b)	17	M	SS	16						
14											
15	FILL, mostly sand with gravel, a little clayey sand, light brown, a little dark brown (A-1-b)	9	M	SS	10						
16											
17											
18			9	M	SS	8					
19											
20	FILL, mostly sand with silt, a little gravel, brown, a little dark brown (A-1-b)	8	M	SS	16						
21											
END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		6/17/13	11:37	21.5	19.5	21.5			None
		6/17/13	12:10	21.5	19.5	21.5			None
BORING COMPLETED: 6/17/13									
DR: JM LG: SHS Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1083 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **910.1** Hennepin Co. Coordinates: **N 151913 E 503390**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, a little sand with silt, trace roots, dark brown, a little black (A-2-4)	FILL	20	M	SS	12					
2											
3	FILL, mixture of silty sand and sand with silt, a little gravel and ashes/cinders, brown, a little black (A-2-4)		15	M	SS	10					
4											
5	FILL, mostly sand with silt and gravel, a little silty sand, brown, a little dark brown (A-1-b)		13	M	SS	8					
6											
7											
8	FILL, mostly sand with silt, a little gravel, clayey sand and ashes/cinders, brown, a little black (A-2-4)		10	M	SS	12					
9											
10	FILL, mostly sand with gravel, a little sand with silt, brown, a little dark brown (A-1-b)		18	M	SS	16					
11											
12											
13	FILL, mostly sand with silt, a little gravel and clayey sand (A-1-b)	11	M	SS	4						
14											
15											
16											
17											
18	FILL, mostly sand, a little gravel and clayey sand, brown, a little dark brown (A-1-b)	5	M	SS	12						
19											
20	FILL, mostly sandy lean clay, a little gravel and sand, dark brown, a little light brown (A-6)	7	M	SS	16	15					
21											
END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		6/17/13	1:01	21.5	19.5	21.5			None
		6/17/13	1:11	21.5	19.5	21.5			None
BORING COMPLETED: 6/17/13									
DR: JM LG: SHS Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1084 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **911.5** Hennepin Co. Coordinates: **N 151652 E 502842**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly gravelly silty sand, a little sand with silt, pieces of brick, trace roots, dark brown and black (A-2-4)	FILL	17	M	SS	12					
2											
3	FILL, mostly sand with silt and gravel, a little sandy lean clay, light brown, a little brown (A-1-b)		22	M	SS	16	4				8
4											
5	FILL, mostly sand with silt, a little gravel, silty sand and sandy lean clay (A-3)		26	M	SS	12					
6											
7											
8	FILL, mostly silty sand, a little gravel and sandy lean clay, trace roots, brown (A-2-4)		48	M	SS	4					
9											
10	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense, laminations of silt (SP) (A-3)	COARSE ALLUVIUM	24	M	SS	16					
11											
12											
13				26	M	SS	18				
14											
15	GRAVELLY SAND, medium to fine grained, light brown, a little brown, moist, medium dense, a lamination of lean clay (SP) (A-1-b)		22	M	SS	12					
16											
17											
18	SILTY SAND, a little gravel, fine grained, brown, moist, medium dense, a lens of lean clay, laminations of fine to medium grained sand with silt (SM) (A-2-4)	22	M	SS	14						
19											
20	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, dense (SP-SM) (A-3)	38	M	SS	18						
21											
END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/17/13	2:06	21.5	19.5	21.5		None	
		6/17/13	2:13	21.5	19.5	21.5		None	
BORING COMPLETED: 6/17/13									
DR: JM LG: SHS Rig: 1C									

AET_CORP_W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/27/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1085 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **913.1** Hennepin Co. Coordinates: **N 151391 E 502294**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel, pieces of concrete, trace roots, dark brown (A-2-4)	FILL	27	M	SS	6					
2	FILL, mostly sand with gravel, a little lean clay with sand, apparent cobble at 4', light brown, a little brown (A-1-b)		25	M	SS	10					
3											
4											
5	GRAVEL WITH SAND, apparent cobble at 9', light brown, moist, medium dense (GP) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	28	M	SS	18					
6											
7	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b) (possible fill)	TILL	29	M	SS	6					
8											
9											
10	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP) (possible fill)	TILL	20	M	SS	18					
11								16			
12	CLAYEY SAND, a little gravel, brownish gray, very stiff (SC) (A-6)										
13	SANDY LEAN CLAY, a little gravel, brownish gray, a little brown, very stiff, laminations of fine grained sand with silt (CL) (A-6)										
14		COARSE ALLUVIUM	19	M	SS	3					
15											
16											
17	SAND WITH GRAVEL, medium to fine grained, light brown, a little brown, moist, medium dense, a lens of gravelly medium grained sand with silt at 19½' (SP) (A-1-b)	COARSE ALLUVIUM	23	M	SS	12					
18											
19											
20											
21			15	M	SS	15					
END OF BORING											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		6/18/13	9:48	21.5	19.5	19.7		None	
		6/18/13	9:53	21.5	19.5	19.9		None	
BORING COMPLETED: 6/18/13									
DR: SHS LG: JM Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1086 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **914.2** Hennepin Co. Coordinates: **N 151132 E 501758**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand, a little gravel and sand with silt, pieces of bituminous, concrete and brick, trace roots, dark brown, a little light brown (A-2-4)	FILL	21	M		SS	16					
2												
3												
4												
5	FILL, mostly sand with silt and gravel, a little silty sand, light brown and brown (A-1-b)		15	M		SS	12					
6												
7	SAND WITH GRAVEL, fine to medium grained, light brown, moist, dense (SP) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	35	M		SS	17					
8												
9												
10	SAND WITH SILT AND GRAVEL, possible cobbles, medium to fine grained, brown, moist, very dense (SP-SM) (A-1-b) (possible fill)		50/4	M		SS	1					
11												
12	SAND WITH GRAVEL, medium to fine grained, light brown, moist, very dense (SP) (A-1-b)	COARSE ALLUVIUM	59	M		SS	14					
13												
14												
15	SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b)		15	M		SS	18					
16												
17												
18	GRAVELLY SAND WITH SILT, medium to fine grained, brown, moist, medium dense (SP-SM) (A-1-b)		21	M		SS	18					
19												
20	SAND WITH SILT, fine grained, light brownish gray, moist, medium dense, laminations of sandy lean clay (SP-SM) (A-3)		25	M		SS	20					
21												
	SAND, fine to medium grained, light brown, moist, medium dense (SP) (A-3)											
	GRAVELLY SAND, medium to fine grained, grayish brown, moist, medium dense (SP) (A-1-b)											
	END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS					NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG		
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH		DRILLING FLUID LEVEL	WATER LEVEL
		6/18/13	11:08	21.5	19.5	21.3			None
		6/18/13	11:14	21.5	19.5	21.2			None
BORING COMPLETED: 6/18/13									
DR: SHS LG: JM Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/25/13

SUBSURFACE BORING LOG

AET JOB NO: 01-05697 LOG OF BORING NO. 1087 ST (p. 1 of 1)
 PROJECT: Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN
 SURFACE ELEVATION: 913.7 Hennepin Co. Coordinates: N 150619 E 500689

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly clayey sand with organic fines, pieces of concrete, trace roots, dark brown (A-2-4)	FILL	25	M		SS	12	8				
2												
3	FILL, mostly sand with silt and gravel, a little clayey sand, a piece of bituminous at 8', brown (A-1-b)		25	M		SS	12					
4												
5				13		M	SS	12				
6												
7												
8			30	M	SS	5						
9												
10	SAND WITH GRAVEL, medium to coarse grained, light brown, moist, medium dense (SP) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	21	M	SS	12						
11												
12	SAND, fine grained, light brown, a little brown, moist, medium dense, laminations of silt (SP) (A-3)	COARSE ALLUVIUM	20	M	SS	18						
13												
14	SAND, fine to medium grained, light brown, a little brown, moist, medium dense, laminations of silt (SP) (A-3)		17	M	SS	16						
15												
16	SAND, a little gravel, medium to fine grained, brown, moist, medium dense, laminations of silt (SP) (A-1-b)		14	M	SS	12						
17												
18	SAND WITH GRAVEL, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		16	W	SS	18						
19												
20												
21	END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/11/13	1:30	21.5	19.5	19.5		19.5	
		7/11/13	1:40	21.5	19.5	19.5		19.0	
BORING COMPLETED: 7/11/13									
DR: GH LG: JMM Rig: 1C									

AET_CORP_W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 7/16/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1088 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **916.2** Hennepin Co. Coordinates: **N 150355 E 500128**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand with organic fines, a little gravel, pieces of concrete, trace roots, dark brown (A-2-4)	FILL	15	M	SS	8	6				
2	FILL, mostly clayey sand, a little gravel, grayish brown (A-6)		15	M	SS	10	15				
3	FILL, mixture of sand with silt and clayey sand, a little gravel, brown (A-2-4, A-6)		8	M	SS	12					
4											
5											
6											
7	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	23	M	SS	18					
8											
9											
10	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)			25	M	SS	18				
11											
12											
13			14	M	SS	18					
14											
15	SAND WITH GRAVEL, medium grained, brown, moist to about 18½' then waterbearing, medium dense (SP) (A-1-b)		12	M	SS	18					
16											
17											
18			12	M	SS	18					
19											
20	GRAVELLY SAND, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		22	W	SS	18					
21											
END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/11/13	12:20	21.5	19.5	19.5		18.4	
		7/11/13	12:30	21.5	19.5	19.5		18.4	
BORING COMPLETED: 7/11/13									
DR: GH LG: JMM Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 7/16/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1089 SS (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **921.6** Hennepin Co. Coordinates: **N 149826 E 499056**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly gravelly silty sand with organic fines, trace roots, dark brown (A-1-b)	FILL	14	M	SS	12					
2	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, medium dense (SP-SM) (A-3)	COARSE ALLUVIUM	20	M	SS	12					
3											
4	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense, a lens of fine sand (SP) (A-1-b)		29	-	SS	0					
5											
6	GRAVELLY SAND, medium grained, light grayish brown, moist, medium dense (SP) (A-1-b)		15	M	SS	14					
7											
8	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		15	M	SS	12					
9											
10	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		21	M	SS	12					
11											
12	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		50	-	SS	0					
13											
14	SILTY SAND, a little gravel, brown, medium dense (SM/SC) (A-2-4)	TILL	22	M	SS	18					
15											
16	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		21	M	SS	18					
17											
18	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		50	-	SS	0					
19											
20	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		21	M	SS	18					
21											
END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/23/14

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/11/13	10:35	21.5	19.5	19.5		None	
		7/11/13	10:45	21.5	19.5	19.5		None	
BORING COMPLETED: 7/11/13									
DR: GH LG: JMM RIG: 1C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1090 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **924.3** Hennepin Co. Coordinates: **N 149569 E 498519**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly gravelly silty sand, a little silty sand with organic fines, trace roots, dark brown (A-1-b)	FILL	15	M	SS	12					
2											
3	FILL, mostly silty sand with gravel, a little ashes/cinders, dark brown and black (A-1-b)		5	M	SS	14	10				
4	FILL, mostly clayey sand with gravel, a little sandy lean clay, brown (A-1-b, A-6)										
5			3	M	SS	14	13				
6											
7	FILL, mostly sand with silt and gravel, a little sandy lean clay, brown, a little dark brown (A-1-b)		8	M	SS	12					
8											
9	CLAYEY SAND, with organic fines, a little gravel, black to dark brown, stiff (SC) (A-6)	TILL	9	M	SS	6	16				
10											
11											
12	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	14	M	SS	12					
13											
14	SAND WITH GRAVEL, medium to coarse grained, grayish brown, moist, medium dense (SP) (A-1-b)		20	M	SS	12					
15											
16	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense (SP) (A-1-b)		24	M	SS	14					
17											
18	GRAVELLY SAND, medium grained, light grayish brown, moist, medium dense (SP) (A-1-b)		28	M	SS	12					
19											
20	GRAVELLY SAND, medium to coarse grained, brown, waterbearing, medium dense (SP) (A-1-b)		21	W	SS	12					
21											
22											
23	CLAYEY SAND, a little gravel, brown, stiff to hard (SC/SM) (A-2-4)	TILL	24	-	SS	0					
24											
25											
26			42	M/W	SS	6	10				
27											
28											
29			14	M/W	SS	12	12				
30											
31											
END OF BORING											

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 7/10/13

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29½'	3.25" HSA								
		6/28/13	1:10	24.0	22.0	23.5		22.5	
		6/28/13	1:15	24.0	22.0	23.5		22.5	
BORING COMPLETED: 6/28/13		6/28/13	1:45	31.5	29.5	29.9		26.0	
DR: DTS LG: TM Rig: 1C		6/28/13	2:00	31.5	29.5	28.8		25.1	

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1091 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **925.4** Hennepin Co. Coordinates: **N 149310 E 497970**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mostly gravelly silty sand, a little silty sand with organic fines, trace roots, dark brown and black (A-1-b)	FILL	15	M		SS	12						
2	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense (SP) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	21	M		SS	12						
3													
4	SAND, fine to medium grained, light grayish brown, a little brown, moist, medium dense, laminations of silt (SP) (A-3)	COARSE ALLUVIUM	23	M		SS	12						
5													
6	SAND, a little gravel, fine to medium grained, light brown, a little brown, moist, medium dense, laminations of silt (SP) (A-3)		13	M		SS	12						
7													
8	SAND WITH GRAVEL, medium to fine grained, brown, moist, medium dense, laminations of silt (SP) (A-1-b)		20	M		SS	12						
9													
10	GRAVELLY SAND, medium grained, grayish brown to brown, moist, medium dense (SP) (A-1-b)		14	M		SS	12						
11													
12			21	M		SS	12						
13													
14	CLAYEY SAND, a little gravel, brown, stiff to very stiff (SC/SM) (A-2-4)	TILL	14	M		SS	12	10					
15													
16			22	M		SS	12	10					
17													
18													
19													
20													
21													
21	END OF BORING												

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
DEPTH	DRILLING METHOD	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
0-19½'	3.25" HSA	6/28/13	10:55	21.0	19.5	20.0			None
		6/28/13	11:10	21.0	19.5	20.0			None
BORING COMPLETED: 6/28/13									
DR: DTS LG: TM Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 7/10/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1092 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **925.1** Hennepin Co. Coordinates: **N 149051 E 497427**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1-2	FILL, mixture of sand with silt and silty sand, with gravel, a little organic fines, trace roots, brown, a little dark brown (A-2-4)	FILL	15	M	SS	14					
2-3	FILL, mostly sand with silt and gravel, possible cobble at 5', a little silty sand, trace roots, light grayish brown, a little dark brown (A-1-b)		17	M	SS	12	6				11
3-4											
4-5											
5-6											
6-7	GRAVELLY SAND WITH SILT, medium to fine grained, grayish brown, moist, very dense to medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	70	M	SS	0					
7-8											
8-9											
9-10	SAND, a little gravel, medium to fine grained, brown, moist, medium dense (SP) (A-1-b)		28	M	SS	12					
10-11											
11-12											
12-13	GRAVELLY SAND WITH SILT, medium grained, brown, moist, very dense (SP-SM) (A-1-b)		20	M	SS	12					
13-14											
14-15											
15-16	SAND WITH GRAVEL, medium grained, brown, moist, medium dense, a lens of fine to medium grained sand at 18' (SP) (A-1-b)		53	M	SS	12					
16-17											
17-18											
18-19											
19-20											
20-21	SAND WITH GRAVEL, medium to coarse grained, brown, waterbearing, medium dense (SP) (A-1-b)		29	M	SS	12					
21	END OF BORING		29	W	SS	12					
			27	W	SS	12					

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/28/13	9:36	21.0	19.5	19.3		19.0	
		6/28/13	9:50	21.0	19.5	19.0		18.8	
BORING COMPLETED: 6/28/13									
DR: DTS LG: TM Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 5/20/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO: **1093 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **921.8** Hennepin Co. Coordinates: **N 148263** **E 495776**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	4" Bituminous pavement	FILL	14	M	SS	4	13					
2	5" FILL, mostly sand with silt and gravel, pieces of brick, brown (A-1-b)											
3	FILL, mostly clayey sand with organic fines and gravel, black (A-1-b)	COARSE ALLUVIUM	8	-	SS	0						
4	SAND WITH SILT AND GRAVEL, medium to fine grained, light grayish brown, moist, loose to medium dense (SP-SM) (A-1-b)											
5												
6		TILL	19	M	SS	12						
7	SILTY SAND, a little gravel, brown, medium dense (SM/SC) (A-2-4)											
8												
9		TILL	12	M	SS	12						
10												
11												
12	CLAYEY SAND, a little gravel, brown, very stiff, laminations of medium sand (SC/SM) (A-2-4)	TILL	16	M	SS	18	8					
13												
14	CLAYEY SAND, a little gravel, brown, stiff (SC/SM) (A-2-4)	COARSE ALLUVIUM	12	W	SS	18	11					
15												
16												
17	SAND WITH SILT, a little gravel, medium grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	16	W	SS	12						
18												
19		COARSE ALLUVIUM	17	W	SS	18						
20	SAND, a little gravel, fine to medium grained, light brown, waterbearing, medium dense, a lens of fine grained sand (SP) (A-3)											
21	END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 7/16/13

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		7/11/13	9:15	21.5	19.5	19.5		17.1	
		7/11/13	9:20	21.5	19.5	10.0		15.8	
BORING COMPLETED: 7/11/13									
DR: GH LG: JMM Rig: 1C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1094 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **921.9** Hennepin Co. Coordinates: **N 148035 E 495245**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with gravel, a little clayey sand, sand with silt, lean clay and ashes/cinders, pieces of bituminous, trace roots, dark brown, a little brown (A-1-b)	FILL	13	M	X	SS	16					
2			8	M		SS	6					
3			5	M		SS	14	24				
4	LEAN CLAY WITH SAND, dark brown, firm (CL) (A-6)	TILL			H							
5	SANDY LEAN CLAY, a little gravel, brown, firm (CL) (A-6)		5	M		SS	14	16				
6	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, a little light brown, moist, loose (SP-SM) (A-1-b)	COARSE ALLUVIUM	8	M		SS	10					
7	GRAVELLY SAND WITH SILT, medium grained, moist, medium dense (GP-GM)				H							
8	SAND, a little gravel, medium grained, light brown, moist (SP) (A-1-b)		14	M		SS	16					
9	SAND, a little gravel, medium to fine grained, light brown, moist, loose (SP) (A-1-b)		9	M		SS	16					
10	GRAVELLY SAND, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)				H							
11	SAND, a little gravel, medium to fine grained, light brown, moist, loose (SP) (A-1-b)		9	M		SS	14					
12	GRAVELLY SAND, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		15	M		SS	14					
13	CLAYEY SAND, a little gravel, brown, stiff (SC/SM) (A-2-4)	TILL			H							
14			12	M		SS	16	11				
15	END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/25/13	11:15	19.0	17.0	18.9		18.1	
		6/25/13	11:30	21.5	19.5	20.2		20.9	
BORING COMPLETED: 6/25/13		6/25/13	11:45	21.5	19.5	20.1		19.8	
DR: TK	LG: MF	Rig: 1C							

AET_CORP_W-COORDINATES_01-05697.GPJ AET+CPT+WELL.GDT 7/16/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1095 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **923.0** Hennepin Co. Coordinates: **N 147799 E 494703**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly sand with organic fines, trace roots, dark brown (A-2-4)	FILL	12	M	SS	14					
2	FILL, mostly gravelly sand with silt, pieces of bituminous and concrete, trace roots, brown, a little dark brown (A-1-b)		14	M	SS	8	12				
3											
4	FILL, mostly gravelly clayey sand, trace roots, dark brown (A-2-4)										
5	SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	23	M	SS	16					
6											
7	SAND WITH SILT AND GRAVEL, apparent cobble around 7/8", medium grained, brown, moist, medium dense (SP-SM) (A-1-b)		27	M	SS	18					
8											
9	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, moist, medium dense (SP-SM) (A-1-b)		24	M	SS	14					
10											
11	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		17	M	SS	16					
12											
13	SAND WITH SILT, fine grained, light brown, waterbearing, medium dense, a lens of medium grained sand with silt (SP-SM) (A-3)		19	M	SS	18					
14											
15	CLAYEY SAND, a little gravel, brown, very stiff (SC/SM) (A-2-4)	TILL	16	M/W	SS	18	12				
16											
17	SILTY SAND WITH GRAVEL, brown, a little light brown, medium dense, a lens of fine grained sand with silt (SM) (A-2-4)		12	M/W	SS	18	12				
18											
19	CLAYEY SAND, a little gravel, brown, stiff, lenses of fine grained sand with silt (SC/SM) (A-2-4)										
20											
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19 1/2'	3.25" HSA	6/25/13	9:55	19.0	17.0	17.7		17.2	
		6/25/13	10:10	21.5	19.5	20.0		18.6	
BORING COMPLETED: 6/25/13		6/25/13	10:15	21.5	19.5	10.8		17.9	
DR: TK LG: MF Rig: 1C									

AET_CORP_WCOORDINATES_01-05697.GPJ_AET+CPT+WELL.GDT_7/2/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1096 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **923.2** Hennepin Co. Coordinates: **N 147592 E 494140**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly sand with silt and gravel, a little clayey sand with organic fines, pieces of brick, trace roots, dark brown, a little black (A-1-b)	FILL	40	M	SS	12					
2	FILL, mostly clayey sand with gravel, a little sand, dark brown, a little light brown (A-6)		14	M	SS	12	9				
4	FILL, mostly clayey sand, a little gravel, dark brown (A-2-4)		2	M	SS	12	10				
7	FILL, mixture of clayey sand and sandy lean clay, a little gravel, trace roots, dark brown and brown (A-6)		4	M	SS	2	11				
9	LEAN CLAY, black to brown, firm (CL) (A-6)		FINE ALLUVIUM								
10	LEAN CLAY, brown, firm (CL) (A-6)			5	M	SS	14	29			
12	LEAN CLAY, gray, a little brown, soft, laminations of sandy silt (CL) (A-4)	4		M	SS	12	28				
14	GRAVELLY SAND WITH SILT, medium to fine grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	14	W	SS	12					
17	GRAVELLY SAND, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		11	W	SS	12					
20			13	W/M	SS	16					
21	SANDY LEAN CLAY, a little gravel, light grayish brown, stiff (CL) (A-6) END OF BORING	TILL					20				

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/24/13	1:31	16.5	14.5	15.4		None	
		6/24/13	1:41	16.5	14.5	16.0		15.4	
BORING COMPLETED: 6/24/13		6/24/13	1:50	21.5	19.5	19.5		16.0	
DR: JM LG: JM Rig: 1C		6/24/13	1:55	21.5	19.5	19.5		15.7	

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 7/2/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1097 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **923.3** Hennepin Co. Coordinates: **N 147401 E 493569**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1-2	FILL, mixture of sand with gravel and clayey sand with organic fines, trace roots, brown and dark brown (A-1-b, A-6)	FILL	8	M	SS	3					
3-4	FILL, mostly clayey sand, a little gravel, pieces of metal, ashes/cinders, trace roots, dark brown (A-6)		4	M	SS	2	18				
5-6	FILL, mostly lean clay, trace roots, dark brown and brown (A-6)		4	M	SS	12	25				
7-9	LEAN CLAY, trace roots, brown, a little black, soft, a lens of organic clay (CL) (A-6) (possible fill)	FINE ALLUVIUM OR FILL	4	M	SS	14	29				
10-11	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, loose (SP-SM) (A-3) (possible fill)	COARSE ALLUVIUM OR FILL	10	M	SS	14					
12-14	SAND WITH GRAVEL, medium grained, grayish brown, a little brown and dark brown, moist, loose, lenses of fine to medium sand and silty sand (SP) (A-1-b) (possible fill)	COARSE ALLUVIUM	5	M	SS	12					
15-16	SAND, a little gravel, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		16	M	SS	14					
17-18	GRAVELLY SAND, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		11	▼	SS	14					
19-20	SAND WITH GRAVEL, medium grained, brown, waterbearing, loose (SP) (A-1-b)		9	W	SS	14					
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	6/24/13	12:22	19.0	17.0	18.5		18.3	
		6/24/13	12:27	19.0	17.0	18.5		18.3	
BORING COMPLETED: 6/24/13		6/24/13	12:33	21.5	19.5	20.0		18.8	
DR: JM LG: TM Rig: 1C		6/24/13	12:40	21.5	19.5	20.0		18.6	

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 7/2/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1098 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **922.5** Hennepin Co. Coordinates: **N 147197 E 492998**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	OC	LL	PL	%-#200
1	FILL, mostly clayey sand with organic fines, a little gravel and sand with silt, trace roots, dark brown, a little grayish brown (A-6, A-1-b)	FILL	9	M	SS	6	24	4.9			
2							14				
3	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, moist, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	12	M	SS	12					
4											
5	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		25	M	SS	14					
6											
7	SAND, a little gravel, medium to fine grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		16	M	SS	14					
8											
9	SAND WITH SILT AND GRAVEL, medium to fine grained, light brown, moist, medium dense, laminations of clayey sand (SP-SM) (A-1-b)		23	M	SS	14					
10											
11	CLAYEY SAND, a little gravel, brown, a little light brown, very stiff to stiff, laminations of sand from 12' to 14' (SC/SM) (A-2-4)	TILL	16	M	SS	12	10				
12											
13			17	M	SS	12	6				
14											
15			17	M	SS	12	10				
16											
17			17	M	SS	12	10				
18											
19			13	▼	SS	14	10				
20											
21											
END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		6/24/13	10:48	21.5	19.5	21.5		None	
		6/24/13	10:58	21.5	19.5	21.1		21.0	
BORING COMPLETED: 6/24/13									
DR: JM LG: TM Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL_GDT 7/19/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1099 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **917.5** Hennepin Co. Coordinates: **N 146989 E 492435**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mixture of clayey sand, lean clay, with sand, slightly organic and silty sand, with gravel, pieces of brick, trace roots, dark brown, black and grayish brown (A-2-4)	FILL	9	M	SS	6	14				
2							27				
3	CLAYEY SAND, with organic fines, trace roots, black, firm (SC) (A-6) (possible fill)	MIXED ALLUVIUM OR FILL	7	M	SS	14					
4	SAND WITH SILT, a little gravel, medium to fine grained, dark brown, moist, loose (SP-SM) (A-1-b) (possible fill)	COARSE ALLUVIUM									
5		COARSE ALLUVIUM OR FILL	9	M	SS	12					
6	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, moist, loose (SP-SM) (A-1-b) (possible fill)										
7			7	M	SS	12					
8	SAND WITH GRAVEL, medium grained, brown, moist (SP) (A-1-b) (possible fill)										
9											
10	SAND, a little gravel, medium to fine grained, brown, moist, loose (SP) (A-1-b) (possible fill)		10	M	SS	3					
11											
12	CLAYEY SAND, a little gravel, brown, very stiff (SC/SM) (A-2-4)	TILL	20	M	SS	2	10				
13											
14	CLAYEY SAND, a little gravel, brown, stiff to very stiff, laminations of sand (SC/SM) (A-2-4)		14	M	SS	14	11				
15											
16											
17											
18			20	M	SS	6	9				
19											
20							10				
21	SAND WITH SILT, fine grained, light brown, moist, medium dense (SP-SM) (A-3)	COARSE*	23	M	SS	16	9				
	CLAYEY SAND, brown, very stiff, laminations of sand (SC/SM) (A-2-4)	TILL									
	END OF BORING	*ALLUVIUM									

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		6/24/13	9:44	21.5	19.5	21.4		None	
		6/24/13	9:55	21.5	19.5	21.4		None	
BORING COMPLETED: 6/24/13									
DR: JM LG: TM Rig: 1C									

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 7/2/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697.1** LOG OF BORING NO. **1100 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **842.9** Hennepin Co. Coordinates: **N 168772 E 525926**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	PID (ppm)		
1	FILL, a mixture of sand with silt and silty sand, a little gravel, pieces of wood and bricks, trace roots, brown, dark brown and gray	FILL	5	M		SS	17					0.0	
2													
3	FILL, mostly silty sand, pieces of wood, cinders, trace roots, black and dark brown		5	M		SS	15						0.0
4	FILL, mostly sand with silt, a little gravel, trace roots, brown												
5	FILL, mostly sand, a little gravel and sand with silt, brown, grayish brown and light grayish brown		8	M		SS	16						0.0
6													
7													
8			10	M		SS	15						0.0
9													
10			8	M		SS	17						0.0
11													
12			10	M		SS	19						0.0
13	FILL, mostly sand with gravel, brownish gray, a little black												
14													
15	SAND, fine grained, light brown, moist, medium dense (SP)	COARSE ALLUVIUM	16	M		SS	14					0.0	
16													
17	SAND WITH GRAVEL, medium grained, light brown, a little grayish brown, moist, medium dense, lenses of silt (SP)		11	M		SS	16						0.0
18													
19													
20	LEAN CLAY, grayish brown, stiff (CL)	FINE ALLUVIUM	11	M		SS	18	26				0.0	
21	FAT CLAY, brownish gray, stiff (CH)							26					
21	END OF BORING												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
0-19½'	3.25" HSA	11/11/10	12:11	21.0	19.5	20.9			None
		11/11/10	12:21	21.0	19.5	20.9			None
BORING COMPLETED: 11/11/10									
DR: DTS LG: GM Rig: 33C									

AET_CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697.1**

LOG OF BORING NO. **1101 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**

SURFACE ELEVATION: **844.8** Hennepin Co. Coordinates: **N 169074 E 525926**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	PID (ppm)
1	FILL, mostly clayey sand with organic fines, a little gravel, trace roots, dark brownish gray and brown	FILL	8	M	SS	23	26				0.0
2	FILL, mostly sand with silt, a little gravel and clayey sand, pieces of bituminous and concrete, brown, a little dark brown		8	M	SS	16					0.0
3	Sieve analysis performed on sample from 2' to 4': -#200 = 5.8%		2	M	SS	15					0.0
4	SAND WITH GRAVEL, medium to fine grained, brown, moist, loose (SP) (possible fill)	COARSE ALLUVIUM OR FILL	8	M	SS	16					0.0
5	SAND, a little gravel, medium to fine grained, grayish brown, moist, loose (SP)	COARSE ALLUVIUM	8	M	SS	15					0.0
6	SAND WITH GRAVEL, medium grained, brownish gray, moist, loose (SP)		8	M	SS	15					0.0
7	SAND, fine grained, light grayish brown, moist, loose (SP)		9	M	SS	19					0.0
8	SANDY SILT, light grayish brown, moist, loose, a lamination of sand (ML)	FINE ALLUVIUM					20				
9	SAND, a little gravel, medium to fine grained, grayish brown, moist, medium dense, laminations of silt and silty sand (SP)	COARSE ALLUVIUM	18	M	SS	13					0.0
10	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-14½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		11/11/10	11:02	16.0	14.5	15.7		None	
		11/11/10	11:12	16.0	14.5	15.7		None	
BORING COMPLETED: 11/11/10									
DR: DTS LG: GM Rig: 33C									

AET CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697.1** LOG OF BORING NO. **1102 SS (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **844.5** Hennepin Co. Coordinates: **N 169267 E 525922**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	PID (ppm)
1	SANDY ORGANIC CLAY, with wood, a little gravel, trace roots, black, stiff, laminations of silty sand (OL/OH)	TOPSOIL	12	M	SS	24	20				0.0
2	SILTY SAND, trace roots, fine grained, brown, moist, medium dense (SM-SC)	COARSE ALLUVIUM	11	M	SS	21					0.0
3	SAND WITH SILT, fine to medium grained, brown, moist, medium dense (SP-SM)										
4	SAND, a little gravel, fine to medium grained, brown, moist, loose (SP)		7	M	SS	18					0.0
5	SAND, fine grained, light grayish brown, brown, a little brown, moist, loose, laminations of silt (SP)		8	M	SS	17					0.0
6	SAND, a little gravel, medium to fine grained, brownish gray, moist, loose (SP)		11	M	SS	18					0.0
7	SAND, a little gravel, medium grained, brownish gray, moist, medium dense (SP)		20	M	SS	16					0.0
8	SAND WITH SILT, fine grained, light brownish gray, a little brown, moist, medium dense, laminations of silt (SP-SM)		18	M	SS	17					0.0
9	SAND, a little gravel, medium grained, grayish brown, a little brownish gray, moist, medium dense, a lens of silt (SP)		24	M	SS	10					0.0
10	SAND WITH SILT, a little gravel, medium to fine grained, grayish brown, moist, medium dense (SP-SM)		17	M	SS	16					0.0
11	SAND, fine grained, grayish brown, moist, medium dense (SP)										
12	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		11/11/10	9:48	21.0	19.5	20.9		None	
		11/11/10	9:59	21.0	19.5			None	
BORING COMPLETED: 11/11/10									
DR: DTS LG: GM Rig: 33C									

AET CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697.1** LOG OF BORING NO. **1103 SS (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis, MN**
 SURFACE ELEVATION: **842.6** Hennepin Co. Coordinates: **N 169543 E 525927**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	PID (ppm)
1	SILTY SAND, with organic fines, trace roots, fine grained, black, moist, loose (SM)	TOPSOIL	6	M	SS	24	20				0.0
2	CLAYEY SAND, trace roots, brown, firm (SC)	MIXED ALLUVIUM					11				
3	SAND WITH SILT, fine grained, brown, moist, medium dense to loose (SP-SM)	COARSE ALLUVIUM	12	M	SS	24					0.0
4	Sieve analysis performed on sample from 2' to 4': -#200 = 9.5%										
5											
6	SAND WITH SILT, fine grained, light grayish brown, moist, loose (SP-SM)		9	M	SS	24					0.0
7	SAND, a little gravel, fine to medium grained, light grayish brown, moist, medium dense, laminations of silt (SP)		14	M	SS	18					0.0
8											
9	SAND, a little gravel, medium to fine grained, brownish gray, moist, medium dense (SP)		22	M	SS	13					0.0
10											
11											
12											
13											
14	SAND, medium to fine grained, brownish gray, moist, medium dense (SP)		13	M	SS	14					0.0
15											
16	SAND, fine grained, light grayish brown, moist, medium dense (SP)		15	M	SS	12					0.0
17											
18	SAND, fine grained, brown, a little dark brown, moist, medium dense, laminations of silt (SP)										
19											
20	LEAN CLAY, grayish brown, a little brown, stiff, laminations of sand with silt (CL)	FINE ALLUVIUM	13	M	SS	18	28	27			0.0
21	FAT CLAY, gray, a little light brownish gray, stiff, laminations of silt (CH)										
	END OF BORING										

AET CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	11/11/10	8:45	21.0	19.5	20.9		None	
		11/11/10	8:58	21.0	19.5	20.9		None	
BORING COMPLETED:	11/11/10								
DR: DTS	LG: GM	Rig: 33C							

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1115 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **836.9** Hennepin Co. Coordinates: **N 165292 E 520917**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, trace roots, grayish brown and dark brown (A-2-4)	FILL	17	M	SS	13					
2	FILL, mixture of silty sand and sand with silt, light grayish brown and light brown (A-2-4, A-3)		16	M	SS	9					
3	FILL, mostly sand with silt, a little gravel, brown (A-3)		26	M	SS	13					
4	FILL, mostly sand with silt and gravel, light brownish gray (A-1-b)		30	M	SS	10					
5	FILL, mostly gravelly sand with silt, a little lean clay, grayish brown (A-1-b)		31	M	SS	7					
6	FILL, mostly sand with silt and gravel, grayish brown, a little brown (A-1-b)		22		SS	12	21				
7	FILL, mixture of lean clay and clayey sand, brownish gray and brown (A-7-6, A-6)		COARSE ALLUVIUM	20	W	SS	12				
8	SAND WITH GRAVEL, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)			10	W	SS	16				
9	SAND, a little gravel, medium grained, brown, waterbearing, loose (SP) (A-1-b)			8	W	SS	10				
10	SAND WITH GRAVEL, medium grained, brown, waterbearing, loose (SP) (A-1-b)										
11	SAND WITH GRAVEL, medium grained, brown, waterbearing, loose (SP) (A-1-b)										
12	END OF BORING										

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		12/2/13	9:25	16.0	14.5	14.5		14.1	
		12/2/13	9:35	16.0	14.5	14.0		13.1	
BORING COMPLETED:	12/2/13	12/2/13	9:45	21.0	19.5	17.4		15.4	
DR: SG	LG: SB	Rig: 91C							

AET_CORP_W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/10/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1116 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **834.9** Hennepin Co. Coordinates: **N 165430 E 521130**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, apparent cobbles, brown and gray (A-1-b)	FILL			FFM	4					
2	FILL, mostly silty sand with gravel, pieces of brick, black, frozen (A-2-4)				M	13					
3	FILL, mostly silty sand, a little gravel, brown (A-2-4)		25								
4	FILL, mostly silty sand, a little gravel, brown (A-2-4)										
5	FILL, mostly sand with silt, a little gravel and clayey sand, brown (A-2-4, A-2-6)		9		M	12	11				
6	FILL, mostly clayey sand with gravel, a little sandy lean clay, brown, a little gray and black (A-6)										
7	SWAMP DEPOSIT	SWAMP DEPOSIT									
8	SAPRIC PEAT, black, a little gray, a lens of sand with silt (PT) (A-8)		7		M	16	304				
9	FAT CLAY, brownish gray, firm to stiff, laminations of silty sand (CH) (A-7-6)	FINE ALLUVIUM									
10	FAT CLAY, brownish gray, firm to stiff, laminations of silty sand (CH) (A-7-6)		5		▼	17	37				
11											
12											
13			20		M/W	16	25				
14	SAND WITH SILT, a little gravel, medium to fine grained, gray, waterbearing, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM TILL									
15	SANDY LEAN CLAY, brownish gray, firm, lenses and laminations of silty sand (CL) (A-6)		8		W/M	6	24				
16	SANDY LEAN CLAY, brownish gray, firm, lenses and laminations of silty sand (CL) (A-6)										
17	SAND WITH SILT AND GRAVEL, medium to fine grained, gray, waterbearing, medium dense, a lens of sandy lean clay (SP-SM) (A-1-b)	COARSE ALLUVIUM	30		W	12					
18	SAND WITH SILT AND GRAVEL, medium to fine grained, gray, waterbearing, medium dense, a lens of sandy lean clay (SP-SM) (A-1-b)										
19	SAND, fine to medium grained, grayish brown, waterbearing, loose (SP) (A-3)		5		W	18					
20	SAND, fine to medium grained, grayish brown, waterbearing, loose (SP) (A-3)										
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	12/2/13	10:25	16.0	14.5	14.3		12.6	
		12/2/13	10:35	16.0	14.5	13.0		11.0	
BORING COMPLETED: 12/2/13		12/2/13	10:50	21.0	19.5	15.6		13.5	
DR: SG	LG: SB	Rig: 91C							

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1117 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **831.7** Hennepin Co. Coordinates: **N 165630 E 521356**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly sand with silt, a little gravel and clayey sand, brown, a little dark brown, frozen (A-3, A-6)	FILL		F	SU						
2				F	SU						
3				M	SU						
4	FILL, mostly silty sand with gravel, piece of metal, black, frozen (A-2-4)		26	M	SS	6					
5	FILL, mostly silty sand with gravel, a little clayey sand, brown (A-2-4)										
6	FILL, mostly sand with silt, a little gravel, sandy lean clay and clayey sand, brown (A-2-4)		14	M	SS	6					
7	FILL, mostly sand with silt and gravel, a little clayey sand and sandy lean clay, brown, a little black (A-1-b)										
8			8	M	SS	6					
9											
10			8	M	SS	4					
11											
12											
13			13	M	SS	6					
14											
15			9	M	SS	10					
16											
17	FILL, mostly clayey sand, a little gravel and sand with silt, trace roots, brown, a little black (A-6)		12	M	SS	7	11				
18											
19	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, waterbearing, loose to medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	7	W	SS	3					
20											
21			7	W	SS	3					
22											
23											
24											
25			21	W	SS	5					
26	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-24½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		12/2/13	11:45	21.0	19.5	19.5		19.1	
		12/2/13	12:00	21.0	19.5	19.5		18.9	
BORING COMPLETED: 12/2/13		12/2/13	12:30	26.0	24.5	23.3		19.1	
DR: SG	LG: SB	Rig: 91C							

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/10/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1118 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **829.3** Hennepin Co. Coordinates: N **165827** E **521576**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, a little ashes/cinders, black, frozen to 1' (A-2-4)	FILL		F/M	SS	12					
2	FILL, mostly sand with silt, a little gravel and silty sand, brown (A-2-4)		29	M	SS	12					
3											
4	FILL, mostly sand with silt and gravel, a little clayey sand, brown (A-1-b)		13	M	SS	10					
5											
6											
7											
8				13	M	SS	6				
9											
10	FILL, mostly sand with silt, a little gravel and clayey sand, brown (A-3)		7	M	SS	7					
11											
12	FILL, mostly sand with silt and gravel, brown (A-1-b)		6	M	SS	1½					
13											
14	FILL, mostly sand with silt, a little gravel and clayey sand, brown (A-1-b)		7	M	SS	10					
15											
16											
17	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, waterbearing, very loose (SP-SM) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	2	W	SS	10					
18			3	W	SS	7					
19											
20											
21											
22	SAND, a little gravel, medium grained, brown, waterbearing, very loose, lenses of clayey sand (SP) (A-1-b)	COARSE ALLUVIUM	3	W	SS	12					
23			2	W	SS	6					
24											
25											
26	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-24½'	3.25" HSA	12/3/13	8:45	18.5	17.0	17.2		None	
		12/3/13	8:50	21.0	19.5	19.5		18.8	
BORING COMPLETED: 12/3/13		12/3/13	9:00	21.0	19.5	19.2		16.6	
DR: SG LG: SB Rig: 91C		12/3/13	9:20	26.0	24.5	23.5		19.4	

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/10/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1119 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **825.7** Hennepin Co. Coordinates: **N 166037 E 521794**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mostly silty sand with gravel, a little clayey sand, pieces of concrete, bituminous and ashes/cinders, black, a little dark brown, frozen to 1' (A-2-4)	FILL	27	F/M		SS	16						
2				M		SS	3						
3													
4	FILL, mostly sand with silt and gravel, a little clayey sand, brown (A-1-b)		12	M		SS	6						
5													
6	FILL, mostly sand with silt, a little gravel and clayey sand, brown (A-2-4)		10	M		SS	4						
7													
8													
9	FILL, mostly sand with silt and gravel, a little clayey sand, light brown and brown (A-1-b)		12	M		SS	7						
10													
11													
12													
13	SAND WITH GRAVEL, medium grained, brown, waterbearing, very loose to loose, lenses and laminations of clayey sand (SP) (A-1-b)	COARSE ALLUVIUM	4	W		SS	4						
14													
15													
16	SAND, fine to medium grained, light brown, waterbearing, loose (SP) (A-3)		10	W		SS	14						
17													
18													
19	SAND, fine to medium grained, light brown, waterbearing, loose (SP) (A-3)		7	W		SS	3						
20													
21	END OF BORING												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	12/3/13	10:10	16.0	14.5	14.5		13.7	
		12/3/13	10:20	16.0	14.5	14.5		13.5	
BORING COMPLETED: 12/3/13		12/3/13	10:30	21.0	19.5	19.4		16.3	
DR: SG LG: SB Rig: 91C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1120 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **823.8** Hennepin Co. Coordinates: **N 166265 E 522025**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	OC	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, apparent cobbles, pieces of concrete and bituminous, a little ashes/cinders, black, frozen to 1' (A-2-4)	FILL		F/M	SS	24					
2	FILL, mostly sand with silt, a little gravel and clayey sand, brown (A-1-b)		24	M	SS	13					
3	FILL, mostly sand with gravel, light brown (A-1-b)		10	M	SS	12					
4			11	M	SS	7					
5			8	M	SS	12					
6			8	M	SS	16	84	18.5			
7			WH	M	SS	18	76		57	44	
8			9	W	SS	13					
9			2	W	SS	15					
10			9	W	SS	8					
11			8	W	SS	4					
12		8	W	SS	8						
13		8	W	SS	8						
14		8	W	SS	8						
15		8	W	SS	8						
16		8	W	SS	8						
17		8	W	SS	8						
18		8	W	SS	8						
19		8	W	SS	8						
20		8	W	SS	8						
21		8	W	SS	8						
22		8	W	SS	8						
23		8	W	SS	8						
24		8	W	SS	8						
25		8	W	SS	8						
26		8	W	SS	8						
27		8	W	SS	8						
28		8	W	SS	8						
29		8	W	SS	8						
30		8	W	SS	8						
31	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA								
19½-29½'	RDF w/DM	12/3/13	11:45	18.5	17.0	17.0		16.0	
		12/3/13	12:00	18.5	17.0	16.0		15.2	
BORING COMPLETED: 12/3/13									
DR: SG LG: SB Rig: 91C									

AET_CORP_W-COORDINATES_01-05697.GPJ_AET-CPT+WELL_GDT_12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1121 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **822.4** Hennepin Co. Coordinates: **N 166425 E 522232**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	OC	LL	PL	%-#200		
1	FILL, mostly silty sand with gravel, brown (A-2-4)	FILL	50/3	M	SS	3							
2	FILL, mostly silty sand with gravel, trace roots, dark brown (A-2-4) (petroleum-type odor)												
3	FILL, mostly sand with silt and gravel, a little silty sand and ashes/cinders, pieces of bituminous, black (A-1-b) (petroleum-type odor)		22	M	SS	12							
4													
5	FILL, mostly sand with gravel, light grayish brown (A-1-b)		16	M	SS	6							
6													
7	FILL, mostly sand with silt, a little gravel and sandy lean clay, brown (A-1-b)		9	M	SS	18							
8	FILL, mostly sand, a little gravel and sandy lean clay, light grayish brown, a little gray (A-1-b)		11	M	SS	10							
9													
10	FILL, mostly sand with silt and gravel, brown (A-1-b)												
11													
12	SAPRIC PEAT, black (PT) (A-8)	SWAMP DEPOSIT					99	26.5					
13	BOGLIME, light gray, firm (OH) (A-7-5)		7	M	SS	16	45	1.7					
14													
15	ORGANIC CLAY, trace shells and roots, light brownish gray, soft (OH) (A-7-5)	2	M	SS	20	84	4.6						
16													
17	SAND WITH SILT, fine grained, light grayish brown, waterbearing, medium dense (SP-SM) (A-3)	COARSE ALLUVIUM											
18			25	W	SS	16							
19	SAND, fine to medium grained, brown, a little light brownish gray, waterbearing, medium dense (SP) (A-3)		30	W	SS	18							
20													
21													
22													
23			21	W	SS	16							
END OF BORING													
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS					NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG						
0-22' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH						DRILLING FLUID LEVEL	WATER LEVEL
		11/27/13	1:40	18.5	17.0	17.8							16.9
		11/27/13	1:55	23.5	22.0	19.9							17.1
BORING COMPLETED: 11/27/13													
DR: DS LG: CD Rig: 33C													

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 12/20/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1122 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **819.3** Hennepin Co. Coordinates: **N 166659 E 522450**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	OC	LL	PL	%-#200		
1	FILL, mostly silty sand with gravel, trace roots, brown (A-2-4)	FILL	16	M		SS	6						
2	FILL, mostly silty sand, a little ashes/cinders, black (A-2-4)												
3	FILL, mostly sand with gravel, a little ashes/cinders, brown, a little black (A-1-b)			5	M		SS	8					
4													
5	FILL, mostly lean clay, a little organic clay, trace roots, gray, a little dark brownish gray and black (A-6, A-8)			9	M		SS	12	32				
6													
7													
8				5	M		SS	10	28				
9													
10				4	M		SS	18	14				
11	ORGANIC CLAY, trace roots, light brownish gray, soft to firm (OH) (A-7-5)	SWAMP DEPOSIT						85					
12								80	3.0				
13	SAND WITH SILT, fine grained, gray, moist, loose, lenses and laminations of silty sand (SP-SM) (A-3)	COARSE ALLUVIUM	5	M		SS	20						
14	SAND, fine to medium grained, brownish gray, waterbearing, loose to medium dense (SP) (A-3)			9	W		SS	18					
15													
16				12	W		SS	22					
17													
18	SAND, with a little gravel, medium grained, brownish gray to brown, waterbearing, medium dense (SP) (A-1-b)		14	W		SS	24						
19													
20													
21	END OF BORING												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	11/27/13	12:15	16.5	14.5	15.1		14.2	
		11/27/13	12:40	21.5	19.5	19.1		15.4	
BORING COMPLETED: 11/27/13		11/27/13	12:45	21.5	19.5	17.8		15.3	
DR: DS	LG: CD	Rig: 33C							

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1123 SS (p. 1 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **818.1** Hennepin Co. Coordinates: **N 166850 E 522656**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	OC	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, a little ashes/cinders, trace roots, black, a little brown (A-2-4)	FILL	7	M	SS	18					
2	FILL, mostly sand with silt and gravel, a little sandy lean clay and ashes/cinders, pieces of wood, dark brownish gray and gray (A-1-b, A-6)		9	M	SS	17					
3	FILL, mostly fat clay, a little silt, gray (A-7-6)		3	M	SS	14	44				
4	FILL, mostly clayey sand with organic fines, a little sand, trace roots, black, a little dark brownish gray (A-6)		4	M	SS	16	23				
5	FILL, mixture of fat clay and gravel with silt and sand, possible cobbles, brownish gray and gray (A-7-6, A-1-b)		11	M/W	SS	14	39				
6	FILL, mostly clayey sand with gravel and wood, brownish gray (A-6)		5	W	SS	1					
7											
8											
9											
10											
11											
12											
13											
14											
15	ORGANIC CLAY, with shells, trace roots, light brownish gray to grayish brown, soft (OH) (A-7-5)	SWAMP DEPOSIT	5	W	SS	-					
16			5	W	SS	18	106	4.6			
17											
18											
19											
20											
21											
22											
23										108	68
24											
25	ORGANIC CLAY, trace shells, grayish brown to brown to gray, soft (OH) (A-7-5)		3	M	SS	18	94		88	47	
26											
27											
28											
29											
30											
31											

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL_GDT 12/23/13

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-39½'	3.25" HSA	11/27/13	11:25	11.0	9.5	10.5		4.0	
		11/27/13	11:45	11.0	9.5	10.5		4.6	
BORING COMPLETED: 11/27/13		11/27/13	1:20	41.0	39.5	29.0		22.0	
DR: TA	LG: SB	Rig: 85C							

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1123 SS (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: N **166850** E **522656**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	OC	LL	PL	%-#200	
33	FAT CLAY, brownish gray, a little brown, firm, laminations of waterbearing sand (CH) (A-7-6) (continued)	FINE ALLUVIUM (continued)	5	M/W	SS	18	29					
34	FAT CLAY, brownish gray, firm (CH) (A-7-6)		5	M		18	55					
35		COARSE ALLUVIUM	5	W	SS	18						
36			5	W		18						
37	SAND, fine grained, trace roots, brownish gray, waterbearing, loose to very loose (SP) (A-3)		5	W		18						
38			4	W	SS	18						
39												
40												
41	END OF BORING											

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1124 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **817.8** Hennepin Co. Coordinates: N **167038** E **522892**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	OC	LL	PL	%-#200
1-2	FILL, mostly clayey sand with gravel, a little silty sand and silt, pieces of concrete, dark brown and black (A-2-6)	FILL	13	M	SS	18	11				
3-4	FILL, mixture of sand with silt and gravel and lean clay, brown and black, a little gray (A-1-b, A-7-6)		17	M	SS	18					
5-6	FILL, mostly fat clay, a little organic clay, brown and gray, a little black (A-7-6)		7	M	SS	18	43				
7-9			4	M	SS	20	38				
10-11	FILL, mostly lean clay, a little gravel, silty sand and organic clay, light gray, gray and black		6	M	SS	21	30				
12-15	LEAN CLAY, brown and gray mottled, a little black, firm to soft, a lens of organic clay, laminations of sandy silt (CL) (possible fill) (A-6)	FINE ALLUVIUM OR FILL	5	M/W	SS	20	33				
16-17			4	M	SS	18	36				
18-19	ORGANIC CLAY, trace shells and roots, pieces of wood, grayish brown to brown, soft (OH) (A-7-5)	SWAMP DEPOSIT	2	M	SS	22	107	9.6			
20-21			3	M	SS	22	106		100	63	
22-24	FAT CLAY, slightly organic, brownish gray, very soft, laminations of silt (CH) (A-7-6)	FINE ALLUVIUM	WH	M	SS	24	67	2.0			
25-26	FAT CLAY, slightly organic, dark brownish gray, firm (CH) (A-7-6)		5	M	SS	24	52	2.8			
27-28	SAND WITH SILT, fine grained, brownish gray, waterbearing, very loose (SP-SM) (A-3)	COARSE ALLUVIUM	3	W	SS	18					
29-30	SAND, fine grained, brownish gray, waterbearing, loose to medium dense (SP) (A-3)		6	W	SS	18					

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29½'	3.25" HSA								
29½-39½'	RDF w/DM	11/27/13	10:54	29.0	27.0	23.3		20.0	
		11/27/13	11:04	29.0	27.0	21.8		19.0	
BORING COMPLETED:	11/27/13								
DR: JM	LG: SHS	Rig: 91C							

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL_GDT 12/23/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1124 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: **N 167038 E 522892**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	OC	LL	PL	%-#200	
33	SAND, fine grained, brownish gray, waterbearing, loose to medium dense (SP) (A-3) <i>(continued)</i>	COARSE ALLUVIUM <i>(continued)</i>	18	W		SS	12					
34	SAND WITH GRAVEL, medium to fine grained, brownish gray, waterbearing, medium dense (SP) (A-1-b)						SS	10				
35				17	W		SS					
36												
37	SAND, fine to medium grained, brownish gray, waterbearing, medium dense (SP) (A-3)			18	W		SS	12				
38												
39												
40	SAND, fine grained, brownish gray, waterbearing, medium dense (SP) (A-3)		18	W		SS	12					
41	END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1125 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **818.0** Hennepin Co. Coordinates: **N 167231 E 523126**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	OC	LL	PL	%-#200
1-2	FILL, mostly sand with silt and gravel, a little silty sand and ashes/cinders, brown, black and dark brown (A-1-b, A-2-4)	FILL	17	M	SS	16					
3-4	FILL, mostly fat clay, a little silt, gray and brownish gray (A-7-6)		13	M	SS	0					
5-6	FILL, mixture of sandy lean clay and silty sand, a little gravel, pieces of wood, trace roots (A-6, A-2-4)		8		SS	14	35				
7-8	FILL, mostly fat clay, gray (A-7-6)		8	M	SS	8	46				
9-10	FILL, mostly fat clay with gravel, gray (A-7-6)		26	M/W	SS	8	39				
12-13	ORGANIC CLAY, trace shells and roots, gray, a little black, firm, a lens of sapric peat (OH) (A-7-5)		SWAMP DEPOSIT	6	M	SS	12	43			
14-15	ORGANIC CLAY, trace roots, grayish brown, soft (OH) (A-7-5)			4	M	SS	18	85	7.1		
17-18	FAT CLAY, brownish gray, soft (CH) (A-7-6)		FINE ALLUVIUM	3	M	SS	24	45			
19-20				4	M	SS	24	56		105	27
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS					NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH		DRILLING FLUID LEVEL
0-19½'	3.25" HSA	11/27/13	10:30	9.0	7.0	8.3		6.2
		11/27/13	11:00	21.5	19.5	21.2		18.6
BORING COMPLETED: 11/27/13		11/27/13	11:15	21.5	19.5	21.2		17.4
DR: DS	LG: CD	Rig: 33C						

AET_COPR W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1126 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **818.9** Hennepin Co. Coordinates: **N 167378 E 523383**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	OC	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and ashes/cinders, trace roots, black (A-2-4)	FILL	14	M		12					
2											
3	FILL, mostly lean clay, a little sand with silt, light gray, brown and dark brown (A-4, A-3)			16	M		12	18			
4	FILL, mostly sand with silt, a little gravel, light brown (A-3)										
5				11	M		8				
6	FILL, mostly sand with silt and gravel, a little clayey sand, brown, a little dark brown (A-1-b)										
7	FILL, mostly sand with silt, a little silty sand, light brown (A-3)			12	M		10				
8											
9	FILL, mostly sand with silt, a little gravel and clayey sand, brown (A-3)			8	M		14				
10											
11	FILL, mixture of silty sand and organic clay, trace shells and roots, light brownish gray, a little dark brown (A-4)		SWAMP DEPOSIT					24			
12					7	M		16	44		
13	BOGLIME, light gray (MH) (A-7-5)										
14			2	M		24	60	0.9			
15											
16											
17	FAT CLAY, grayish brown, very soft, laminations of silt (CH) (A-7-6)	FINE ALLUVIUM	WH			24	57				
18				WH	M		24	69			
19											
20	FAT CLAY, brownish gray, soft to firm (CH) (A-7-6)		2	M		16	72		105	28	
21											
22			6	M/W		24	73				
23	SAND, fine grained, brownish gray, waterbearing, medium dense, laminations of clayey sand above 27' (SP) (A-3)	COARSE ALLUVIUM									
24											
25											
26											
27			27	W		16					
28											
29											
30											
31	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29½'	3.25" HSA	11/27/13	9:30	26.5	24.5	24.3		21.7	
		11/27/13	9:55	31.0	29.5	27.1		18.0	
BORING COMPLETED: 11/27/13									
DR: DS LG: CD Rig: 33C									

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1127 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **821.7** Hennepin Co. Coordinates: **N 167506 E 523657**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and ashes/cinders, trace roots, black, frozen to 1 1/2' (A-6)	FILL		F/M	SS	24	12				
2	FILL, mixture of sand with silt and sand, a little gravel, clayey sand and silty sand, brown and light grayish brown (A-2-4, A-3)		25	M	SS	17					
3	FILL, mostly sand with gravel, a little clayey sand, light brown, a little brown (A-1-b)		16	M	SS	15					
4											
5											
6											
7	SAND, fine grained, light brown, a little brown, moist, medium dense (SP) (A-3) (possible fill)	COARSE ALLUVIUM OR FILL	16	M	SS	16					
8			16	M	SS	18					
9											
10											
11											
12											
13			17	M	SS	18					
14											
15			17	M	SS	17					
16											
17	SANDY LEAN CLAY, a little gravel, apparent cobbles, brownish gray, very stiff (CL) (A-6)	TILL	22	M	SS	14	17				
18											
19											
20	CLAYEY SAND, grayish brown, a little brown, stiff, laminations of sand (SC) (A-6)		13	M	SS	1					
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19 1/2'	3.25" HSA	11/27/13	10:40	21.0	19.5	21.0		None	
BORING COMPLETED:	11/27/13								
DR: TA	LG: SB	Rig: 85							

AET_CORP_W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1128 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **822.1** Hennepin Co. Coordinates: **N 167628 E 523924**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with gravel, pieces of concrete and brick, a little ashes/cinders, dark brown, frozen to 4" (A-2-4)	FILL	34	F/M	SS	8						
2	FILL, mostly gravelly silty sand, a little clayey sand, grayish brown (A-2-4)		12	M	SS	3						
4	FILL, mixture of sand with silt and silty sand, a little gravel and clayey sand, light brown and brown (A-2-4)		32	M	SS	18						
6	FILL, mostly sand, a little clayey sand, light brown, a little grayish brown (A-3)		26	M	SS	18						
8	FILL, mostly sand with silt and gravel, a little fat clay, brown and light grayish brown, moist (A-1-b, A-7-6)		14	M	SS	14						
10	FILL, mostly sand with silt and gravel, a little fat clay, brown and light grayish brown, moist (A-1-b, A-7-6)		14	M	SS	14						
12	FAT CLAY, brownish gray, firm, laminations of silt (CH) (A-7-6)		FINE ALLUVIUM	6	M	SS	24	45				
14	FAT CLAY, brownish gray, firm, laminations of silt (CH) (A-7-6)			6	M	SS	21	40				
16	FAT CLAY, brownish gray, firm, laminations of silt (CH) (A-7-6)			8	M	SS	24	37				
18	FAT CLAY, brownish gray, firm, laminations of silt (CH) (A-7-6)			8	M	SS	24	30			56	21
20	FAT CLAY, brownish gray, firm, laminations of sand (CH) (A-7-6)			8	M	SS	24	30			56	21
21	END OF BORING											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	11/27/13	9:20	21.5	19.5	21.5		None	
		11/27/13	9:30	21.5	19.3	21.5		None	
BORING COMPLETED: 11/27/13									
DR: JM LG: SHS Rig: 91C									

AET_CORP_W-COORDINATES_01-05697.GPJ AET+CPT+WELL.GDT 12/20/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1129 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **822.6** Hennepin Co. Coordinates: **N 167789 E 524223**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand, a little gravel and ashes/cinders, black, frozen to 4" (A-2-4)	FILL	56	F/M	SS	18						
2	FILL, mostly silty sand with gravel, a little ashes/cinders, black (A-2-4)		28	M	SS	18						
3	FILL, mostly lean clay, a little sand, brown, a little light brown (A-7-6)		16	M	SS	16	19					
4	FILL, mostly silty sand, black (A-2-4)		4	M	SS	16						
5	FILL, mostly sand, grayish brown (A-3)		17	W	SS	18						
6	FILL, mostly sand with silt, brown (A-3)		9	W	SS	24						
7	FAT CLAY, grayish brown, firm (CH) (A-7-6)		FINE ALLUVIUM	8	M	SS	20	39				
8	FAT CLAY, brownish gray, firm, laminations of silt (CH) (A-7-6)			7	M	SS	20	44				
9	FAT CLAY, grayish brown, firm, laminations of waterbearing sand (CH) (A-7-6)			5	M/W	SS	24	34				
10	END OF BORING											
11												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA	11/26/13	1:03	11.5	9.5	10.6		8.6	
		11/26/13	1:13	11.5	9.5	9.9		8.0	
BORING COMPLETED: 11/26/13		11/26/13	1:36	21.5	19.5	21.2		18.4	
DR: JM LG: SHS Rig: 91C		11/26/13	1:47	21.5	19.5	19.7		18.9	

AET_CORP_WCOORDINATES_01-05697.GPJ AET+CPT+WELL.GDT 12/9/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1130 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **822.4** Hennepin Co. Coordinates: **N 167899 E 524513**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mixture of silty sand and clayey sand, with wood, a little gravel, dark brown and black, frozen to 4" (A-2-4)	FILL	14	F/M	SS	12					
2	FILL, mixture of clayey sand and gravel with sand, dark brown and light grayish brown (A-2-6, A-1-b)		27	M	SS	12	7				
3											
4											
5											
6	FILL, mostly silty sand, dark brownish gray, a little grayish brown (A-2-4)										
7											
8											
9	FILL, mostly sand, gray and brown (A-3)										
10											
11											
12	FAT CLAY, trace roots, gray and brown mottled, soft (CH) (A-7-6)	FINE ALLUVIUM	3	M	SS	8	42				
13											
14											
15	FAT CLAY, brownish gray to grayish brown, soft to very soft, laminations of waterbearing sand (CH) (A-7-6)		2	M/W	SS	6	56				
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
DEPTH	DRILLING METHOD	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-39½'	3.25" HSA	11/26/13	9:26	11.0	9.0	10.1		7.3	
BORING COMPLETED: 11/26/13									
DR: JM LG: SHS Rig: 91C									

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1130 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: **N 167899 E 524513**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
33	FAT CLAY, brownish gray to grayish brown, soft to very soft, laminations of waterbearing sand (CH) (A-7-6) (continued)	FINE ALLUVIUM (continued)	WH	M/W	SS	22	66				
34											
35	FAT CLAY, trace roots, dark brownish gray, very soft, laminations of organic clay (CH) (A-7-6)	COARSE ALLUVIUM	10	M	SS	24	52				
36											
37	SAND WITH SILT, fine grained, gray, moist, loose (SP-SM) (A-3)										
38	SAND WITH SILT, a little gravel, medium to fine grained, dark brownish gray, waterbearing, loose (SP-SM) (A-1-b)			8	W	SS	16				
39											
40	SAND WITH SILT, fine grained, brown, waterbearing, medium dense (SP-SM) (A-3)		16	W	SS	18					
41											
END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1143 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **866.2** Hennepin Co. Coordinates: **N 160773 E 517726**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, trace roots, dark brown to black (A-2-4)	FILL	22	M	SS	16					
2	FILL, mostly sand with silt and gravel, trace roots, dark brown (A-1-b)		23	M	SS	14	11				
3	FILL, mixture of clayey sand and sand with silt, a little gravel, dark brown and light brown (A-2-4)										
4											
5	SANDY ORGANIC CLAY, a little gravel, trace roots, black, stiff (OH) (A-6) (possible fill)	FINE ALLUVIUM OR FILL	9	M	SS	10	39				
6											
7	SILTY SAND, a little gravel, medium to fine grained, dark brown, moist, loose (SM/SC) (A-2-4) (possible fill)	COARSE ALLUVIUM OR FILL	7	M	SS	16					
8											
9											
10	GRAVELLY SAND WITH SILT, possible cobbles, trace roots, medium to fine grained, light brownish gray, a little brown, moist, dense, laminations of clayey sand (SP-SM) (A-1-b) (possible fill)	COARSE ALLUVIUM	33	M	SS	6					
11											
12	GRAVELLY SAND, medium grained, light grayish brown and brown, moist to 14½' then waterbearing, medium dense, lenses of fine to medium grained sand with silt (SP) (A-1-b)		20	M	SS	16					
13											
14											
15			25	W	SS	6					
16											
17											
18			14	W	SS	10					
19	SAND WITH GRAVEL, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		18	W	SS	12					
20											
21			21	W	SS	10					
22											
23			22	W	SS	12					
24											
25											
26											
27	SAND, a little gravel, medium grained, gray, waterbearing, medium dense (SP) (A-1-b)		19	W	SS	14					
28											
29	GRAVELLY SAND, medium grained, gray, waterbearing, medium dense (SP) (A-1-b)		22	W	SS	10					
30											
31											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
0-17'	3.25" HSA								
17-59½'	RDF w/DM	8/28/13	3:00	16.0	14.5	14.5			14.4
		8/29/13	8:15	16.0	14.5	14.5			14.4
BORING COMPLETED:	8/29/13	8/29/13	8:30	18.5	17.0	17.0		15.0	
DR: GH LG: TK Rig: 1C		8/29/13	8:40	18.5	17.0	17.0		15.0	

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 9/4/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1143 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: **N 160773 E 517726**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
33	SAND, a little gravel, medium to fine grained, gray, waterbearing, medium dense (SP) (A-1-b) (continued)		22	W	SS	14					
34											
35			18	W	SS	14					
36											
37											
38	SANDY SILT, gray, wet, medium dense (ML) (A-4)	FINE ALLUVIUM	22	W	SS	14	20				
39											
40	GRAVELLY SAND WITH SILT, possible cobbles, medium to fine grained, brownish gray, waterbearing, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	23	W	SS	12					
41											
42											
43											
44											
45	SAND WITH GRAVEL, medium grained, grayish brown, a little brown, waterbearing, medium dense to very dense, a lens of silt at 55' (SP) (A-1-b)		55	W	SS	0					
46											
47											
48											
49											
50			29	W	SS	6					
51											
52											
53											
54											
55			51	W	SS	12					
56											
57											
58	SAND WITH SILT, fine grained, brown, waterbearing, very dense, laminations of medium grained sand (SP-SM) (A-3)		61	W	SS	10					
59											
60											
61	END OF BORING										

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 9/4/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1144 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **868.9** Hennepin Co. Coordinates: **N 162372 E 517829**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%#200
1	FILL, mostly silty sand, a little gravel, pieces of concrete, glass, trace roots, dark brown (A-2-4)	FILL	30	M		16					
2	8" Crushed limestone base, light brown (A-1-b)										
3	FILL, mostly sand with silt, a little gravel, silty sand and clayey sand, brown, a little light grayish brown (A-3)										
4											
5	FILL, mostly sand, a little gravel, brown (A-3)										
6	FILL, mostly sand with silt, trace roots, dark brown (A-3)										
7	SAND WITH SILT, medium to fine grained, brown to dark brown, waterbearing, very loose (SP-SM) (A-1-b)	COARSE ALLUVIUM	3	W		10					
8											
9											
10			2	W		10					
11											
12	SANDY LEAN CLAY, a little gravel, gray, firm to very stiff (CL) (A-6)	TILL	8	M		10	19				
13											
14											
15			17	W		14	13				
16											
17	CLAYEY SAND, a little gravel, brown, hard (SC) (A-6)	COARSE ALLUVIUM	37	M		16	13				
18	SAND WITH SILT, a little gravel, fine to medium grained, brown, waterbearing, dense, a lens of silty sand (SP-SM) (A-2-4)										
19	SAND, a little gravel, medium to fine grained, brown, waterbearing, medium dense, lenses of fine grained silty sand (SP) (A-1-b)										
20			19	W		12					
21											
22			25	W		10					
23											
24	SILTY SAND, a little gravel, brown, medium dense (SM) (A-2-4)	TILL	30	W		12					
25											
26											
27	CLAYEY SAND, a little gravel, brownish gray, hard, laminations of sand from 29½' to 33' (SC) (A-6)	TILL	46	M		16	10				
28											
29											
30			34	M		14	10				
31											

DEPTH	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-9½'	3.25" HSA								
9½'-59½'	RDF w/DM	8/28/13	9:30	11.0	9.5	9.5		9.3	
		8/28/13	9:40	11.0	9.5	9.5		9.2	
BORING COMPLETED: 8/28/13		8/28/13	9:50	11.0	9.5	9.5		9.2	
DR: GH LG: TK Rig: 1C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 9/4/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO: **1144 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: **N 162372 E 517829**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN,	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
33	SAND WITH SILT, fine grained, brown to brown and gray, waterbearing, dense, a lens of silt at 33½' (SP-SM) (A-3)	COARSE ALLUVIUM	41	M	SS	14	10				
34			55	W	SS	12					
35	SAND, a little gravel, fine to medium grained, brown, waterbearing, very dense, a lens of fine grained silty sand (SP) (A-3)		76	W	SS	12					
36											
37	SAND WITH SILT, a little gravel, medium grained, dark brownish gray, waterbearing, very dense (SP-SM) (A-1-b)		64	W	SS	10					
38											
39	SAND WITH SILT, fine to medium grained, grayish brown to brownish gray, waterbearing, very dense (SP-SM) (A-3)		65	W	SS	12					
40											
41	SAND, fine grained, grayish brown, waterbearing, very dense (SP) (A-3)		69	W	SS	14					
42											
43	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)		61	W	SS	14					
44											
45	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)		70	W	SS	10					
46											
47	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
48											
49	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
50											
51	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
52											
53	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
54											
55	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
56											
57	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
58											
59	SAND, fine to medium grained, grayish brown, waterbearing, very dense (SP) (A-3)										
60											
61	END OF BORING										

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL_GDT 9/4/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1148 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **864.6** Hennepin Co. Coordinates: N. **163206** E **518072**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, a little sapric peat and ashes/cinders, pieces of glass, trace roots, dark brown and brown, a little black (A-2-4)	FILL	10	M	SS	15					
2			15	M		7					
3	FILL, mixture of silty sand and sandy lean clay, a little gravel, dark brown, a little light brownish gray (A-2-4)	FILL	13	M	SS	8					
4			13	M		8					
5	FILL, mostly sand, a little gravel, trace roots, light grayish brown (A-3)	FILL									
6	SAND WITH SILT AND GRAVEL, possible cobbles, fine to medium grained, light grayish brown, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	27	M	SS	8					
7			27	M		8					
8	GRAVELLY SAND WITH SILT, fine to medium grained, light brown, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	30	M	SS	2					
9			30	M		2					
10	SAND, a little gravel, medium grained, light grayish brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	25	M	SS	5					
11			25	M		5					
12	CLAYEY SAND, a little gravel, grayish brown, very stiff (SC) (A-6)	TILL	18	M	SS	17	15				
13			18	M		17	15				
14	CLAYEY SAND, a little gravel, brown, very stiff (SC) (A-6)	TILL	17	M	SS	16	14				
15			17	M		16	14				
16	CLAYEY SAND WITH GRAVEL, possible cobbles, brown, hard (SC)	TILL	50/2	M	SS	8	12				
17			50/2	M		8	12				
18	CLAYEY SAND, a little gravel, possible cobbles, brown, very stiff, a lens of silty sand (SM/SC) (A-2-6)	TILL	17	M/W	SS	10	12				
19			17	M/W		10	12				
20	CLAYEY SAND, a little gravel, brown, very stiff (SC) (A-6)	TILL	19	M/W	SS	17	10				
21			19	M/W		17	10				
22	SAND WITH SILT, medium grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	12	W	SS	18					
23			12	W		18					
24	SAND, possible cobbles, medium grained, brown, waterbearing, medium dense, a lens of clayey sand (SP) (A-1-b)	COARSE ALLUVIUM	25	W	SS	10					
25			25	W		10					

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29'	3.25" HSA								
29-39½'	RDF w/DM	10/1/13	8:57	28.5	27.0	26.7		21.5	
		10/1/13	9:07	28.5	27.0	24.2		18.6	
BORING COMPLETED: 10/1/13									
DR: SG LG: SB Rig: 91C									

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 10/15/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1148 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: **N 163206 E 518072**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
33 -	SAND, medium grained, brown, waterbearing, dense, lenses of sand with silt (SP) (A-1-b) <i>(continued)</i>	COARSE ALLUVIUM <i>(continued)</i>	39	W	X	SS	14					
34 -	SAND WITH SILT, a little gravel, fine to medium grained, brown, waterbearing, dense (SP-SM) (A-1-b)		40	W	X	SS	10					
35 -	SAND WITH SILT AND GRAVEL, possible cobbles, fine to medium grained, brown, waterbearing, dense (SP-SM) (A-1-b)		50	W	X	SS	6					
36 -	SAND WITH GRAVEL, possible cobbles, medium grained, gray, waterbearing, medium dense, a lens of sand with silt (SP) (A-1-b)		30	W	X	SS	11					
37 -												
38 -												
39 -												
40 -												
41 -	END OF BORING											

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 10/15/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1149 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **867.4** Hennepin Co. Coordinates: **N 162761 E 517891**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, trace roots, dark brown, a little brown (A-2-4)	FILL	20	M	SS	18					
2	FILL, mostly silty sand with gravel, possible cobbles, pieces of concrete, a little ashes/cinders, brown (A-2-4)		51	M	SS	4					
3	SILTY SAND, a little gravel, fine grained, light brown, moist, medium dense (SM) (A-2-4)	COARSE ALLUVIUM OR FILL	25	M	SS	13					
4	SAND WITH SILT AND GRAVEL, fine grained, light brown, a little light brownish gray, moist, medium dense (SP-SM) (A-1-b) (possible fill)		19	M	SS	12					
5	SAND WITH SILT, fine grained, light brown, moist, medium dense, a lamination of lean clay (SP-SM) (A-3)	COARSE ALLUVIUM	17	M	SS	14					
6	SAND, medium to fine grained, light brown, moist, medium dense (SP-SM) (A-1-b)		14	M	SS	15					
7	SAND, fine to medium grained, light brown, a little brown, moist, medium dense, a lens of sand with silt (SP) (A-3)	TILL	22	M	SS	14					
8	CLAYEY SAND, brown, moist, very stiff, laminations of waterbearing sand (SC) (A-6)		27	M/W	SS	17	15				
9	CLAYEY SAND, a little gravel, gray, a little brown, stiff, laminations of waterbearing sand (SC) (A-6)	MIXED ALLUVIUM	14	M/W	SS	17	13				
10	SAND WITH SILT, a little gravel, medium to fine grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)		16	W	SS	15					
11		COARSE ALLUVIUM	15	W	SS	18					
12	GRAVELLY SAND WITH SILT, medium to fine grained, brownish gray, waterbearing, medium dense (SP-SM) (A-1-b)		30	W	SS	2					
13	SILTY SAND, a little gravel, fine to medium grained, brownish gray, wet, medium dense (SM) (A-1-b)	COARSE ALLUVIUM	20	W	SS	13					
14											

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-25½'	3.25" HSA								
25½-49½'	RDF w/DM	10/1/13	11:46	26.0	24.5	23.2		21.4	
		10/1/13	12:00	26.0	24.5	22.2		18.5	
BORING COMPLETED: 10/1/13									
DR: SG LG: SB Rig: 91C									

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 10/15/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1149 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: N **162761** E **517891**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
33	SAND WITH SILT, a little gravel, medium to fine grained, gray, waterbearing, dense (SP-SM) (A-1-b) <i>(continued)</i>	COARSE ALLUVIUM <i>(continued)</i>	39	W	X	SS	13						
34													
35	SAND WITH SILT, fine grained, brown, waterbearing, dense to medium dense (SP-SM) (A-3)			33	W	X	SS	10					
36													
37													
38				40	W	X	SS	12					
39													
40			29	W	X	SS	16						
41													
42													
43			30	W	X	SS	12						
44													
45	GRAVELLY SAND WITH SILT, fine grained, brown, waterbearing, dense (SP-SM) (A-3)		47	W	X	SS	1						
46													
47	SAND, fine to medium grained, brown, waterbearing, medium dense, a lens of sand with silt at 48' (SP) (A-3)		19	W	X	SS	10						
48													
49													
50			13	W	X	SS	½						
51	END OF BORING												

AET_CORP W-COORDINATES 01-05697.GPJ_AET+CPT+WELL.GDT 10/15/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1150 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **864.8** Hennepin Co. Coordinates: **N 161728 E 517802**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with organic fines, a little gravel and ashes/cinders, trace roots, black (A-2-4)	FILL	9	M	SS	20					
2	FILL, mostly sand with silt, a little gravel and silty sand, trace roots, brown, a little black (A-2-4, A-1-b)		15	M	SS	10					
3		COARSE ALLUVIUM	11	M	SS	6					
4	SAND WITH SILT AND GRAVEL, fine to medium grained, brown, moist, medium dense (SP-SM) (A-1-b)		5	M	SS	16					
5	SAND, a little gravel, medium grained, light brown, a little brown, moist to about 9 1/2' then waterbearing, loose, lenses of clayey sand (SP) (A-1-b)		5	M/W	SS	12					
6			16	W/M	SS	10					
7	SAND WITH SILT, a little gravel, fine grained, grayish brown, a little dark brownish gray, wet; medium dense, lenses of silty sand with organic fines (SP-SM) (A-2-4)		13	W	SS	10					
8	SAND WITH SILT AND GRAVEL, fine to medium grained, grayish brown, wet to waterbearing (SP-SM) (A-1-b)		5	W	SS	10					
9	SAND WITH GRAVEL, medium grained, gray, a little dark brownish gray, waterbearing, loose to very loose, lenses of fine grained silty sand with organic fines (SP) (A-1-b)		4	W	SS	18					
10		SWAMP DEPOSIT	9	W	SS	18	188				
11	SAPRIC PEAT, black (PT) (A-8)		3	M/W	SS	16	57				
12	ORGANIC CLAY, trace shells, gray to brownish gray, soft to very soft (OH) (A-8)		WR	M/W	SS	20	87				
13		COARSE ALLUVIUM	9	W	SS	16					
14	SAND WITH GRAVEL, medium grained, gray, a little dark brownish gray, waterbearing, loose (SP) (A-1-b)										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29 1/2'	3.25" HSA								
29 1/2'-49 1/2'	RDF w/DM	9/26/13	11:15	11.0	9.5	9.8		9.5	
		9/26/13	11:25	11.0	9.5	9.5		9.5	
BORING COMPLETED:	9/26/13	9/26/13	11:40	18.5	17.0	16.9		15.1	
DR: SS LG: GH Rig: 41C		9/26/13	11:45	18.5	17.0	16.8		14.9	

AET_CORP_W-COORDINATES_01-05697.GPJ_AET+CPT+WELL.GDT_10/16/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1150 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: **N 161728 E 517802**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
33	SAND, a little gravel, medium grained, gray, waterbearing, medium dense (SP) (A-1-b)		12	W	SS	12					
34											
35	GRAVELLY SAND, medium to fine grained, gray, waterbearing, medium dense to loose (SP) (A-1-b)		11	W	SS	4					
36											
37											
38			8	W	SS	3					
39											
40	SAND, a little gravel, medium to fine grained, gray, waterbearing, loose (SP) (A-1-b)		8	W	SS	8					
41											
42	SAND, fine to medium grained, brownish gray, waterbearing, medium dense, lenses of fine grained sand with silt (SP) (A-1-b)		12	W	SS	14					
43											
44											
45			19	W	SS	16					
46											
47											
48			18	W	SS	8					
49											
50	SAND WITH SILT, fine grained, brownish gray, waterbearing, medium dense (SP) (A-3)		23	W	SS	16					
51	END OF BORING										

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 10/15/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1151 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **865.3** Hennepin Co. Coordinates: **N 161335 E 517782**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with organic fines, a little gravel, trace roots, dark brown (A-2-4)	FILL	19	M	SS	18					
2	FILL, mostly sand with silt and gravel, brown (A-1-b)		20	M	SS	18					
4	CLAYEY SAND, a little gravel, brown mottled, very stiff, laminations of medium grained sand and sandy silt (SC)	MIXED ALLUVIUM	16	M	SS	18	13				
7	SAND WITH SILT, a little gravel, fine grained, brown, moist, medium dense, laminations of lean clay with sand (SP-SM) (A-2-4)	COARSE ALLUVIUM	12	M	SS	18					
9	SAND WITH SILT, fine to medium grained, brown, moist, loose, a lens of clayey sand (SP-SM) (A-1-b, A-6)		9	M/W	SS	18					
12	SAND WITH SILT, a little gravel, medium to fine grained, gray, a little black, waterbearing, very loose, lenses of sapric peat with sand and clayey sand (SP-SM) (A-1-b, A-8)		3	W	SS	18					
15			3	W	SS	18					
17	HEMIC PEAT, dark brown and brown, a little black, a lens of sapric peat at 20½' (PT) (A-8)	SWAMP DEPOSIT	5	W	SS	18	290				
20			10	W	SS	16	292				
22	SAND WITH SILT AND GRAVEL, medium to fine grained, brownish gray, waterbearing, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	24	W	SS	12					
24	SAND WITH SILT AND GRAVEL, fine to medium grained, dark brownish gray, a little light gray, waterbearing, medium dense to loose, a lamination of lean clay at 25½' (SP-SM) (A-1-b)		14	W	SS	10					
27			7	W	SS	5					
30	GRAVEL WITH SAND, gray, waterbearing, medium dense to loose (GP) (A-1-b)		19	W	SS	1					

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-24½'	3.25" HSA								
24½-49½'	RDF w/DM	9/27/13	9:36	13.5	12.0	12.5		12.3	
		9/27/13	9:45	13.5	12.0	12.4		11.6	
BORING COMPLETED:	9/27/13	9/27/13	10:05	23.5	22.0	22.3		18.0	
DR: SS LG: GH Rig: 41C		9/27/13	10:10	23.5	22.0	21.5		17.0	

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL_GDT 10/15/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1151 ST (p. 2 of 2)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

Hennepin Co. Coordinates: N **161335** E **517782**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
33	GRAVEL WITH SAND, gray, waterbearing; medium dense to loose (GP) (A-1-b) <i>(continued)</i>		12	W	SS	1/2						
34												
35												
36					14	W	SS	6				
37												
38					19	W	SS	2				
39												
40					8	W	SS	4				
41												
42												
43			17	W	SS	4						
44												
45			18	W	SS	6						
46												
47												
48			18	W	SS	8						
49												
50			45	W	SS	2						
51	END OF BORING											

AET_CORP W-COORDINATES: 01-05697.GPJ AET+CPT+WELL.GDT 10/15/13

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1152 ST (p. 1 of 2)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **867.9** Hennepin Co. Coordinates: **N 160223 E 517507**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%#200
1	FILL, mixture of clayey sand with organic fines and silty sand, a little gravel, trace roots, dark brown (A-2-4)	FILL	16	M	SS	12	19				
2											
3	FILL, mostly sand with silt and gravel, a little silty sand, grayish brown, a little dark brown (A-1-b)			33	M	SS	12				
4											
5	FILL, mostly gravelly sand with silt, a little clayey sand, brown and brownish gray, a little dark brown (A-1-b)			22	-	SS	0				
6											
7											
8				18	M	SS	4				
9											
10				19	M	SS	16				
11											
12				48	M	SS	6				
13											
14	SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM) (A-3)	COARSE ALLUVIUM	20	M	SS	12					
15											
16											
17	SAND WITH GRAVEL, medium grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)			13	W	SS	12				
18											
19	SAND, a little gravel, medium grained, brown, waterbearing (SP) (A-1-b)			13	W	SS	10				
20											
21	SAND WITH SILT, fine grained, brown, waterbearing, medium dense (SP-SM) (A-3)			21	W	SS	12				
22											
23	SAND, a little gravel, medium grained, grayish brown, waterbearing, loose (SP) (A-1-b)			10	W	SS	6				
24											
25	SAND WITH GRAVEL, medium grained, brownish gray, waterbearing, medium dense (SP) (A-1-b)		11	W	SS	6					
26											
27	SAND, a little gravel, medium grained, grayish brown, waterbearing, medium dense (SP) (A-1-b)		18	W	SS	10					
28											
29											
30											
31											

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-17'	3.25" HSA								
17-49½'	RDF w/DM	10/7/13	11:36	18.5	17.0	17.2		16.8	
		10/7/13	12:09	18.5	17.0	17.1		16.4	
BORING COMPLETED: 10/7/13									
DR: SG LG: SHS Rig: 91C									

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL_GDT 10/15/13

SUBSURFACE BORING LOG

AET JOB NO: 01-05697 LOG OF BORING NO. 1152 ST (p. 2 of 2)
 PROJECT: Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis
 Hennepin Co. Coordinates: N 160223 E 517507

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
33	SAND WITH SILT, a little gravel, fine to medium grained, brown, waterbearing, medium dense (SP-SM) (A-3)	COARSE ALLUVIUM <i>(continued)</i>	38	W	X	SS	12					
34												
35	SAND, a little gravel, medium grained, brownish gray, waterbearing, medium dense (SP) (A-1-b)		14	W	X	SS	10					
36												
37	SAND WITH SILT, fine grained, grayish brown, waterbearing, medium dense (SP-SM) (A-3)		26	W	X	SS	2					
38												
39	SAND WITH GRAVEL, medium grained, grayish brown, waterbearing, medium dense (SP) (A-1-b)		21	W	X	SS	12					
40												
41												
42												
43	SAND WITH GRAVEL, medium grained, gray, waterbearing, medium dense (SP) (A-1-b)	24	W	X	SS	10						
44												
45												
46												
47	SAND, fine grained, brownish gray, waterbearing, medium dense (SP) (A-3)	17	W	X	SS	10						
48												
49												
50		13	W	X	SS	10						
51		24	W	X	SS	12						
51	END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 10/15/13



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1166 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **884.3** Hennepin Co. Coordinates: N **155893** E **512029**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand, a little gravel and ashes/cinders, trace roots, black (A-2-4)	FILL	6	M		SS	18					
2	FILL, mostly sand with silt, a little gravel and clayey sand, brown, a little black (A-2-4)		4	M		SS	16					
3												
4	FILL, mostly silty sand, a little gravel, pieces of brick, wood and metal, gray, black and brown (A-2-4)		10	M		SS	6					
5												
6												
7												
8												
9	SAPRIC PEAT, pieces of wood, black, a little gray, laminations of sand (PT) (A-8)	SWAMP DEPOSIT	3	M		SS	16	84				
10												
11												
12	SAND WITH SILT, a little gravel, fine to medium to fine grained, gray, waterbearing, loose (SP-SM) (A-3)	COARSE ALLUVIUM	6	W		SS	10					
13	SAND, a little gravel, medium to fine grained, gray, waterbearing, loose (SP) (A-1-b)		6	W		SS	18					
14												
15	SAND WITH GRAVEL, medium grained, gray, waterbearing, loose to medium dense, a lens of sand with silt at 18' (SP) (A-1-b)		6	W		SS	18					
16												
17												
18												
19												
20												
21	END OF BORING											

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/12/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		6/4/14	12:35	16.0	14.5	13.8			12.8
		6/4/14	12:50	16.0	14.5	13.8			12.7
BORING COMPLETED: 6/4/14									
DR: DS LG: GH Rig: 41C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1167 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **886.4** Hennepin Co. Coordinates: **N 155888 E 511697**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, dark brown and brown (A-2-4)	FILL	6	M		12					
2	FILL, mostly sand with gravel, a little silty sand, brown, a little dark brown (A-1-b)		8	M		10					
3											
4	FILL, mostly sand with gravel, a little clayey sand and silty sand (A-1-b)		7	M		10					
5											
6											
7	FILL, mostly sand, a little gravel, light brown (A-1-b)		33	M		8					
8											
9	SILTY SAND, a little gravel, fine to medium grained, dark brown, moist, dense (SP-SM) (A-2-4)	COARSE ALLUVIUM	38	M		12					
10											
11											
12	SAND WITH SILT, a little gravel, medium to fine grained, brown, moist to waterbearing, medium dense (SP-SM) (A-1-b)		23	M/W		14					
13											
14	SAND, a little gravel, medium to fine grained, brown, waterbearing, loose, a lens of sand with silt (SP-SM) (A-1-b)		8	W		10					
15											
16	SAND, a little gravel, medium to fine grained, brown, a little grayish brown, waterbearing, medium dense, a lens of sand with silt (SP) (A-1-b)		11	W		6					
17											
18	SAND WITH GRAVEL, medium grained, light brown, a little brown, waterbearing, loose to medium dense (SP) (A-1-b)		8	W		18					
19											
20											
21											
22											
23											
24											
25											
26											
27	SAND, a little gravel, medium grained, light grayish brown, waterbearing, medium dense to loose (SP) (A-1-b)	14	W		10						
28											
29											
30											
31	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-19½'	3.25" HSA								
19-29½'	RDF w/DM	4/29/14	12:15	16.0	14.5	14.3		13.5	
		4/29/14	12:25	16.0	14.5	14.0		12.5	
BORING COMPLETED: 4/29/14									
DR: TA LG: SHS Rig: 69C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 5/9/14



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1168 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **890.9** Hennepin Co. Coordinates: **N 155389 E 510728**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand, a little gravel and ashes/cinders, trace roots, pieces of glass, black (A-2-4)	FILL	18	M		8						
2	FILL, mostly sand with gravel, a little silty sand, trace roots at 12', light brown, a little black (A-1-b)		17	M		12						
3												
4												
5				43	M		6					
6												
7												
8				17	M		12					
9												
10				17	M		10					
11												
12												
13				12	M		6					
14			FILL, mostly sand, a little gravel and sandy lean clay, brown and light brownish gray, a little dark brown (A-1-b)									
15		10		M		8						
16												
17	LEAN CLAY, gray and brown mottled, firm, a lens of silty sand, laminations of sand (CL) (A-4)		FINE ALLUVIUM									
18				6	M/W		6	20				
19	SAND WITH SILT, a little gravel, medium to fine grained, brown, a little light brownish gray, waterbearing, very loose, a lens of lean clay (SP-SM) (A-1-b)		COARSE ALLUVIUM									
20				3	W		6					
21												

END OF BORING

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
0-19½'	3.25" HSA								
		6/3/14	12:41	18.5	17.0	17.9			17.0
		6/3/14	12:46	21.0	19.5	19.6			17.6
BORING COMPLETED: 6/5/14		6/3/14	12:56	21.0	19.5	19.4		16.7	
DR: JM LG: SHS Rig: 68C									

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/12/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1169 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **896.6** Hennepin Co. Coordinates: **N 155064 E 510199**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with organic fines, a little gravel and sand, trace roots, black and light brown (A-2-4, A-1-b)	FILL	11	M		18						
2	SAND, a little gravel, medium to coarse grained, light brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	13	M		10						
3												
4												
5			SAND WITH GRAVEL, medium grained, light grayish brown, moist, medium dense (SP) (A-1-b)		13	M		12				
6												
7	SAND, a little gravel, medium grained, light grayish brown, moist, loose, a lens of sandy lean clay at 10' (SP) (A-1-b)		10	M		8						
8												
9												
10					10	M		10				
11												
12	SAND, a little gravel, trace roots at 18', medium grained, brown, moist, loose, a lens of sandy lean clay at 18' (SP) (A-1-b)		15	-		0						
13												
14												
15					9	M		8				
16												
17	LEAN CLAY, gray and brown mottled, soft, laminations of waterbearing sand and silty sand (CL) (A-4)	FINE ALLUVIUM	7	M		10						
18												
19												
20			4	M/W		12	24					
21	END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/12/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		6/3/14	10:30	21.0	19.5	21.0			None
		6/3/14	10:40	21.0	19.5	21.0			None
BORING COMPLETED: 6/3/14									
DR: JM LG: SHS Rig: 68C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1170 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **900.9** Hennepin Co. Coordinates: **N 154815 E 509657**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS														
							WC	DEN	LL	PL	%-#200										
1	FILL, mostly silty sand, a little gravel, sand and ashes/cinders, black and dark brown (A-2-4)	FILL	7	M		SS	16														
2																					
3			1	M		SS	12														
4																					
5						8	M	SS	2												
6																					
7	FILL, mostly sand with silt and gravel, light brown (A-1-b)		24	M		SS	8														
8																					
9	FILL, mostly sand, a little gravel, light brown (A-1-b)		21	M		SS	10														
10																					
11																					
12	FILL, mostly gravelly sand with silt, brown (A-1-b)		23	M		SS	6														
13																					
14	GRAVELLY SAND WITH SILT, medium grained, brown, moist, medium dense (SP-SM) (A-1-b) (possible fill)		17	M		SS	8														
15																					
16	SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b)		16	M		SS	10														
17																					
18																					
19																					
20			18	M	SS	8															
21	END OF BORING																				

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		6/3/14	9:13	21.0	19.5	20.9			None
		6/3/14	9:23	21.0	19.5	20.9			None
BORING COMPLETED: 6/3/14									
DR: JM LG: SHS Rig: 68C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/12/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1171 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **909.0** Hennepin Co. Coordinates: **N 154307 E 508552**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand with gravel, dark brown (A-1-b)	FILL	9	M	SS	16	24					
2	FILL, mostly lean clay, dark brown and brown (A-6)		16	M				8				
3	FILL, mostly silty sand and gravel, brown (A-1-b)	COARSE ALLUVIUM	14	M	SS	14						
4	SAND, a little gravel, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)											
5	SAND, fine to medium grained, light brown, moist, medium dense (SP) (A-3)											
6	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP) (A-3)											
7												
8												
9												
10												
11												
12	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense (SP) (A-1-b)						17	M	SS	12		
13		19	M	SS	10							
14		19	M	SS	12							
15		21	M	SS	10							
16												
17												
18												
19												
20												
21	END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		5/23/14	2:08	21.0	19.5	20.7			None
BORING COMPLETED: 5/23/14									
DR: SG LG: CD Rig: 91C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1172 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **911.5** Hennepin Co. Coordinates: **N 154041 E 507997**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mixture of silty sand and clayey sand, with gravel, dark brown and brown (A-1-b)	FILL	12	M		SS	12	16					
2	SAND WITH SILT AND GRAVEL, fine to medium grained, brown, moist, medium dense (SP-SM) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	27	M		SS	8						
3													
4	SAND WITH GRAVEL, medium to fine grained, light brown, moist, dense (SP) (A-1-b)	COARSE ALLUVIUM	31	M		SS	12						
5													
6													
7													
8													
9													
10	SAND, medium grained, light brown, moist, medium dense (SP) (A-1-b)		20	M		SS	12						
11													
12	SAND WITH GRAVEL, medium to fine grained, light brown to brown, moist, medium dense (SP) (A-1-b)		22	M		SS	10						
13													
14	SAND, medium grained, light brown, moist, medium dense (SP) (A-1-b)		20	M		SS	14						
15													
16	SAND WITH GRAVEL, medium to fine grained, light brown to brown, moist, medium dense (SP) (A-1-b)		13	M		SS	10						
17													
18	SAND WITH GRAVEL, medium to fine grained, light brown to brown, moist, medium dense (SP) (A-1-b)		19	M		SS	12						
19													
20	SAND WITH GRAVEL, medium to fine grained, light brown to brown, moist, medium dense (SP) (A-1-b)		20	M		SS	10						
21													
21	END OF BORING												

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		5/23/14	1:25	21.0	19.5	20.5		None	
BORING COMPLETED: 5/23/14									
DR: SG LG: CD Rig: 91C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1173 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **916.6** Hennepin Co. Coordinates: **N 153523 E 506916**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, trace roots, dark brown (A-1-b)	FILL	7	M	SS	16	26				
2	LEAN CLAY WITH SAND, trace roots, dark grayish brown, firm (A-6)	TOPSOIL OR FINE ALLUVIUM	5	M	SS	12	20				
4	GRAVELLY SAND, medium to fine grained, brown, moist, dense (SP) (A-1-b)	COARSE ALLUVIUM	44	M	SS	6					
5											
6											
7	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		30	M	SS	12					
8											
9											
10			21	M	SS	12					
11											
12											
13			15	M	SS	12					
14											
15			21	M	SS	12					
16											
17	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense (SP) (A-1-b)		27	M	SS	12					
18											
19	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		16	M	SS	12					
20											
21	END OF BORING										

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		5/22/14	2:05	21.0	19.5	20.3			None
BORING COMPLETED: 5/22/14									
DR: SG LG: TM Rig: 91C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1174 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **915.0** Hennepin Co. Coordinates: **N 153260 E 506402**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly clayey sand with organic fines, a little gravel, trace roots, black and dark brown (A-6)	FILL	4	M		SS	12	15				
2	FILL, mostly clayey sand, a little gravel, brown and black		4	M		SS	10	19				
4	FILL, mostly sand with silt and gravel, a little clayey sand, possible cobbles, brown, a little black (A-1-b, A-6)		21	M		SS	16					
5	FILL, mostly sand with silt and gravel, a little clayey sand, possible cobbles, brown, a little black (A-1-b, A-6)		23	M		SS	0					
8	SAND, fine to medium grained, light brown, moist, medium dense to loose, laminations of silt (SP) (A-3)	COARSE ALLUVIUM	9	M		SS	14					
9	SAND, fine to medium grained, light brown, moist, medium dense to loose, laminations of silt (SP) (A-3)		9	M		SS	14					
10	SAND, a little gravel, medium grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		16	M		SS	16					
12	SAND, a little gravel, medium grained, light brown, moist, medium dense, laminations of silt (SP) (A-1-b)		16	M		SS	16					
13	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP-SM) (A-3)		17	M		SS	15					
14	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP-SM) (A-3)		17	M		SS	15					
15	SAND, a little gravel, fine to medium grained, light grayish brown, moist, medium dense (SP) (A-3)	19	M		SS	12						
17	SAND, a little gravel, fine to medium grained, light grayish brown, moist, medium dense (SP) (A-3)	19	M		SS	12						
18	SAND, fine grained, light grayish brown, moist, dense, laminations of silt (SP) (A-3)	41	M		SS	18						
19	SAND, fine grained, light grayish brown, moist, dense, laminations of silt (SP) (A-3)	41	M		SS	18						
20	SAND, fine grained, light grayish brown, moist, dense, laminations of silt (SP) (A-3)	41	M		SS	18						
21	END OF BORING											

DEPTH: DRILLING METHOD

WATER LEVEL MEASUREMENTS

NOTE: REFER TO
THE ATTACHED
SHEETS FOR AN
EXPLANATION OF
TERMINOLOGY ON
THIS LOG

0-19½' **3.25" HSA**

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
5/30/14	2:44	21.0	19.5	21.0		None

BORING
COMPLETED: **5/30/14**

DR: **SHS** LG: **JM** Rig: **68C**

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1175 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **912.3** Hennepin Co. Coordinates: **N 153022 E 505912**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly gravel with silt and sand, dark brown (A-1-b)	FILL	5	M		3					
2	FILL, mostly gravelly sand with silt, brown (A-1-b)		4	M		3					
4	CLAYEY SAND, with organic fines, a little gravel, trace roots, dark brown, firm, a lens of silty sand (SC) (possible fill) (A-2-4)	MIXED ALLUVIUM OR FILL	6	M		8	20				
5	SAND WITH GRAVEL, medium grained, light brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	18	M		10					
6			11	M		12					
7	SAND, fine grained, light brown, a little black, moist, medium dense, laminations of silt (SP) (A-3)		11	M		12					
8	SAND, a little gravel, medium grained, light brown, moist, medium dense (SP) (A-1-b)		14	M		12					
9	SAND, fine to medium grained, light brown, moist, medium dense, laminations of silt (SP) (A-3)		35	-		0					
10			20	M		14					
11	SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b)		25	M		14					
12	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		5/30/14	1:12	21.0	19.5	21.0			None
		5/30/14	1:22	21.0	19.5	21.0			None
BORING COMPLETED: 5/30/14									
DR: JM LG: SHS Rig: 68C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/12/14



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1176 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **904.9** Hennepin Co. Coordinates: **N 151996 E 503628**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mostly sand with silt, a little gravel and clayey sand, trace roots, brown (A-3)	FILL	13	M		SS	14						
2			26	-		SS	0						
3													
4	FILL, mostly silty sand with gravel, a little clayey sand, trace roots, dark brown (A-1-b)		16	M		SS	8						
5													
6													
7													
8													
9													
10	FILL, mostly silty sand, a little gravel, trace roots, dark brown (A-2-4)		14	M		SS	12						
11													
12	FILL, mostly silty sand with gravel, a little ashes/cinders, dark brown (A-1-b)		7	M		SS	6						
13													
14													
15	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, waterbearing, loose (SP-SM) (A-1-b)	COARSE ALLUVIUM	7	M		SS	6						
16													
17													
18	SAND, a little gravel, medium to fine grained, grayish brown, waterbearing, loose (SP) (A-1-b)		7	M		SS	4						
19													
20	SAND, a little gravel, medium to fine grained, grayish brown, waterbearing, loose (SP) (A-1-b)		8	W		SS	8						
21													
22	SAND, a little gravel, medium to fine grained, grayish brown, waterbearing, loose (SP) (A-1-b)		7	W		SS	8						
23													
END OF BORING													

DEPTH	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	
0-22'	3.25" HSA	5/23/14	2:00	21.0	19.5	19.7		18.8
		5/23/14	2:10	21.0	19.5	19.4		18.3
BORING COMPLETED: 5/23/14		5/23/14	2:15	21.0	19.5	19.4		18.3
DR: GH LG: SHS Rig: 68C		5/23/14	2:23	23.5	22.0	22.0		18.7

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1177 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **905.9** Hennepin Co. Coordinates: **N 151779 E 503176**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with organic fines, a little gravel, trace roots, dark brown (A-1-b)	FILL	8	M		6					
2			4	M		6					
3			6	M		3					
4	FILL, mostly gravelly silty sand, a little clayey sand, trace roots, dark brown (A-1-b)			6	M		3				
5			6	M		6	17				
6	FILL, mostly clayey sand, a little gravel, trace roots, dark brown and brown (A-6)			6	M		6	17			
7		TILL OR FILL	7	M		12	14				
8	CLAYEY SAND, a little gravel, brown, a little light brown, firm, laminations of sand (SC) (A-6) (possible fill)			7	M		12	14			
9				5	M		14	19			
10	SANDY LEAN CLAY, a little gravel, brown mottled, firm (CL) (A-6) (possible fill)		5	M		14	19				
11		COARSE ALLUVIUM	7	M		6					
12	SILTY SAND, a little gravel, dark brown, loose (SM) (A-1-b) (possible fill)			7	M		6				
13			8	M		14	16				
14	SANDY LEAN CLAY, a little gravel, dark brown and brown, firm (CL) (A-6) (possible fill)		8	M		14	16				
15			38	M		8					
16	SAND WITH SILT AND GRAVEL, medium to fine grained, light brown to brown, waterbearing, dense to medium dense (SP-SM) (A-1-b)		38	M		8					
17			20	W		12					
18											
19											
20											
21											
22											
23											
END OF BORING											

AET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-22'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		5/23/14	9:51	23.5	22.0	21.7			20.3
		5/23/14	10:01	23.5	22.0	21.7			20.5
BORING COMPLETED: 5/23/14		5/23/14	10:06	23.5	22.0	21.7			20.6
DR: GH	LG: SHS	Rig: 68C							



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1178 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **907.1** Hennepin Co. Coordinates: **N 151478 E 502662**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly clayey sand with gravel, a little silty sand, pieces of bituminous, trace roots, light brown and brown (A-6)	FILL	4	M		SS	8	8				
2			9	M		SS	8	10				
3												
4	SAND, a little gravel, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	20	M		SS	10					
5			21	M		SS	16					
6	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense, laminations of silt (SP)		20	M		SS	12					
7			19	M		SS	10					
8	GRAVELLY SAND, medium to coarse grained, brown, moist, medium dense (SP) (A-1-b)		19	M		SS	10					
9	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)		24	M		SS	12					
10			25	M/W		SS	14					
11	SAND, a little gravel, fine to medium grained, brown, moist to waterbearing, medium dense (SP) (A-3)		25	M/W		SS	14					
12	CLAYEY SAND, brown, very stiff (SC/SM) (A-2-4)	TILL	27	M		SS	16	12				
13												
14	END OF BORING											

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		5/29/14	12:09	21.0	19.5	20.9			Wet
		5/29/14	12:19	21.0	19.5	20.9			Wet
BORING COMPLETED: 5/29/14									
DR: JM LG: SHS Rig: 68C									



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1179 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **910.0** Hennepin Co. Coordinates: N **151181** E **502045**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel, trace roots, dark brown (A-2-4)	FILL	5	M		10					
2	FILL, mostly sand with silt, a little gravel, trace roots, light brown (A-3)		6	M		12					
3	FILL, mostly sand with silt, a little gravel and sandy lean clay, brown (A-3)		14	M		12					
4											
5											
6											
7	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, medium dense (SP-SM) (A-3) (possible fill)	COARSE ALLUVIUM OR FILL	15	M		10					
8											
9	CLAYEY SAND WITH GRAVEL, brown, a little dark brown, lens of silty sand (SC) (A-6) (possible fill)	TILL OR FILL	16	M		10	8				
10											
11											
12	SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, medium dense (SP-SM) (A-3)	COARSE ALLUVIUM	45	M		12					
13											
14											
15											
16											
17											
18											
19											
20	SAND WITH SILT, fine grained, light brown, moist, medium dense (SP-SM) (A-3)		22	M		12					
21	END OF BORING										

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		5/23/14	12:37	21.0	19.5	20.9		None	
		5/23/14	12:47	21.0	19.5	20.9		None	
BORING COMPLETED: 5/23/14									
DR: GH LG: SHS Rig: 68C									

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1180 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **910.7** Hennepin Co. Coordinates: N **150719** E **501007**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, pieces of bituminous, dark brown (A-1-b)	FILL	12	M		14					
2	FILL, mostly sand with silt and gravel, brown (A-1-b)		27	M		12					
3											
4	FILL, mostly silty sand, a little gravel, dark brown (A-1-b)		31	M		2					
5											
6											
7											
8			16	M		12					
9	SANDY LEAN CLAY, slightly organic, trace roots, black, stiff (CL) (A-6)	TOPSOIL	15	M		12	26				
10											
11											
12	SAND WITH SILT, a little gravel, medium to fine grained, brown, moist, medium dense (SP-SM) (A-1-b)	COARSE ALLUVIUM	14	M		12					
13											
14	SAND WITH SILT AND GRAVEL, fine to medium grained, brown, moist, medium dense (SP-SM) (A-1-b)		14	M		6					
15											
16	SILTY SAND WITH GRAVEL, fine to medium grained, brown, wet, loose (SM) (A-1-b)		6	W		6					
17											
18	GRAVEL WITH SAND, brown, waterbearing, medium dense (GP) (A-1-a)	11	W		1						
19											
20											
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		5/22/14	1:01	21.0	19.5	19.1		17.1	
		5/22/14	1:10	21.0	19.5	19.2		16.6	
BORING COMPLETED: 5/22/14									
DR: GH LG: SHS Rig: 68C									

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1181 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **913.0** Hennepin Co. Coordinates: N **150383** E **500396**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand with gravel, trace roots, brown (A-1-b)	FILL	11	M		12					
2	FILL, mostly sand with silt, a little gravel and sandy lean clay, brown and dark brown (A-3)		9	M		12					
3		TOPSOIL									
4	LEAN CLAY WITH SAND, trace roots, dark brown, stiff (CL) (A-6)		9	M		6	23				
5		COARSE ALLUVIUM									
6	SILTY SAND, a little gravel, fine to medium grained, brown, moist, loose (SM) (A-1-b)		10	M		6					
7											
8	SAND WITH GRAVEL, medium grained, light brown, moist, dense (SP) (A-1-b)		40	M		12					
9											
10			39	M		12					
11											
12			24	M		12					
13											
14			20	W		4					
15											
16	SAND WITH SILT AND GRAVEL, medium to fine grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)		20	W		4					
17											
18			15	W		6					
19											
20											
21	END OF BORING										

AET_CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/10/14

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		5/22/14	10:37	21.0	19.5	18.0		16.0	
		5/22/14	10:48	21.0	19.5	17.8		15.6	
BORING COMPLETED: 5/22/14									
DR: GH LG: SHS Rig: 68C									



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1182 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **916.1** Hennepin Co. Coordinates: N **150137** E **499886**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel, trace roots, dark brown (A-2-4)	FILL	16	M	SS	6					
2	FILL, mostly sand with silt and gravel, fine to medium grained, brown (A-1-b)		10	M	SS	12	33				
3		TOPSOIL									
4	SANDY LEAN CLAY, slightly organic, trace roots, dark brown, stiff (CL) (A-6)	FINE ALLUVIUM									
5	SANDY LEAN CLAY, brown, firm (CL) (A-6)		6	M	SS	6	19				
6											
7	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP) (A-1-b)	COARSE ALLUVIUM	27	M	SS	12					
8											
9											
10			30	M	SS	12					
11											
12	SAND, a little gravel, medium grained, light brown, moist, medium dense (SP) (A-1-b)		22	M	SS	12					
13											
14	SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense (SP) (A-1-b)		25	M	SS	12					
15											
16	SAND WITH GRAVEL, medium grained, brown, waterbearing, medium dense (SP) (A-1-b)		19	M	SS	12					
17											
18	SAND WITH SILT AND GRAVEL, medium grained, brown, waterbearing, medium dense (SP-SM) (A-1-b)		21	W	SS	6					
19											
20											
21	END OF BORING										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19½'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		5/22/14	9:24	21.0	19.5	19.0		18.2	
		5/22/14	9:35	21.0	19.5	18.9		18.0	
BORING COMPLETED: 5/22/14									
DR: SG LG: TM Rig: 91C									

AET_CORP_W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1183 SS (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **919.5** Hennepin Co. Coordinates: **N 149878 E 499343**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
							WC	DEN	LL	PL	%-#200		
1	FILL, mostly silty sand with organic fines, trace roots, dark brown (A-2-4)	FILL	6	M		SS	1						
2	FILL, mostly silty sand, a little gravel, trace roots, brown (A-4)		10	M		SS	6						
3													
4	FILL, mostly silty sand, a little gravel and lean clay, brown (A-2-4)		9	M		SS	6						
5													
6													
7													
8				11	M		SS	12					
9													
10				5	M		SS	12					
11													
12	FILL, mostly silty sand with gravel, dark brown (A-1-b)	COARSE ALLUVIUM	8	M		SS	12						
13													
14													
15				23	-		SS	0					
16													
17	SAND WITH GRAVEL, medium grained, light brown, moist, very dense to dense (SP)		57	M		SS	12						
18													
19													
20			37	M		SS	12						
21	END OF BORING												

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 8/10/14

DEPTH: 0-19½'	DRILLING METHOD: 3.25" HSA	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG	
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL		WATER LEVEL
		5/22/14	8:38	21.0	19.5	20.9			None
BORING COMPLETED: 5/22/14									
DR: SG	LG: TM	Rig: 91C							

SUBSURFACE BORING LOG

AET JOB NO: **01-05697** LOG OF BORING NO. **1184 ST (p. 1 of 1)**
 PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**
 SURFACE ELEVATION: **922.4** Hennepin Co. Coordinates: **N 149621 E 498798**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS							
							WC	DEN	LL	PL	%-#200			
1	FILL, mostly silty sand, a little gravel, trace roots, brown and dark brown (A-1-b)	FILL	13	M		SS	3							
2														
3						11	M	SS	6					
4	FILL, mostly silty sand with gravel, dark brown (A-1-b)													
5														
6						12	M	SS	6					
7														
8						9	M	SS	1					
9														
10			9	M	SS	6								
11														
12	SAND WITH GRAVEL, medium grained, light brown, moist, dense to medium dense (SP) (A-1-b)		COARSE ALLUVIUM											
13														
14							33	M	SS	10				
15														
16							23	M	SS	6				
17														
18			25	M	SS	6								
19														
20	SAND, a little gravel, fine to medium grained, brown, waterbearing, medium dense (SP) (A-1-b)													
21						17		SS	10					
END OF BORING														

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	
0-19½'	3.25" HSA	5/22/14	1:05	21.0	19.5	20.1	20.0	
		5/22/14	1:16	21.0	19.5	20.1	20.0	
BORING COMPLETED: 5/22/14								
DR: JM LG: CD Rig: 68C								

AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14



SUBSURFACE BORING LOG

AET JOB NO: **01-05697**

LOG OF BORING NO. **1185 ST (p. 1 of 1)**

PROJECT: **Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis**

SURFACE ELEVATION: **925.5** Hennepin Co. Coordinates: **N 149372** **E 498302**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
							WC	DEN	LL	PL	%-#200	
1	FILL, mostly silty sand, a little gravel, dark brown (A-1-b)	FILL	12	M	SS	6						
2	GRAVELLY SAND, medium to coarse grained, brown, moist, loose (SP) (A-1-b) (possible fill)	COARSE ALLUVIUM OR FILL	8	M	SS	8						
3												
4												
5	SAND, fine grained, light brown, moist, medium dense (SP) (A-3)	COARSE ALLUVIUM	11	M	SS	12						
6												
7												
8												
9	SAND, fine to medium grained, light brown, moist, medium dense (SP) (A-3)		10	M	SS	14						
10												
11												
12	SAND, fine grained, light brown, moist, medium dense to dense, lenses and laminations of silt (SP) (A-3)		24	M	SS	10						
13												
14												
15	SILT WITH SAND, brown, moist, dense (ML) (A-4)	FINE ALLUVIUM	31	M	SS	12						
16												
17	SAND, fine to medium grained, light brown, moist, dense (SP) (A-3)	COARSE ALLUVIUM	44	M	SS	14						
18												
19	SAND WITH SILT, fine to medium grained, light brown, moist, dense, lenses and laminations of silty sand (SP-SM) (A-3)		31	M	SS	14						
20												
21												
END OF BORING												

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	
0-19½'	3.25" HSA	5/22/14	8:18	21.0	19.5	20.8	None	
		5/22/14	8:58	21.0	19.5	2.7	None	
BORING COMPLETED: 5/22/14								
DR: JM LG: CD Rig: 68C								

AET CORP W-COORDINATES 01-05697.GPJ AET-CPT+WELL.GDT 6/2/14