DRILL HOLE LOG

BORING NO. 08-L2-B1

PROJECT: I-15 UTAH COUNTY CORRIDOR - L2, I-15 OVER GENEVA ROAD
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:291,022 E:574,583
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 50'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 5.0' **AFTER 24 HOURS:** ▼ 6.0'

PROJECT NUMBER: 200801.200
DATE STARTED: 9/5/08
DATE COMPLETED: 9/9/08
GROUND ELEVATION: 4553.6'
LOGGED BY: J.P., C.S., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
				15	10,22,22,(94)	GM	brown, moist, dense	SILTY GRAVEL W/SAND								
4550																
	5			14	4,2,3,(11)	CL-ML (A-4(2))	brown, moist, firm, 1" sand layer	SANDY SILTY CLAY silt lenses		23.3	24	6	3	30	67	
4545																
	10			14	3,3,3,(12) 0.30	SM	brown, wet	SILTY SAND								
						CL	brown, moist, firm	LEAN CLAY silt and/or sand lenses 0.5" apart								
4540																
	15			15	11,12,10,(38)	SM (A-2-4(0))	brown, wet, dense	SILTY SAND		20.7		NP	0	78	22	
4535																
	20			16	6,9,17,(41)	ML	brown, wet	SILT W/SAND								
						SM	brown, wet, dense	SILTY SAND few clay layers 0.25" thick								
4530																
	25			10	9,9,6,(22)	SM (A-2-4(0))	gray, wet, med. dense			25.7		NP	0	67	33	6% -0.005 mm
4525																
	30			18	0,3,2,(7)	CL (A-6(11))	gray, moist, firm	LEAN CLAY silt lenses, few sand layers to 0.25" thick		30.8	32	12	0	4	96	33% -0.005 mm
4520																
	35			17	5,18,20,(48)	SP-SM (A-3(0))	gray, wet, dense	SAND W/SILT		19.8		NP	0	90	10	
4515								CLAY (driller's observation)								
	40			18	3,6,20,(31)	SP-SM	gray, wet, dense	SAND W/SILT								
4510																
	45			18	9,9,6,(17) 0.42 0.24	CL (A-4(9))	gray, moist, firm to soft	LEAN CLAY silt lenses & layers to 1" thick		25.2	29	10	0	6	94	26% -0.005 mm
4505																

DH_LOGV1 08-L2.GPJ US EVAL.GDT 2/23/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE — 2,3,2,(6) — Blow Count per 6"; $(N_1)_{60}$ Value; 0.45 — Torvane (tsf)

UNDISTURBED SAMPLE — PUSHED; 0.45 — Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer

DRILL HOLE LOG

BORING NO. 08-L2-B1

PROJECT: I-15 UTAH COUNTY CORRIDOR - L2, I-15 OVER GENEVA ROAD
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:291,022 E:574,583
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 50'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 5.0' **AFTER 24 HOURS:** ▼ 6.0'

PROJECT NUMBER: 200801.200
DATE STARTED: 9/5/08
DATE COMPLETED: 9/9/08
GROUND ELEVATION: 4553.6'
LOGGED BY: J.P., C.S., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
			☒	18	Pushed 0.30	CL (A-6(12))	gray, moist, firm		100.2	27.2	33	14	0	11	89	CT UC
4500								LEAN CLAY silt lenses & layers to 1" thick								
	55		■	18	0,3,10,(14) 0.24	CL	gray, moist, soft									
						SM	gray, wet									
4495								SILTY SAND								
	60		■	18	16,18,11,(29) 0.36	SM (A-2-4(0))	gray, wet, med. dense			24.9		NP	0	78	22	
						CL	gray, moist, firm									
4490																
	65		☒	17	Pushed 0.42	CL (A-6(11))	gray, moist, firm		102.1	26.1	31	14	0	13	87	CT UU
4485								LEAN CLAY sand lenses & layers to 1" thick								
	70		■	18	5,6,7,(12) 0.38	CL	gray, moist, firm									
4480																
	75		■	18	5,11,19,(27) 0.46	CL	gray, moist, firm									
4475																
	80		☒	18	Pushed 0.71	CL (A-7-6(23))	gray, moist, stiff, vertical sand layer	LEAN CLAY	90.1	32.0	44	24	0	8	92	CT UC
4470																
	85		■	18	1,6,7,(11) 0.66	CL	brown, moist, stiff									
4465																
	90		☒	18	Pushed 0.75	CL (A-7-6(28))	gray-brown, moist, stiff	LEAN CLAY silt lenses from 0.25" to 6" apart	94.8	30.6	48	24	0	0	100	UU
4460																
	95		■	18	0,1,6,(6) 0.38	CL	gray, moist, firm									
4455																

DH_LOGV1 08-L2.GPJ US EVAL.GDT 2/23/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE ■ 2,3,2,(6) ← Blow Count per 6"; ← $(N_1)_{60}$ Value; 0.45 ← Torvane (tsf)

UNDISTURBED SAMPLE ☒ PUSHED 0.45 ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer

DRILL HOLE LOG

BORING NO. 08-L2-B1

PROJECT: I-15 UTAH COUNTY CORRIDOR - L2, I-15 OVER GENEVA ROAD
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:291,022 E:574,583
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 50'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 5.0' **AFTER 24 HOURS:** ▼ 6.0'

PROJECT NUMBER: 200801.200
DATE STARTED: 9/5/08
DATE COMPLETED: 9/9/08
GROUND ELEVATION: 4553.6'
LOGGED BY: J.P., C.S., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
			☒	18	Pushed *0.68*	CL (*A-7-6(23)*)	gray, moist, stiff	83.2	35.5	43	21	0	0	100	CT UU
4450							LEAN CLAY silt lenses from 0.25" to 6" apart								
	105		☒	18	Pushed *0.68*	CL (*A-7-6(22)*)	gray, moist, stiff	95.5	31.3	41	20	0	0	100	UC
4445															
	110		■	18	0,1,6,(5) *0.52*	CL	gray, moist, stiff								
							LEAN CLAY silt lenses at 45° angle & 2" to 3" apart								
4440															
	115		☒	18	Pushed *0.78*	CL (*A-7-6(23)*)	gray, moist, stiff	90.8	33.4	42	21	0	0	100	UU
4435															
	120		■	18	1,5,7,(9) *0.62*	CL	gray, moist, stiff								
							LEAN CLAY silt lenses								
4430															
	125		☒	18	Pushed *0.58*	CL (*A-7-6(22)*)	gray, moist, stiff	103.4	22.2	43	21	0	3	97	CT UC
4425															
	130		■	14	18,15,22,(26)	ML (*A-4(0)*)	gray, wet, med. dense		22.0		NP	0	39	61	15% -0.005 mm
							SANDY SILT								
4420															
	135		■	10	16,24,24,(33)	ML	gray, wet, dense								
4415															
	140		▬	5	100/5",(REF)	SP-SM (*A-1-b*)	gray, wet, very dense		11.9		NP	36	53	11	
4410							SAND W/SILT & GRAVEL possible cobbles								
	145		▬	3	60/3",(REF)	SP-SM	gray, wet, very dense								
4405							Drilled to 150'. Driller reports granular material to 150'.								

DH_LOGV1 08-L2.GPJ US EVAL.GDT 2/23/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE ■ 2,3,2,(6) ← Blow Count per 6"; ← $(N_1)_{60}$ Value; *0.45* ← Torvane (tsf)

UNDISTURBED SAMPLE ☒ PUSHED *0.45* ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
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DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer

DRILL HOLE LOG

BORING NO. 08-L2-B2

PROJECT: I-15 UTAH COUNTY CORRIDOR - L2, I-15 OVER GENEVA ROAD
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:291,584 E:574,356
DRILLING METHOD: 96-CME-55 TO 20' THEN 08-CME-55 / N.W. CASING TO 40'
DRILLER: E. RICHARDSON, D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 5.3' **AFTER 24 HOURS:** ▼ 3.3'

PROJECT NUMBER: 200801.200
DATE STARTED: 1/9/09
DATE COMPLETED: 1/12/09
GROUND ELEVATION: 4548.5'
LOGGED BY: G.P., C.S., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
			■	14	4,5,6,(23) *0.57*	CL	lt. brown, moist, stiff								
4545							LEAN CLAY								
	5		■	15	3,3,7,(22) *0.43*	CL (*A-7-6(21)*)	lt. brown, moist, firm		25.1	41	20	0	3	97	
4540															
	10		■	17	5,13,16,(62)	SP-SM (*A-3(0)*)	red-brown, wet, very dense		24.1		NP	0	94	6	DS
4535							SAND W/SILT								
	15		■	15	8,15,16,(57)	SP-SM	lt. brown, wet, very dense								
4530															
	20		■	12	1/12",5,(8)	SP (*A-3(0)*)	brown, wet, loose clay layers at 22' & 24' (driller's observation)		23.2		NP	0	96	4	2% -0.005 mm
4525							SAND								
	25		■	10	4,4,4,(12)	SM (*A-2-4(0)*)	gray, wet, med. dense		24.9		NP	0	79	21	11% -0.005 mm
4520							SILTY SAND								
	30		☒	17	Pushed *0.36*	CL (*A-6(12)*)	red-brown, moist, firm	93.8	29.3	32	12	0	1	99	CT UC
4515							LEAN CLAY interbedded w/silt lenses & layers to 3" thick								
	35		■	18	4,4,4,(10) *0.34*	CL	brown, moist, firm								
4510															
	40		☒	16	Pushed	ML (*A-4(0)*)	gray, wet	100.7	24.1		NP	0	10	90	UU
							SILT interbedded w/clay & sand lenses								
4505															
	45		■	24	0/24",(0) *0.20*	CL	gray, very moist, soft								
							LEAN CLAY								
4500															

DH_LOGV1 08-L2.GPJ US EVAL.GDT 2/23/09

LEGEND:

DISTURBED SAMPLE ■ 2,3,2,(6) ← Blow Count per 6"; ← $(N_1)_{60}$ Value; *0.45* ← Torvane (tsf)

UNDISTURBED SAMPLE ☒ PUSHED *0.45* ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
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CU = Consolidated, Undrained
HYD = Hydrometer

RB&G ENGINEERING, INC.

DRILL HOLE LOG

BORING NO. 08-L2-B2

PROJECT: I-15 UTAH COUNTY CORRIDOR - L2, I-15 OVER GENEVA ROAD
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:291,584 E:574,356
DRILLING METHOD: 96-CME-55 TO 20' THEN 08-CME-55 / N.W. CASING TO 40'
DRILLER: E. RICHARDSON, D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 5.3' **AFTER 24 HOURS:** ▼ 3.3'

PROJECT NUMBER: 200801.200
DATE STARTED: 1/9/09
DATE COMPLETED: 1/12/09
GROUND ELEVATION: 4548.5'
LOGGED BY: G.P., C.S., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
			☒	17	Pushed 0.35	CL (A-6(13))	gray, very moist, firm	85.0	35.6	35	13	0	0	100	CT UC
4495							LEAN CLAY								
	55		■	18	0.27 0/8",4,5,(10)	CL ML	gray, moist, firm								
							gray, wet, loose								
4490							SILT W/SAND								
	60		☒	12	Pushed 0.40	ML CL (A-6(13))	gray, wet								
							brown, very moist, firm		35.5	34	12	0	1	99	
4485							LEAN CLAY silt lenses								
	65		■	18	0.45 0,2,5,(7)	CL ML	brown, very moist, firm								
							brown, wet								
4480							SILT W/SAND								
	70		☒	18	Pushed 0.45	CL (A-6(11))	brown, very moist, firm	85.9	35.4	32	11	0	1	99	CT UC
4475															
	75		■	18	1,5,6,(10) 0.50	CL	brown, moist, firm to stiff								
4470							LEAN CLAY few silt lenses								
	80		☒	18	Pushed 0.47	CL (A-6(17))	brown, moist, firm	96.6	28.3	36	16	0	1	99	UU
4465							SILTY TO LEAN CLAY								
	85		■	18	0.42 8,36,37,(63)	CL-ML/CL SM	brown, moist, firm								
							brown, wet, very dense								
4460							SILTY SAND								
	90		■	18	10,5,8,(11) 0.45	SM CL	brown, wet								
							brown, moist, firm								
4455							LEAN CLAY silt lenses & layers to 1" thick								
	95		☒	18	Pushed 0.55	CL (A-7-6(23))	brown, moist, stiff	88.6	34.9	42	21	0	1	99	UC
4450							LEAN CLAY few silt lenses								

DH_LOGV1 08-L2.GPJ US EVAL.GDT 2/23/09

RB&G ENGINEERING, INC.

LEGEND:

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0.45 ← Torvane (tsf)

UNDISTURBED SAMPLE ☒ PUSHED
0.45 ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
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HYD = Hydrometer

DRILL HOLE LOG

BORING NO. 08-L2-B2

PROJECT: I-15 UTAH COUNTY CORRIDOR - L2, I-15 OVER GENEVA ROAD
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:291,584 E:574,356
DRILLING METHOD: 96-CME-55 TO 20' THEN 08-CME-55 / N.W. CASING TO 40'
DRILLER: E. RICHARDSON, D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 5.3' **AFTER 24 HOURS:** ▼ 3.3'

PROJECT NUMBER: 200801.200
DATE STARTED: 1/9/09
DATE COMPLETED: 1/12/09
GROUND ELEVATION: 4548.5'
LOGGED BY: G.P., C.S., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
			■	18	3,6,7,(10) *0.49*	CL	gray, moist, firm								
4445															
	105														
4440															
	110		⊠	17	Pushed *0.32*	CL (*A-6(21)*)	gray, moist, firm	83.0	35.0	40	19	0	0	100	CT UU
							LEAN CLAY few silt lenses								
4435															
	115														
4430															
	120		⊠	18	Pushed *0.79*	CL (*A-6(13)*)	gray, moist, stiff	99.9	26.4	33	14	0	7	93	UC
4425															
	125														
4420							SILTY SAND								
	130		■	13	24,31,31,(44)	SM (*A-2-4(0)*)	gray, wet, dense		20.5		NP	0	84	16	
4415															
	135		■	17	*0.18 / 0.47* 8,19,33,(36)	CL SM	dk. gray, moist, soft to firm								
							LEAN CLAY silt layers								
							gray, wet, dense								
							SILTY SAND								
4410															
	140		■	12	33,37,47,(57)	SM (*A-1-a*)	gray, wet, dense		8.4		NP	29	58	13	
							SILTY SAND W/GRAVEL possible cobbles								
4405															
	145		■	10	34,45,36,(54)	SM	gray, wet, dense								
4400															

DH_LOGV1 08-L2.GPJ US EVAL.GDT 2/23/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE ■ 2,3,2,(6) ← Blow Count per 6"; ← $(N_1)_{60}$ Value; *0.45* ← Torvane (tsf)

UNDISTURBED SAMPLE ⊠ PUSHED *0.45* ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
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