DRILL HOLE LOG

BORING NO. 08-P2-B1

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:260,954 E:586,273
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 50'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: N.M. **AFTER 24 HOURS:** 2.8'

PROJECT NUMBER: 200801.200
DATE STARTED: 9/22/08
DATE COMPLETED: 9/23/08
GROUND ELEVATION: 4540.5'
LOGGED BY: M.H., E.R., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Rec. (in)	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
4540				13	11,5,6,(23) *0.85*	SM ML (A-4(6))	brown, moist / dk. brown, moist, stiff	Organics in top 3" / SILTY SAND W/GRAVEL / SILT W/SAND plastic		20.8	35	9	0	26	74	
4535	5			3	4,5,4,(20) *0.34*	CL	lt. brown, moist, firm	LEAN CLAY silt lenses								
4530	10			17	*0.35* 5,4,3,(15)	CL ML (A-4(0))	lt. brown, moist, firm / gray, wet, med. dense	SANDY SILT slightly plastic, clay lenses		27.2	26	3	0	36	64	16% -0.005 mm
				16	1,2,3,(10)	ML (A-4(0))	gray, wet, loose	SANDY SILT few clay lenses		30.6		NP	1	41	58	12% -0.005 mm
4525	15			17	Pushed	ML (A-4(0))	gray, wet		92.8	29.9		NP	0	42	58	CU
				18	0/18",(0) *0.15*	ML (A-6(11))	gray, very moist, soft	SILT W/SAND plastic		38.1	38	12	0	15	85	23% -0.005 mm
4520	20			18	1,2,1,(5)	ML (A-4(5))	gray, wet	SILT plastic		35.4	34	4	0	9	91	18% -0.005 mm
4515	25			18	Pushed *0.33*	CH (A-7-6(30))	gray, moist, firm	FAT CLAY	76.0	46.8	50	27	0	1	99	UU UC
4510	30			18	3,12,17,(41)	SP-SM	gray, wet, dense	SAND W/SILT								
4505	35			18	7,17,20,(49)	SP-SM (A-3(0))	gray, wet, dense			22.3		NP	0	95	5	
4500	40			18	3,2,7,(11) *0.20*	CL	gray-brown, moist, soft	LEAN CLAY interbedded w/silt lenses & layers to 1" thick								
				15	*0.24* Pushed	CL (A-4(8)) ML (A-4(0))	gray-brown, moist, soft / gray, wet	SANDY SILT	88.4	32.7 / 26.2	30	9 / NP	0 / 0	10 / 33	90 / 67	CT
4495	45			18	4,12,26,(45) *0.32*	SM	gray, wet/moist, dense/firm, 7" clay layer	SILTY SAND								
								SILTY SAND occasional silt lenses								

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-P2-B1

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:260,954 E:586,273
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 50'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: N.M. **AFTER 24 HOURS:** 2.8'

PROJECT NUMBER: 200801.200
DATE STARTED: 9/22/08
DATE COMPLETED: 9/23/08
GROUND ELEVATION: 4540.5'
LOGGED BY: M.H., E.R., 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
4490				18	11,17,23,(45)	SM	gray, wet, dense									
4485	55			18	17,24,30,(58)	SM (A-2-4(0))	gray, wet, very dense	SILTY SAND occasional silt lenses		24.6		NP	0	71	29	
4480	60			15	16,23,27,(51)	SM	gray, wet, very dense									
4475	65			15	18,25,21,(46)	SM	gray, wet, dense	SILTY SAND occasional clay lenses								
4470	70			18	4,4,5,(9) 0.58	SM	gray, wet									
						CL	gray, moist, stiff	LEAN CLAY								
				18	0.51 Pushed	CL (A-7-6(28))	gray, moist, stiff		83.7	38.8	47	25	0	0	100	UC
						SM (A-2-4(0))	gray, wet	SILTY SAND		16.6		NP	0	74	26	
4465	75			18	0,1,3,(4) 0.45	SM	gray, wet, very loose									
						CL	gray, moist, firm	LEAN CLAY								
						ML	gray, wet	SANDY SILT								
				18	8,31,33,(58)	SM	gray, wet, very dense									
4460	80			16	18,24,25,(44)	SM (A-4(0))	gray, wet, dense			25.1		NP	0	51	49	
								SILTY SAND								
4455	85			16	19,26,23,(43)	SM	gray, wet, dense, interbedded clay lenses in top of sample									
4450	90			12	Pushed 0.88	CL (A-6(6))	dk. gray, moist, stiff		111.7	18.4	28	12	0	29	71	CT
4445	95			18	8,10,12,(18) 0.66	CL	dk. gray, moist, stiff	LEAN CLAY many silt lenses & layers to 2" thick								

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-P2-B1

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:260,954 E:586,273
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 50'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: N.M. **AFTER 24 HOURS:** 2.8'

PROJECT NUMBER: 200801.200
DATE STARTED: 9/22/08
DATE COMPLETED: 9/23/08
GROUND ELEVATION: 4540.5'
LOGGED BY: M.H., E.R., 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
4440				15	0.36 Pushed	CL (A-6(10))	dk. gray, moist, firm	99.3	26.6	31	11	0	4	96	UC
							dk. gray, wet		18.4		NP	0	69	31	
						SM (A-2-4(0))	SILTY SAND								
						SM	gray, wet								
4435	105			18	5,3,4,(6) 0.36	CL	gray, moist, firm								
							LEAN CLAY slight organic odor								
4430	110			12	Pushed 0.40	ML (A-4(0))	gray, moist, firm		23.3	27	3	0	20	80	
							SILT W/SAND slightly plastic								
4425	115			16	12,11,12,(17)	SM	gray, wet, med. dense								
							SILTY SAND many silt lenses & layers to 1" thick								
4420	120			15	Pushed	SM	gray, wet								
				14	6,6,7	SM (A-4(0))	gray, wet, disturbed blow counts		24.6		NP	0	56	44	
							SILTY SAND								
4415	125														
4410	130														
4405	135														
4400	140														
4395	145														

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-P2-B2

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:260,866 E:586,463
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 60'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 1.7' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 9/24/08
DATE COMPLETED: 9/25/08
GROUND ELEVATION: 4540.8'
LOGGED BY: E.R., S.R.J., C.S., M.H., 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
4540			■	11	4,6,5,(23) *0.76*	ML	dk. brown, moist, stiff	Organics in top 3"								
4535	5		■	18	7,10,11,(48) *0.24*	ML (*A-4(3)*)	lt. brown, moist, soft	SILT W/SAND plastic, many sand lenses, occasional gravels		25.6	30	5	0	22	78	
4530	10		■	15	*0.24* 12,4,3,(16)	ML SM (*A-4(0)*)	gray, moist, soft gray, wet, med. dense	SILTY SAND W/GRAVEL		21.1	25	3	20	33	47	12% -0.005 mm
4525	15		☒	15	Pushed	ML ML (*A-4(0)*)	dk. gray, very moist dk. gray, wet	SILT W/SAND plastic SANDY SILT	92.1	28.1		NP	0	44	56	DS UU
4520	20		■	18	1,1,1/12",(3) *0.20*	ML (*A-4(3)*)	brown, wet, soft	SILT W/SAND plastic, sand and/or silt lenses		32.2	30	4	0	23	77	21% -0.005 mm
4515	25		☒	18	Pushed *0.22*	CL (*A-7-6(21)*)	gray, moist, soft	LEAN CLAY silt lenses	77.5	37.8	42	19	0	2	98	CT UC
4510	30		■	18	0,3,5,(11) *0.14*	CL SM	gray, moist, soft gray, wet	SILTY SAND								
4505	35		☒ ■	10 17	Pushed 10,18,15,(43)	SP-SM SP-SM (*A-3(0)*)	gray, wet gray, wet, dense	SAND W/SILT		23.8		NP	0	94	6	
4500	40		☒	18	Pushed *0.72*	ML (*A-4(3)*)	gray, moist, stiff	SILT plastic		24.6	26	4	0	9	91	
4495	45		■	17	5,5,8,(15) *0.38*	CL	gray, moist, firm	LEAN CLAY silt lenses								
								SANDY SILT								

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-P2-B2

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:260,866 E:586,463
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 60'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 1.7' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 9/24/08
DATE COMPLETED: 9/25/08
GROUND ELEVATION: 4540.8'
LOGGED BY: E.R., S.R.J., C.S., M.H., 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
4490			■	15	11,17,22,(44)	ML	gray, wet, dense									
						SM	gray, wet, dense									
4485	55		■	16	14,27,35,(67)	SM (A-2-4(0))	gray, wet, very dense			21.3		NP	0	87	13	
4480	60		■	16	20,27,25,(54)	SM	gray, wet, very dense	SILTY SAND								
4475	65		■	17	19,29,33,(62)	SM (A-2-4(0))	gray, wet, very dense			20.1		NP	0	77	23	
4470	70		■	17	3,5,18,(22) 0.28	SM	gray, wet									
						CL	gray, moist, firm	LEAN CLAY sand lenses								
						SM	gray, wet, dense	SILTY SAND								
4465	75		■	18	0,5,3,(7) 0.42	CL (A-7-6(27))	gray, moist, firm	LEAN CLAY silt and/or sand lenses		37.1	47	24	0	1	99	
4460	80		☒	12	Pushed	ML	gray, wet	SANDY SILT								
			■	14	13,16,25,(37)	CL (A-6(7))	gray, moist, stiff	LEAN CLAY W/SAND silt lenses		21.2	28	12	0	25	75	
4455	85		■	18	23,37,44,(71)	SM	gray, wet, very dense	SILTY SAND								
4450	90		■	17	23,27,21,(41) 0.56	SM	gray, wet, dense									
						CL-ML	gray, moist, stiff	SILTY CLAY W/SAND								
4445	95		☒	16	Pushed 0.70	CL (A-6(11))	gray-brown, moist, stiff	LEAN CLAY	97.6	22.8	32	11	0	4	96	CT UC
								SILTY SAND silt layers to 2" thick								

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-P2-B2

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:260,866 E:586,463

DRILLING METHOD: 08-CME-55 / N.W. CASING TO 60'

DRILLER: D. SAMPSON

DEPTH TO WATER - INITIAL: ▽ 1.7' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 9/24/08

DATE COMPLETED: 9/25/08

GROUND ELEVATION: 4540.8'

LOGGED BY: E.R., S.R.J., C.S., M.H., 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
4440				16	24,20,16,(29) *0.31*	SM (*A-4(0)*) CL	gray, wet, med. dense gray-brown, moist, firm LEAN CLAY		22.3		NP	0	56	44	
4435	105														
4430	110														
4425	115														
4420	120														
4415	125														
4410	130														
4405	135														
4400	140														
4395	145														

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 09-P2-B3

SHEET 1 OF 1

PROJECT: I-15 UTAH CO. CORRIDOR - P2, I-15 OVER UTA

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:260,525 E:586,069

DRILLING METHOD: 96-CME-55 / N.W. CASING TO 25'

DRILLER: T. KERN

DEPTH TO WATER - INITIAL: ▽ 4.5' **AFTER 24 HOURS:** ▼ 3.6'

PROJECT NUMBER: 200801.200

DATE STARTED: 4/17/09

DATE COMPLETED: 4/17/09

GROUND ELEVATION: 4537.9'

LOGGED BY: J. PRICE, J. BOONE

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
4535								SILTY SAND								
						SM	dk. brown, very moist									
	5		■	16	1,1/14",(2)	ML (A-4(0))	lt. brown, wet, very loose	SANDY SILT		29.2		NP	0	39	61	9% -0.005 mm
			■	14	2,2,3,(11)	ML (A-4(0))	lt. brown, wet, med. dense	SILT W/SAND occasional sand layers, clay lenses		31.4		NP	0	15	85	12% -0.005 mm
4530			■	18	3,3,4,(16) 0.25	CL	lt. brown, very moist, soft to firm	LEAN CLAY W/SAND many silt lenses								
	10		■	18	2,3,4,(15) 0.65	CL (A-4(8))	lt. brown, moist, stiff	LEAN CLAY silt lenses		27.4	30	8	1	3	96	16% -0.005 mm
4525			■	18	2,2,3,(10) 0.45	CL (A-6(11))	lt. brown, moist, firm			28.8	32	12	0	4	96	24% -0.005 mm
						CL	lt. brown, moist									
	15		■	18	1,1,2,(6) 0.20	CL-ML (A-4(4))	gray, moist, soft	SILTY CLAY W/SAND		28.8	29	7	0	26	74	18% -0.005 mm
			■	17	1,2,2,(7)	ML	gray, wet, loose	SILT W/SAND								
4520			■	18	1,1,2,(5)	ML (A-4(0))	gray, wet, loose			34.0		NP	0	27	73	14% -0.005 mm
	20		■	18	0/18",(0) 0.35	ML	gray, wet, firm	SILT plastic, occasional sand layers to 1" thick								
4515			■	18	1,1,2,(5) 0.25	ML (A-4(11))	gray, wet, soft to firm			39.7	34	10	0	1	99	21% -0.005 mm
	25		■	18	0/18",(0) 0.25	CL	gray, very moist, soft	LEAN CLAY								
			■	18	0/18",(0) 0.20	CL (A-7-6(23))	gray, very moist, soft			45.0	43	22	0	5	95	
4510																
	30															
4505																
	35															
4500																
	40															
4495																
	45															
4490																

DH_LOGV1 08-P2.GPJ US EVAL.GDT 5/22/09

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
SS = Soluble Salt
DC = Dispersive Clay