Attachment Referenced in Response to DOE Comment # 2 - Part I

APPENDIX B1.2 FROM PRE-DESIGN STUDIES REPORT (MWH, 2014)
GEOTECHNICAL TEST RESULTS
ADVANCED TERRA TESTING

APPENDIX B1.2

GEOTECHNICAL TEST RESULTS

ADVANCED TERRA TESTING

BORROW AREAS GEOTECHNICAL TEST RESULTS

Moisture Content Determinations
ASTM D 2216

CLIENT:	MWH	JOB NO.	2512-77
PROJECT	Church Rock	LOCATION	Borrow Areas
PROJECT NO.	--		

BORING NO.	DH-B1-10
DEPTH	35-45'
SAMPLE NO.	--
DATE SAMPLED	12/11/13
DATE TESTED	12/31/13 TBT
SOIL DESCRIPTION	Silty Clay

MOISTURE DETERMINATIONS	
Wt. of Wet Soil & Dish (gms)	919.66
Wt. of Dry Soil & Dish (gms)	835.30
Net Loss of Moisture (gms)	84.36
Wt. of Dish (gms)	13.70
Wt. of Dry Soil (gms)	821.60
Moisture Content (%)	10.3

Data entry by: DAW/SKL Date: 1/3/2014
Checked by: Date: 1/7/14
File name: 2512_77_M&D-ASTMD-2216-2937-R0_0.xls

ATT
ADVANCED TERRA TESTING

Moisture Content Determinations
ASTM D 2216

CLIENT:	MWH	JOB NO.	2512-77
PROJECT	Church Rock	LOCATION	Borrow Areas
PROJECT NO.	-		

BORING NO.	SB-B4-01	DH-B1-03	DH-B3-05
DEPTH	0-15'	0-10'	20-30'
SAMPLE NO.	-	-	-
DATE SAMPLED	12/12/2013	12/10/2013	12/11/2013
DATE TESTED	1/3/14 TMR	1/3/14 TMR	1/3/14 TMR
SOIL DESCRIPTION	Silty Clay	Silty Clay w/ Sand	Silty Clay
MOISTURE DETERMINATIONS			
Wt. of Wet Soil & Dish (gms)	474.43	406.32	489.81
Wt. of Dry Soil & Dish (gms)	443.56	385.67	456.88
Net Loss of Moisture (gms)	30.87	20.65	32.93
Wt. of Dish (gms)	6.70	6.51	8.45
Wt. of Dry Soil (gms)	436.86	379.16	448.43
Moisture Content (%)	7.1	5.4	7.3

Data entry by: SKL Date: 1/4/2014
Checked by: CM Date: 1/7/14
File name: 2512_77_M&D-ASTMD-2216-2937-R0_2.xls

ATT
ADVANCED TERRA TESTING

Moisture & Density Determinations
ASTM D 2216 & D 2937

CLIENT:	MWH	JOB NO.	2512-77
PROJECT	Church Rock	LOCATION	Borrow Areas
PROJECT NO.	--		

BORING NO.	WB-B1-01A	WB-B1-03A	WB-B2-02A	WB-B5-001B
DEPTH	3-3.5'	11-11.5'	5.5-6.0'	3.0-3.5'
SAMPLE NO.	--	--	--	--
DATE SAMPLED	11/14/13 MWH	11/14/13 MWH	11/14/13 MWH	11/18/13 MWH
DATE TESTED	12/30/13 CAL	12/30/13 CAL	12/30/13 CAL	12/30/13 CAL
SOIL DESCRIPTION	Silty Sand	Silty Sand	Silty Sand	Sand with Silt
DENSITY DETERMINATIONS				
Sample Height (IN)	4.994	4.984	4.992	3.320
Sample Diameter (IN)	1.935	1.938	1.934	1.881
Wt of Wet Soil (GMs)	355.48	456.02	354.12	232.36
Sample Volume (CU Ft)	0.00850	0.00851	0.00849	0.00534
WET DENSITY (PCF)	92.2	118.2	92.0	95.9
DRY DENSITY (PCF)	88.8	111.0	87.1	92.5
MOISTURE DETERMINATIONS				
Wt. of Wet Soil & Dish (gms)	411.57	93.23	115.35	395.87
Wt. of Dry Soil & Dish (gms)	396.66	88.00	109.54	381.87
Net Loss of Moisture (gms)	14.91	5.23	5.81	14.00
Wt. of Dish (gms)	6.65	6.52	6.55	6.67
Wt. of Dry Soil (gms)	390.01	81.48	102.99	375.20
Moisture Content (%)	3.8	6.4	5.6	3.7

BORING NO.	WB-B5-002A
DEPTH	6.0-6.5'
SAMPLE NO.	--
DATE SAMPLED	11/18/13 MWH
DATE TESTED	12/30/13 CAL
SOIL DESCRIPTION	Sand with Silt
DENSITY DETERMINATIONS	
Sample Height (IN)	4.995
Sample Diameter (IN)	1.933
Wt of Wet Soil (GMs)	351.22
Sample Volume (CU Ft)	0.00848
WET DENSITY (PCF)	91.3
DRY DENSITY (PCF)	86.9
MOISTURE DETERMINATIONS	
Wt. of Wet Soil & Dish (gms)	98.49
Wt. of Dry Soil & Dish (gms)	94.06
Net Loss of Moisture (gms)	4.43
Wt. of Dish (gms)	6.49
Wt. of Dry Soil (gms)	87.57
Moisture Content (%)	5.1

Data entry by: DAW Date: 1/2/2014
Checked by: Date: 1/2/14
File name: 2512_77_M&D-ASTMD-2216-2937-R0_1.xls

ATT
ADVANCED TERRA TESTING

Specific Gravity
ASTM D 854 - Method B

CLIENT:	MWH	JOB NO.	2512-77
PROJECT	Church Rock	LOCATION	Borrow Areas
PROJECT NO.	--		

BORING NO.	WB-B1-06	EB-B4-06	SB-B1-04
DEPTH	5-10'	10-20'	0-25'
SOIL DESC.	-	-	Silty Clay w/ Sand
DATE SAMPLED	-	-	12/12/2013
DATE TESTED	1/3/14 SKL	1/4/14 SKL	1/4/14 SKL
Pycnometer #	Big 10	Big 7	Big 13
Weight of oven dry soil (g) (Wo)	85.20	66.75	92.01
Weight of flask, soil, and water. (g) (Wb)	724.88	714.88	729.46
Temperature (deg. C) (Tx)	24.4	23.7	23.8
Weight of water & flask at Tx (from cal. curve)(Wa)	671.94	673.13	671.57
Specific Gravity*	2.64	2.67	2.70

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

Data entry by: SKL Date: 1/7/2014
Checked by: DAW Date: 01/09/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_3.xls

ATT
ADVANCED TERRA TESTING

Specific Gravity
ASTM D 854 - Method B

CLIENT: MWH JOB NO. 2512-77

PROJECT Church Rock LOCATION Borrow Areas
PROJECT NO.

BORING NO.	DH-B3-05	DH-B1-03	SB-B4-01	DH-B1-10
DEPTH	20-30'	0-10'	0-15'	35-45'
SAMPLE NO.	--	--	--	--
DATE SAMPLED	12/11/13	12/10/13	12/12/13	--
DATE TESTED	01/16/14 SKL	01/16/14 SKL	01/16/14 SKL	01/15/14 SKL
SOIL DESCRIPTION	Silty Clay		Silty Clay	
Pycnometer #	Big 10	Big 7	Big 11	Big 12
Weight of oven dry soil (g) (Wo)	62.58	72.80	52.22	108.22
Weight of flask, soil, and water. (g) (Wb)	710.96	718.67	705.65	735.29
Temperature (deg. C) (Tx)	24.4	24.6	24.6	24.5
Weight of water & flask at Tx (from cal. curve)(Wa)	671.94	673.13	672.97	672.55
Specific Gravity*	2.66	2.67	2.67	2.38

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

Data entry by: DAW Date: 1/16/2014
Checked by: _____ Date: 1/16/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_7.xls

ATT
ADVANCED TERRA TESTING

Unit Weight, Moisture Content, Specific Gravity & Total Porosity
ASTM D2937, D 2216, D 854

Client: MWH
Project: Church Rock
Project No.: --

Job No.: 2512-77
Location: Borrow Areas

BORING NO.	NB-B1-03B	NB-B2-01B	DH-B1-01B	DH-B2-03
DEPTH	10.5-11.0'	3-3.5'	3-3.5'	15-15.5'
SAMPLE NO.	--	--	--	--
DATE SAMPLED	12/12/13	12/12/13	12/10/13	12/11/13
SOIL DESCRIPTION	Sandy Clay	Silty Sand	Silty Sand	Shale
SPECIFIC GRAVITY DETERMINATIONS				
Date Tested	01/08/14 SKL	01/09/14 SKL	01/09/14 SKL	01/09/14 SKL
Pycnometer #	Big 12	Big 10	Big 7	Big 13
Weight of oven dry soil (g) (Wo)	73.85	77.66	90.22	83.21
Weight of flask, soil, and water. (g) (Wb)	718.89	720.25	729.53	722.16
Temperature (deg. C) (Tx)	23.8	24.5	24.4	24.3
Weight of water & flask at Tx (from cal. curve)(Wa)	672.62	672.01	673.20	671.63
Specific Gravity*	2.68	2.64	2.66	2.55

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

DENSITY DETERMINATIONS				
Date Tested	01/08/14 SKL	01/08/14 SKL	01/09/14 SKL	01/09/14 SKL
Sample Height (in)	5.714	4.980	4.987	4.980
Sample Diameter (in)	1.934	1.933	1.935	1.940
Wt. of Wet Soil (g)	392.17	329.52	353.85	412.96
Sample Volume (cu. ft)	0.00971	0.00846	0.00849	0.00852
WET DENSITY (pcf)	89.0	85.9	91.9	106.9
DRY DENSITY (pcf)	84.4	81.9	88.8	96.7
MOISTURE DETERMINATIONS				
Date Tested	01/08/14 SKL	01/08/14 SKL	01/09/14 SKL	01/09/14 SKL
Wt. of Wet Soil & Dish (g)	86.71	101.65	360.31	98.90
Wt. of Dry Soil & Dish (g)	82.66	97.19	348.22	90.11
Net Loss of Moisture (g)	4.05	4.46	12.09	8.79
Wt. of Dish (g)	8.26	6.49	6.53	6.54
Wt. of Dry Soil (g)	74.40	90.70	341.69	83.57
MOISTURE CONTENT (%)	5.4	4.9	3.5	10.5
TOTAL POROSITY (%)	49.499	50.318	46.579	39.160

Data entry by: DAW Date: 1/9/2014
Checked by: _____ Date: 1/9/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_5.xls

ATT
ADVANCED TERRA TESTING

Unit Weight, Moisture Content, Specific Gravity & Total Porosity
ASTM D2937, D 2216, D 854

Client:	MWH	Job No.:	2512-77
Project:	Church Rock	Location:	Borrow Areas
Project No.:			

BORING NO.	SB-B1-01A	SB-B1-03A	SB-B2-02B	SB-B3-02A
DEPTH	3.5'-4'	11'-11.5'	5.5'-6.0'	6.0-6.5'
SAMPLE NO.	--	--	--	--
DATE SAMPLED	12/12/13 MWH	12/12/13 MWH	12/12/13 MWH	12/12/13 MWH
SOIL DESCRIPTION	Silty Clay	Silty Clay with Sand	Silty Clay	Silty Clay

SPECIFIC GRAVITY DETERMINATIONS

Date Tested	01/08/14 SKL	01/08/14 SKL	01/08/14 SKL	01/08/14 SKL
Pycnometer #	Big 9	Big 1	Big 10	Big 11
Weight of oven dry soil (g) (Wo)	75.76	86.41	82.53	70.00
Weight of flask, soil, and water. (g) (Wb)	722.32	726.00	723.99	716.94
Temperature (deg. C) (Tx)	24.1	24.1	24.0	24.1
Weight of water & flask at Tx (from cal. curve)(Wa)	674.74	671.77	671.97	673.00
Specific Gravity*	2.89	2.69	2.70	2.69

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

DENSITY DETERMINATIONS

Date Tested	01/08/14 SKL	01/08/14 SKL	01/08/14 SKL	01/08/14 SKL
Sample Height (in)	4.979	4.982	4.988	4.976
Sample Diameter (in)	1.933	1.935	1.936	1.882
Wt. of Wet Soil (g)	375.51	338.76	332.44	337.47
Sample Volume (cu. ft)	0.00846	0.00848	0.00850	0.00801
WET DENSITY (pcf)	97.9	88.1	86.3	92.9
DRY DENSITY (pcf)	91.4	82.6	80.1	84.3

MOISTURE DETERMINATIONS

Date Tested	01/08/14 SKL	01/08/14 SKL	01/08/14 SKL	01/08/14 SKL
Wt. of Wet Soil & Dish (g)	88.21	100.89	97.53	84.00
Wt. of Dry Soil & Dish (g)	82.81	95.14	91.13	76.84
Net Loss of Moisture (g)	5.40	5.75	6.40	7.16
Wt. of Dish (g)	6.51	8.20	8.20	6.54
Wt. of Dry Soil (g)	76.30	86.94	82.93	70.30
MOISTURE CONTENT (%)	7.1	6.6	7.7	10.2
TOTAL POROSITY (%)	49.311	50.709	52.577	49.728

Data entry by: SKL Date: 1/8/2014
Checked by: BRJ Date: 1/8/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_4.xls

ATT ADVANCED TERRA TESTING

Unit Weight, Moisture Content, Specific Gravity & Total Porosity
ASTM D2937, D 2216, D 854

Client: MWH
Project: Church Rock
Project No.: --

Job No.: 2512-77
Location: Borrow Areas

BORING NO.	WB-B1-01A	WB-B1-03A	WB-B2-02A	WB-B5-001B
DEPTH	3-3.5'	11-11.5'	5.5-6.0'	3.0-3.5'
SAMPLE NO.	--	--	--	--
DATE SAMPLED	11/14/13	11/14/13	11/14/13	11/18/13
SOIL DESCRIPTION	Silty Sand	Silty Sand	Silty Sand	Sand with Silt
SPECIFIC GRAVITY DETERMINATIONS				
Date Tested	01/02/14 SKL	01/02/14 SKL	01/02/14 SKL	01/02/14 SKL
Pycnometer #	Big 10	Big 7	Big 9	Big 11
Weight of oven dry soil (g) (Wo)	101.80	81.18	102.68	101.16
Weight of flask, soil, and water. (g) (Wb)	735.59	723.84	738.92	736.10
Temperature (deg. C) (Tx)	24.5	24.4	24.4	24.3
Weight of water & flask at Tx (from cal. curve)(Wa)	671.93	673.12	674.69	672.96
Specific Gravity*	2.67	2.67	2.67	2.66
DENSITY DETERMINATIONS				
Date Tested	12/30/13 CAL	12/30/13 CAL	12/30/13 CAL	12/30/13 CAL
Sample Height (in)	4.994	4.984	4.992	3.320
Sample Diameter (in)	1.935	1.938	1.934	1.881
Wt. of Wet Soil (g)	355.48	456.02	354.12	232.36
Sample Volume (cu. ft)	0.00850	0.00851	0.00849	0.00534
WET DENSITY (pcf)	92.2	118.2	92.0	95.9
DRY DENSITY (pcf)	88.8	111.0	87.1	92.5
MOISTURE DETERMINATIONS				
Date Tested	12/30/13 CAL	12/30/13 CAL	12/30/13 CAL	12/30/13 CAL
Wt. of Wet Soil & Dish (g)	411.57	93.23	115.35	395.87
Wt. of Dry Soil & Dish (g)	396.66	88.00	109.54	381.87
Net Loss of Moisture (g)	14.91	5.23	5.81	14.00
Wt. of Dish (g)	6.65	6.52	6.55	6.67
Wt. of Dry Soil (g)	390.01	81.48	102.99	375.20
MOISTURE CONTENT (%)	3.8	6.4	5.6	3.7
TOTAL POROSITY (%)	46.703	33.265	47.765	44.319

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

Data entry by: DAW
Date: 1/2/2014
Checked by:
Date: 1/2/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_1.xls

ATT
ADVANCED TERRA TESTING

Unit Weight, Moisture Content, Specific Gravity & Total Porosity
ASTM D2937, D 2216, D 854

Client: MWH
Project: Church Rock
Project No.:

Job No.: 2512-77
Location: Borrow Areas

BORING NO.	WB-B5-002A	EB-B6-01B	EB-B6-04A
DEPTH	6.0-6.5'	3-3.5'	11-11.5'
SAMPLE NO.	--	--	--
DATE SAMPLED	11/18/13 CAL	12/10/13 MWH	12/10/13 MWH
SOIL DESCRIPTION	Sand with Silt	Silty Clay	Silty Clay
SPECIFIC GRAVITY DETERMINATIONS			
Date Tested	01/02/14 SKL	01/13/14 SKL	01/13/14 SKL
Pycnometer #	Big 12	Big 13	Big 10
Weight of oven dry soil (g) (Wo)	87.36	79.12	107.69
Weight of flask, soil, and water. (g) (Wb)	727.06	721.47	739.58
Temperature (deg. C) (Tx)	24.4	24.3	24.4
Weight of water & flask at Tx (from cal. curve)(Wa)	672.55	671.57	671.94
Specific Gravity*	2.66	2.71	2.69
DENSITY DETERMINATIONS			
Date Tested	12/30/13 CAL	01/05/14 SKL	01/05/14 SKL
Sample Height (in)	4.995	4.982	4.980
Sample Diameter (in)	1.933	1.933	1.877
Wt. of Wet Soil (g)	351.22	376.53	373.99
Sample Volume (cu. ft)	0.00848	0.00846	0.00797
WET DENSITY (pcf)	91.3	98.1	103.4
DRY DENSITY (pcf)	86.9	91.2	95.2
MOISTURE DETERMINATIONS			
Date Tested	12/30/13 CAL	01/05/14 SKL	01/05/14 SKL
Wt. of Wet Soil & Dish (g)	98.49	405.11	124.09
Wt. of Dry Soil & Dish (g)	94.06	376.85	114.79
Net Loss of Moisture (g)	4.43	28.26	9.30
Wt. of Dish (g)	6.49	6.58	6.65
Wt. of Dry Soil (g)	87.57	370.27	108.14
MOISTURE CONTENT (%)	5.1	7.6	8.6
TOTAL POROSITY (%)	47.665	46.080	43.287

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

Data entry by: DAW Date: 1/16/2014
Checked by: Date: 1/16/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_2.xls

ATT
ADVANCED TERRA TESTING

Unit Weight, Moisture Content, Specific Gravity & Total Porosity
ASTM D2937, D 2216, D 854

Client: MWH
Project: Church Rock
Project No.:

Job No.: 2512-77
Location: Borrow Areas

BORING NO.	EB-B2-001A	EB-B3-003B	EB-B4-02A	EB-B5-02B
DEPTH	3-3.5'	10.5-11'	6-6.5'	5.5-6'
SAMPLE NO.	--	--	--	--
DATE SAMPLED	11/18/13 MWH	11/18/13 MWH	12/10/13 MWH	12/10/13 MWH
SOIL DESCRIPTION	Silty Sand	Sandy Silt with Clay	Sandy Clay	Clayey Sand with Gravel
SPECIFIC GRAVITY DETERMINATIONS				
Date Tested	01/10/14 SKL	01/06/14 SKL	01/13/14 SKL	01/13/14 SKL
Pycnometer #	Big 11	Big 10	Big 9	Big 7
Weight of oven dry soil (g) (Wo)	73.89	90.92	91.07	79.15
Weight of flask, soil, and water. (g) (Wb)	719.18	729.13	731.32	723.00
Temperature (deg. C) (Tx)	24.6	23.5	24.4	24.6
Weight of water & flask at Tx (from cal. curve)(Wa)	672.94	671.91	674.68	673.11
Specific Gravity*	2.67	2.70	2.65	2.71

*Specific Gravity = Wo/[Wo+(Wa-Wb)]

DENSITY DETERMINATIONS				
Date Tested	01/05/14 CAL	01/05/14 CAL	01/05/14 CAL	01/05/14 CAL
Sample Height (in)	4.445	4.982	4.985	4.459
Sample Diameter (in)	1.928	1.936	1.937	1.934
Wt. of Wet Soil (g)	385.81	339.03	327.67	344.15
Sample Volume (cu. ft)	0.00751	0.00849	0.00850	0.00758
WET DENSITY (pcf)	113.3	88.1	85.0	100.1
DRY DENSITY (pcf)	107.1	83.1	80.7	93.8
MOISTURE DETERMINATIONS				
Date Tested	01/05/14 CAL	01/05/14 CAL	01/05/14 CAL	01/05/14 CAL
Wt. of Wet Soil & Dish (g)	392.16	103.35	103.04	91.37
Wt. of Dry Soil & Dish (g)	371.17	97.91	98.13	86.06
Net Loss of Moisture (g)	20.99	5.44	4.91	5.31
Wt. of Dish (g)	6.50	6.74	6.57	6.57
Wt. of Dry Soil (g)	364.67	91.17	91.56	79.49
MOISTURE CONTENT (%)	5.8	6.0	5.4	6.7
TOTAL POROSITY (%)	35.794	50.651	51.159	44.448

Data entry by: DAW Date: 1/16/2014
Checked by: Date: 1/16/14
File name: 2512_77_SpecificGravity-ASTM-854-R1_6.xls

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Shale

Boring Number: DH-B2-03
Depth: 15-15.5'
Sample Number: --
Test Date: 01/08/14
Technician: MLM
Sampled Date: 12/11/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

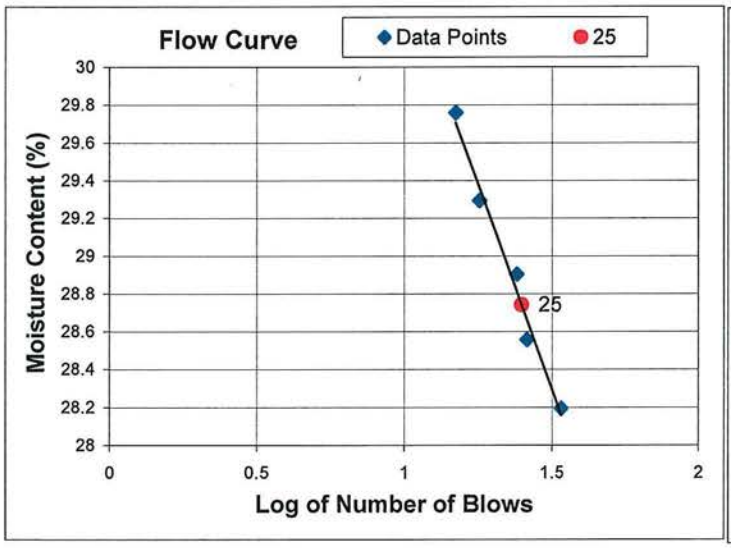
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	10.362	11.046	11.373
Weight of Dry Soil & Pan (g):	8.515	9.117	9.382
Weight of Water (g):	1.847	1.929	1.991
Weight of Pan (g):	1.140	1.145	1.149
Moisture Content (%):	25.0	24.2	24.2

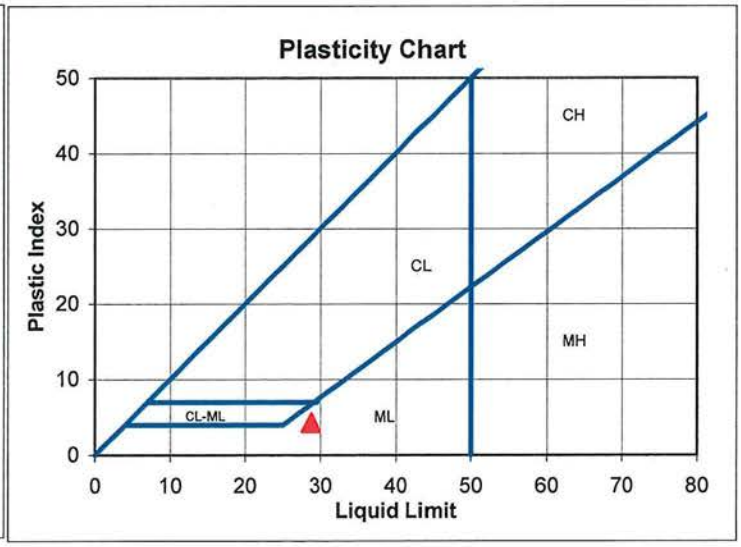
Average: 24.5%
Standard Deviation: 0.5%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	15	18	24	26	34
Weight of Wet Soil & Pan (g):	10.162	10.706	9.391	10.603	10.643
Weight of Dry Soil & Pan (g):	8.093	8.541	7.541	8.483	8.536
Weight of Water (g):	2.069	2.165	1.850	2.120	2.107
Weight of Pan (g):	1.140	1.150	1.140	1.059	1.063
Moisture Content (%):	29.8	29.3	28.9	28.6	28.2

Plastic Limit: 24
Liquid Limit: 29
Plastic Index: 4
Atterberg Classification ML





Data Entered By: DAW Date: 1/10/2014
File Name: atterberg-ASTM_4318-R6_14.xls

Data Checked By: MLM
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: DH-B3-05
Depth: 20-30'
Sample Number: -
Test Date: 1/14/2014
Technician: MLM
Sampled Date: 12/11/2013
Sampled By: -
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

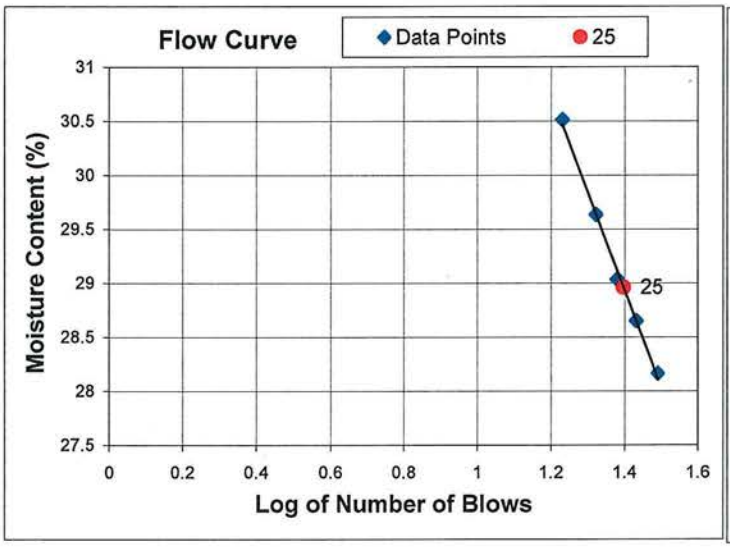
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	11.095	12.271	13.024
Weight of Dry Soil & Pan (g):	9.589	10.603	11.261
Weight of Water (g):	1.506	1.668	1.763
Weight of Pan (g):	1.106	1.086	1.135
Moisture Content (%):	17.8	17.5	17.4

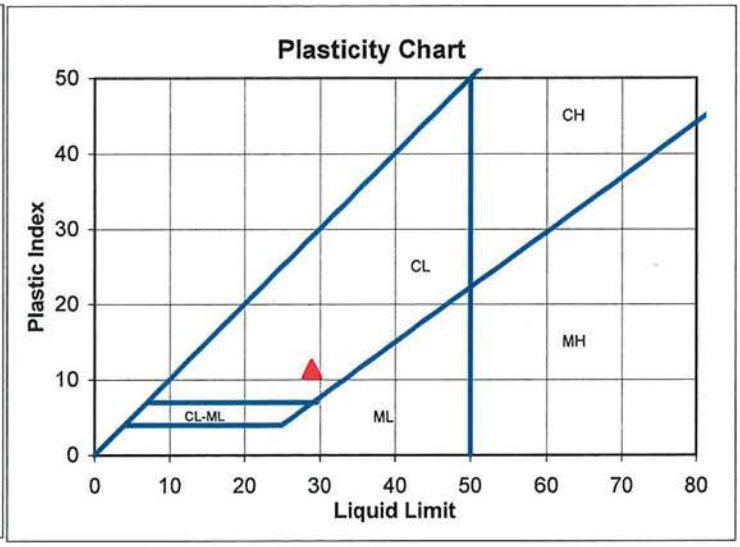
Average: 17.6%
Standard Deviation: 0.2%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	31	27	24	21	17
Weight of Wet Soil & Pan (g):	13.469	12.694	12.158	12.432	11.627
Weight of Dry Soil & Pan (g):	10.760	10.119	9.671	9.847	9.167
Weight of Water (g):	2.709	2.575	2.487	2.585	2.460
Weight of Pan (g):	1.141	1.131	1.105	1.124	1.104
Moisture Content (%):	28.2	28.6	29.0	29.6	30.5

Plastic Limit: 18
Liquid Limit: 29
Plastic Index: 11
Atterberg Classification CL





Data Entered By: SKL Date: 1/15/2014
File Name: atterberg-ASTM_4318-R6_20.xls

Data Checked By: MLM
Date: 1/15/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay w/ Sand

Boring Number: DH-B1-03
Depth: 0-10'
Sample Number: -
Test Date: 1/14/2014
Technician: MLM
Sampled Date: 12/10/2013
Sampled By: -
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

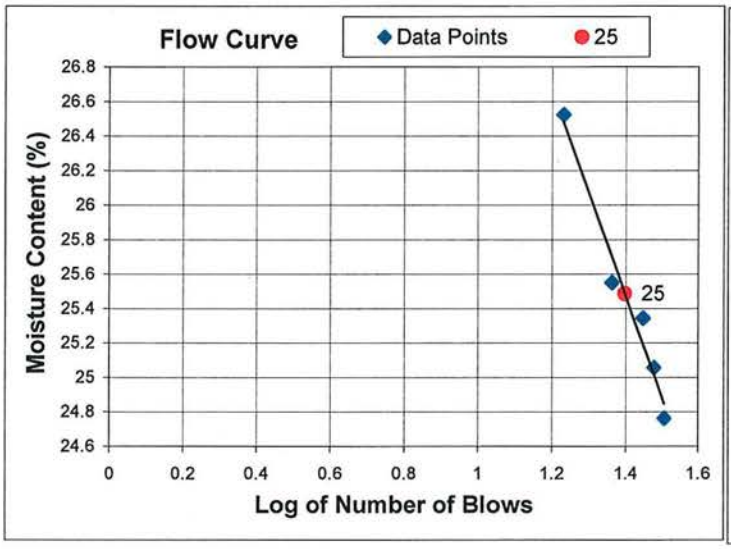
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	14.124	14.760	13.933
Weight of Dry Soil & Pan (g):	12.042	12.594	11.904
Weight of Water (g):	2.082	2.166	2.029
Weight of Pan (g):	1.149	1.092	1.135
Moisture Content (%):	19.1	18.8	18.8

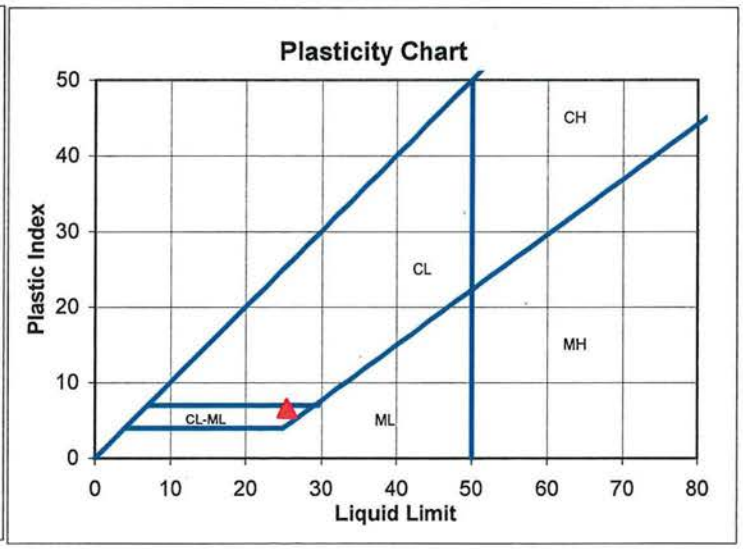
Average: 18.9%
Standard Deviation: 0.2%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	32	30	28	23	17
Weight of Wet Soil & Pan (g):	12.572	14.495	13.590	12.990	13.022
Weight of Dry Soil & Pan (g):	10.306	11.813	11.075	10.581	10.530
Weight of Water (g):	2.266	2.682	2.515	2.409	2.492
Weight of Pan (g):	1.155	1.109	1.151	1.152	1.134
Moisture Content (%):	24.8	25.1	25.3	25.5	26.5

Plastic Limit: 19
Liquid Limit: 25
Plastic Index: 7
Atterberg Classification CL-ML





Data Entered By: SKL Date: 1/15/2014
File Name: atterberg-ASTM_4318-R6_19.xls

Data Checked By: MLM
Date: 1/15/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B4-01
Depth: 0-15'
Sample Number: --
Test Date: 01/13/14
Technician: MLM
Sampled Date: 12/12/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

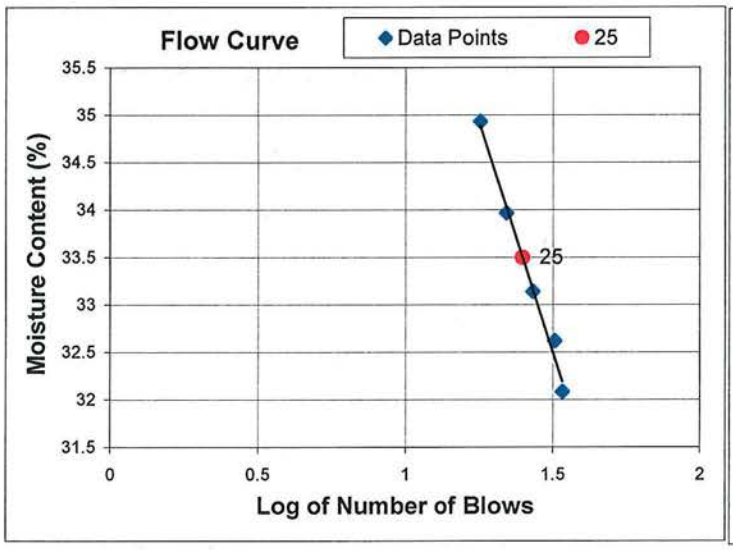
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	11.536	13.927	13.618
Weight of Dry Soil & Pan (g):	10.178	12.302	11.987
Weight of Water (g):	1.358	1.625	1.631
Weight of Pan (g):	1.129	1.138	1.093
Moisture Content (%):	15.0	14.6	15.0

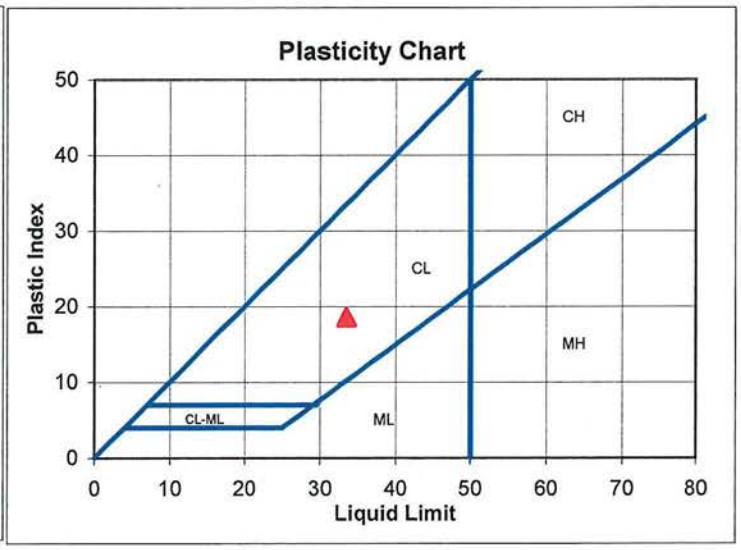
Average: 14.8%
Standard Deviation: 0.3%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	34	32	27	22	18
Weight of Wet Soil & Pan (g):	15.472	15.947	14.141	17.597	16.484
Weight of Dry Soil & Pan (g):	11.983	12.282	10.893	13.424	12.515
Weight of Water (g):	3.489	3.665	3.248	4.173	3.969
Weight of Pan (g):	1.108	1.045	1.091	1.137	1.152
Moisture Content (%):	32.1	32.6	33.1	34.0	34.9

Plastic Limit: 15
Liquid Limit: 33
Plastic Index: 19
Atterberg Classification CL





Data Entered By: DAW Date: 1/14/2014
File Name: atterberg-ASTM_4318-R6_17.xls

Data Checked By: CAE
Date: 1/15/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B1-03A
Depth: 11-11.5'
Sample Number: -
Test Date: 1/3/2014
Technician: MLM
Sampled Date: 11/14/2013
Sampled By: MWH
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

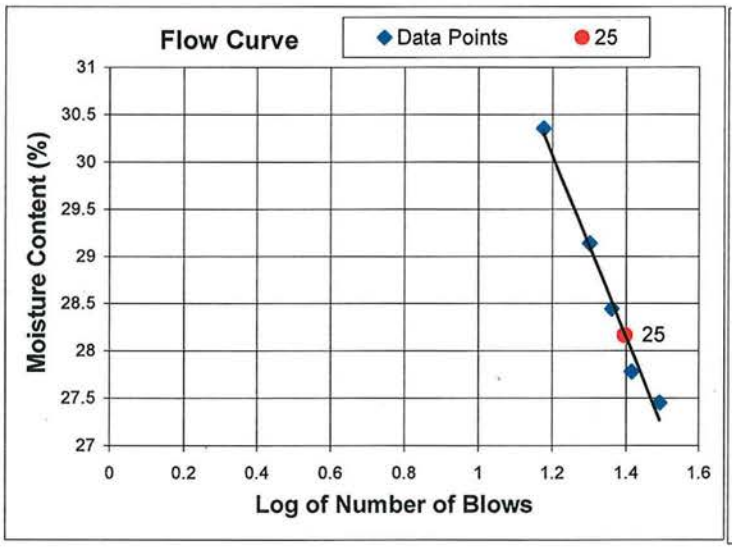
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	7.525	7.672	7.862
Weight of Dry Soil & Pan (g):	6.557	6.702	6.848
Weight of Water (g):	0.968	0.970	1.014
Weight of Pan (g):	1.145	1.100	1.053
Moisture Content (%):	17.9	17.3	17.5

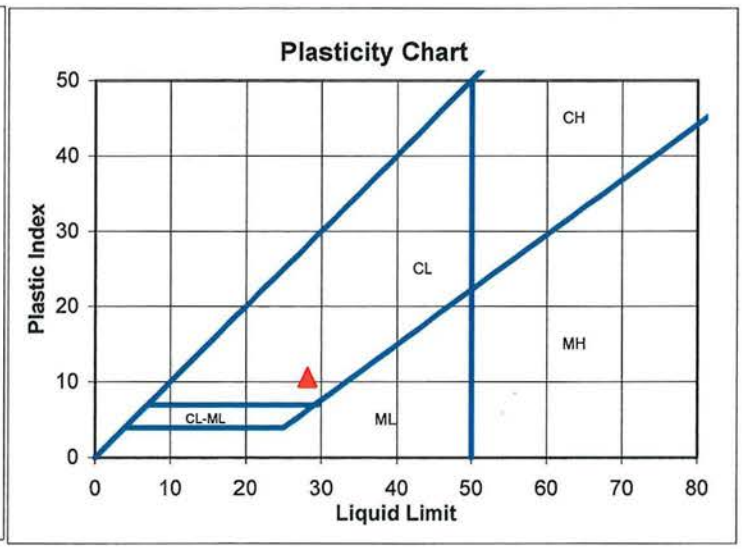
Average: 17.6%
Standard Deviation: 0.3%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	31	26	23	20	15
Weight of Wet Soil & Pan (g):	9.955	8.930	10.481	10.410	10.609
Weight of Dry Soil & Pan (g):	8.059	7.230	8.417	8.310	8.394
Weight of Water (g):	1.896	1.700	2.064	2.100	2.215
Weight of Pan (g):	1.153	1.111	1.161	1.103	1.096
Moisture Content (%):	27.5	27.8	28.4	29.1	30.4

Plastic Limit: 18
Liquid Limit: 28
Plastic Index: 11
Atterberg Classification CL





Data Entered By: SKL Date: 1/4/2014
File Name: atterberg-ASTM_4318-R6_8.xls

Data Checked By: CAL
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Project Number: Sandy Silt with Clay

Boring Number: EB-B3-003B
Depth: 10.5-11'
Sample Number: -
Test Date: 1/3/2014
Technician: MLM
Sampled Date: 11/18/2013
Sampled By: -
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

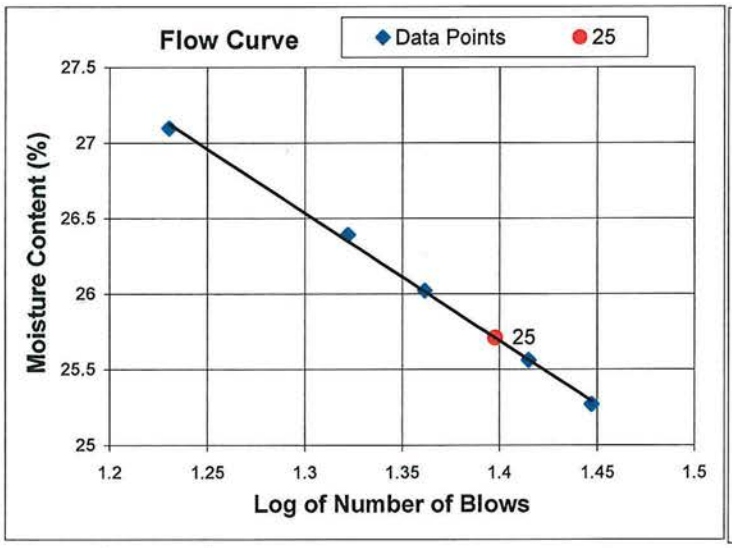
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	8.261	8.297	8.851
Weight of Dry Soil & Pan (g):	7.300	7.346	7.827
Weight of Water (g):	0.961	0.951	1.024
Weight of Pan (g):	1.143	1.148	1.157
Moisture Content (%):	15.6	15.3	15.4

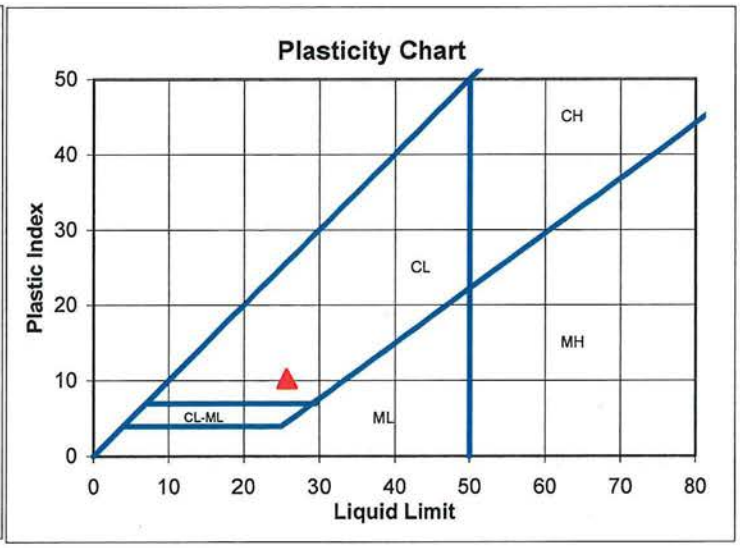
Average: 15.4%
Standard Deviation: 0.2%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	28	26	23	21	17
Weight of Wet Soil & Pan (g):	11.438	9.969	10.674	10.979	11.117
Weight of Dry Soil & Pan (g):	9.358	8.172	8.706	8.924	8.988
Weight of Water (g):	2.080	1.797	1.968	2.055	2.129
Weight of Pan (g):	1.127	1.142	1.143	1.137	1.130
Moisture Content (%):	25.3	25.6	26.0	26.4	27.1

Plastic Limit: 15
Liquid Limit: 26
Plastic Index: 10
Atterberg Classification CL





Data Entered By: SKL Date: 1/4/2014
File Name: atterberg-ASTM_4318-R6_7.xls

Data Checked By: CAL
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: EB-B6-04A
Depth: 11-11.5'
Sample Number: -
Test Date: 1/3/2014
Technician: MLM
Sampled Date: 12/10/2013
Sampled By: MWH
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

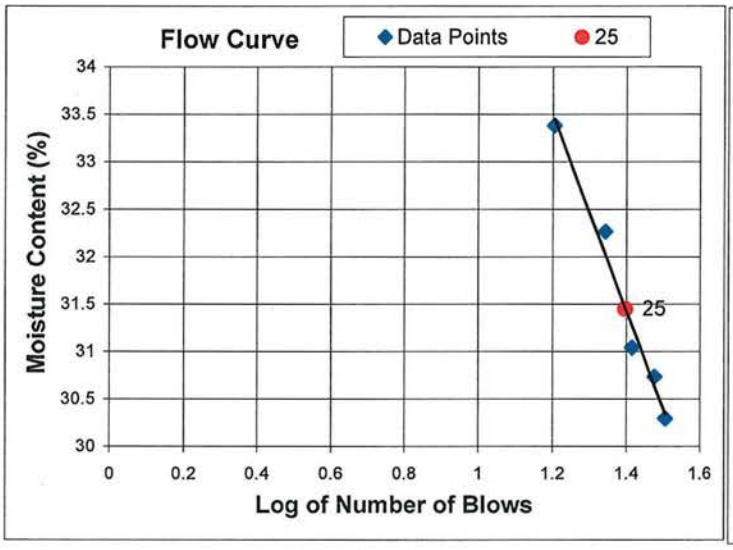
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	9.213	10.005	8.409
Weight of Dry Soil & Pan (g):	8.256	8.972	7.532
Weight of Water (g):	0.957	1.033	0.877
Weight of Pan (g):	1.111	1.154	1.137
Moisture Content (%):	13.4	13.2	13.7

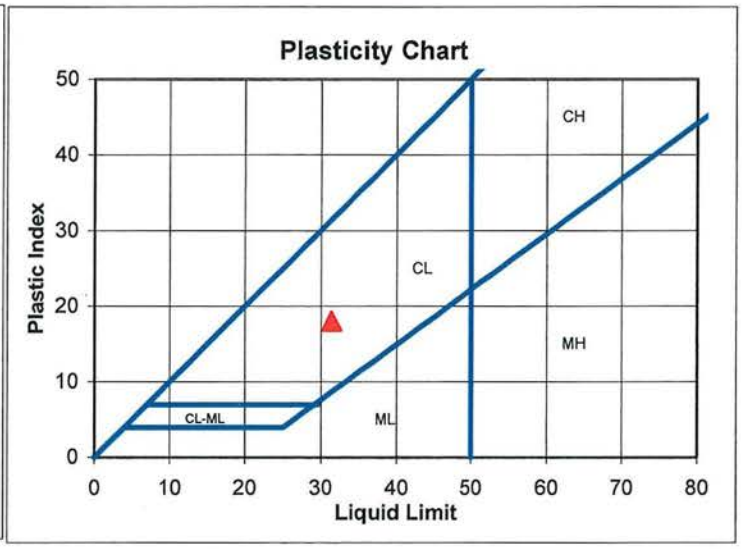
Average: 13.4%
Standard Deviation: 0.3%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	32	30	26	22	16
Weight of Wet Soil & Pan (g):	15.226	12.737	12.179	13.310	13.273
Weight of Dry Soil & Pan (g):	11.951	10.012	9.565	10.342	10.237
Weight of Water (g):	3.275	2.725	2.614	2.968	3.036
Weight of Pan (g):	1.140	1.146	1.144	1.142	1.141
Moisture Content (%):	30.3	30.7	31.0	32.3	33.4

Plastic Limit: 13
Liquid Limit: 31
Plastic Index: 18
Atterberg Classification CL





Data Entered By: SKL Date: 1/4/2014
File Name: atterberg-ASTM_4318-R6_6.xls

Data Checked By: GJL
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: NB-B2-04
Depth: 0-10'
Sample Number: -
Test Date: 1/2/2014
Technician: DAW
Sampled Date: 12/12/2013
Sampled By: -
Method: Method A

Test Configuration

Liquid Limits Device: 0860
Material Size of Fines: -#40

Plastic Limits

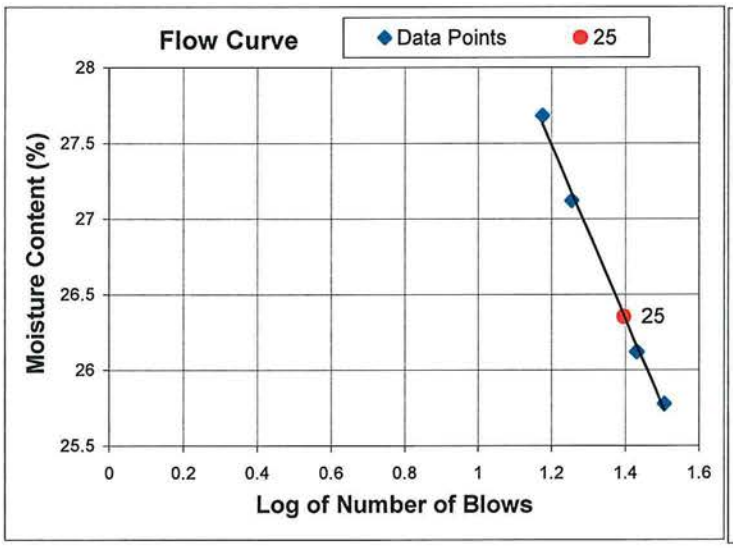
	Sample 1	Sample 2
Weight of Wet Soil & Pan (g):	11.946	9.294
Weight of Dry Soil & Pan (g):	10.218	7.995
Weight of Water (g):	1.728	1.299
Weight of Pan (g):	1.135	1.129
Moisture Content (%):	19.0	18.9

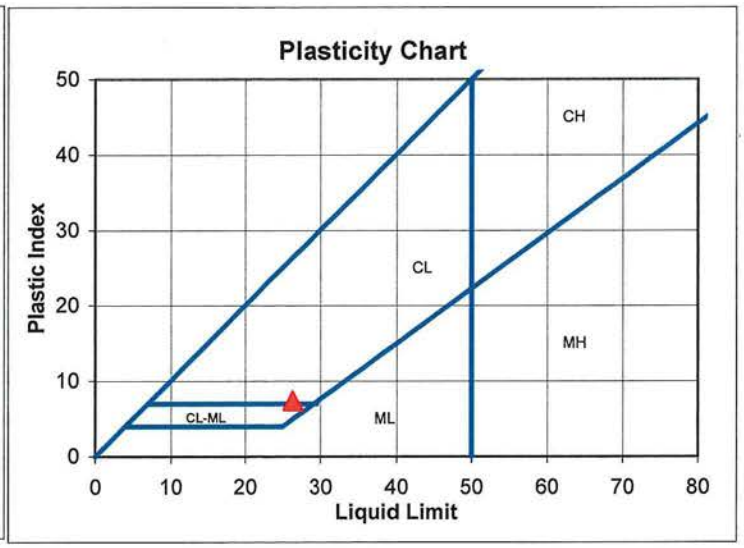
Average: 19.0%
Standard Deviation: 0.1%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4
Number of Blows:	15	18	27	32
Weight of Wet Soil & Pan (g):	24.117	25.278	27.140	21.372
Weight of Dry Soil & Pan (g):	19.128	20.123	21.737	17.228
Weight of Water (g):	4.989	5.155	5.403	4.144
Weight of Pan (g):	1.103	1.114	1.051	1.151
Moisture Content (%):	27.7	27.1	26.1	25.8

Plastic Limit: 19
Liquid Limit: 26
Plastic Index: 7
Atterberg Classification CL





Data Entered By: SKL Date: 1/3/2014
File Name: atterberg-ASTM_4318-R6_5.xls

Data Checked By: CAL
Date: 1/8/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: EB-B4-06
Depth: 10-20'
Sample Number: -
Test Date: 1/2/2014
Technician: SKL
Sample Date: 12/10/2013
Sampled By: -
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

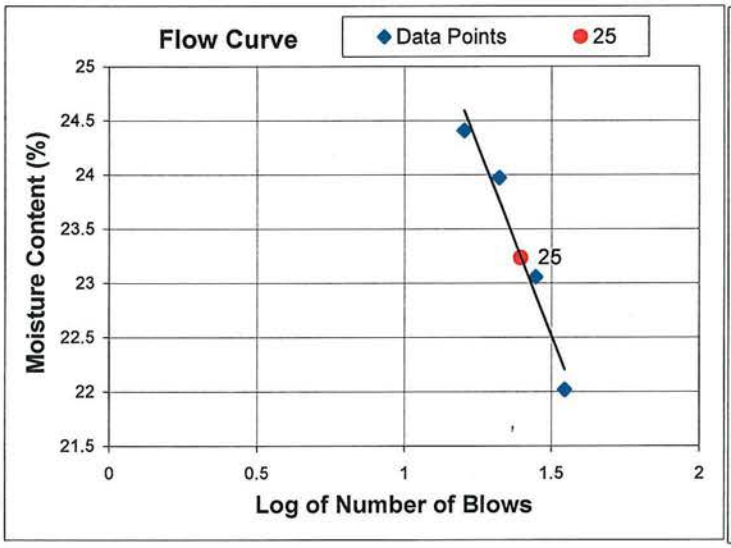
	Sample 1	Sample 2
Weight of Wet Soil & Pan (g):	10.176	10.413
Weight of Dry Soil & Pan (g):	8.881	9.107
Weight of Water (g):	1.295	1.306
Weight of Pan (g):	1.094	1.158
Moisture Content (%):	16.6	16.4

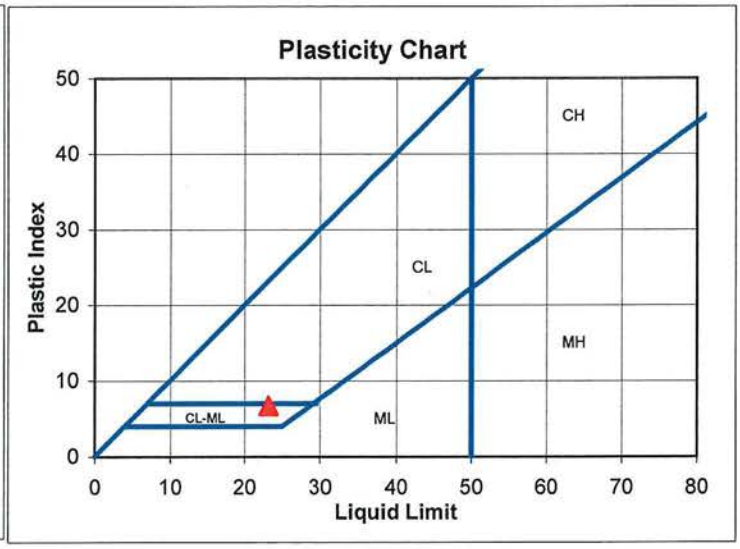
Average: 16.5%
Standard Deviation: 0.1%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4
Number of Blows:	35	28	21	16
Weight of Wet Soil & Pan (g):	14.102	12.040	16.307	16.191
Weight of Dry Soil & Pan (g):	11.756	9.990	13.375	13.241
Weight of Water (g):	2.346	2.050	2.932	2.950
Weight of Pan (g):	1.099	1.097	1.142	1.153
Moisture Content (%):	22.0	23.1	24.0	24.4

Plastic Limit: 17
Liquid Limit: 23
Plastic Index: 7
Atterberg Classification CL-ML





Data Entered By: SKL Date: 1/3/2014
File Name: atterberg-ASTM_4318-R6_4.xls

Data Checked By: CAL
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client:	MWH	Boring Number:	WB-B1-06
Job Number:	2512-77	Depth:	5-10'
Project:	Church Rock	Sample Number:	--
Location:	Borrow Areas	Test Date:	12/31/13
Soil Description:	Silty Sand	Technician:	MLM

Test Configuration

Liquid Limits Device: 0860
Material Size of Fines: -#40
Method: Method A

Plastic Limits

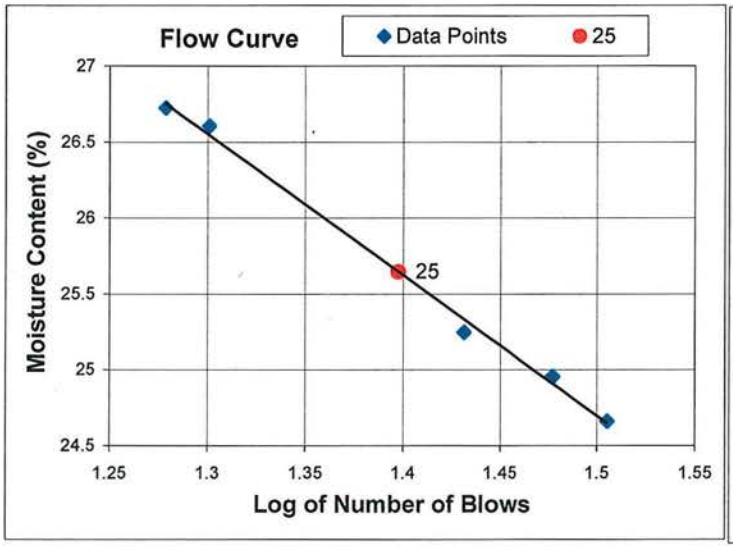
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	14.096	13.298	15.392
Weight of Dry Soil & Pan (g):	11.949	11.285	13.064
Weight of Water (g):	2.147	2.013	2.328
Weight of Pan (g):	1.143	1.143	1.105
Moisture Content (%):	19.9	19.8	19.5

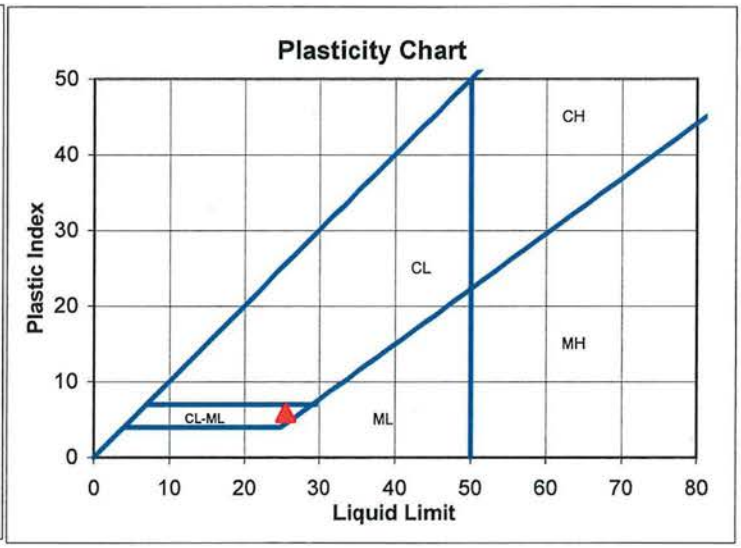
Average: 19.7%
Standard Deviation: 0.2%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	32	30	27	20	19
Weight of Wet Soil & Pan (g):	13.262	12.711	11.081	11.658	11.505
Weight of Dry Soil & Pan (g):	10.865	10.401	9.076	9.450	9.320
Weight of Water (g):	2.397	2.310	2.005	2.208	2.185
Weight of Pan (g):	1.145	1.144	1.134	1.150	1.143
Moisture Content (%):	24.7	25.0	25.2	26.6	26.7

Plastic Limit: 20
Liquid Limit: 26
Plastic Index: 6
Atterberg Classification CL-ML





Data Entered By: DAW/SKL Date: 1/3/2014
File Name: atterberg-ASTM_4318-R6_3.xls

Data Checked By: CAC
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B2-05
Depth: 10-20'
Sample Number: --
Test Date: 12/31/13
Technician: BRJ
Sampled Date: 11/14/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

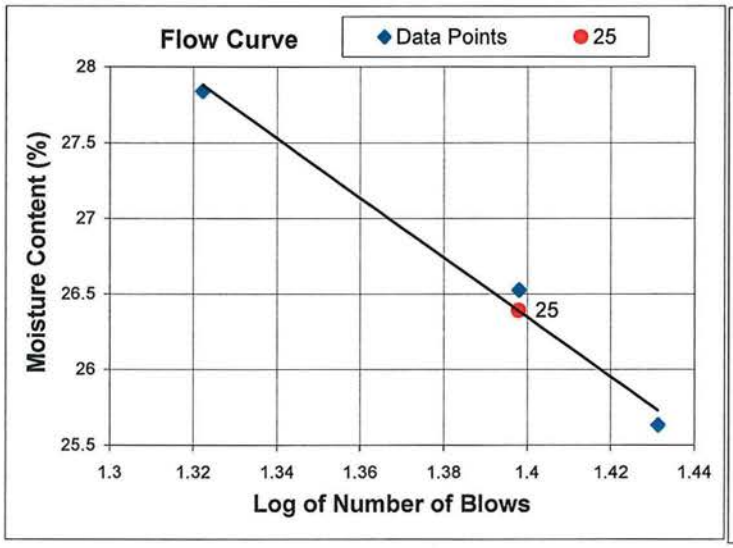
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	14.940	11.600	13.440
Weight of Dry Soil & Pan (g):	13.000	10.090	11.690
Weight of Water (g):	1.940	1.510	1.750
Weight of Pan (g):	1.500	1.160	1.110
Moisture Content (%):	16.9	16.9	16.5

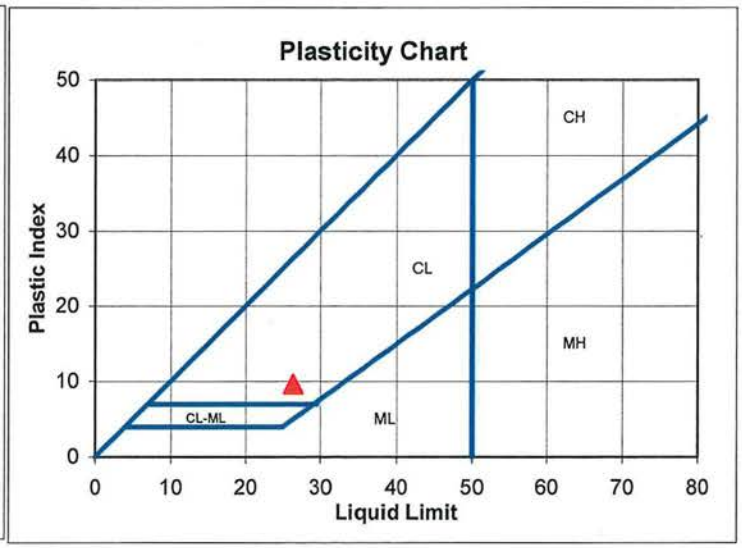
Average: 16.8%
Standard Deviation: 0.2%

Liquid Limits

	Sample 1	Sample 2	Sample 3
Number of Blows:	27	25	21
Weight of Wet Soil & Pan (g):	10.070	10.050	10.610
Weight of Dry Soil & Pan (g):	8.250	8.180	8.550
Weight of Water (g):	1.820	1.870	2.060
Weight of Pan (g):	1.150	1.130	1.150
Moisture Content (%):	25.6	26.5	27.8

Plastic Limit: 17
Liquid Limit: 26
Plastic Index: 10
Atterberg Classification CL





Data Entered By: DAW/SKL Date: 1/3/2014
File Name: atterberg-ASTM_4318-R6_2.xls

Data Checked By: CAL
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B2-02B
Depth: 5.5-6'
Sample Number: --
Test Date: 01/07/14
Technician: MLM
Sampled Date: --
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

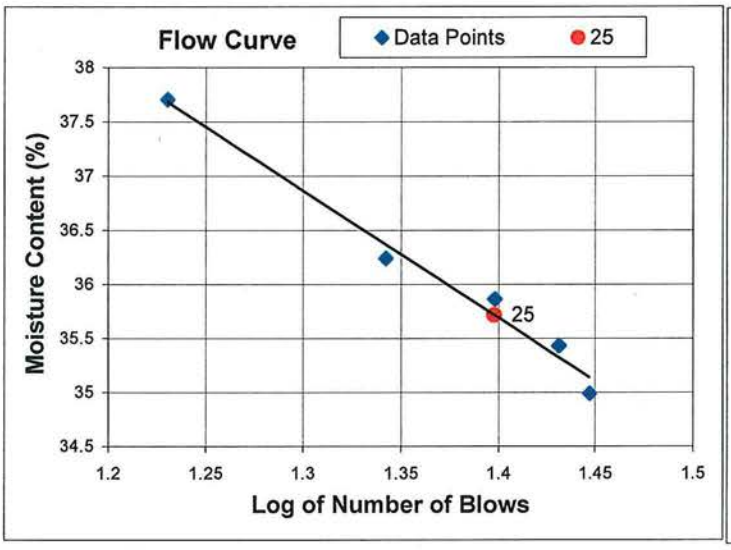
	Sample 1	Sample 2
Weight of Wet Soil & Pan (g):	11.286	11.922
Weight of Dry Soil & Pan (g):	9.934	10.475
Weight of Water (g):	1.352	1.447
Weight of Pan (g):	1.150	1.057
Moisture Content (%):	15.4	15.4

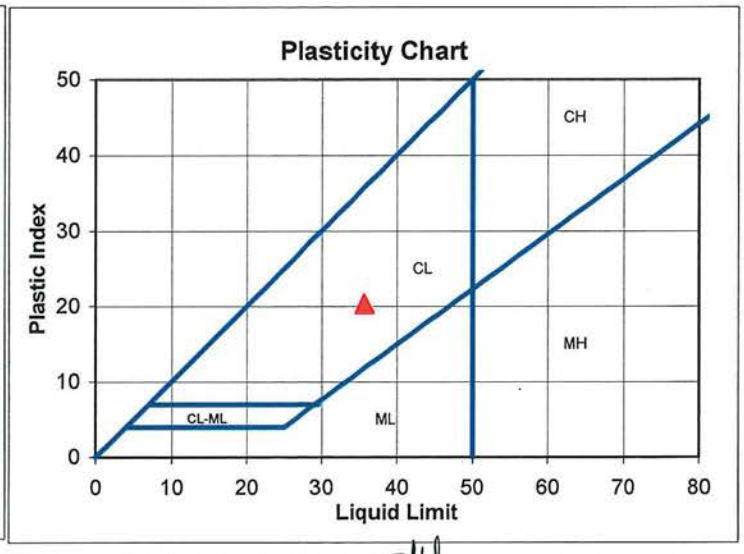
Average: 15.4%
Standard Deviation: 0.0%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	28	27	22	25	17
Weight of Wet Soil & Pan (g):	16.262	15.402	15.638	12.176	13.668
Weight of Dry Soil & Pan (g):	12.345	11.661	11.774	9.225	10.209
Weight of Water (g):	3.917	3.741	3.864	2.951	3.459
Weight of Pan (g):	1.150	1.102	1.111	0.996	1.034
Moisture Content (%):	35.0	35.4	36.2	35.9	37.7

Plastic Limit: 15
Liquid Limit: 36
Plastic Index: 20
Atterberg Classification CL





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File Name: atterberg-ASTM_4318-R6_12.xls

Data Checked By: SM
Date: 1/8/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: SB-B1-04
Depth: 0-25'
Sample Number: --
Test Date: 01/06/14
Technician: MLM
Sampled Date: 12/12/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0860
Material Size of Fines: -#40

Plastic Limits

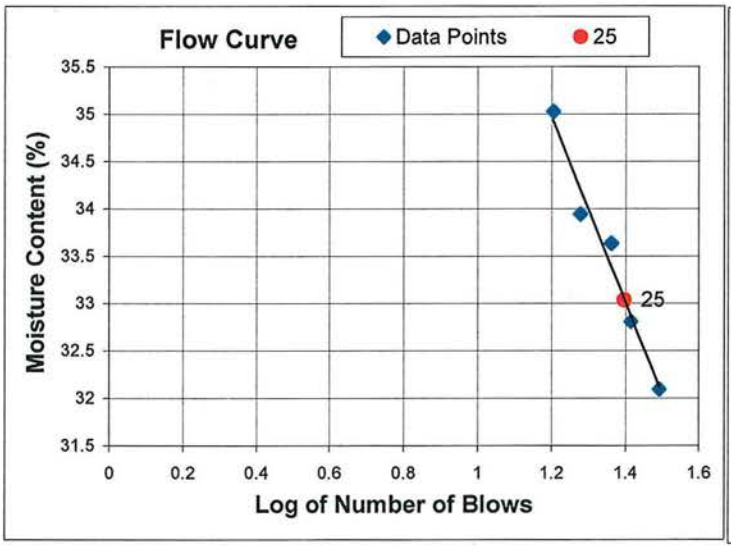
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	10.906	10.109	9.707
Weight of Dry Soil & Pan (g):	9.725	9.001	8.666
Weight of Water (g):	1.181	1.108	1.041
Weight of Pan (g):	1.138	1.136	1.098
Moisture Content (%):	13.8	14.1	13.8

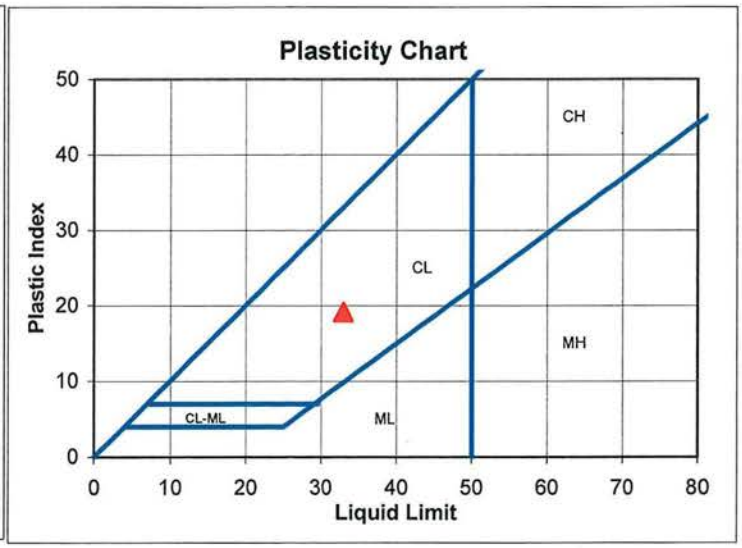
Average: 13.9%
Standard Deviation: 0.2%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	31	26	23	19	16
Weight of Wet Soil & Pan (g):	14.784	14.427	16.341	16.753	14.895
Weight of Dry Soil & Pan (g):	11.471	11.149	12.518	12.791	11.326
Weight of Water (g):	3.313	3.278	3.823	3.962	3.569
Weight of Pan (g):	1.148	1.157	1.150	1.117	1.136
Moisture Content (%):	32.1	32.8	33.6	33.9	35.0

Plastic Limit: 14
Liquid Limit: 33
Plastic Index: 19
Atterberg Classification CL





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File Name: atterberg-ASTM_4318-R6_10.xls

Data Checked By: CAL
Date: 1/8/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: SB-B1-03A
Depth: 11-11.5'
Sample Number: --
Test Date: 01/06/14
Technician: BRJ
Sampled Date: 12/12/13
Sampled By: MWH
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

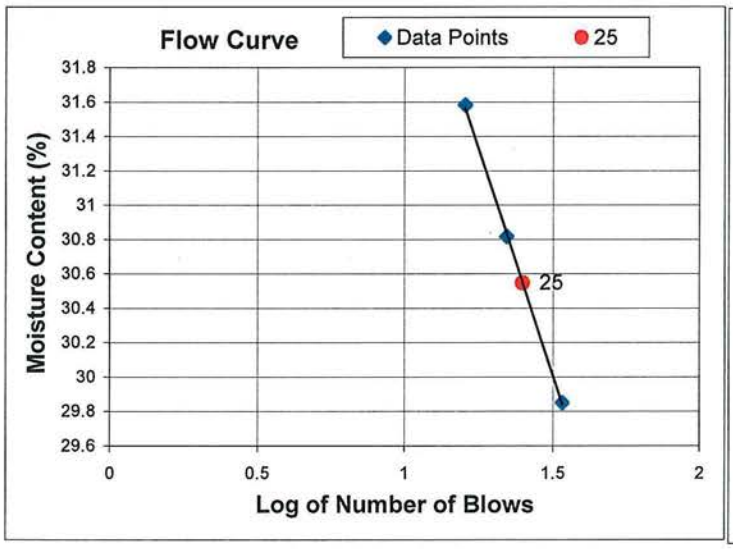
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	12.450	11.680	10.370
Weight of Dry Soil & Pan (g):	10.970	10.300	9.210
Weight of Water (g):	1.480	1.380	1.160
Weight of Pan (g):	1.050	1.150	1.050
Moisture Content (%):	14.9	15.1	14.2

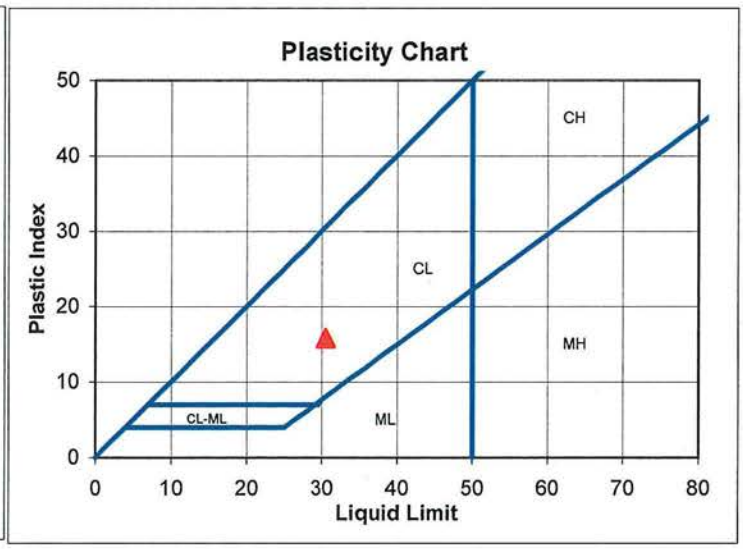
Average: 14.7%
Standard Deviation: 0.5%

Liquid Limits

	Sample 1	Sample 2	Sample 3
Number of Blows:	16	22	34
Weight of Wet Soil & Pan (g):	9.680	9.970	11.460
Weight of Dry Soil & Pan (g):	7.640	7.890	9.090
Weight of Water (g):	2.040	2.080	2.370
Weight of Pan (g):	1.180	1.140	1.150
Moisture Content (%):	31.6	30.8	29.8

Plastic Limit: 15
Liquid Limit: 31
Plastic Index: 16
Atterberg Classification CL





Data Entered By: DAW Date: 1/7/2014
File Name: atterberg-ASTM_4318-R6_11.xls

Data Checked By: CAC
Date: 1/8/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: NB-B2-01B
Depth: 3-3.5'
Sample Number: --
Test Date: 01/08/14
Technician: MLM
Sampled Date: 12/12/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

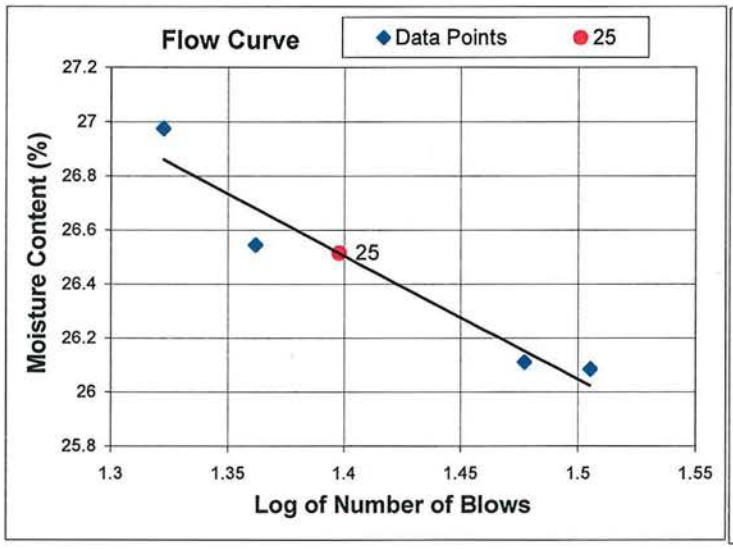
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	12.184	10.762	11.001
Weight of Dry Soil & Pan (g):	10.124	8.996	9.203
Weight of Water (g):	2.060	1.766	1.798
Weight of Pan (g):	1.115	1.104	1.133
Moisture Content (%):	22.9	22.4	22.3

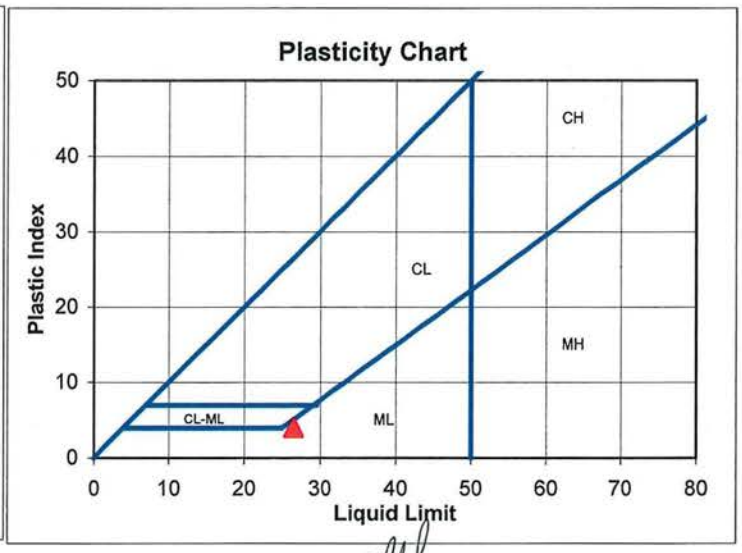
Average: 22.5%
Standard Deviation: 0.3%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4
Number of Blows:	21	23	30	32
Weight of Wet Soil & Pan (g):	11.864	12.822	10.745	11.835
Weight of Dry Soil & Pan (g):	9.578	10.372	8.753	9.624
Weight of Water (g):	2.286	2.450	1.992	2.211
Weight of Pan (g):	1.103	1.142	1.124	1.148
Moisture Content (%):	27.0	26.5	26.1	26.1

Plastic Limit: 23
Liquid Limit: 27
Plastic Index: 4
Atterberg Classification ML





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Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sand with Silt

Boring Number: WB-B5-002A
Depth: 6-6.5'
Sample Number: --
Test Date: 01/08/14
Technician: MLM
Sampled Date: 11/18/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

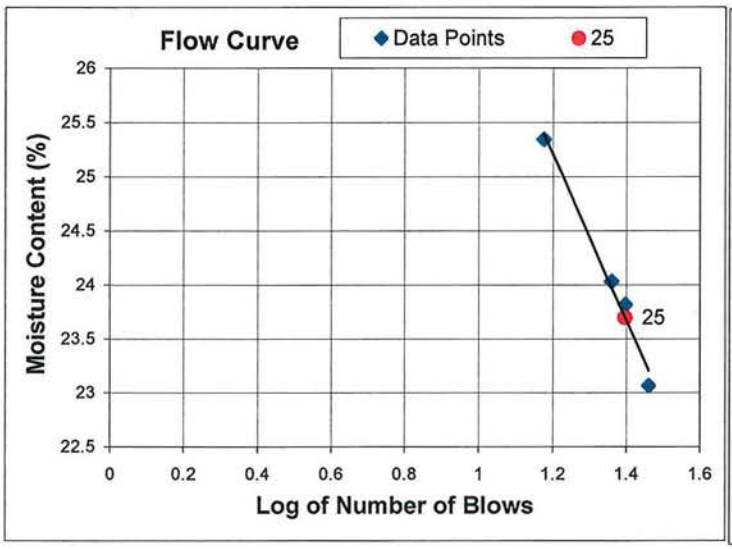
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	10.955	10.506	11.043
Weight of Dry Soil & Pan (g):	9.500	9.118	9.558
Weight of Water (g):	1.455	1.388	1.485
Weight of Pan (g):	1.089	1.150	1.051
Moisture Content (%):	17.3	17.4	17.5

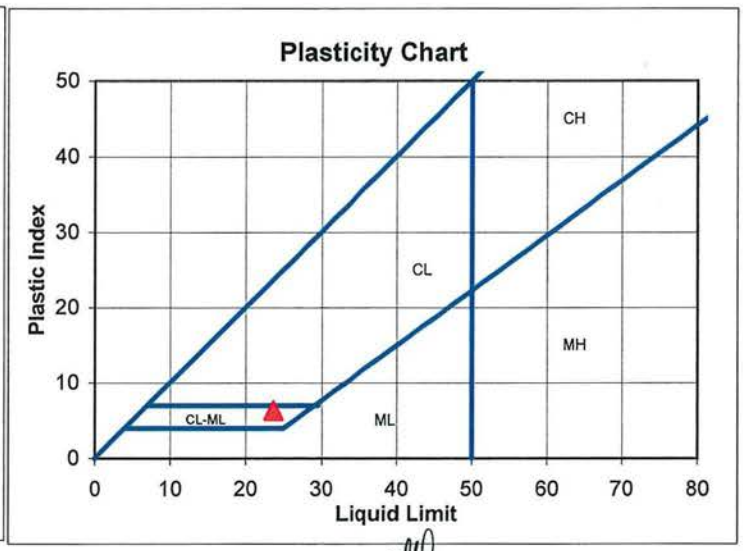
Average: 17.4%
Standard Deviation: 0.1%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4
Number of Blows:	29	23	25	15
Weight of Wet Soil & Pan (g):	10.515	10.544	11.133	10.421
Weight of Dry Soil & Pan (g):	8.759	8.720	9.209	8.546
Weight of Water (g):	1.756	1.824	1.924	1.875
Weight of Pan (g):	1.146	1.129	1.131	1.147
Moisture Content (%):	23.1	24.0	23.8	25.3

Plastic Limit: 17
Liquid Limit: 24
Plastic Index: 6
Atterberg Classification CL-ML





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Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: NB-B1-03B
Depth: 10.5-11'
Sample Number: --
Test Date: 01/08/14
Technician: MLM
Sampled Date: 12/12/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

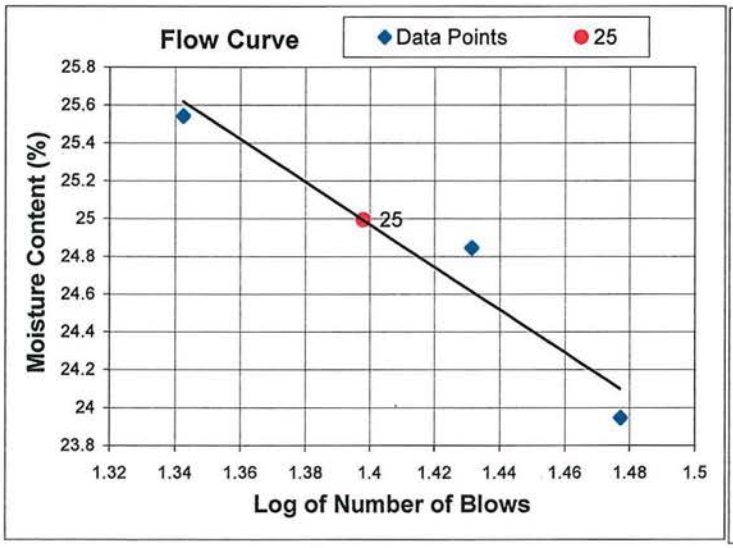
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	13.575	13.419	15.649
Weight of Dry Soil & Pan (g):	11.343	11.238	13.050
Weight of Water (g):	2.232	2.181	2.599
Weight of Pan (g):	1.126	1.132	1.065
Moisture Content (%):	21.8	21.6	21.7

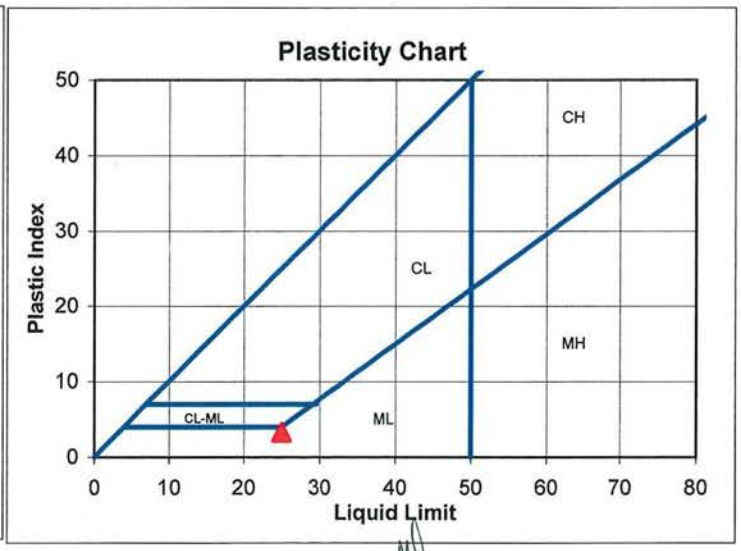
Average: 21.7%
Standard Deviation: 0.1%

Liquid Limits

	Sample 1	Sample 2	Sample 3
Number of Blows:	30	27	22
Weight of Wet Soil & Pan (g):	10.383	10.142	11.341
Weight of Dry Soil & Pan (g):	8.596	8.353	9.269
Weight of Water (g):	1.787	1.789	2.072
Weight of Pan (g):	1.133	1.152	1.156
Moisture Content (%):	23.9	24.8	25.5

Plastic Limit: 22
Liquid Limit: 25
Plastic Index: 3
Atterberg Classification ML





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Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B3-02A
Depth: 6-6.5'
Sample Number: --
Test Date: 01/08/14
Technician: MLM
Sampled Date: 12/12/13
Sampled By: --
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

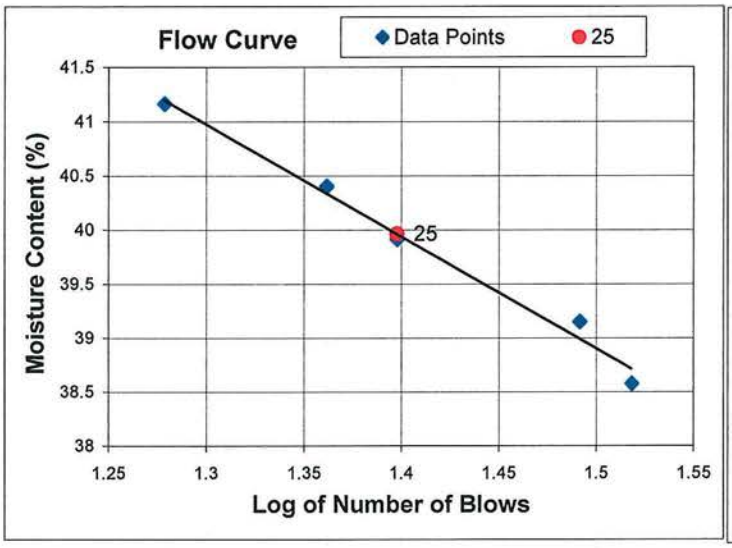
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	9.983	9.413	10.999
Weight of Dry Soil & Pan (g):	8.705	8.252	9.600
Weight of Water (g):	1.278	1.161	1.399
Weight of Pan (g):	1.146	1.103	1.142
Moisture Content (%):	16.9	16.2	16.5

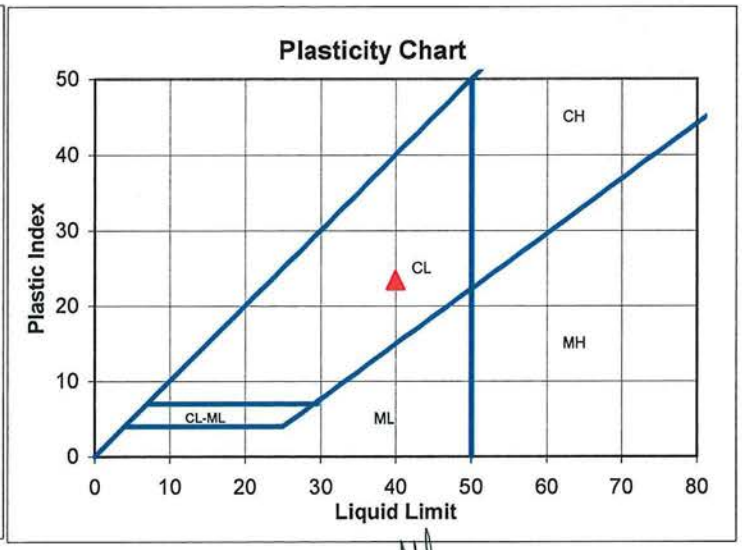
Average: 16.6%
Standard Deviation: 0.3%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	33	31	25	23	19
Weight of Wet Soil & Pan (g):	12.143	10.617	11.436	11.687	11.467
Weight of Dry Soil & Pan (g):	9.083	7.951	8.497	8.649	8.457
Weight of Water (g):	3.060	2.666	2.939	3.038	3.010
Weight of Pan (g):	1.150	1.141	1.133	1.129	1.144
Moisture Content (%):	38.6	39.1	39.9	40.4	41.2

Plastic Limit: 17
Liquid Limit: 40
Plastic Index: 23
Atterberg Classification CL





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Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Atterberg Limits Test
ASTM D 4318

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Clayey Sand with Gravel

Boring Number: EB-B5-02B
Depth: 5.5-6'
Sample Number: -
Test Date: 1/3/2014
Technician: MLM
Sampled Date: 12/10/2013
Sampled By: MWH
Method: Method A

Test Configuration

Liquid Limits Device: 0966
Material Size of Fines: -#40

Plastic Limits

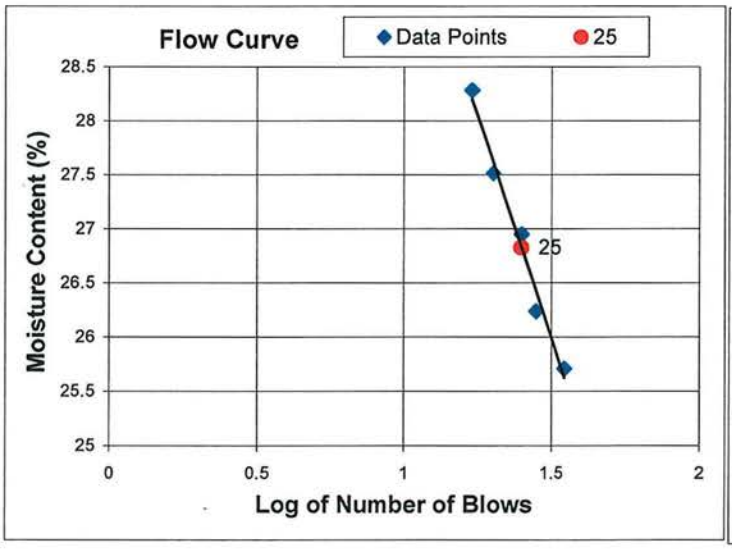
	Sample 1	Sample 2	Sample 3
Weight of Wet Soil & Pan (g):	9.145	7.920	8.369
Weight of Dry Soil & Pan (g):	8.128	7.066	7.443
Weight of Water (g):	1.017	0.854	0.926
Weight of Pan (g):	1.118	1.148	1.146
Moisture Content (%):	14.5	14.4	14.7

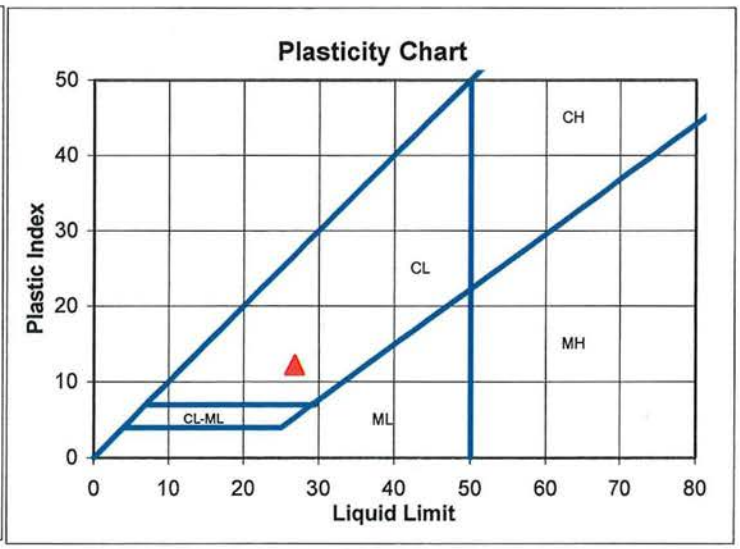
Average: 14.5%
Standard Deviation: 0.1%

Liquid Limits

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number of Blows:	35	28	25	20	17
Weight of Wet Soil & Pan (g):	10.738	11.194	11.246	10.595	11.084
Weight of Dry Soil & Pan (g):	8.776	9.104	9.100	8.544	8.891
Weight of Water (g):	1.962	2.090	2.146	2.051	2.193
Weight of Pan (g):	1.144	1.138	1.136	1.089	1.137
Moisture Content (%):	25.7	26.2	26.9	27.5	28.3

Plastic Limit: 15
Liquid Limit: 27
Plastic Index: 12
Atterberg Classification CL





Data Entered By: SKL Date: 1/4/2014
File Name: atterberg-ASTM_4318-R6_9.xls

Data Checked By: CAL
Date: 1/7/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Silt with Clay

Boring Number: EB-B3-003B
Depth: 10.5-11'
Sample Number: --
Sampled Date: 11/18/13
Test Date: 01/06/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 54.03
Weight of Dry Soil & Pan (g): 53.19
Weight of Water (g): 0.84
Weight of Pan (g): 2.99
Weight of Dry Soil (g): 50.20
Moisture (%): 1.7

General Sample Data

Total Wet Weight of Sample (g): 282.70
Total Dry Weight of Sample (g): 278.05
Calculated Weight Plus #200 (g): 128.82
Moisture of Total Sample (%): 1.7
Percent Retained #200 Sieve (%): 46.3

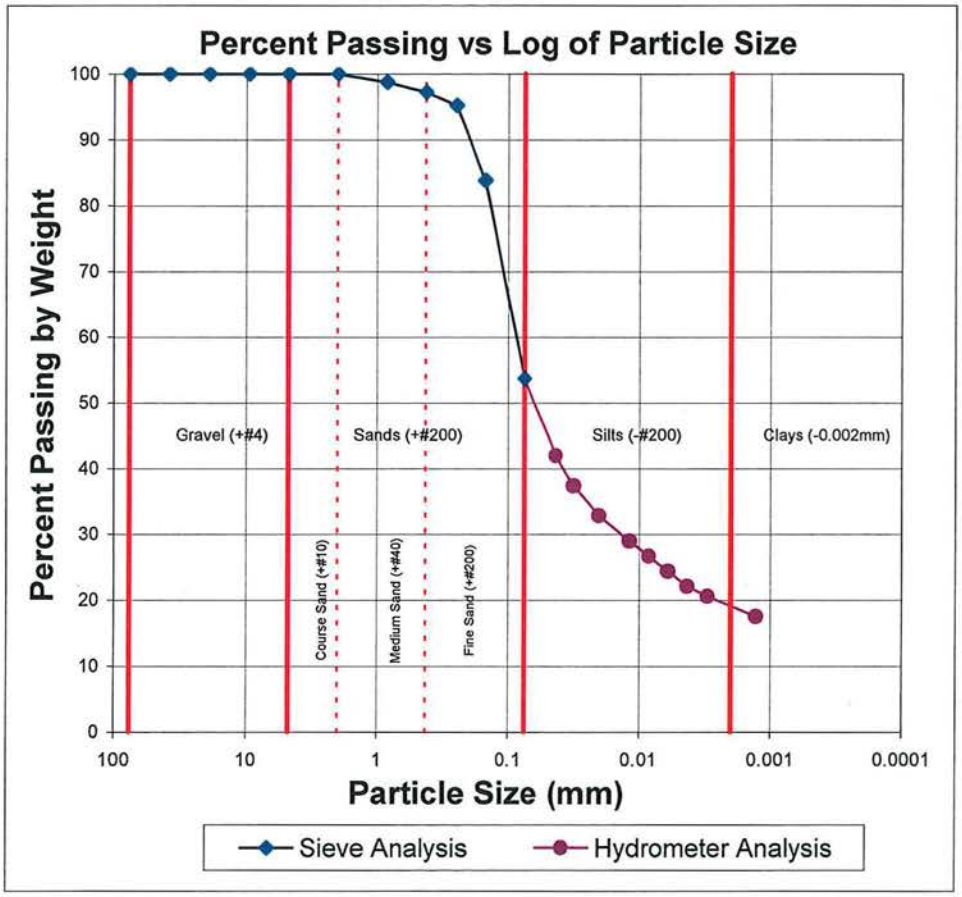
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 282.70
Calculated Dry Weight of -#10 (g): 278.05

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
66.027g split out of -#10 material.						
#20	**0.850**	3.86	3.05	0.81	3.48	98.7
#40	**0.425**	4.05	3.05	1.00	4.28	97.2
#60	**0.250**	4.34	3.05	1.30	5.55	95.2
#100	**0.150**	10.40	2.99	7.41	31.71	83.8
#200	**0.075**	22.61	3.04	19.57	83.80	53.7



Data Entered By: DAW
Date: 1/13/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_15.xls

Checked By: mlm
Date: 1/13/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Silt with Clay

Boring Number: EB-B3-003B
Depth: 10.5-11'
Sample Number: --
Sampled Date: 11/18/13
Test Date: 01/03/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.70
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 282.70
Total Dry Weight of Sample (g): 278.05
Wet Weight of Sub-Sample (g): 66.027
Dry Weight of Sub-Sample (g): 64.940
Corrected Dry Weight of Sub-Sample - W(g): 64.940

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	32.0	27.5	23.6	0.0130	11.05	0.0431	42.0	116.67	42.0
2	29.0	24.5	23.6	0.0130	11.54	0.0312	37.4	103.95	37.4
5	26.0	21.5	23.6	0.0130	12.03	0.0201	32.8	91.22	32.8
15	23.5	19.0	23.6	0.0130	12.44	0.0118	29.0	80.61	29.0
30	22.0	17.5	23.6	0.0130	12.69	0.0084	26.7	74.25	26.7
60	20.5	16.0	23.7	0.0130	12.93	0.0060	24.4	67.88	24.4
120	19.0	14.5	23.9	0.0130	13.18	0.0043	22.1	61.52	22.1
250	18.0	13.5	23.9	0.0130	13.34	0.0030	20.6	57.28	20.6
1440	16.0	11.5	22.5	0.0131	13.67	0.0013	17.5	48.79	17.5

Data Entered By: DAW
Date: 1/13/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_15.xls

Checked By: MLM
Date: 1/13/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: EB-B4-06
Depth: 10-20'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/06/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 72.17
Weight of Dry Soil & Pan (g): 69.93
Weight of Water (g): 2.24
Weight of Pan (g): 3.11
Weight of Dry Soil (g): 66.82
Moisture (%): 3.4

General Sample Data

Total Wet Weight of Sample (g): 1,754.66
Total Dry Weight of Sample (g): 1,698.05
Calculated Weight Plus #200 (g): 857.94
Moisture of Total Sample (%): 3.3
Percent Retained #200 Sieve (%): 50.5

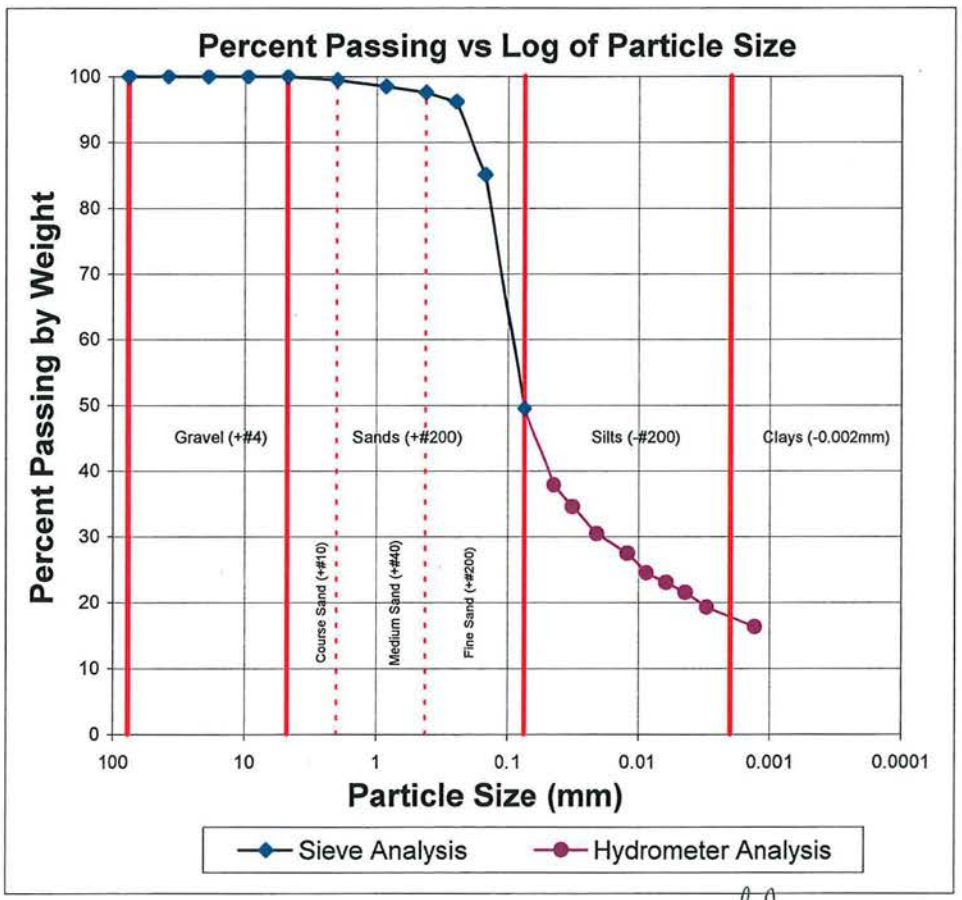
Plus Split Data

Original Weight of +#10 (g): 12.86
Calculated Weight of +#10 (g): 9.46

Minus Split Data

Original Weight of -#10 (g): 1,741.80
Calculated Dry Weight of -#10 (g): 1,688.59

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	9.46	0.00	9.46	9.46	99.4
68.979g split out of -#10 material.						
#20	**0.850**	3.66	3.03	0.63	15.91	98.5
#40	**0.425**	3.82	3.18	0.64	16.17	97.6
#60	**0.250**	4.00	3.05	0.95	23.91	96.1
#100	**0.150**	10.51	3.05	7.46	188.64	85.0
#200	**0.075**	26.91	3.04	23.87	603.85	49.5



Data Entered By: DAW
Date: 1/10/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_9.xls

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Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: EB-B4-06
Depth: 10-20'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/03/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.67
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 1,754.66
Total Dry Weight of Sample (g): 1,698.05
Wet Weight of Sub-Sample (g): 68.979
Dry Weight of Sub-Sample (g): 66.742
Corrected Dry Weight of Sub-Sample - W(g): 67.144

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	30.0	25.5	23.5	0.0132	11.37	0.0444	37.9	643.07	37.9
2	27.8	23.3	23.5	0.0132	11.74	0.0319	34.5	586.32	34.5
5	25.0	20.5	23.5	0.0132	12.19	0.0206	30.4	516.97	30.4
15	23.0	18.5	23.4	0.0132	12.52	0.0120	27.5	466.54	27.5
30	21.0	16.5	23.5	0.0132	12.85	0.0086	24.5	416.10	24.5
60	20.0	15.5	23.6	0.0132	13.01	0.0061	23.0	390.88	23.0
120	19.0	14.5	23.8	0.0132	13.18	0.0044	21.5	365.66	21.5
250	17.5	13.0	24.0	0.0130	13.42	0.0030	19.3	327.84	19.3
1440	15.5	11.0	22.5	0.0133	13.75	0.0013	16.3	277.40	16.3

Data Entered By: DAW
Date: 1/10/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_9.xls

Checked By: SM
Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B1-06
Depth: 5-10'
Sample Number: --
Sampled Date: 11/14/13
Test Date: 01/06/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 91.85
Weight of Dry Soil & Pan (g): 88.42
Weight of Water (g): 3.43
Weight of Pan (g): 3.11
Weight of Dry Soil (g): 85.31
Moisture (%): 4.0

General Sample Data

Total Wet Weight of Sample (g): 2,206.17
Total Dry Weight of Sample (g): 2,121.61
Calculated Weight Plus #200 (g): 1,127.52
Moisture of Total Sample (%): 4.0
Percent Retained #200 Sieve (%): 53.1

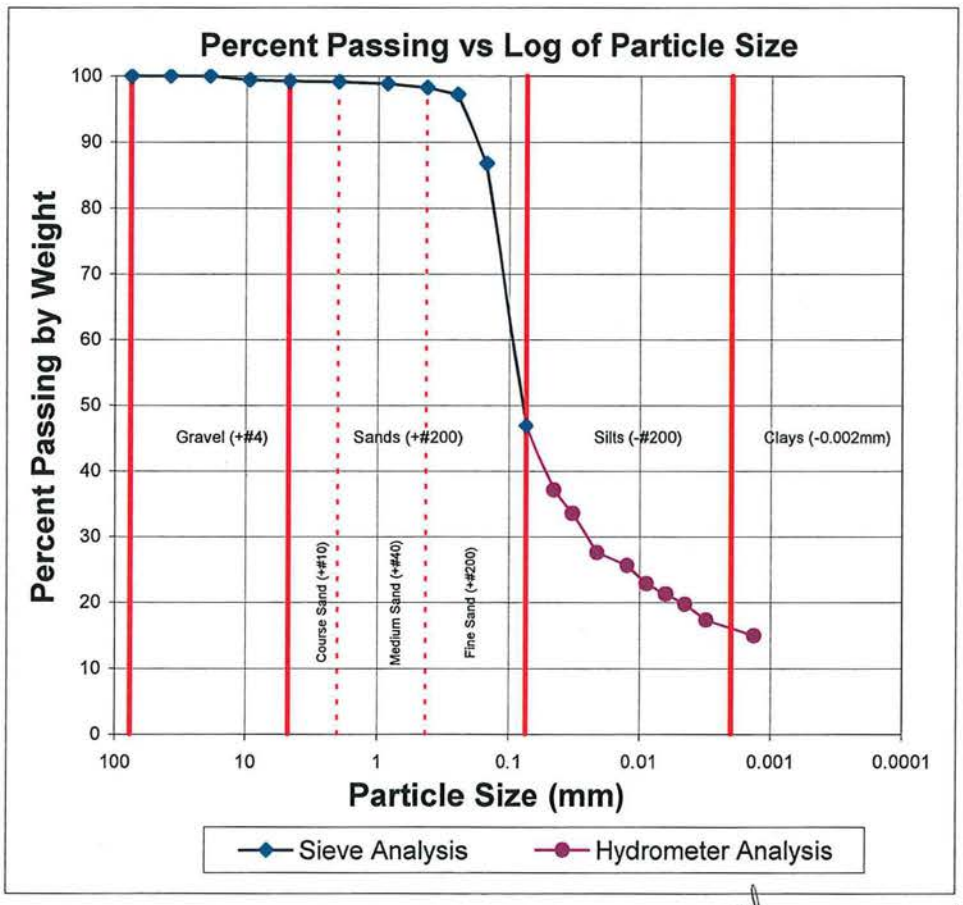
Plus Split Data

Original Weight of +#10 (g): 23.47
Calculated Weight of +#10 (g): 18.47

Minus Split Data

Original Weight of -#10 (g): 2,182.70
Calculated Dry Weight of -#10 (g): 2,103.14

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	76.2	0.00	0.00	0.00	0.00	100.0
1.5"	38.10	0.00	0.00	0.00	0.00	100.0
3/4"	19.05	0.00	0.00	0.00	0.00	100.0
3/8"	9.525	12.77	0.00	12.77	12.77	99.4
#4	4.750	3.29	0.00	3.29	3.29	99.2
#10	2.000	2.41	0.00	2.41	2.41	99.1
65.616g split out of -#10 material.						
#20	0.850	3.25	3.06	0.19	6.30	98.8
#40	0.425	3.37	3.00	0.38	12.57	98.2
#60	0.250	3.82	3.19	0.63	21.07	97.2
#100	0.150	9.69	3.01	6.68	222.72	86.7
#200	0.075	28.44	3.06	25.39	846.39	46.9



Data Entered By: DAW
Date: 1/10/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_6.xls

Checked By:
Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B1-06
Depth: 5-10'
Sample Number: --
Sampled Date: 11/14/13
Test Date: 01/03/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.64
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 2,206.17
Total Dry Weight of Sample (g): 2,121.61
Wet Weight of Sub-Sample (g): 65.616
Dry Weight of Sub-Sample (g): 63.080
Corrected Dry Weight of Sub-Sample - W(g): 63.653

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	28.0	23.5	23.5	0.0134	11.70	0.0457	37.0	785.99	37.0
2	25.8	21.3	23.5	0.0134	12.07	0.0328	33.5	710.73	33.5
5	22.0	17.5	23.5	0.0134	12.69	0.0213	27.6	585.31	27.6
15	20.8	16.3	23.5	0.0134	12.89	0.0124	25.6	543.50	25.6
30	19.0	14.5	23.6	0.0134	13.18	0.0089	22.9	484.97	22.9
60	18.0	13.5	23.7	0.0134	13.34	0.0063	21.3	451.52	21.3
120	17.0	12.5	23.9	0.0134	13.51	0.0045	19.7	418.08	19.7
250	15.5	11.0	24.1	0.0132	13.75	0.0031	17.3	367.91	17.3
1440	14.0	9.5	22.6	0.0135	14.00	0.0013	15.0	317.74	15.0

Data Entered By: DAW
Date: 1/10/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_6.xls

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Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: SB-B1-04
Depth: 0-25'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/08/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 101.49
Weight of Dry Soil & Pan (g): 98.72
Weight of Water (g): 2.77
Weight of Pan (g): 6.54
Weight of Dry Soil (g): 92.18
Moisture (%): 3.0

General Sample Data

Total Wet Weight of Sample (g): 1,700.44
Total Dry Weight of Sample (g): 1,651.24
Calculated Weight Plus #200 (g): 703.54
Moisture of Total Sample (%): 3.0
Percent Retained #200 Sieve (%): 42.6

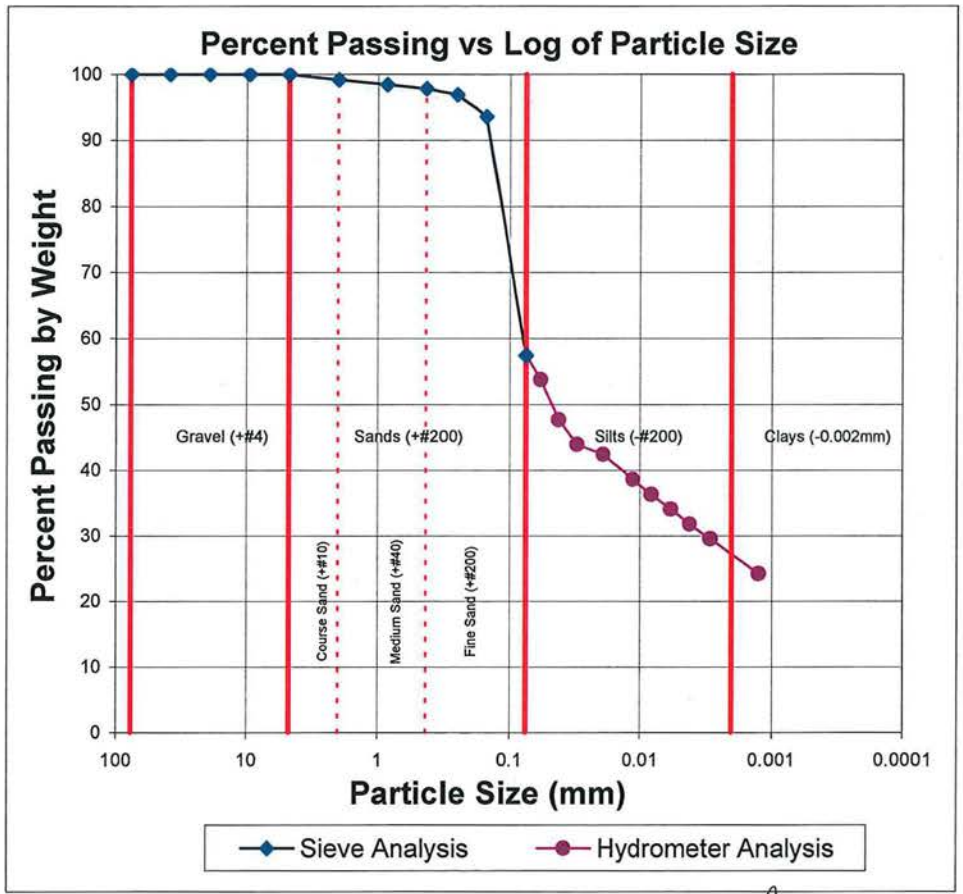
Plus Split Data

Original Weight of +#10 (g): 21.22
Calculated Weight of +#10 (g): 13.98

Minus Split Data

Original Weight of -#10 (g): 1,679.22
Calculated Dry Weight of -#10 (g): 1,637.26

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	13.98	0.00	13.98	13.98	99.2
66.922g split out of -#10 material.						
#20	**0.850**	3.57	3.11	0.47	11.77	98.4
#40	**0.425**	3.63	3.20	0.43	10.81	97.8
#60	**0.250**	3.66	3.07	0.59	14.87	96.9
#100	**0.150**	5.26	3.09	2.17	54.76	93.6
#200	**0.075**	26.75	3.05	23.70	597.35	57.4



Data Entered By: DAW
Date: 1/9/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_5.xls

Checked By: CW
Date: 1/10/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: SB-B1-04
Depth: 0-25'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/06/14

Sampled By: --
Technician: SKL

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.70
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 1,700.44
Total Dry Weight of Sample (g): 1,651.24
Wet Weight of Sub-Sample (g): 66.922
Dry Weight of Sub-Sample (g): 64.970
Corrected Dry Weight of Sub-Sample - W(g): 65.494

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
0.5	40.0	35.5	22.0	0.0131	9.73	0.0579	53.7	886.90	53.7
1	36.0	31.5	22.0	0.0131	10.39	0.0423	47.7	786.97	47.7
2	33.5	29.0	22.1	0.0131	10.80	0.0305	43.9	724.51	43.9
5	32.5	28.0	22.2	0.0131	10.96	0.0194	42.4	699.52	42.4
15	30.0	25.5	22.2	0.0131	11.37	0.0114	38.6	637.07	38.6
30	28.5	24.0	22.3	0.0131	11.62	0.0082	36.3	599.59	36.3
60	27.0	22.5	22.3	0.0131	11.87	0.0058	34.0	562.12	34.0
120	25.5	21.0	22.4	0.0131	12.11	0.0042	31.8	524.64	31.8
250	24.0	19.5	22.7	0.0131	12.36	0.0029	29.5	487.17	29.5
1440	20.5	16.0	22.4	0.0131	12.93	0.0012	24.2	399.73	24.2

Data Entered By: DAW
Date: 1/9/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_5.xls

Checked By: [signature]
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B2-05
Depth: 10-20'
Sample Number: --
Sampled Date: --
Test Date: 01/06/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 90.46
Weight of Dry Soil & Pan (g): 86.93
Weight of Water (g): 3.53
Weight of Pan (g): 3.05
Weight of Dry Soil (g): 83.88
Moisture (%): 4.2

General Sample Data

Total Wet Weight of Sample (g): 26,560.00
Total Dry Weight of Sample (g): 25,648.00
Calculated Weight Plus #200 (g): 14,420.02
Moisture of Total Sample (%): 3.6
Percent Retained #200 Sieve (%): 56.2

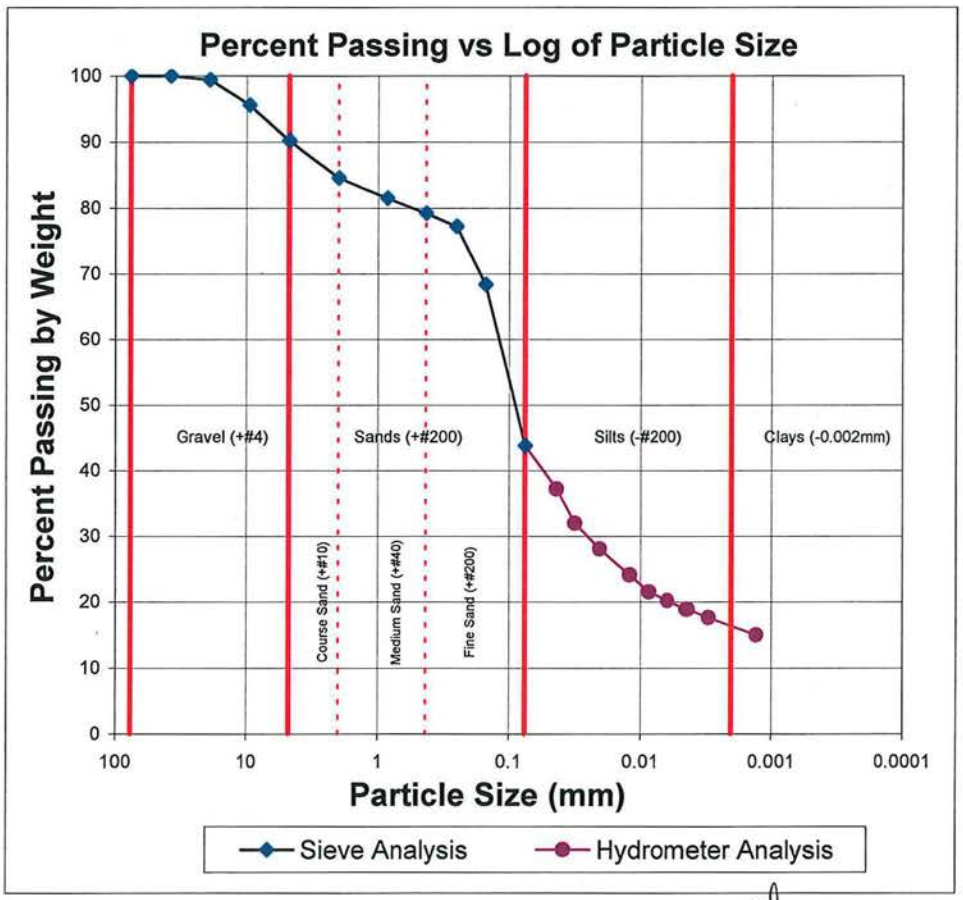
Plus Split Data

Original Weight of +#10 (g): 4,097.00
Calculated Weight of +#10 (g): 3,977.10

Minus Split Data

Original Weight of -#10 (g): 22,463.00
Calculated Dry Weight of -#10 (g): 21,670.90

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	149.71	0.00	149.71	149.71	99.4
3/8"	**9.525**	991.18	0.00	991.18	991.18	95.6
#4	**4.750**	1388.40	0.00	1388.40	1388.40	90.1
#10	**2.000**	1447.81	0.00	1447.81	1447.81	84.5
67.60g split out of -#10 material.						
#20	**0.850**	5.36	3.04	2.33	777.71	81.5
#40	**0.425**	4.87	3.09	1.78	595.31	79.1
#60	**0.250**	4.80	3.28	1.53	509.79	77.2
#100	**0.150**	10.03	3.27	6.77	2259.96	68.3
#200	**0.075**	21.87	3.02	18.86	6300.16	43.8



Data Entered By: DAW
Date: 1/9/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_8.xls

Checked By: SHL
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B2-05
Depth: 10-20'
Sample Number: --
Sampled Date: --
Test Date: 01/03/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.65
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 26,560.00
Total Dry Weight of Sample (g): 25,648.00
Wet Weight of Sub-Sample (g): 67.600
Dry Weight of Sub-Sample (g): 64.870
Corrected Dry Weight of Sub-Sample - W(g): 76.769

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	33.0	28.5	23.6	0.0132	10.88	0.0434	37.2	9534.61	37.2
2	29.0	24.5	23.6	0.0132	11.54	0.0316	32.0	8196.42	32.0
5	26.0	21.5	23.6	0.0132	12.03	0.0204	28.0	7192.78	28.0
15	23.0	18.5	23.6	0.0132	12.52	0.0120	24.1	6189.13	24.1
30	21.0	16.5	23.6	0.0132	12.85	0.0086	21.5	5520.04	21.5
60	20.0	15.5	23.7	0.0132	13.01	0.0061	20.2	5185.49	20.2
120	19.0	14.5	23.9	0.0132	13.18	0.0044	18.9	4850.94	18.9
250	18.0	13.5	24.1	0.0130	13.34	0.0030	17.6	4516.39	17.6
1440	16.0	11.5	22.6	0.0133	13.67	0.0013	15.0	3847.30	15.0

Data Entered By: DAW
Date: 1/9/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_8.xls

Checked By: [signature]
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B1-03A
Depth: 11-11.5'
Sample Number: -
Sampled Date: 11/14/2013
Test Date: 1/6/2014

Sampled By: MWH
Technician: DAW

Grain Size Data

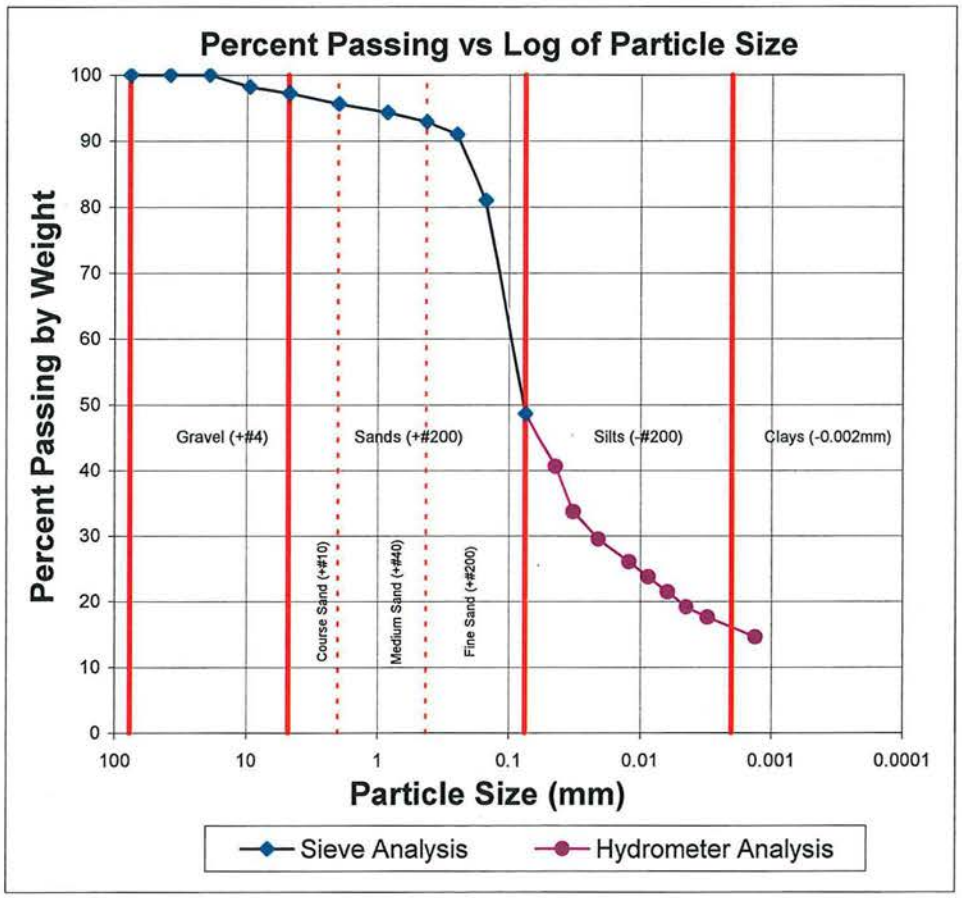
Hygroscopic Moisture of Fines
Weight of Wet Soil & Pan (g): 71.76
Weight of Dry Soil & Pan (g): 70.36
Weight of Water (g): 1.40
Weight of Pan (g): 3.08
Weight of Dry Soil (g): 67.28
Moisture (%): 2.1

General Sample Data
Total Wet Weight of Sample (g): 281.12
Total Dry Weight of Sample (g): 275.64
Calculated Weight Plus #200 (g): 141.68
Moisture of Total Sample (%): 2.0
Percent Retained #200 Sieve (%): 51.4

Plus Split Data
Original Weight of +#10 (g): 13.03
Calculated Weight of +#10 (g): 12.05

Minus Split Data
Original Weight of -#10 (g): 268.09
Calculated Dry Weight of -#10 (g): 263.59

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	5.00	0.00	5.00	5.00	98.2
#4	**4.750**	2.59	0.00	2.59	2.59	97.2
#10	**2.000**	4.46	0.00	4.46	4.46	95.6
63.575g split out of -#10 material.						
#20	**0.850**	3.99	3.14	0.85	3.61	94.3
#40	**0.425**	4.04	3.12	0.93	3.91	92.9
#60	**0.250**	4.49	3.25	1.24	5.24	91.0
#100	**0.150**	9.62	3.08	6.54	27.68	81.0
#200	**0.075**	24.13	3.05	21.07	89.19	48.6



Data Entered By: SKL
Date: 1/8/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_4.xls

Checked By: GL
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B1-03A
Depth: 11-11.5'
Sample Number: -
Sampled Date: 11/14/2013
Test Date: 1/3/2014

Sampled By: MWH
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.67
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 281.12
Total Dry Weight of Sample (g): 275.64
Wet Weight of Sub-Sample (g): 63.575
Dry Weight of Sub-Sample (g): 62.279
Corrected Dry Weight of Sub-Sample - W(g): 65.145

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	31.0	26.5	23.7	0.0132	11.21	0.0441	40.6	111.81	40.6
2	26.5	22.0	23.7	0.0132	11.95	0.0322	33.7	92.82	33.7
5	23.8	19.3	23.7	0.0132	12.40	0.0207	29.5	81.22	29.5
15	21.5	17.0	23.7	0.0132	12.77	0.0122	26.0	71.73	26.0
30	20.0	15.5	23.7	0.0132	13.01	0.0087	23.7	65.40	23.7
60	18.5	14.0	23.8	0.0132	13.26	0.0062	21.4	59.07	21.4
120	17.0	12.5	23.8	0.0132	13.51	0.0044	19.1	52.74	19.1
250	16.0	11.5	24.0	0.0130	13.67	0.0030	17.6	48.52	17.6
1440	14.0	9.5	22.5	0.0133	14.00	0.0013	14.5	40.08	14.5

Data Entered By: SKL
Date: 1/8/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_4.xls

Checked By: CAL
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B2-02A
Depth: 5.5-6'
Sample Number: -
Sampled Date: 11/14/2013
Test Date: 1/6/2014

Sampled By: -
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 54.08
Weight of Dry Soil & Pan (g): 53.20
Weight of Water (g): 0.88
Weight of Pan (g): 3.03
Weight of Dry Soil (g): 50.17
Moisture (%): 1.8

General Sample Data

Total Wet Weight of Sample (g): 300.80
Total Dry Weight of Sample (g): 296.11
Calculated Weight Plus #200 (g): 183.83
Moisture of Total Sample (%): 1.6
Percent Retained #200 Sieve (%): 62.1

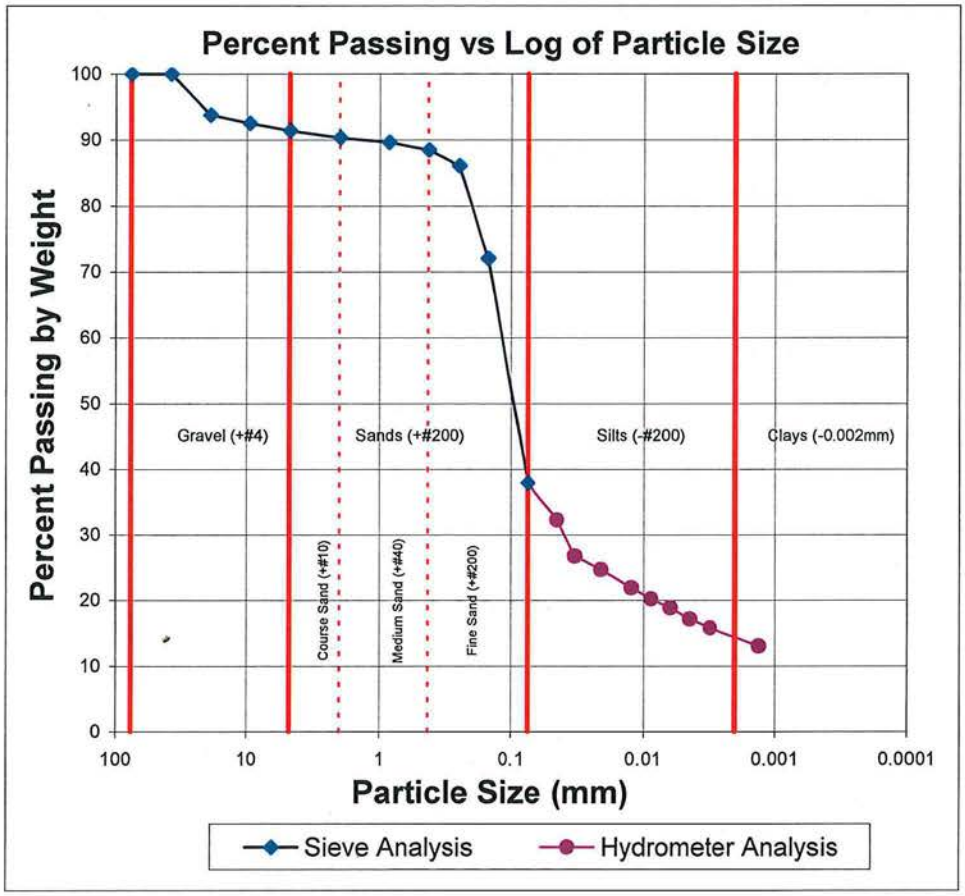
Plus Split Data

Original Weight of +#10 (g): 31.60
Calculated Weight of +#10 (g): 28.65

Minus Split Data

Original Weight of -#10 (g): 269.20
Calculated Dry Weight of -#10 (g): 267.46

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	18.45	0.00	18.45	18.45	93.8
3/8"	**9.525**	3.76	0.00	3.76	3.76	92.5
#4	**4.750**	3.28	0.00	3.28	3.28	91.4
#10	**2.000**	3.16	0.00	3.16	3.16	90.3
66.821g split out of -#10 material.						
#20	**0.850**	3.62	3.12	0.51	2.06	89.6
#40	**0.425**	3.83	2.99	0.84	3.43	88.5
#60	**0.250**	4.98	3.25	1.73	7.05	86.1
#100	**0.150**	13.24	2.99	10.25	41.73	72.0
#200	**0.075**	27.81	3.03	24.78	100.92	37.9



Data Entered By: SKL
Date: 1/8/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_2.xls

Checked By: CAR
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: WB-B2-02A
Depth: 5.5-6'
Sample Number: -
Sampled Date: 11/14/2013
Test Date: 1/3/2014

Sampled By: -
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.67
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 300.80
Total Dry Weight of Sample (g): 296.11
Wet Weight of Sub-Sample (g): 66.821
Dry Weight of Sub-Sample (g): 65.669
Corrected Dry Weight of Sub-Sample - W(g): 72.723

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	28.0	23.5	23.7	0.0132	11.70	0.0451	32.2	95.42	32.2
2	24.0	19.5	23.7	0.0132	12.36	0.0327	26.7	79.17	26.7
5	22.5	18.0	23.7	0.0132	12.60	0.0209	24.7	73.08	24.7
15	20.5	16.0	23.7	0.0132	12.93	0.0122	21.9	64.96	21.9
30	19.3	14.8	23.7	0.0132	13.14	0.0087	20.2	59.89	20.2
60	18.3	13.8	23.8	0.0132	13.30	0.0062	18.9	55.83	18.9
120	17.0	12.5	23.8	0.0132	13.51	0.0044	17.1	50.75	17.1
250	16.0	11.5	23.9	0.0132	13.67	0.0031	15.8	46.69	15.8
1440	14.0	9.5	22.6	0.0133	14.00	0.0013	13.0	38.57	13.0

Data Entered By: SKL
Date: 1/8/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_2.xls

Checked By: CM
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sand with Silt

Boring Number: WB-B5-002A
Depth: 6-6.5'
Sample Number: --
Sampled Date: 11/18/13
Test Date: 01/06/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 54.26
Weight of Dry Soil & Pan (g): 53.53
Weight of Water (g): 0.73
Weight of Pan (g): 3.09
Weight of Dry Soil (g): 50.44
Moisture (%): 1.4

General Sample Data

Total Wet Weight of Sample (g): 303.20
Total Dry Weight of Sample (g): 298.87
Calculated Weight Plus #200 (g): 168.17
Moisture of Total Sample (%): 1.4
Percent Retained #200 Sieve (%): 56.3

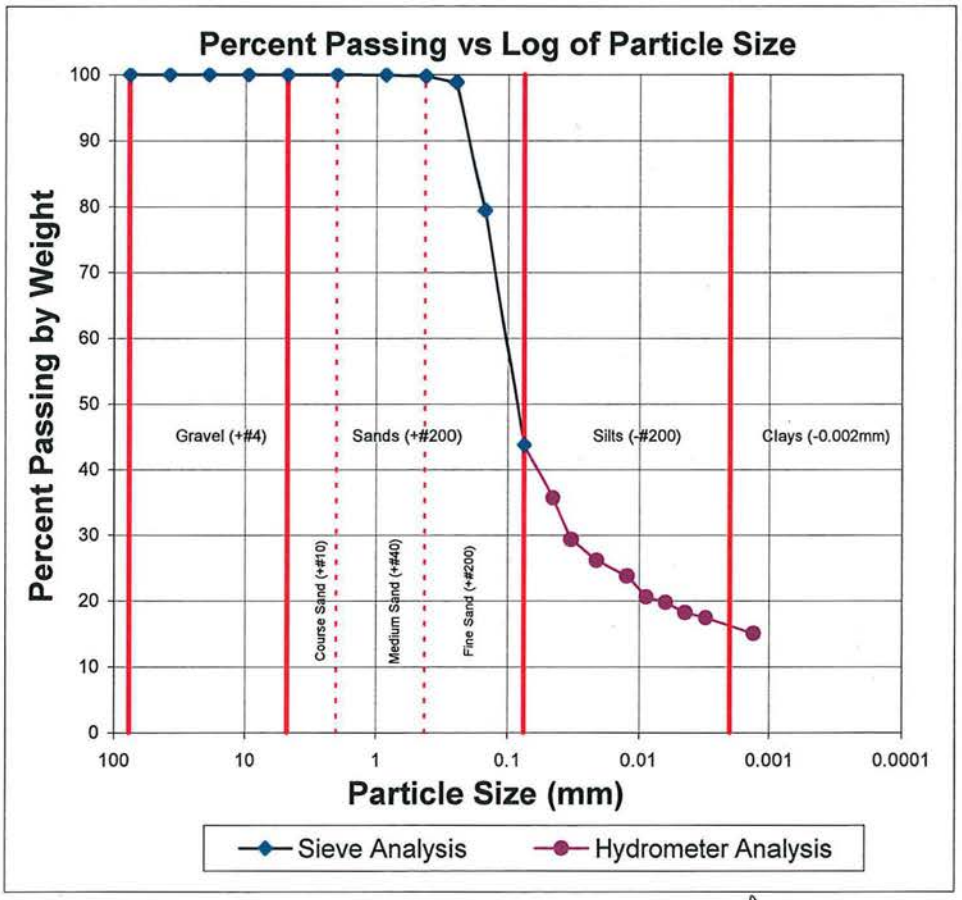
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 303.20
Calculated Dry Weight of -#10 (g): 298.87

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	76.2	0.00	0.00	0.00	0.00	100.0
1.5"	38.10	0.00	0.00	0.00	0.00	100.0
3/4"	19.05	0.00	0.00	0.00	0.00	100.0
3/8"	9.525	0.00	0.00	0.00	0.00	100.0
#4	4.750	0.00	0.00	0.00	0.00	100.0
#10	2.000	0.00	0.00	0.00	0.00	100.0
64.006g split out of -#10 material.						
#20	0.850	3.11	3.07	0.04	0.18	99.9
#40	0.425	3.22	3.11	0.12	0.54	99.8
#60	0.250	3.67	3.07	0.60	2.84	98.8
#100	0.150	15.30	3.03	12.28	58.16	79.3
#200	0.075	25.56	3.09	22.47	106.45	43.7



Data Entered By: DAW
Date: 1/9/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_7.xls

Checked By:
Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sand with Silt

Boring Number: WB-B5-002A
Depth: 6-6.5'
Sample Number: --
Sampled Date: 11/18/13
Test Date: 01/03/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.66
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 303.20
Total Dry Weight of Sample (g): 298.87
Wet Weight of Sub-Sample (g): 64.006
Dry Weight of Sub-Sample (g): 63.093
Corrected Dry Weight of Sub-Sample - W(g): 63.093

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	27.0	22.5	23.7	0.0132	11.87	0.0454	35.6	106.51	35.6
2	23.0	18.5	23.7	0.0132	12.52	0.0330	29.3	87.57	29.3
5	21.0	16.5	23.7	0.0132	12.85	0.0211	26.1	78.10	26.1
15	19.5	15.0	23.8	0.0132	13.10	0.0123	23.8	71.00	23.8
30	17.5	13.0	23.8	0.0132	13.42	0.0088	20.6	61.54	20.6
60	17.0	12.5	23.8	0.0132	13.51	0.0062	19.8	59.17	19.8
120	16.0	11.5	23.9	0.0132	13.67	0.0044	18.2	54.44	18.2
250	15.5	11.0	23.9	0.0132	13.75	0.0031	17.4	52.07	17.4
1440	14.0	9.5	22.6	0.0133	14.00	0.0013	15.0	44.97	15.0

Data Entered By: DAW
Date: 1/9/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_7.xls

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Date: 1/9/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: EB-B4-02A
Depth: 6.0-6.5'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/08/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 66.29
Weight of Dry Soil & Pan (g): 65.43
Weight of Water (g): 0.86
Weight of Pan (g): 6.68
Weight of Dry Soil (g): 58.75
Moisture (%): 1.5

General Sample Data

Total Wet Weight of Sample (g): 256.73
Total Dry Weight of Sample (g): 253.03
Calculated Weight Plus #200 (g): 122.63
Moisture of Total Sample (%): 1.5
Percent Retained #200 Sieve (%): 48.5

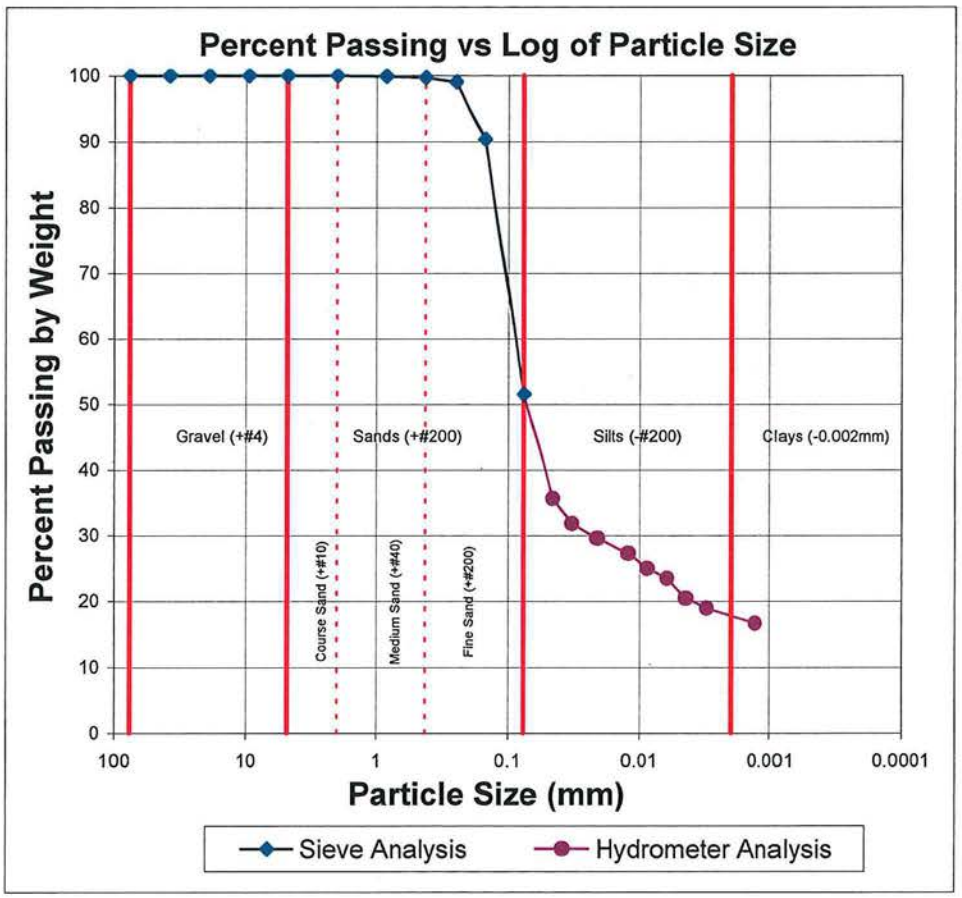
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 256.73
Calculated Dry Weight of -#10 (g): 253.03

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
67.062g split out of -#10 material.						
#20	**0.850**	3.30	3.24	0.06	0.23	99.9
#40	**0.425**	3.11	2.99	0.12	0.46	99.7
#60	**0.250**	3.43	2.98	0.45	1.73	99.0
#100	**0.150**	8.88	3.11	5.77	22.09	90.3
#200	**0.075**	28.63	2.99	25.63	98.13	51.5



Data Entered By: DAW
Date: 1/13/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_12.xls

Checked By: MJM
Date: 1/13/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: EB-B4-02A
Depth: 6.0-6.5'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/06/14

Sampled By: --
Technician: SKL

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.65
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 256.73
Total Dry Weight of Sample (g): 253.03
Wet Weight of Sub-Sample (g): 67.062
Dry Weight of Sub-Sample (g): 66.094
Corrected Dry Weight of Sub-Sample - W(g): 66.094

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	28.0	23.5	22.0	0.0133	11.70	0.0456	35.6	90.09	35.6
2	25.5	21.0	22.0	0.0133	12.11	0.0328	31.8	80.50	31.8
5	24.0	19.5	22.0	0.0133	12.36	0.0209	29.5	74.75	29.5
15	22.5	18.0	22.0	0.0133	12.60	0.0122	27.3	69.00	27.3
30	21.0	16.5	22.1	0.0133	12.85	0.0087	25.0	63.25	25.0
60	20.0	15.5	22.3	0.0133	13.01	0.0062	23.5	59.42	23.5
120	18.0	13.5	22.4	0.0133	13.34	0.0044	20.5	51.75	20.5
250	17.0	12.5	22.7	0.0133	13.51	0.0031	18.9	47.92	18.9
1440	15.5	11.0	22.4	0.0133	13.75	0.0013	16.7	42.17	16.7

Data Entered By: DAW
Date: 1/13/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_12.xls

Checked By: MLM
Date: 1/13/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: NB-B2-01B
Depth: 3-3.5'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/15/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 55.59
Weight of Dry Soil & Pan (g): 54.94
Weight of Water (g): 0.65
Weight of Pan (g): 3.33
Weight of Dry Soil (g): 51.61
Moisture (%): 1.3

General Sample Data

Total Wet Weight of Sample (g): 276.40
Total Dry Weight of Sample (g): 272.96
Calculated Weight Plus #200 (g): 139.75
Moisture of Total Sample (%): 1.3
Percent Retained #200 Sieve (%): 51.2

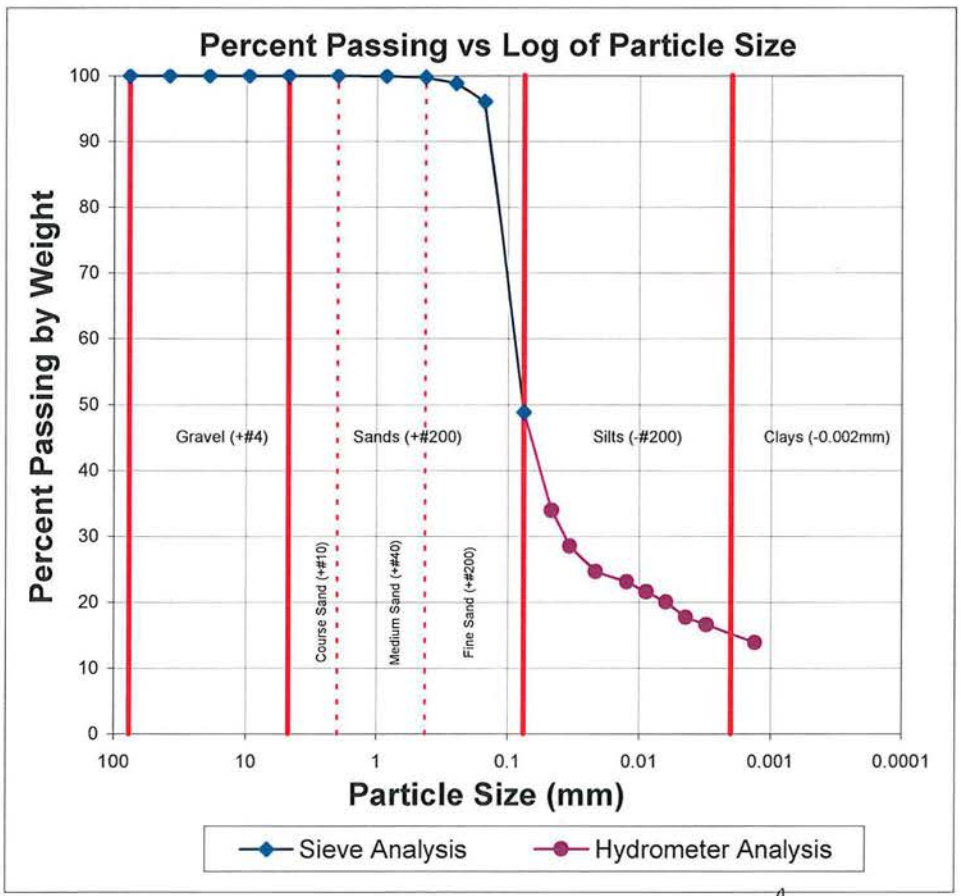
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 276.40
Calculated Dry Weight of -#10 (g): 272.96

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
65.819g split out of -#10 material.						
#20	**0.850**	3.07	3.03	0.04	0.16	99.9
#40	**0.425**	3.11	2.99	0.13	0.52	99.7
#60	**0.250**	3.61	3.00	0.61	2.55	98.8
#100	**0.150**	4.84	3.04	1.80	7.56	96.0
#200	**0.075**	33.80	3.10	30.71	128.95	48.8



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_17.xls

Checked By: [signature]
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Sand

Boring Number: NB-B2-01B
Depth: 3-3.5'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.64
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 276.40
Total Dry Weight of Sample (g): 272.96
Wet Weight of Sub-Sample (g): 65.819
Dry Weight of Sub-Sample (g): 65.000
Corrected Dry Weight of Sub-Sample - W(g): 65.000

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	27.0	22.0	23.8	0.0134	11.87	0.0461	34.0	92.71	34.0
2	23.5	18.5	23.8	0.0134	12.44	0.0333	28.6	77.96	28.6
5	21.0	16.0	23.8	0.0134	12.85	0.0214	24.7	67.42	24.7
15	20.0	15.0	23.8	0.0134	13.01	0.0125	23.2	63.21	23.2
30	19.0	14.0	23.8	0.0134	13.18	0.0089	21.6	58.99	21.6
60	18.0	13.0	23.9	0.0134	13.34	0.0063	20.1	54.78	20.1
120	16.5	11.5	24.0	0.0132	13.59	0.0044	17.8	48.46	17.8
250	15.8	10.8	24.1	0.0132	13.71	0.0031	16.6	45.30	16.6
1440	14.0	9.0	23.6	0.0134	14.00	0.0013	13.9	37.93	13.9

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_17.xls

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Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B1-01A
Depth: 3.5-4'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/15/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 59.01
Weight of Dry Soil & Pan (g): 58.23
Weight of Water (g): 0.78
Weight of Pan (g): 3.08
Weight of Dry Soil (g): 55.15
Moisture (%): 1.4

General Sample Data

Total Wet Weight of Sample (g): 317.10
Total Dry Weight of Sample (g): 312.68
Calculated Weight Plus #200 (g): 134.64
Moisture of Total Sample (%): 1.4
Percent Retained #200 Sieve (%): 43.1

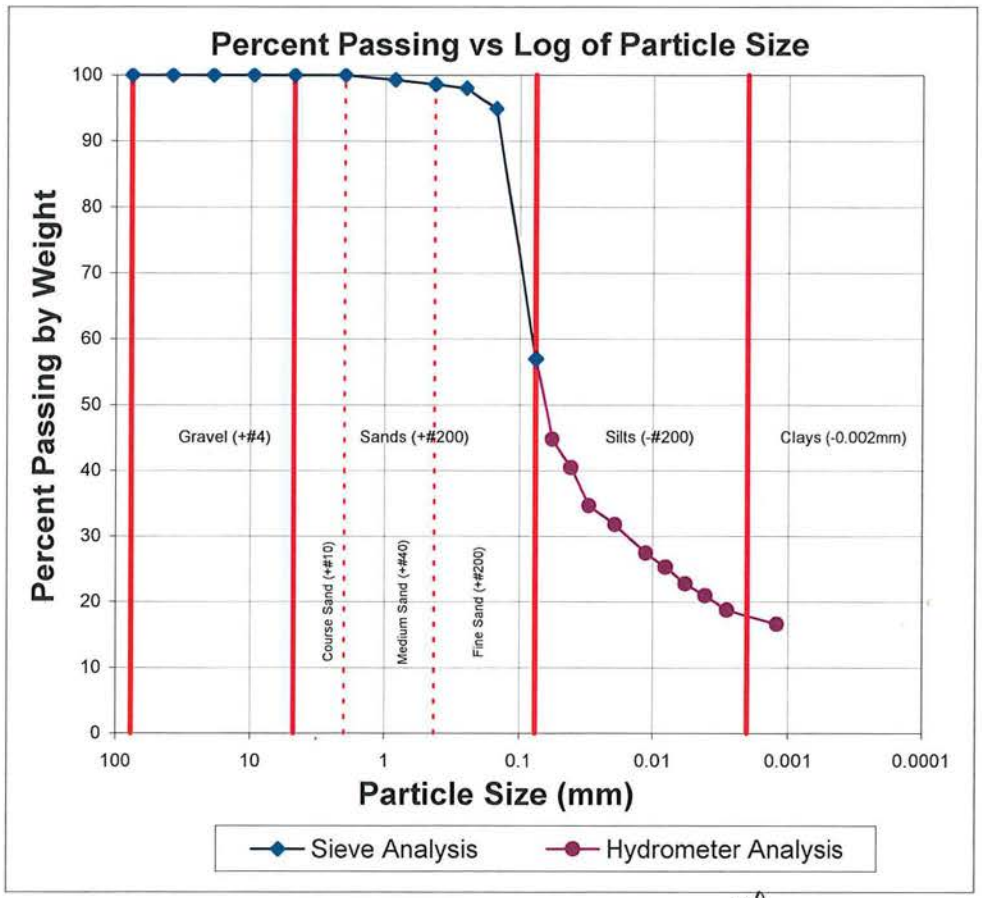
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 317.10
Calculated Dry Weight of -#10 (g): 312.68

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
66.822g split out of -#10 material.						
#20	**0.850**	3.71	3.21	0.49	2.34	99.3
#40	**0.425**	3.47	3.04	0.43	2.03	98.6
#60	**0.250**	3.42	3.03	0.39	1.85	98.0
#100	**0.150**	5.06	2.99	2.07	9.81	94.9
#200	**0.075**	28.05	3.06	24.99	118.61	56.9



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_18.xls

Checked By: SH
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B1-01A
Depth: 3.5-4'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: --
Technician: MLM/DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.89
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 0.95

Total Wet Weight of Sample (g): 317.10
Total Dry Weight of Sample (g): 312.68
Wet Weight of Sub-Sample (g): 66.822
Dry Weight of Sub-Sample (g): 65.890
Corrected Dry Weight of Sub-Sample - W(g): 65.890

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
0.5	36.0	31.0	23.2	0.0124	10.39	0.0567	44.8	139.93	44.8
1	33.0	28.0	23.2	0.0124	10.88	0.0410	40.4	126.39	40.4
2	29.0	24.0	23.2	0.0124	11.54	0.0299	34.6	108.33	34.6
5	27.0	22.0	23.1	0.0124	11.87	0.0191	31.8	99.30	31.8
15	24.0	19.0	23.2	0.0124	12.36	0.0113	27.4	85.76	27.4
30	22.5	17.5	23.3	0.0124	12.60	0.0081	25.3	78.99	25.3
60	20.8	15.8	23.4	0.0124	12.89	0.0058	22.7	71.09	22.7
120	19.5	14.5	23.6	0.0124	13.10	0.0041	20.9	65.45	20.9
250	18.0	13.0	24.2	0.0123	13.34	0.0028	18.8	58.68	18.8
1440	16.5	11.5	23.6	0.0124	13.59	0.0012	16.6	51.91	16.6

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_18.xls

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Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: EB-B6-03
Depth: 0-10'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/06/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 84.30
Weight of Dry Soil & Pan (g): 79.98
Weight of Water (g): 4.32
Weight of Pan (g): 3.02
Weight of Dry Soil (g): 76.96
Moisture (%): 5.6

General Sample Data

Total Wet Weight of Sample (g): 1,051.51
Total Dry Weight of Sample (g): 995.80
Calculated Weight Plus #200 (g): 264.76
Moisture of Total Sample (%): 5.6
Percent Retained #200 Sieve (%): 26.6

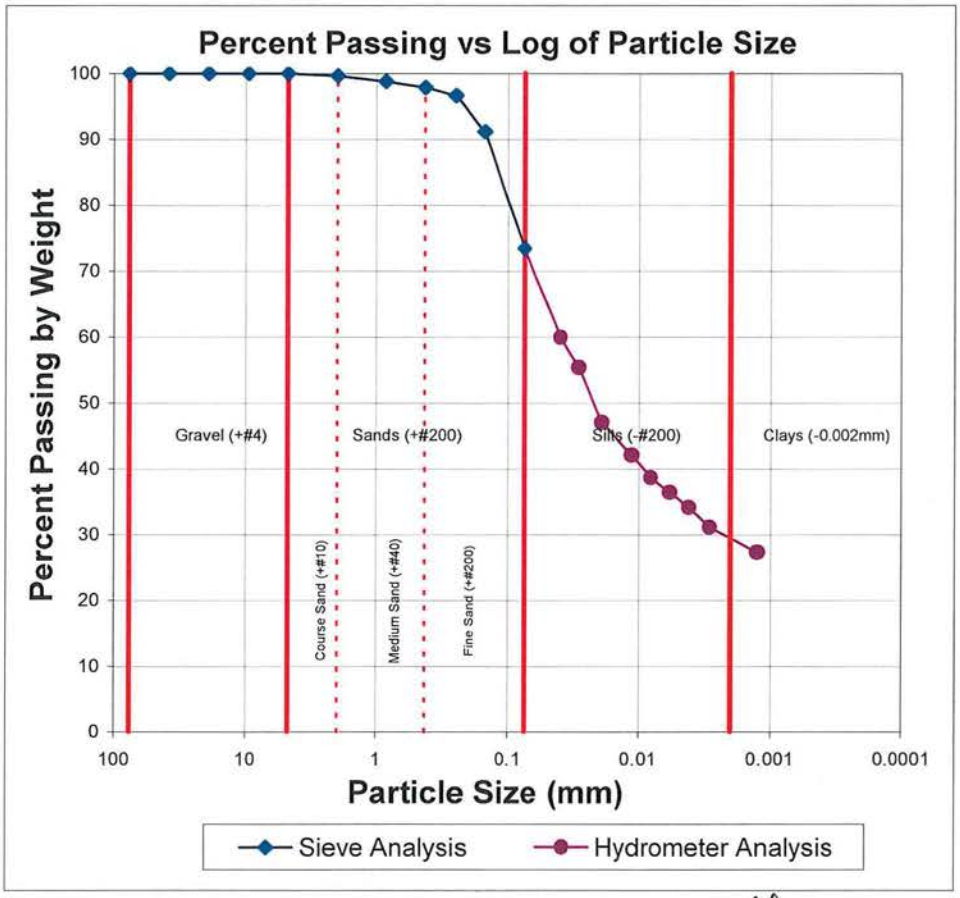
Plus Split Data

Original Weight of +#10 (g): 4.11
Calculated Weight of +#10 (g): 3.41

Minus Split Data

Original Weight of -#10 (g): 1,047.40
Calculated Dry Weight of -#10 (g): 992.39

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	3.41	0.00	3.41	3.41	99.7
69.486g split out of -#10 material.						
#20	**0.850**	3.64	3.05	0.58	8.78	98.8
#40	**0.425**	3.64	3.04	0.60	9.02	97.9
#60	**0.250**	3.82	3.00	0.82	12.43	96.6
#100	**0.150**	6.62	3.02	3.61	54.41	91.2
#200	**0.075**	14.81	3.09	11.72	176.72	73.4



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_10.xls

Checked By: SBL
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: EB-B6-03
Depth: 0-10'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/03/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.65
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 1,051.51
Total Dry Weight of Sample (g): 995.80
Wet Weight of Sub-Sample (g): 69.486
Dry Weight of Sub-Sample (g): 65.793
Corrected Dry Weight of Sub-Sample - W(g): 65.991

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	44.0	39.5	23.6	0.0132	9.08	0.0397	59.9	596.87	59.9
2	41.0	36.5	23.6	0.0132	9.57	0.0288	55.4	551.54	55.4
5	35.5	31.0	23.6	0.0132	10.47	0.0191	47.0	468.43	47.0
15	32.3	27.8	23.6	0.0132	11.01	0.0113	42.1	419.32	42.1
30	30.0	25.5	23.7	0.0132	11.37	0.0081	38.7	385.32	38.7
60	28.5	24.0	23.7	0.0132	11.62	0.0058	36.4	362.65	36.4
120	27.0	22.5	23.8	0.0132	11.87	0.0041	34.1	339.99	34.1
250	25.0	20.5	24.0	0.0130	12.19	0.0029	31.1	309.77	31.1
1440	22.5	18.0	22.5	0.0133	12.60	0.0012	27.3	271.99	27.3

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_10.xls

Checked By: SM
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sand with Silt

Boring Number: WB-B5-005
Depth: 0-10'
Sample Number: --
Sampled Date: 11/18/13
Test Date: 01/08/14

Sampled By: --
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 247.42
Weight of Dry Soil & Pan (g): 243.73
Weight of Water (g): 3.69
Weight of Pan (g): 6.60
Weight of Dry Soil (g): 237.13
Moisture (%): 1.6

General Sample Data

Total Wet Weight of Sample (g): 1,295.90
Total Dry Weight of Sample (g): 1,276.04
Calculated Weight Plus #200 (g): 785.78
Moisture of Total Sample (%): 1.6
Percent Retained #200 Sieve (%): 61.6

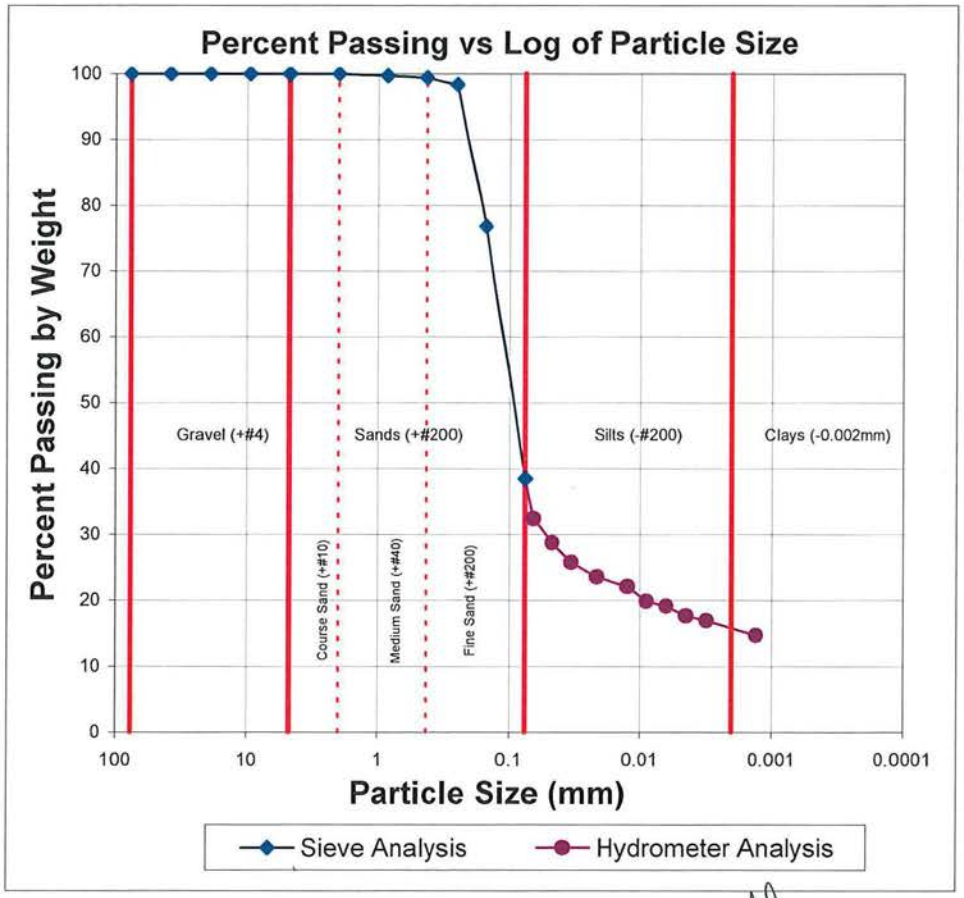
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 1,295.90
Calculated Dry Weight of -#10 (g): 1,276.04

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
69.047g split out of -#10 material.						
#20	**0.850**	3.51	3.29	0.21	4.02	99.7
#40	**0.425**	3.24	3.07	0.18	3.30	99.4
#60	**0.250**	3.77	3.05	0.72	13.53	98.4
#100	**0.150**	17.66	3.01	14.65	274.92	76.8
#200	**0.075**	29.11	3.00	26.11	490.00	38.4



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_11.xls

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Date: _____

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sand with Silt

Boring Number: WB-B5-005
Depth: 0-10'
Sample Number: --
Sampled Date: 11/18/13
Test Date: 01/06/14

Sampled By: --
Technician: SKL

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.65
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 1,295.90
Total Dry Weight of Sample (g): 1,276.04
Wet Weight of Sub-Sample (g): 69.047
Dry Weight of Sub-Sample (g): 67.989
Corrected Dry Weight of Sub-Sample - W(g): 67.989

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
0.5	26.5	22.0	22.2	0.0133	11.95	0.0651	32.4	413.47	32.4
1	24.0	19.5	22.2	0.0133	12.36	0.0468	28.7	366.48	28.7
2	22.0	17.5	22.2	0.0133	12.69	0.0335	25.8	328.89	25.8
5	20.5	16.0	22.2	0.0133	12.93	0.0214	23.6	300.70	23.6
15	19.5	15.0	22.2	0.0133	13.10	0.0124	22.1	281.91	22.1
30	18.0	13.5	22.2	0.0133	13.34	0.0089	19.9	253.72	19.9
60	17.5	13.0	22.3	0.0133	13.42	0.0063	19.1	244.32	19.1
120	16.5	12.0	22.4	0.0133	13.59	0.0045	17.7	225.53	17.7
250	16.0	11.5	22.7	0.0133	13.67	0.0031	16.9	216.13	16.9
1440	14.5	10.0	22.3	0.0133	13.92	0.0013	14.7	187.94	14.7

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_11.xls

Checked By: [signature]
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Clayey Sand with Gravel

Boring Number: EB-B5-02B
Depth: 5.5-6'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/08/14

Sampled By: MWH
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 18.93
Weight of Dry Soil & Pan (g): 18.68
Weight of Water (g): 0.25
Weight of Pan (g): 3.01
Weight of Dry Soil (g): 15.67
Moisture (%): 1.6

General Sample Data

Total Wet Weight of Sample (g): 280.79
Total Dry Weight of Sample (g): 276.94
Calculated Weight Plus #200 (g): 150.91
Moisture of Total Sample (%): 1.4
Percent Retained #200 Sieve (%): 54.5

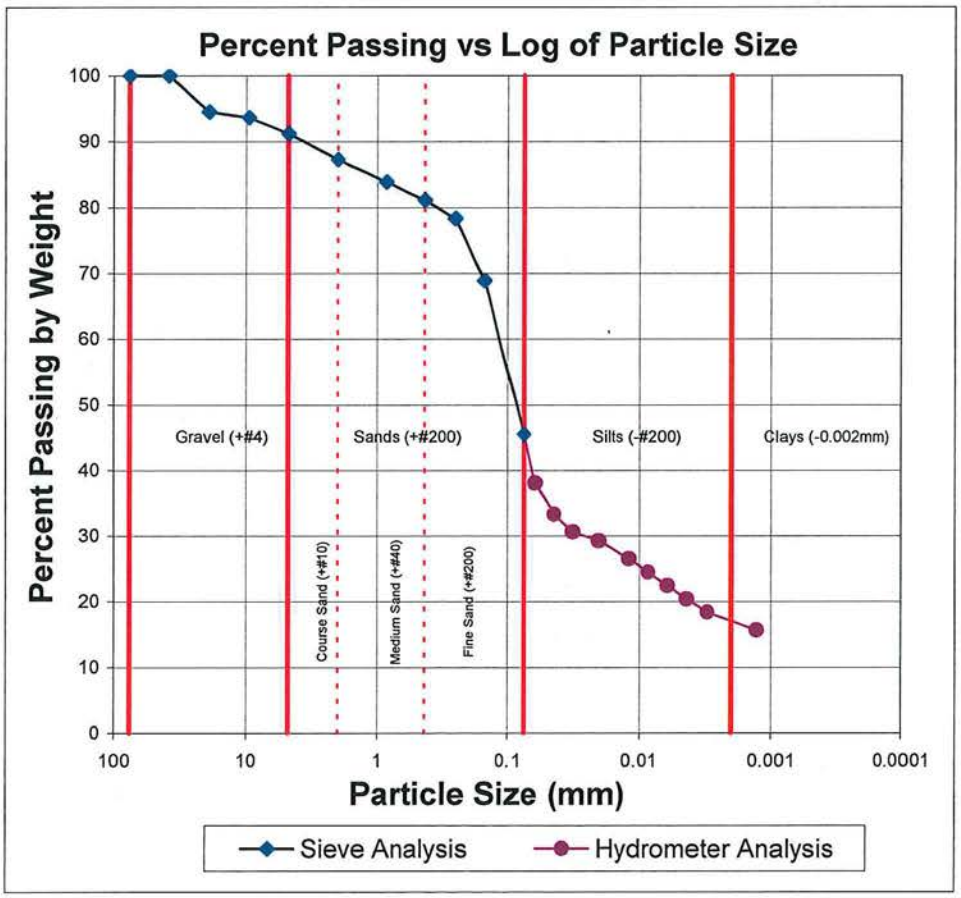
Plus Split Data

Original Weight of +#10 (g): 37.32
Calculated Weight of +#10 (g): 35.31

Minus Split Data

Original Weight of -#10 (g): 243.47
Calculated Dry Weight of -#10 (g): 241.63

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	15.19	0.00	15.19	15.19	94.5
3/8"	**9.525**	2.53	0.00	2.53	2.53	93.6
#4	**4.750**	6.63	0.00	6.63	6.63	91.2
#10	**2.000**	10.96	0.00	10.96	10.96	87.2
64.472g split out of -#10 material.						
#20	**0.850**	5.53	3.03	2.50	9.51	83.8
#40	**0.425**	5.05	3.05	1.99	7.59	81.1
#60	**0.250**	5.05	3.01	2.04	7.75	78.3
#100	**0.150**	9.87	2.99	6.89	26.21	68.8
#200	**0.075**	19.97	3.02	16.95	64.53	45.5



Data Entered By: DAW
Date: 1/13/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_13.xls

Checked By: MLM
Date: 1/13/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Clayey Sand with Gravel

Boring Number: EB-B5-02B
Depth: 5.5-6'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/06/14

Sampled By: MWH
Technician: SKL

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.71
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 280.79
Total Dry Weight of Sample (g): 276.94
Wet Weight of Sub-Sample (g): 64.472
Dry Weight of Sub-Sample (g): 63.460
Corrected Dry Weight of Sub-Sample - W(g): 72.775

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
0.5	32.5	28.0	22.3	0.0131	10.96	0.0614	38.0	105.36	38.0
1	29.0	24.5	22.3	0.0131	11.54	0.0446	33.3	92.19	33.3
2	27.0	22.5	22.3	0.0131	11.87	0.0320	30.6	84.66	30.6
5	26.0	21.5	22.3	0.0131	12.03	0.0204	29.2	80.90	29.2
15	24.0	19.5	22.3	0.0131	12.36	0.0119	26.5	73.38	26.5
30	22.5	18.0	22.5	0.0131	12.60	0.0085	24.5	67.73	24.5
60	21.0	16.5	22.5	0.0131	12.85	0.0061	22.4	62.09	22.4
120	19.5	15.0	22.6	0.0131	13.10	0.0043	20.4	56.44	20.4
250	18.0	13.5	22.8	0.0131	13.34	0.0030	18.3	50.80	18.3
1440	16.0	11.5	22.4	0.0131	13.67	0.0013	15.6	43.27	15.6

Data Entered By: DAW
Date: 1/14/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_13.xls

Checked By: MLM
Date: 1/15/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Shale

Boring Number: DH-B2-03
Depth: 15-15.5'
Sample Number: --
Sampled Date: 12/11/13
Test Date: 01/16/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 58.06
Weight of Dry Soil & Pan (g): 57.22
Weight of Water (g): 0.84
Weight of Pan (g): 3.27
Weight of Dry Soil (g): 53.95
Moisture (%): 1.6

General Sample Data

Total Wet Weight of Sample (g): 343.30
Total Dry Weight of Sample (g): 338.04
Calculated Weight Plus #200 (g): 93.56
Moisture of Total Sample (%): 1.6
Percent Retained #200 Sieve (%): 27.7

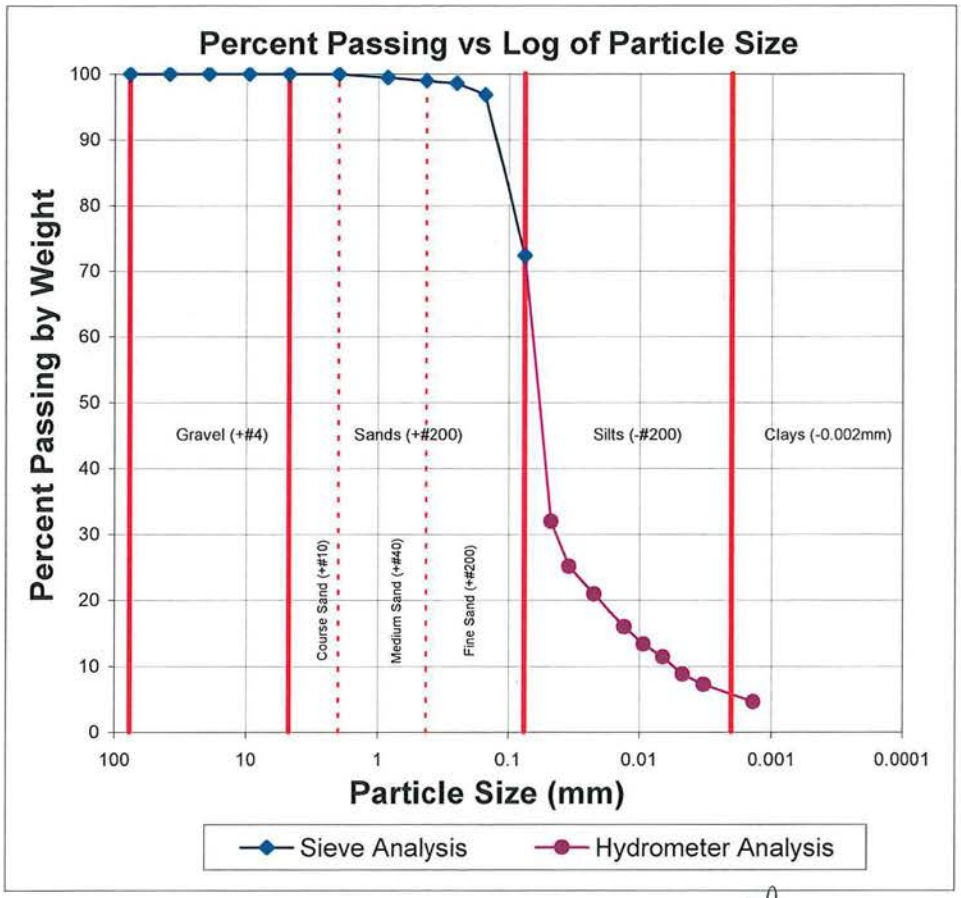
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 343.30
Calculated Dry Weight of -#10 (g): 338.04

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
68.184g split out of -#10 material.						
#20	**0.850**	3.37	3.00	0.37	1.87	99.4
#40	**0.425**	3.55	3.24	0.31	1.56	99.0
#60	**0.250**	3.26	2.99	0.27	1.34	98.6
#100	**0.150**	4.16	2.98	1.18	5.92	96.8
#200	**0.075**	19.57	3.11	16.46	82.87	72.3



Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_25.xls

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Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Shale

Boring Number: DH-B2-03
Depth: 15-15.5'
Sample Number: --
Sampled Date: 12/11/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.55
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.02

Total Wet Weight of Sample (g): 343.30
Total Dry Weight of Sample (g): 338.04
Wet Weight of Sub-Sample (g): 68.184
Dry Weight of Sub-Sample (g): 67.139
Corrected Dry Weight of Sub-Sample - W(g): 67.139

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	26.0	21.0	23.8	0.0136	12.03	0.0471	32.0	108.09	32.0
2	21.5	16.5	23.8	0.0136	12.77	0.0343	25.1	84.93	25.1
5	18.8	13.8	23.8	0.0136	13.22	0.0221	20.9	70.77	20.9
15	15.5	10.5	23.8	0.0136	13.75	0.0130	16.0	54.04	16.0
30	13.8	8.8	23.7	0.0136	14.04	0.0093	13.3	45.04	13.3
60	12.5	7.5	23.9	0.0136	14.24	0.0066	11.4	38.60	11.4
120	10.8	5.8	24.0	0.0134	14.53	0.0047	8.8	29.60	8.8
250	9.8	4.8	24.0	0.0134	14.70	0.0033	7.2	24.45	7.2
1466	8.0	3.0	23.7	0.0136	14.98	0.0014	4.6	15.44	4.6

Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_25.xls

Checked By: [signature]
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: NB-B1-03B
Depth: 10.5-11'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/16/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 58.82
Weight of Dry Soil & Pan (g): 58.17
Weight of Water (g): 0.65
Weight of Pan (g): 3.04
Weight of Dry Soil (g): 55.13
Moisture (%): 1.2

General Sample Data

Total Wet Weight of Sample (g): 303.20
Total Dry Weight of Sample (g): 299.67
Calculated Weight Plus #200 (g): 166.56
Moisture of Total Sample (%): 1.2
Percent Retained #200 Sieve (%): 55.6

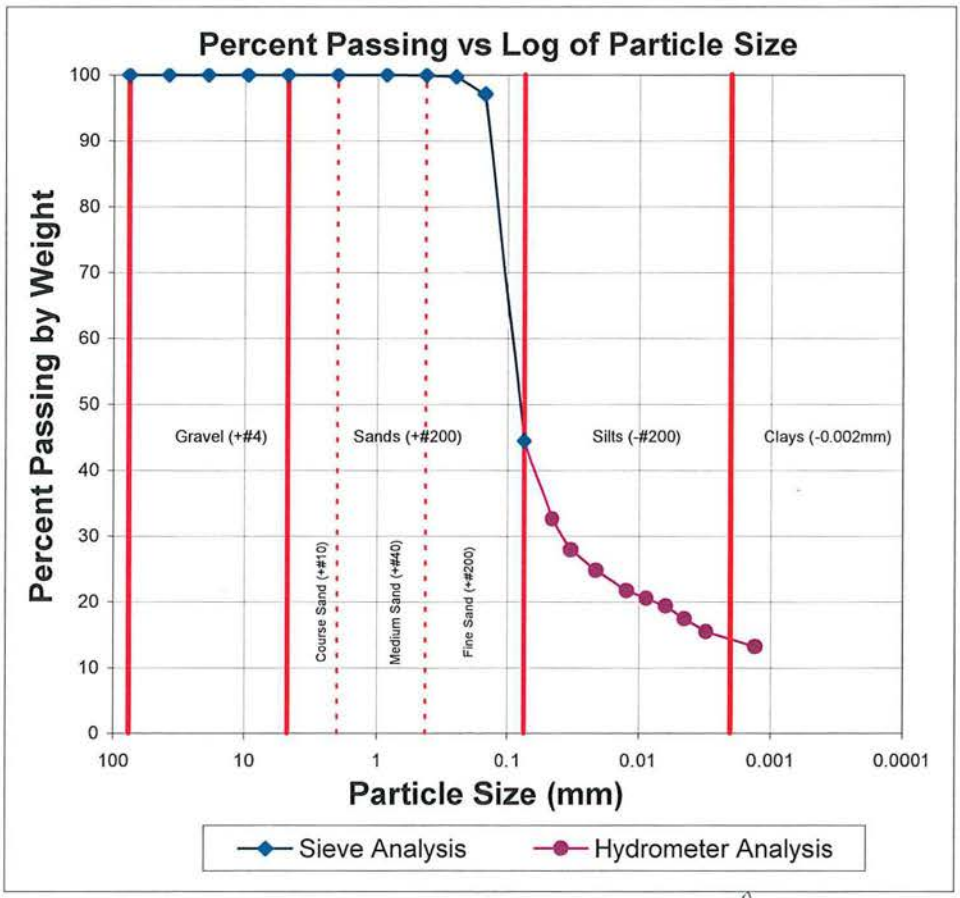
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 303.20
Calculated Dry Weight of -#10 (g): 299.67

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
64.916g split out of -#10 material.						
#20	**0.850**	3.14	3.14	0.01	0.03	100.0
#40	**0.425**	3.00	2.98	0.02	0.09	100.0
#60	**0.250**	3.19	3.02	0.17	0.79	99.7
#100	**0.150**	4.74	3.06	1.68	7.83	97.1
#200	**0.075**	36.83	3.04	33.79	157.82	44.4



Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_24.xls

Checked By: [signature]
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: NB-B1-03B
Depth: 10.5-11'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.68
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 303.20
Total Dry Weight of Sample (g): 299.67
Wet Weight of Sub-Sample (g): 64.916
Dry Weight of Sub-Sample (g): 64.160
Corrected Dry Weight of Sub-Sample - W(g): 64.160

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	26.0	21.0	23.5	0.0132	12.03	0.0457	32.6	97.60	32.6
2	23.0	18.0	23.5	0.0132	12.52	0.0330	27.9	83.66	27.9
5	21.0	16.0	23.5	0.0132	12.85	0.0211	24.8	74.36	24.8
15	19.0	14.0	23.5	0.0132	13.18	0.0123	21.7	65.07	21.7
30	18.3	13.3	23.5	0.0132	13.30	0.0088	20.6	61.58	20.6
60	17.5	12.5	23.6	0.0132	13.42	0.0062	19.4	58.10	19.4
120	16.3	11.3	23.9	0.0132	13.63	0.0044	17.4	52.29	17.4
250	15.0	10.0	24.0	0.0130	13.83	0.0031	15.5	46.48	15.5
1440	13.5	8.5	23.5	0.0132	14.08	0.0013	13.2	39.51	13.2

Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_24.xls

Checked By: SM
Date: 1/17/13

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: SB-B1-03A
Depth: 11-11.5'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/16/14

Sampled By: MWH
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 59.58
Weight of Dry Soil & Pan (g): 58.70
Weight of Water (g): 0.88
Weight of Pan (g): 3.09
Weight of Dry Soil (g): 55.61
Moisture (%): 1.6

General Sample Data

Total Wet Weight of Sample (g): 296.00
Total Dry Weight of Sample (g): 291.39
Calculated Weight Plus #200 (g): 136.06
Moisture of Total Sample (%): 1.6
Percent Retained #200 Sieve (%): 46.7

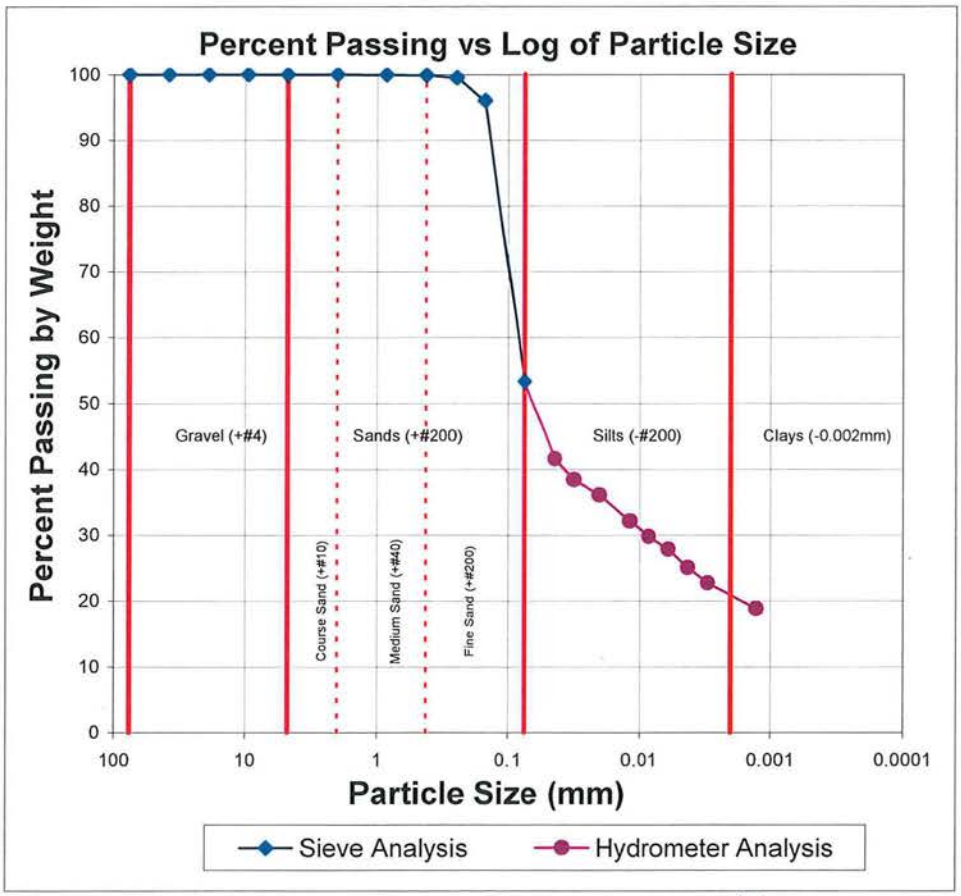
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 296.00
Calculated Dry Weight of -#10 (g): 291.39

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
64.296g split out of -#10 material.						
#20	**0.850**	3.06	3.03	0.03	0.12	100.0
#40	**0.425**	3.12	3.08	0.04	0.17	99.9
#60	**0.250**	3.47	3.21	0.25	1.16	99.5
#100	**0.150**	5.34	3.11	2.23	10.26	96.0
#200	**0.075**	30.07	3.06	27.01	124.36	53.3



Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_22.xls

Checked By: SH
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: SB-B1-03A
Depth: 11-11.5'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: MWH
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.69
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 296.00
Total Dry Weight of Sample (g): 291.39
Wet Weight of Sub-Sample (g): 64.296
Dry Weight of Sub-Sample (g): 63.294
Corrected Dry Weight of Sub-Sample - W(g): 63.294

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	31.5	26.5	23.6	0.0132	11.13	0.0439	41.6	121.14	41.6
2	29.5	24.5	23.6	0.0132	11.46	0.0315	38.4	112.00	38.4
5	28.0	23.0	23.6	0.0132	11.70	0.0201	36.1	105.14	36.1
15	25.5	20.5	23.6	0.0132	12.11	0.0118	32.2	93.72	32.2
30	24.0	19.0	23.7	0.0132	12.36	0.0085	29.8	86.86	29.8
60	22.8	17.8	23.7	0.0132	12.56	0.0060	27.8	81.14	27.8
120	21.0	16.0	24.0	0.0130	12.85	0.0043	25.1	73.14	25.1
250	19.5	14.5	24.0	0.0130	13.10	0.0030	22.7	66.29	22.7
1452	17.0	12.0	23.5	0.0132	13.51	0.0013	18.8	54.86	18.8

Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_22.xls

Checked By: SM
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B3-02A
Depth: 6-6.5'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/16/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 55.01
Weight of Dry Soil & Pan (g): 53.94
Weight of Water (g): 1.07
Weight of Pan (g): 3.26
Weight of Dry Soil (g): 50.68
Moisture (%): 2.1

General Sample Data

Total Wet Weight of Sample (g): 274.30
Total Dry Weight of Sample (g): 268.63
Calculated Weight Plus #200 (g): 57.96
Moisture of Total Sample (%): 2.1
Percent Retained #200 Sieve (%): 21.6

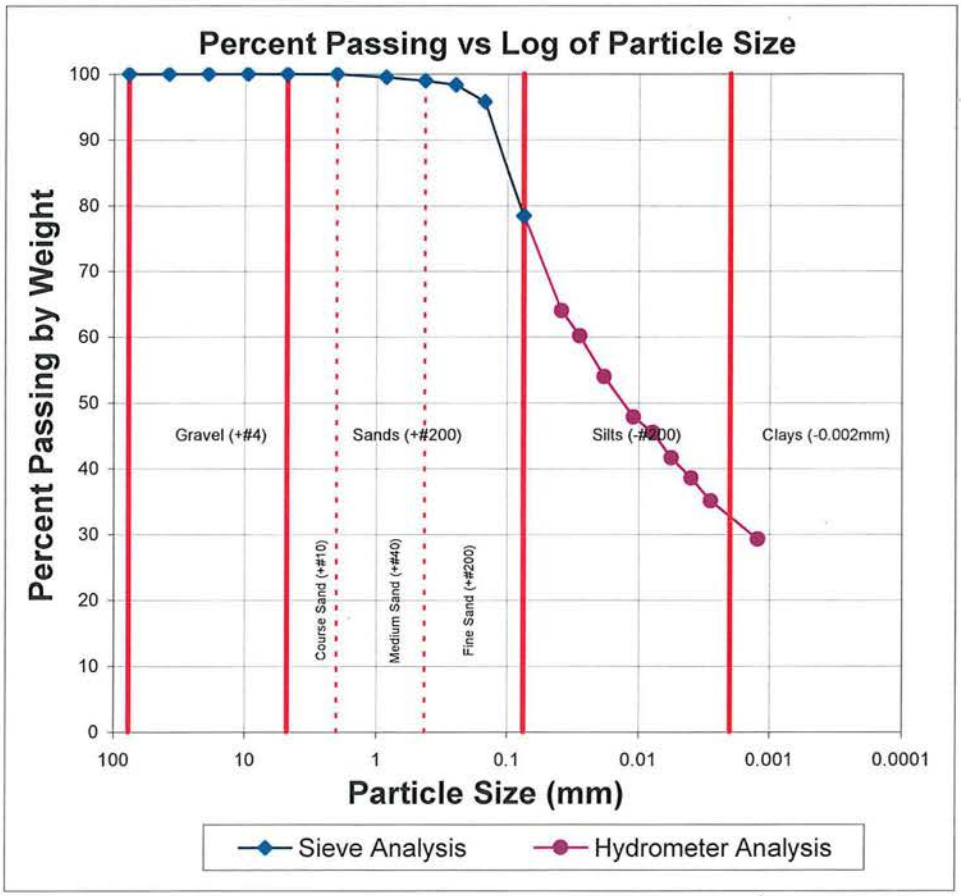
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 274.30
Calculated Dry Weight of -#10 (g): 268.63

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
65.812g split out of -#10 material.						
#20	**0.850**	3.28	2.97	0.31	1.27	99.5
#40	**0.425**	3.46	3.10	0.36	1.50	99.0
#60	**0.250**	3.62	3.21	0.42	1.73	98.3
#100	**0.150**	4.74	3.10	1.64	6.85	95.8
#200	**0.075**	14.37	3.19	11.18	46.61	78.4



Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_21.xls

Checked By: SHP
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B3-02A
Depth: 6-6.5'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.69
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 274.30
Total Dry Weight of Sample (g): 268.63
Wet Weight of Sub-Sample (g): 65.812
Dry Weight of Sub-Sample (g): 64.451
Corrected Dry Weight of Sub-Sample - W(g): 64.451

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	46.5	41.5	23.7	0.0132	8.67	0.0388	63.9	171.76	63.9
2	44.0	39.0	23.7	0.0132	9.08	0.0281	60.1	161.41	60.1
5	40.0	35.0	23.7	0.0132	9.73	0.0184	53.9	144.86	53.9
15	36.0	31.0	23.7	0.0132	10.39	0.0110	47.8	128.30	47.8
30	34.5	29.5	23.8	0.0132	10.64	0.0078	45.5	122.09	45.5
60	32.0	27.0	23.8	0.0132	11.05	0.0057	41.6	111.75	41.6
120	30.0	25.0	24.0	0.0130	11.37	0.0040	38.5	103.47	38.5
250	27.8	22.8	24.2	0.0130	11.74	0.0028	35.1	94.16	35.1
1440	24.0	19.0	23.6	0.0132	12.36	0.0012	29.3	78.64	29.3

Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_21.xls

Checked By: [signature]
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: DH-B1-03
Depth: 0-10'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/16/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 77.44
Weight of Dry Soil & Pan (g): 76.09
Weight of Water (g): 1.35
Weight of Pan (g): 3.19
Weight of Dry Soil (g): 72.90
Moisture (%): 1.9

General Sample Data

Total Wet Weight of Sample (g): 1,163.24
Total Dry Weight of Sample (g): 1,142.64
Calculated Weight Plus #200 (g): 564.24
Moisture of Total Sample (%): 1.8
Percent Retained #200 Sieve (%): 49.4

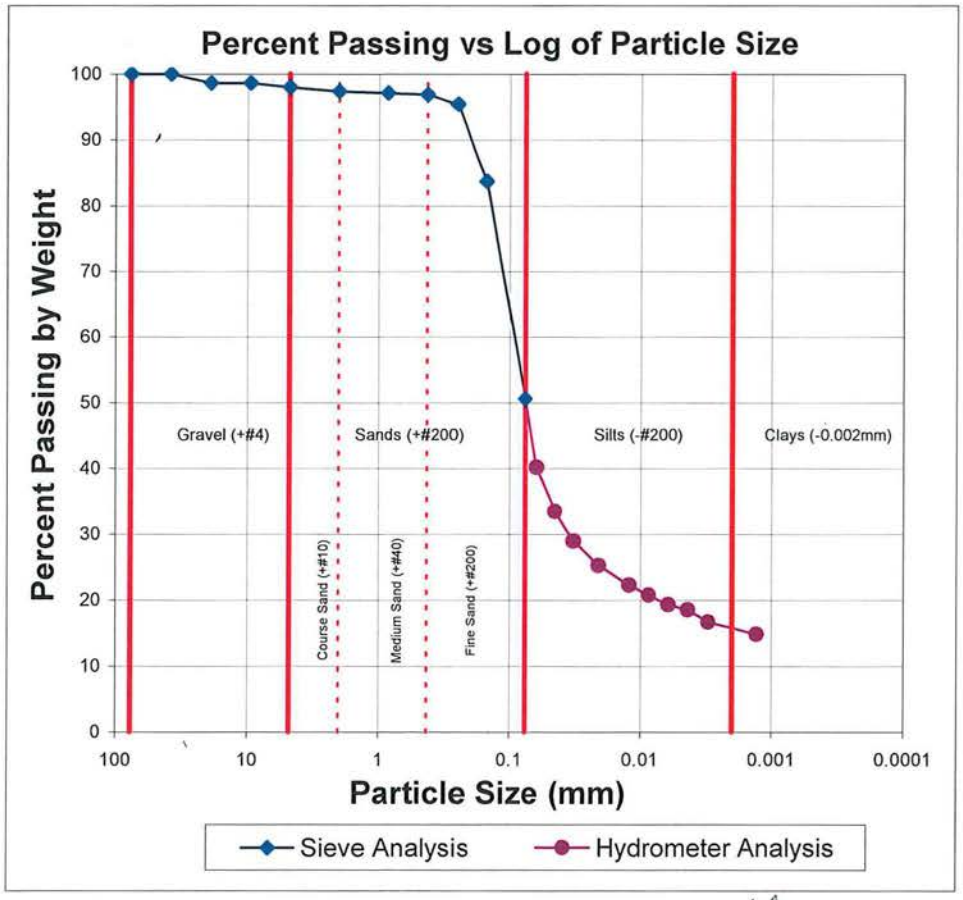
Plus Split Data

Original Weight of +#10 (g): 33.55
Calculated Weight of +#10 (g): 30.15

Minus Split Data

Original Weight of -#10 (g): 1,129.69
Calculated Dry Weight of -#10 (g): 1,112.49

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	15.65	0.00	15.65	15.65	98.6
3/8"	**9.525**	0.01	0.00	0.01	0.01	98.6
#4	**4.750**	7.39	0.00	7.39	7.39	98.0
#10	**2.000**	7.10	0.00	7.10	7.10	97.4
66.557g split out of -#10 material.						
#20	**0.850**	3.18	3.03	0.15	2.62	97.1
#40	**0.425**	3.36	3.20	0.16	2.66	96.9
#60	**0.250**	4.00	3.02	0.98	16.70	95.4
#100	**0.150**	10.92	3.04	7.88	134.07	83.7
#200	**0.075**	25.21	3.00	22.21	378.04	50.6



Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_23.xls

Checked By: SHL
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay with Sand

Boring Number: DH-B1-03
Depth: 0-10'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.67
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 1,163.24
Total Dry Weight of Sample (g): 1,142.64
Wet Weight of Sub-Sample (g): 66.557
Dry Weight of Sub-Sample (g): 65.347
Corrected Dry Weight of Sub-Sample - W(g): 67.091

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
0.5	32.0	27.0	24.0	0.0130	11.05	0.0612	40.1	458.54	40.1
1	27.5	22.5	24.0	0.0130	11.78	0.0447	33.4	382.12	33.4
2	24.5	19.5	24.0	0.0130	12.28	0.0322	29.0	331.17	29.0
5	22.0	17.0	24.0	0.0130	12.69	0.0207	25.3	288.71	25.3
15	20.0	15.0	24.0	0.0130	13.01	0.0121	22.3	254.75	22.3
30	19.0	14.0	24.0	0.0130	13.18	0.0086	20.8	237.76	20.8
60	18.0	13.0	24.1	0.0130	13.34	0.0061	19.3	220.78	19.3
120	17.5	12.5	24.1	0.0130	13.42	0.0044	18.6	212.29	18.6
250	16.3	11.3	24.0	0.0130	13.63	0.0030	16.7	191.06	16.7
1440	15.0	10.0	23.6	0.0132	13.83	0.0013	14.9	169.83	14.9

Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_23.xls

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Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: DH-B3-05
Depth: 20-30'
Sample Number: --
Sampled Date: 12/11/13
Test Date: 01/16/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 67.21
Weight of Dry Soil & Pan (g): 65.68
Weight of Water (g): 1.53
Weight of Pan (g): 3.04
Weight of Dry Soil (g): 62.64
Moisture (%): 2.4

General Sample Data

Total Wet Weight of Sample (g): 2,930.03
Total Dry Weight of Sample (g): 2,864.95
Calculated Weight Plus #200 (g): 1,062.52
Moisture of Total Sample (%): 2.3
Percent Retained #200 Sieve (%): 37.1

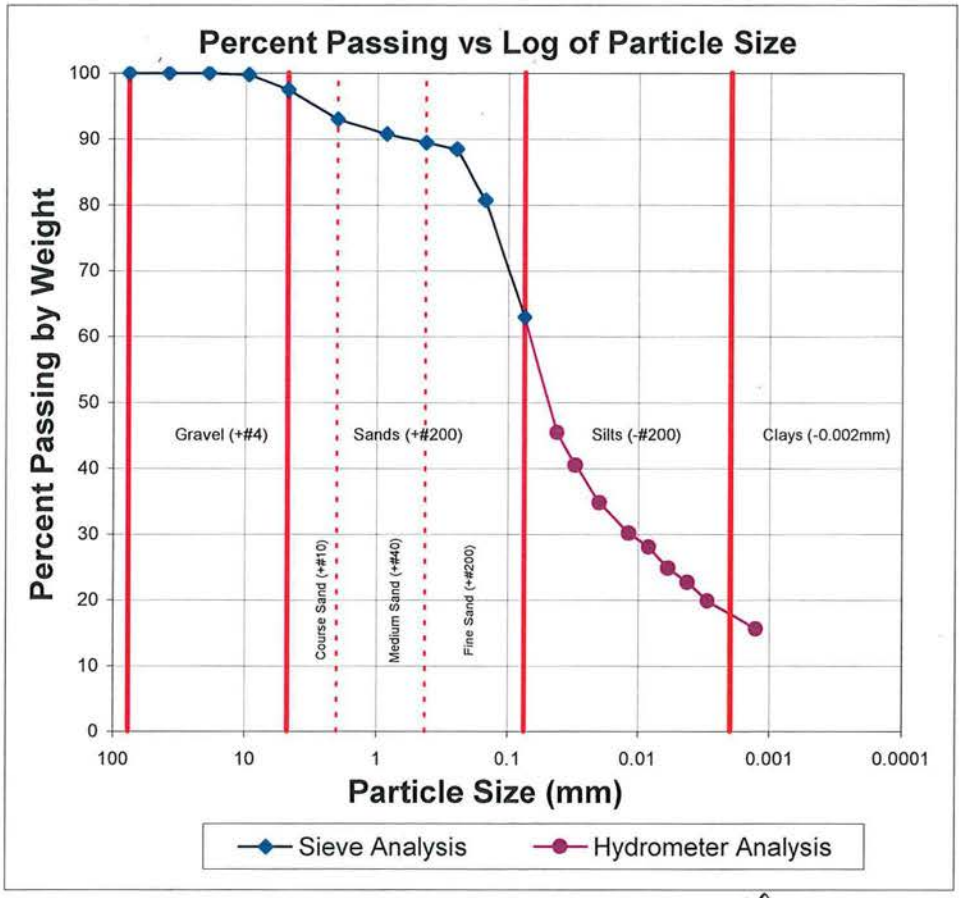
Plus Split Data

Original Weight of +#10 (g): 373.73
Calculated Weight of +#10 (g): 200.58

Minus Split Data

Original Weight of -#10 (g): 2,556.30
Calculated Dry Weight of -#10 (g): 2,664.37

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	6.54	0.00	6.54	6.54	99.8
#4	**4.750**	66.18	0.00	66.18	66.18	97.5
#10	**2.000**	127.86	0.00	127.86	127.86	93.0
67.044g split out of -#10 material.						
#20	**0.850**	4.63	3.03	1.60	65.14	90.7
#40	**0.425**	3.92	3.00	0.91	37.13	89.4
#60	**0.250**	3.99	3.29	0.70	28.34	88.4
#100	**0.150**	8.55	3.07	5.48	223.06	80.7
#200	**0.075**	15.54	3.05	12.49	508.28	62.9



Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_26.xls

Checked By: SLL
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: DH-B3-05
Depth: 20-30'
Sample Number: --
Sampled Date: 12/11/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.66
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 2,930.03
Total Dry Weight of Sample (g): 2,864.95
Wet Weight of Sub-Sample (g): 67.044
Dry Weight of Sub-Sample (g): 65.445
Corrected Dry Weight of Sub-Sample - W(g): 70.371

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	37.0	32.0	24.0	0.0130	10.23	0.0416	45.4	1301.83	45.4
2	33.5	28.5	24.0	0.0130	10.80	0.0302	40.5	1159.44	40.5
5	29.5	24.5	24.0	0.0130	11.46	0.0197	34.8	996.71	34.8
15	26.3	21.3	23.9	0.0132	11.99	0.0118	30.2	864.50	30.2
30	24.8	19.8	24.0	0.0130	12.24	0.0083	28.0	803.47	28.0
60	22.5	17.5	24.1	0.0130	12.60	0.0060	24.8	711.94	24.8
120	21.0	16.0	24.2	0.0130	12.85	0.0043	22.7	650.92	22.7
250	19.0	14.0	24.1	0.0130	13.18	0.0030	19.9	569.55	19.9
1456	16.0	11.0	23.6	0.0132	13.67	0.0013	15.6	447.50	15.6

Data Entered By: DAW
Date: 1/17/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_26.xls

Checked By: SAW
Date: 1/17/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Sandy Clay

Boring Number: NB-B2-04
Depth: 0-10'
Sample Number: -
Sampled Date: 12/12/2013
Test Date: 1/6/2014

Sampled By: -
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 81.58
Weight of Dry Soil & Pan (g): 79.03
Weight of Water (g): 2.55
Weight of Pan (g): 3.06
Weight of Dry Soil (g): 75.97
Moisture (%): 3.4

General Sample Data

Total Wet Weight of Sample (g): 1,336.30
Total Dry Weight of Sample (g): 1,292.90
Calculated Weight Plus #200 (g): 633.87
Moisture of Total Sample (%): 3.4
Percent Retained #200 Sieve (%): 49.0

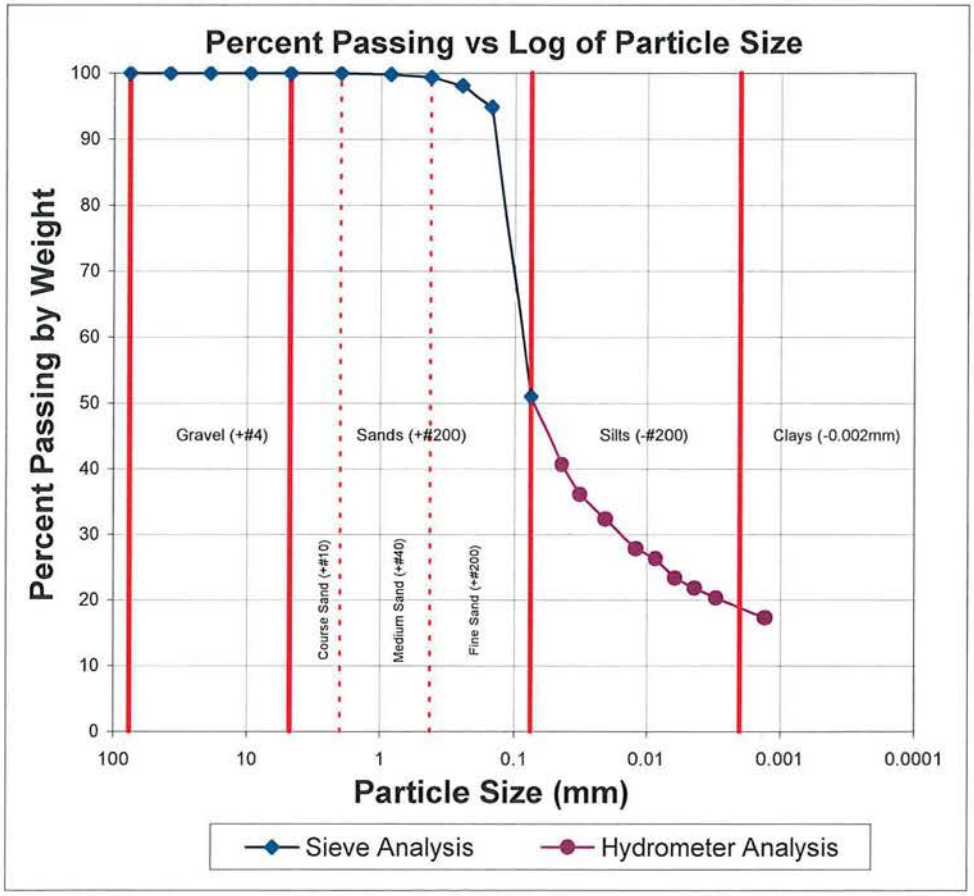
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 1,336.30
Calculated Dry Weight of -#10 (g): 1,292.90

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
68.812g split out of -#10 material.						
#20	**0.850**	3.22	3.08	0.14	2.68	99.8
#40	**0.425**	3.37	3.07	0.29	5.69	99.4
#60	**0.250**	3.87	3.02	0.85	16.49	98.1
#100	**0.150**	5.17	3.01	2.16	41.85	94.8
#200	**0.075**	32.23	3.02	29.21	567.17	51.0



Data Entered By: SKL
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_3.xls

Checked By: DAW
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Project Number: Sandy Clay

Boring Number: NB-B2-04
Depth: 0-10'
Sample Number: -
Sampled Date: 12/12/2013
Test Date: 1/3/2014

Sampled By: -
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.65
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 1,336.30
Total Dry Weight of Sample (g): 1,292.90
Wet Weight of Sub-Sample (g): 68.812
Dry Weight of Sub-Sample (g): 66.577
Corrected Dry Weight of Sub-Sample - W(g): 66.577

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	31.5	27.0	23.5	0.0132	11.13	0.0439	40.6	525.04	40.6
2	28.5	24.0	23.5	0.0132	11.62	0.0317	36.1	466.71	36.1
5	26.0	21.5	23.5	0.0132	12.03	0.0204	32.3	418.09	32.3
15	23.0	18.5	23.5	0.0132	12.52	0.0120	27.8	359.75	27.8
30	22.0	17.5	23.6	0.0132	12.69	0.0086	26.3	340.31	26.3
60	20.0	15.5	23.7	0.0132	13.01	0.0061	23.3	301.41	23.3
120	19.0	14.5	23.9	0.0132	13.18	0.0044	21.8	281.97	21.8
250	18.0	13.5	24.1	0.0130	13.34	0.0030	20.3	262.52	20.3
1440	16.0	11.5	22.5	0.0133	13.67	0.0013	17.3	223.63	17.3

Data Entered By: SKL
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_3.xls

Checked By: DAW
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B4-01
Depth: 0-15'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/15/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 57.07
Weight of Dry Soil & Pan (g): 55.58
Weight of Water (g): 1.49
Weight of Pan (g): 3.20
Weight of Dry Soil (g): 52.38
Moisture (%): 2.8

General Sample Data

Total Wet Weight of Sample (g): 1,156.38
Total Dry Weight of Sample (g): 1,124.83
Calculated Weight Plus #200 (g): 454.04
Moisture of Total Sample (%): 2.8
Percent Retained #200 Sieve (%): 40.4

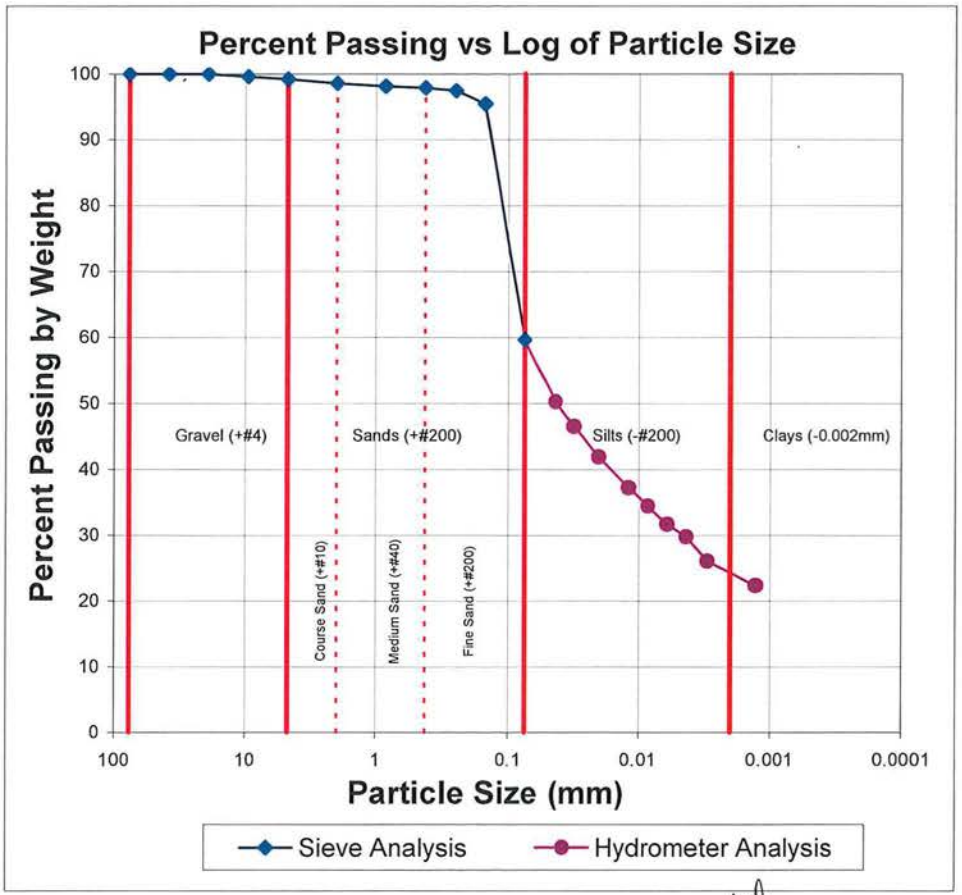
Plus Split Data

Original Weight of +#10 (g): 20.36
Calculated Weight of +#10 (g): 15.80

Minus Split Data

Original Weight of -#10 (g): 1,136.02
Calculated Dry Weight of -#10 (g): 1,109.03

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	4.13	0.00	4.13	4.13	99.6
#4	**4.750**	4.38	0.00	4.38	4.38	99.2
#10	**2.000**	7.29	0.00	7.29	7.29	98.6
54.322g split out of -#10 material.						
#20	**0.850**	3.25	3.02	0.23	4.85	98.2
#40	**0.425**	3.16	3.02	0.14	2.98	97.9
#60	**0.250**	3.49	3.26	0.23	4.89	97.5
#100	**0.150**	4.11	3.05	1.06	22.17	95.5
#200	**0.075**	22.26	3.05	19.21	403.35	59.6



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_19.xls

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Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B4-01
Depth: 0-15'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.67
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.00

Total Wet Weight of Sample (g): 1,156.38
Total Dry Weight of Sample (g): 1,124.83
Wet Weight of Sub-Sample (g): 54.322
Dry Weight of Sub-Sample (g): 52.819
Corrected Dry Weight of Sub-Sample - W(g): 53.569

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	32.0	27.0	23.6	0.0132	11.05	0.0438	50.3	565.34	50.3
2	30.0	25.0	23.6	0.0132	11.37	0.0314	46.5	523.46	46.5
5	27.5	22.5	23.6	0.0132	11.78	0.0202	41.9	471.12	41.9
15	25.0	20.0	23.6	0.0132	12.19	0.0119	37.2	418.77	37.2
30	23.5	18.5	23.7	0.0132	12.44	0.0085	34.4	387.36	34.4
60	22.0	17.0	23.7	0.0132	12.69	0.0061	31.6	355.95	31.6
120	21.0	16.0	23.8	0.0132	12.85	0.0043	29.8	335.02	29.8
250	19.0	14.0	24.3	0.0130	13.18	0.0030	26.1	293.14	26.1
1440	17.0	12.0	23.6	0.0132	13.51	0.0013	22.3	251.26	22.3

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_19.xls

Checked By: [signature]
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: EB-B6-04A
Depth: 11-11.5'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/08/14

Sampled By: MWH
Technician: DAW

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 22.80
Weight of Dry Soil & Pan (g): 22.36
Weight of Water (g): 0.44
Weight of Pan (g): 3.05
Weight of Dry Soil (g): 19.31
Moisture (%): 2.3

General Sample Data

Total Wet Weight of Sample (g): 314.77
Total Dry Weight of Sample (g): 307.76
Calculated Weight Plus #200 (g): 95.85
Moisture of Total Sample (%): 2.3
Percent Retained #200 Sieve (%): 31.1

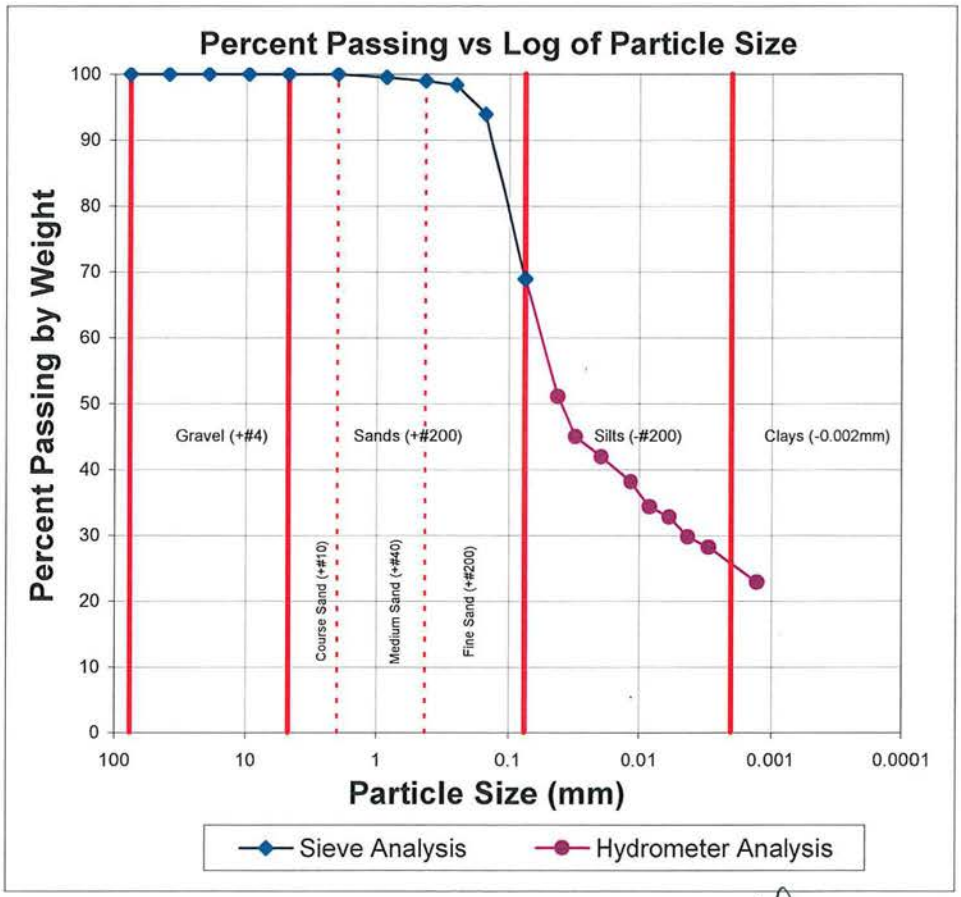
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 314.77
Calculated Dry Weight of -#10 (g): 307.76

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
66.574g split out of -#10 material.						
#20	**0.850**	3.40	3.10	0.30	1.44	99.5
#40	**0.425**	3.55	3.20	0.35	1.65	99.0
#60	**0.250**	3.45	3.03	0.42	2.00	98.3
#100	**0.150**	6.08	3.18	2.90	13.69	93.9
#200	**0.075**	19.42	3.13	16.30	77.06	68.9



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_14.xls

Checked By: SM
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: EB-B6-04A
Depth: 11-11.5'
Sample Number: --
Sampled Date: 12/10/13
Test Date: 01/06/14

Sampled By: MWH
Technician: SKL

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.69
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 4.5
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 314.77
Total Dry Weight of Sample (g): 307.76
Wet Weight of Sub-Sample (g): 66.574
Dry Weight of Sub-Sample (g): 65.091
Corrected Dry Weight of Sub-Sample - W(g): 65.091

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	38.0	33.5	22.0	0.0133	10.06	0.0423	51.1	157.28	51.1
2	34.0	29.5	22.0	0.0133	10.72	0.0308	45.0	138.50	45.0
5	32.0	27.5	22.2	0.0133	11.05	0.0198	42.0	129.11	42.0
15	29.5	25.0	22.3	0.0133	11.46	0.0116	38.1	117.38	38.1
30	27.0	22.5	22.3	0.0133	11.87	0.0084	34.3	105.64	34.3
60	26.0	21.5	22.3	0.0133	12.03	0.0060	32.8	100.94	32.8
120	24.0	19.5	22.5	0.0133	12.36	0.0043	29.7	91.55	29.7
250	23.0	18.5	22.8	0.0133	12.52	0.0030	28.2	86.86	28.2
1440	19.5	15.0	22.3	0.0133	13.10	0.0013	22.9	70.43	22.9

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_14.xls

Checked By: [signature]
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B2-02B
Depth: 5.5-6'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/15/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 54.12
Weight of Dry Soil & Pan (g): 53.12
Weight of Water (g): 1.00
Weight of Pan (g): 3.10
Weight of Dry Soil (g): 50.02
Moisture (%): 2.0

General Sample Data

Total Wet Weight of Sample (g): 289.70
Total Dry Weight of Sample (g): 284.02
Calculated Weight Plus #200 (g): 84.68
Moisture of Total Sample (%): 2.0
Percent Retained #200 Sieve (%): 29.8

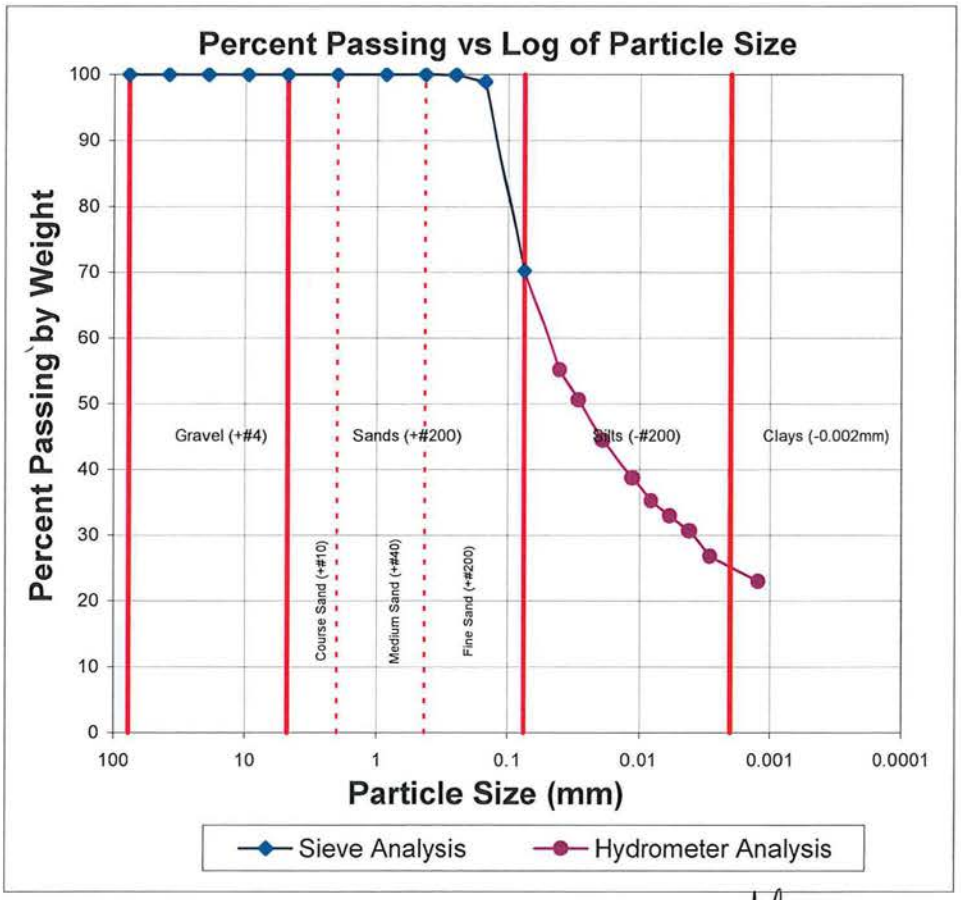
Plus Split Data

Original Weight of +#10 (g): 0.00
Calculated Weight of +#10 (g): 0.00

Minus Split Data

Original Weight of -#10 (g): 289.70
Calculated Dry Weight of -#10 (g): 284.02

Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	0.00	0.00	0.00	0.00	100.0
#10	**2.000**	0.00	0.00	0.00	0.00	100.0
65.976g split out of -#10 material.						
#20	**0.850**	0.00	0.00	0.00	0.00	100.0
#40	**0.425**	3.01	3.00	0.01	0.04	100.0
#60	**0.250**	3.05	3.02	0.03	0.14	99.9
#100	**0.150**	3.69	3.01	0.69	3.01	98.9
#200	**0.075**	21.61	3.06	18.56	81.49	70.2



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_20.xls

Checked By: [signature]
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: SB-B2-02B
Depth: 5.5-6'
Sample Number: --
Sampled Date: 12/12/13
Test Date: 01/14/14

Sampled By: --
Technician: DPM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.70
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 0.99

Total Wet Weight of Sample (g): 289.70
Total Dry Weight of Sample (g): 284.02
Wet Weight of Sub-Sample (g): 65.976
Dry Weight of Sub-Sample (g): 64.683
Corrected Dry Weight of Sub-Sample - W(g): 64.683

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
1	41.0	36.0	23.5	0.0130	9.57	0.0401	55.2	156.64	55.2
2	38.0	33.0	23.5	0.0130	10.06	0.0291	50.6	143.59	50.6
5	34.0	29.0	23.5	0.0130	10.72	0.0190	44.4	126.18	44.4
15	30.3	25.3	23.5	0.0130	11.33	0.0113	38.7	109.86	38.7
30	28.0	23.0	23.4	0.0130	11.70	0.0081	35.2	100.07	35.2
60	26.5	21.5	23.7	0.0130	11.95	0.0058	32.9	93.55	32.9
120	25.0	20.0	23.9	0.0130	12.19	0.0041	30.6	87.02	30.6
250	22.5	17.5	24.0	0.0128	12.60	0.0029	26.8	76.14	26.8
1440	20.0	15.0	23.5	0.0130	13.01	0.0012	23.0	65.27	23.0

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_20.xls

Checked By: SHL
Date: 1/16/14

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: DH-B1-10
Depth: 35-45'
Sample Number: --
Sampled Date: 12/11/13
Test Date: 01/15/14

Sampled By: --
Technician: MLM

Grain Size Data

Hygroscopic Moisture of Fines

Weight of Wet Soil & Pan (g): 117.77
Weight of Dry Soil & Pan (g): 111.81
Weight of Water (g): 5.96
Weight of Pan (g): 3.22
Weight of Dry Soil (g): 108.59
Moisture (%): 5.5

General Sample Data

Total Wet Weight of Sample (g): 199.35
Total Dry Weight of Sample (g): 189.56
Calculated Weight Plus #200 (g): 42.43
Moisture of Total Sample (%): 5.2
Percent Retained #200 Sieve (%): 22.4

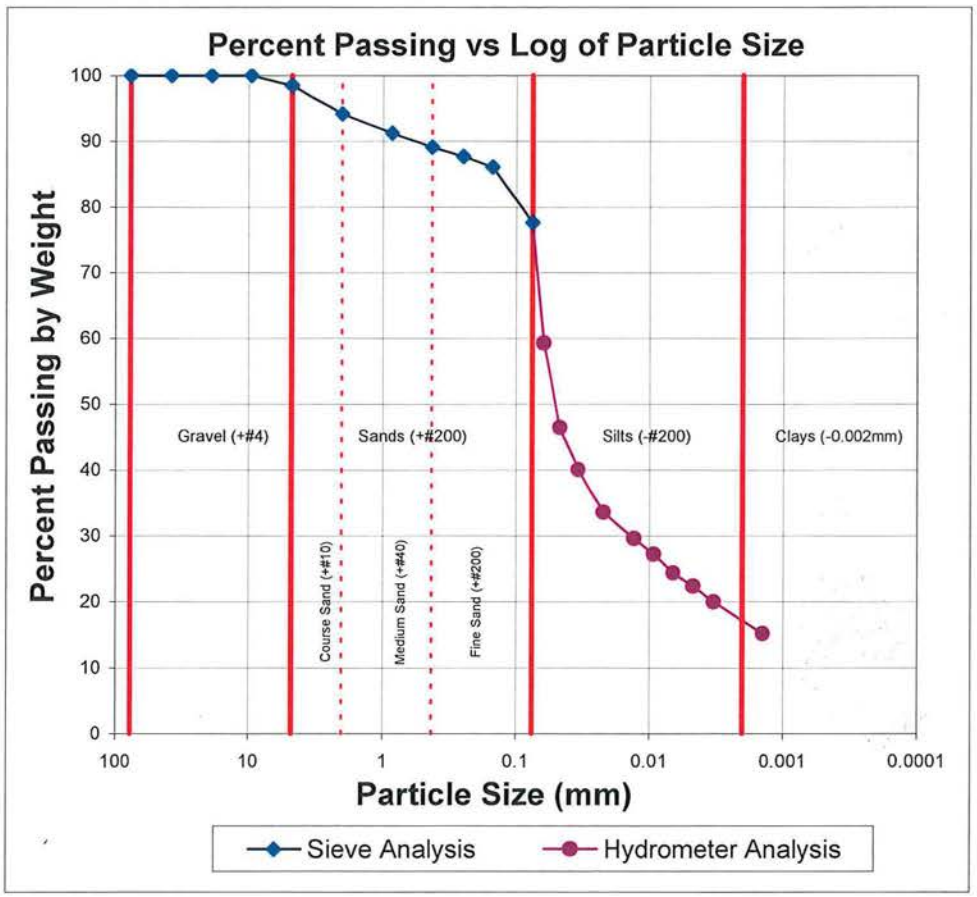
Sieve Number	Sieve Size (mm)	Weight of Retained Soil & Pan (g)	Weight of Pan (g)	Weight of Retained Soil (g)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
3"	**76.2**	0.00	0.00	0.00	0.00	100.0
1.5"	**38.10**	0.00	0.00	0.00	0.00	100.0
3/4"	**19.05**	0.00	0.00	0.00	0.00	100.0
3/8"	**9.525**	0.00	0.00	0.00	0.00	100.0
#4	**4.750**	2.84	0.00	2.84	2.84	98.5
#10	**2.000**	8.26	0.00	8.26	8.26	94.1
65.592g split out of -#10 material.						
#20	**0.850**	5.01	3.08	1.93	5.54	91.2
#40	**0.425**	4.49	3.08	1.41	4.06	89.1
#60	**0.250**	4.07	3.13	0.94	2.69	87.7
#100	**0.150**	4.08	3.02	1.05	3.02	86.1
#200	**0.075**	8.63	3.05	5.58	16.02	77.6

Plus Split Data

Original Weight of +#10 (g): 12.06
Calculated Weight of +#10 (g): 11.10

Minus Split Data

Original Weight of -#10 (g): 187.29
Calculated Dry Weight of -#10 (g): 178.46



Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_16.xls

Checked By: KR
Date: 1/26/16

ATT
ADVANCED TERRA TESTING

Particle Size Analysis of Soils
ASTM D 422

Client: MWH
Job Number: 2512-77
Project: Church Rock
Location: Borrow Areas
Soil Description: Silty Clay

Boring Number: DH-B1-10
Depth: 35-45'
Sample Number: --
Sampled Date: 12/11/13
Test Date: 01/14/14

Sampled By: --
Technician: MLM

Hydrometer Data

Test Configuration

Hydrometer Type: 152H
Specific Gravity: 2.38
Deflocculant: Sodium Hexametaphosphate
Deflocculant Correction: 5.0
Specific Gravity Correction Factor - α: 1.06

Total Wet Weight of Sample (g): 199.35
Total Dry Weight of Sample (g): 189.56
Wet Weight of Sub-Sample (g): 65.592
Dry Weight of Sub-Sample (g): 62.179
Corrected Dry Weight of Sub-Sample - W(g): 66.078

Elapsed Time (min)	Hydrometer Reading	Corrected Hydrometer Reading	Temperature (°C)	Temperature Coefficient (K)	Effective Depth (L)	Grain Diameter (mm)	Percent in Suspension (%)	Calculated Weight of Retained Soil (g)	Percent Passing by Weight (%)
0	-	-	-	-	-	-	-	-	-
0.5	42.0	37.0	23.4	0.0143	9.41	0.0620	59.2	112.28	59.2
1	34.0	29.0	23.4	0.0143	10.72	0.0468	46.4	88.00	46.4
2	30.0	25.0	23.4	0.0143	11.37	0.0341	40.0	75.86	40.0
5	26.0	21.0	23.4	0.0143	12.03	0.0222	33.6	63.73	33.6
15	23.5	18.5	23.4	0.0143	12.44	0.0130	29.6	56.14	29.6
30	22.0	17.0	23.5	0.0143	12.69	0.0093	27.2	51.59	27.2
60	20.3	15.3	23.6	0.0143	12.97	0.0066	24.4	46.28	24.4
120	19.0	14.0	23.7	0.0143	13.18	0.0047	22.4	42.48	22.4
250	17.5	12.5	24.1	0.0142	13.42	0.0033	20.0	37.93	20.0
1440	14.5	9.5	23.6	0.0143	13.92	0.0014	15.2	28.83	15.2

Data Entered By: DAW
Date: 1/16/2014
File Name: 2512_77_hydrometer-ASTM-D422-R0_16.xls

Checked By: KP
Date: 1/26/16

ATT
ADVANCED TERRA TESTING

COMPACTION TEST
ASTM D 698 A

CLIENT:	MWH		JOB NO. 2512-77
BORING NO.	DH-B3-05	DATE SAMPLED	-
DEPTH	20-30'	DATE TESTED	01/17/14 BDF/TMR
SAMPLE NO.	-	LOCATION	Church Rock
SOIL DESCR.	Silty Clay		

Moisture Determination

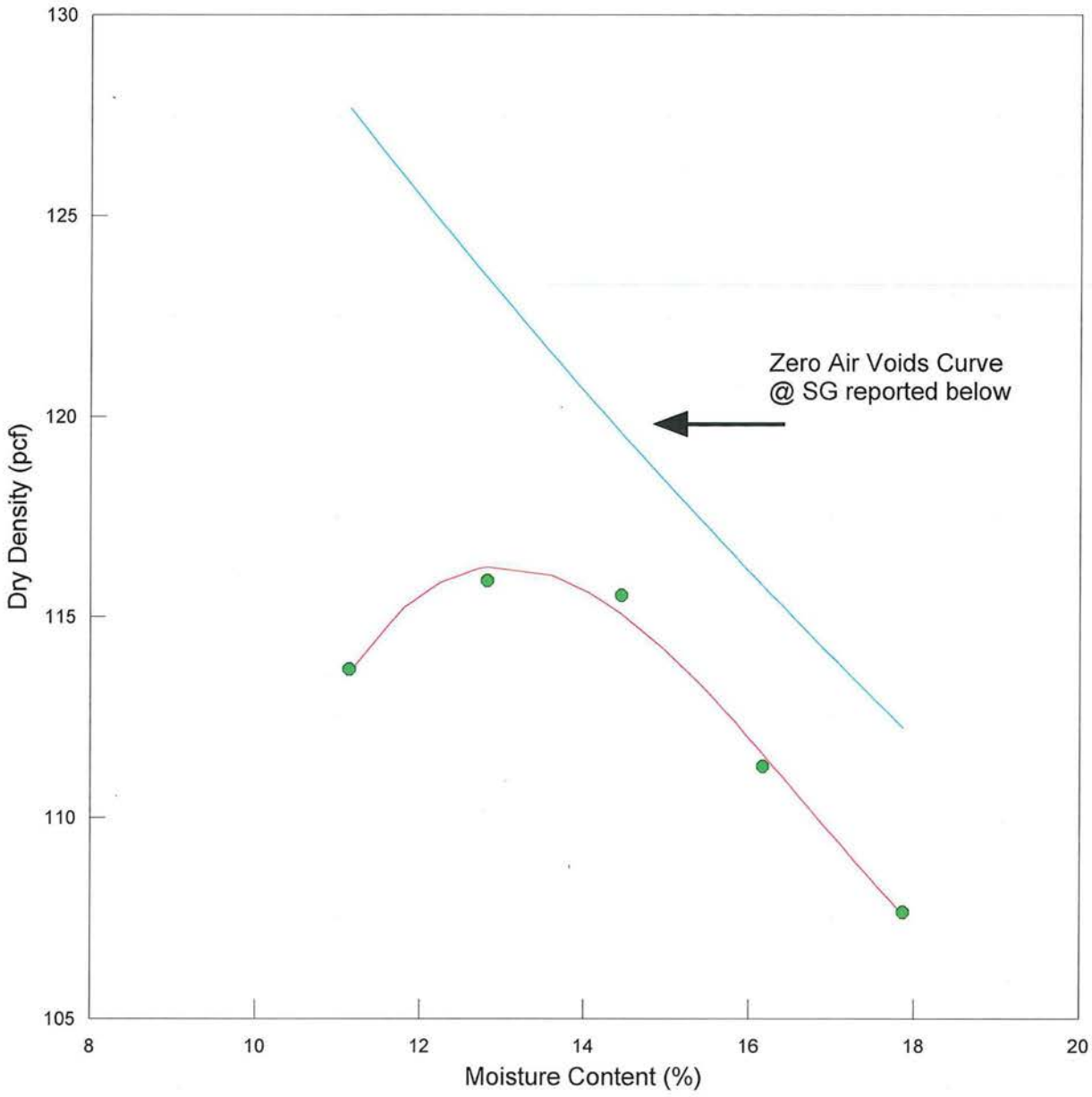
	1	2	3	4	5
Wt of Moisture added (ml)	280.00	320.00	240.00	200.00	360.00
Wt. of soil & dish (g)	590.69	518.34	481.41	392.79	540.02
Dry wt. soil & dish (g)	514.65	444.94	425.77	352.86	456.70
Net loss of moisture (g)	76.04	73.40	55.64	39.93	83.32
Wt. of dish (g)	6.50	6.55	6.67	6.68	6.49
Net wt. of dry soil (g)	508.15	438.39	419.10	346.18	450.21
Moisture Content (%)	14.96	16.74	13.28	11.53	18.51
Corrected Moisture Content	14.45	16.16	12.82	11.14	17.87
Density determination					
Wt of soil & mold (lb)	14.16	14.06	14.11	13.96	13.98
Wt. of mold (lb)	9.78	9.78	9.78	9.78	9.78
Net wt. of wet soil (lb)	4.38	4.28	4.33	4.18	4.20
Net wt of dry soil (lb)	3.81	3.67	3.82	3.75	3.54
Dry Density, (pcf)	114.30	109.99	114.68	112.43	106.32
Corrected Dry Density (pcf)	115.54	111.28	115.91	113.70	107.66
Volume Factor	30	30	30	30	30

Data entered by: DAW Date: 01/20/2014
Data checked by: KR Date: 1/21/14
FileName: PR2030B305.WK4

ADVANCED TERRA TESTING, Inc.
ATT

Proctor Compaction Test

DH-B3-05, 20-30', -



Best Fit Curve | Actual Data | Zero Air VoidsCurve @ SG = 2.65

OPTIMUM MOISTURE CONTENT = 13.0 MAXIMUM DRY DENSITY = 116.3
ASTM D 698 A, Rock correction applied? Y

COMPACTION TEST
ASTM D 698 A

CLIENT:	MWH		JOB NO. 2512-77
BORING NO.	SB-B4-01	DATE SAMPLED	-
DEPTH	0-15'	DATE TESTED	01/17/14 BDF/TMR
SAMPLE NO.	-	LOCATION	Church Rock - Borrow Areas
SOIL DESCR.	Silty Clay		

Moisture Determination

	1	2	3	4	5
Wt of Moisture added (ml)	280.00	240.00	320.00	200.00	360.00
Wt. of soil & dish (g)	603.39	516.89	533.38	474.86	465.65
Dry wt. soil & dish (g)	526.53	458.85	459.79	427.58	393.81
Net loss of moisture (g)	76.86	58.04	73.59	47.28	71.84
Wt. of dish (g)	8.17	6.52	8.24	6.63	6.68
Net wt. of dry soil (g)	518.36	452.33	451.55	420.95	387.13
Moisture Content (%)	14.83	12.83	16.30	11.23	18.56
Corrected Moisture Content					

Density determination

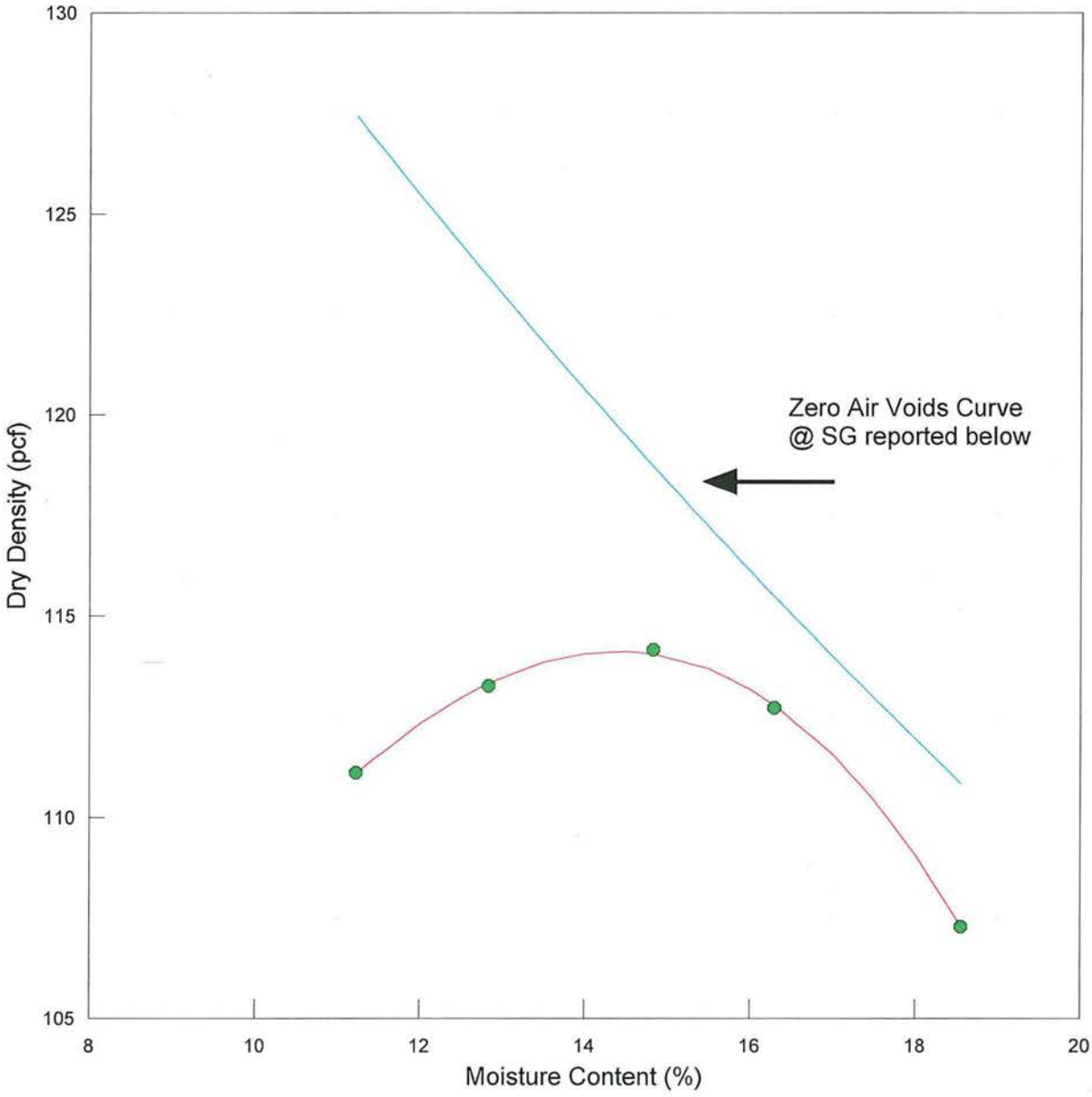
Wt of soil & mold (lb)	14.15	14.04	14.15	13.90	14.02
Wt. of mold (lb)	9.78	9.78	9.78	9.78	9.78
Net wt. of wet soil (lb)	4.37	4.26	4.37	4.12	4.24
Net wt of dry soil (lb)	3.81	3.78	3.76	3.70	3.58
Dry Density, (pcf)	114.17	113.27	112.73	111.12	107.29
Corrected Dry Density (pcf)					
Volume Factor	30	30	30	30	30

Data entered by: DAW Date: 01/24/2014
Data checked by: KR Date: 1/25/14
FileName: PRSBB401.WK4

ADVANCED TERRA TESTING, INC. ATT

Proctor Compaction Test

SB-B4-01, 0-15', -



Best Fit Curve | Actual Data | Zero Air VoidsCurve @ SG = 2.65

OPTIMUM MOISTURE CONTENT = 14.4 MAXIMUM DRY DENSITY = 114.1
ASTM D 698 A, Rock correction applied? N

COMPACTION TEST
ASTM D 698 A

CLIENT:	MWH		JOB NO. 2512-77
BORING NO.	EB-B4-06	DATE SAMPLED	12/10/2013
DEPTH	10-20'	DATE TESTED	01/03/2014 TMR
SAMPLE NO.		LOCATION	Church Rock
SOIL DESCR.	Sandy Clay		

Moisture Determination

	1	2	3	4	5
Wt of Moisture added (ml)	240.00	200.00	160.00	280.00	120.00
Wt. of soil & dish (g)	593.20	618.04	590.98	539.74	578.69
Dry wt. soil & dish (g)	518.54	548.93	533.61	464.77	530.82
Net loss of moisture (g)	74.66	69.11	57.37	74.97	47.87
Wt. of dish (g)	6.56	6.63	6.55	6.48	6.68
Net wt. of dry soil (g)	511.98	542.30	527.06	458.29	524.14
Moisture Content (%)	14.58	12.74	10.88	16.36	9.13
Corrected Moisture Content					

Density determination

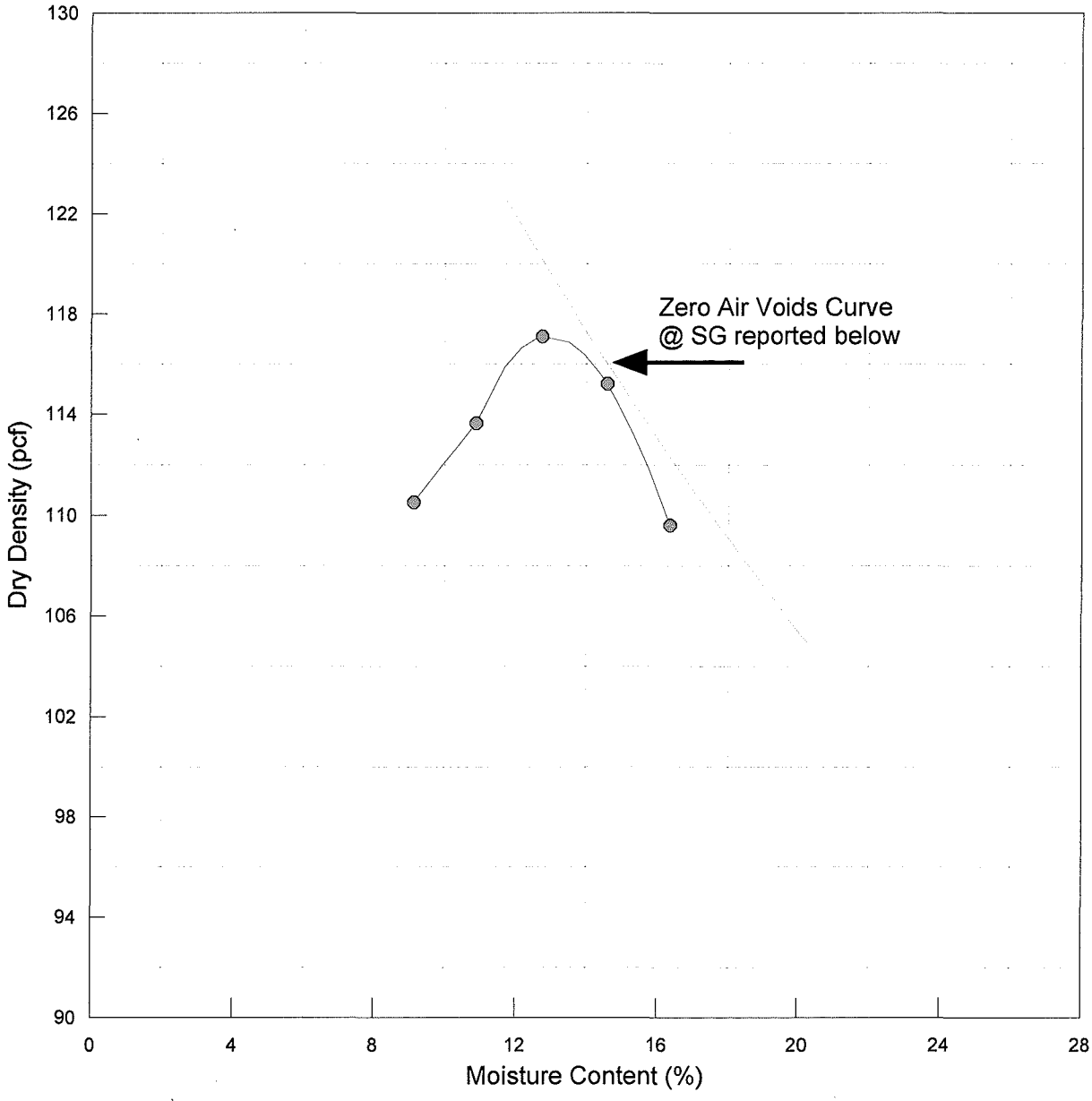
Wt of soil & mold (lb)	14.19	14.19	13.99	14.04	13.81
Wt. of mold (lb)	9.79	9.79	9.79	9.79	9.79
Net wt. of wet soil (lb)	4.40	4.40	4.20	4.25	4.02
Net wt of dry soil (lb)	3.84	3.90	3.79	3.65	3.68
Dry Density, (pcf)	115.20	117.08	113.63	109.58	110.51
Corrected Dry Density (pcf)					
Volume Factor	30	30	30	30	30

Data entered by: TMR Date: 01/06/2014
Data checked by: [signature] Date: 1/6/14
FileName: PRB40606

ADVANCED TERRA TESTING, INC. ATT

Proctor Compaction Test

EB-B4-06, 10-20',



Best Fit Curve Actual Data Zero Air VoidsCurve @ SG = 2.55

OPTIMUM MOISTURE CONTENT = 12.9 MAXIMUM DRY DENSITY = 117.1
ASTM D 698 A, Rock correction applied? N

COMPACTION TEST
ASTM D 698 A

CLIENT:	MWH		JOB NO. 2512-77
BORING NO.	EB-B6-03	DATE SAMPLED	12/10/2013
DEPTH	0-10'	DATE TESTED	01/02/2014 TMR
SAMPLE NO.		LOCATION	Church Rock
SOIL DESCR.	Silty Clay		

Moisture Determination

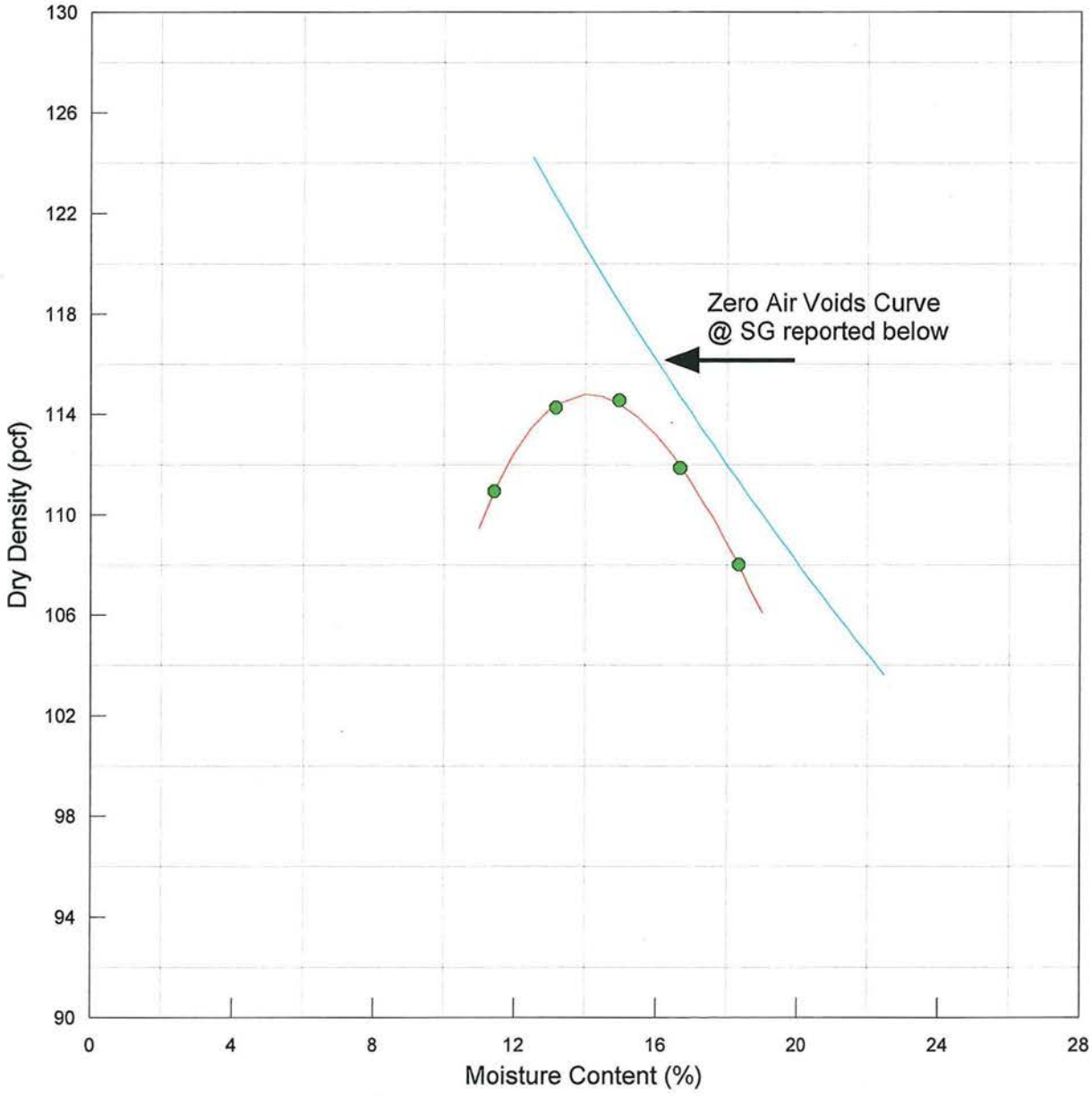
	1	2	3	4	5
Wt of Moisture added (ml)	280.00	240.00	200.00	160.00	120.00
Wt. of soil & dish (g)	509.71	610.36	557.46	558.84	590.48
Dry wt. soil & dish (g)	431.78	524.12	485.77	494.64	530.60
Net loss of moisture (g)	77.93	86.24	71.69	64.20	59.88
Wt. of dish (g)	6.54	6.67	6.64	6.62	6.56
Net wt. of dry soil (g)	425.24	517.45	479.13	488.02	524.04
Moisture Content (%)	18.33	16.67	14.96	13.16	11.43
Corrected Moisture Content					
Density determination					
Wt of soil & mold (lb)	14.05	14.14	14.18	14.10	13.91
Wt. of mold (lb)	9.79	9.79	9.79	9.79	9.79
Net wt. of wet soil (lb)	4.26	4.35	4.39	4.31	4.12
Net wt of dry soil (lb)	3.60	3.73	3.82	3.81	3.70
Dry Density, (pcf)	108.01	111.86	114.56	114.27	110.93
Corrected Dry Density (pcf)					
Volume Factor	30	30	30	30	30

Data entered by: TMR Date: 01/03/2014
Data checked by: Date: 1/6/14
FileName: PRB60304

ADVANCED TERRA TESTING, Inc.
ATT

Proctor Compaction Test

EB-B6-03, 0-10',



Best Fit Curve | Actual Data | Zero Air VoidsCurve @ SG = 2.65

OPTIMUM MOISTURE CONTENT = 14.1 MAXIMUM DRY DENSITY = 114.8
ASTM D 698 A, Rock correction applied? N