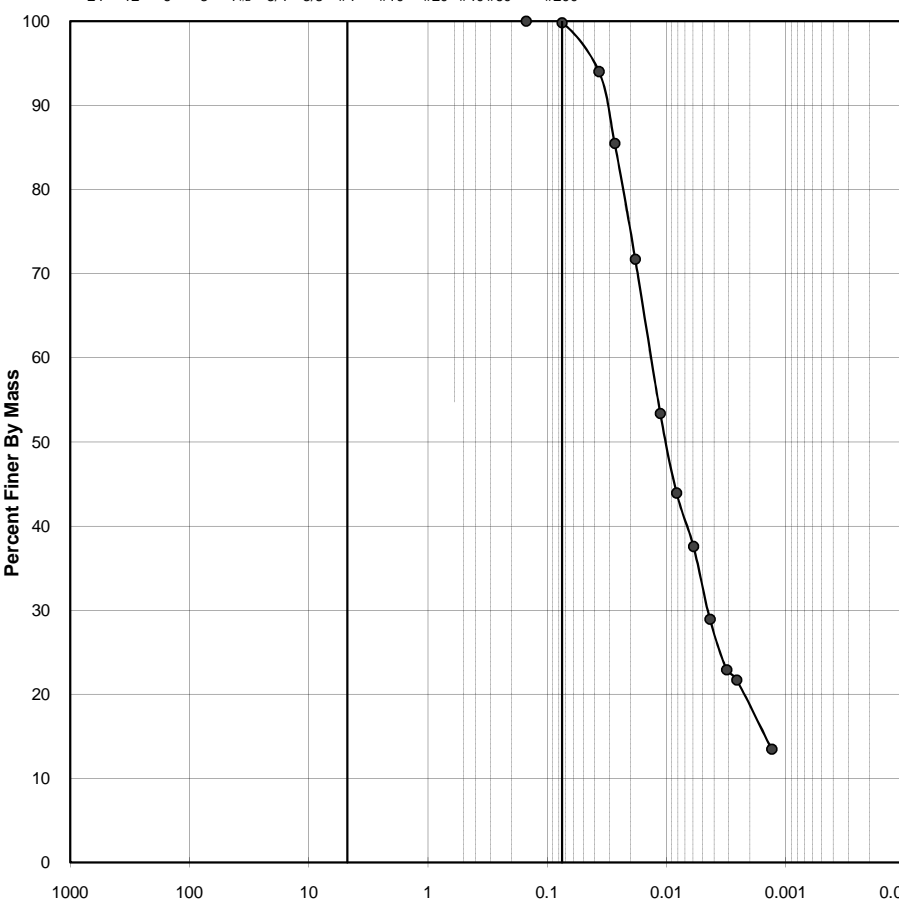


PARTICLE SIZE ANALYSIS OF SOILS				Reference ASTM D 422-63 (2007)																																																																	
Project No.:	09-1221-3019 / 5000 / 3000	Borehole:	Tailings																																																																		
Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	SG-5																																																																		
Project:	Krumovgrad Gold Project	Depth (m):	N/A																																																																		
Location:	Bulgaria	Lab ID No:	14																																																																		
Specific Gravity (measured): 2.74		Other Remarks:																																																																			
Dispersion Method: Stirring																																																																					
Dispersion Period (min):																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sieve Size (US) (mm)</th> <th style="text-align: center;">% Passing</th> </tr> </thead> <tbody> <tr><td>3.5"</td><td>87.50</td></tr> <tr><td>3"</td><td>75.00</td></tr> <tr><td>2"</td><td>50.00</td></tr> <tr><td>1.5"</td><td>37.50</td></tr> <tr><td>1"</td><td>25.00</td></tr> <tr><td>3/4"</td><td>19.00</td></tr> <tr><td>1/2"</td><td>12.50</td></tr> <tr><td>3/8"</td><td>9.50</td></tr> <tr><td>#4</td><td>4.75</td></tr> <tr><td>#10</td><td>2.00</td></tr> <tr><td>#20</td><td>0.850</td></tr> <tr><td>#40</td><td>0.425</td></tr> <tr><td>#60</td><td>0.250</td></tr> <tr><td>#100</td><td>0.150</td></tr> <tr><td>#200</td><td>0.075</td></tr> <tr><td>-</td><td>0.0368</td></tr> <tr><td>-</td><td>0.0271</td></tr> <tr><td>-</td><td>0.0182</td></tr> <tr><td>-</td><td>0.0113</td></tr> <tr><td>-</td><td>0.0082</td></tr> <tr><td>-</td><td>0.0059</td></tr> <tr><td>-</td><td>0.0043</td></tr> <tr><td>-</td><td>0.0031</td></tr> <tr><td>-</td><td>0.0026</td></tr> <tr><td>-</td><td>0.0013</td></tr> </tbody> </table>	Sieve Size (US) (mm)	% Passing	3.5"	87.50	3"	75.00	2"	50.00	1.5"	37.50	1"	25.00	3/4"	19.00	1/2"	12.50	3/8"	9.50	#4	4.75	#10	2.00	#20	0.850	#40	0.425	#60	0.250	#100	0.150	#200	0.075	-	0.0368	-	0.0271	-	0.0182	-	0.0113	-	0.0082	-	0.0059	-	0.0043	-	0.0031	-	0.0026	-	0.0013	<div style="text-align: center;"> <p>Size of opening, inches U.S. Standard Sieve Size, opening in meshes / inch USCS GRAIN SIZE SCALE</p> <p>24 12 6 3 1 1/2 3/4 3/8 #4 #10 #20 #40 #60 #200</p> </div>  <div style="text-align: center; margin-top: 10px;"> <p>Grain Size (mm)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td rowspan="2" style="width: 10%;">BOULDER</td> <td rowspan="2" style="width: 10%;">COBBLE</td> <td colspan="2" style="width: 20%;">GRAVEL</td> <td colspan="3" style="width: 20%;">SAND</td> <td rowspan="2" style="width: 30%;">FINES (Silt, Clay)</td> </tr> <tr> <td>Coarse</td> <td>Fine</td> <td>Coarse</td> <td>Medium</td> <td>Fine</td> </tr> </table> </div> <p style="font-size: x-small; margin-top: 10px;">* The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.</p>				BOULDER	COBBLE	GRAVEL		SAND			FINES (Silt, Clay)	Coarse	Fine	Coarse	Medium	Fine
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EB		January 26, 2010		LP																																																																	
TESTED BY		DATE		CHECKED BY																																																																	
				DATE																																																																	

Shrinkage Factors of Soils by the Wax Method

Reference
ASTM D 4943-02

Project No.:	09-1221-3019 / 5000 / 3000	Borehole	Tailings
Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	SG-5
Project:	Krumovgrad Project	Depth (m):	
Location:	Bulgaria	Lab Sch No:	14

Shrinkage Factors of Soils by the Wax Method

Test Number		1	2
Shrinkage Dish Number			
Mass of Dry Soil	g	22.52	22.72
Mass of Dry Soil Pat and Wax in Air	g	31.69	26.85
Mass of Dry Soil Pat and Wax in Water	g	7.30	8.19
Mass of Wax	g	9.17	4.13
Density of Wax	g/cc	0.85	0.85
Volume of Dry Soil Pat and Wax	cc	24.39	18.66
Volume of Wax	cc	10.80	4.86
Volume of Dry Soil Pat	cc	13.59	13.80
Volume of Wet Soil Pat	cc	16.80	17.04

Shrinkage Factors

Initial Water Content		39.4	39.3
Number of Atterberg Limit Blows		10	10
Shrinkage Limit, SL		25.19	25.02
Shrinkage Ratio, R		1.65	1.65
Volumetric Shrinkage, VL		23.57	23.46
Linear Shrinkage, LS		6.81	6.78

Sample Description: Tailings

Remarks: Sample is NON-PLASTIC, Volumetric Limit was calculated from Initial Water Content

** The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.*

TM	Jan-26-10	LP	January 26,2010
TESTED BY	DATE	CHECKED BY	DATE

SPECIFIC GRAVITY OF SOIL SOLIDS

Reference

ASTM C 127-07
ASTM D 854-06 Method B

Project No.:	09-1221-3019 / 5000 / 3000	Borehole	Tailings
Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	SG-5
Project:	Krumovgrad Project	Depth (m):	
Location:	Bulgaria	Lab Sch No:	14

Specific Gravity of Fine Fraction (ASTM D 854-06)

Percentage Passing #4 sieve		100	
Test Number		1	2
Flask Number		2	4
Air Removal Method		Vacuum	Vacuum
Mass of Flask (g)		172.69	172.71
Mass of Flask + Dry Soil (g)	M_P	248.04	249.70
Mass of Dry Soil (g)		75.35	76.99
Mass of Flask + Soil + Water (g)	$M_{pws,t}$	718.89	719.87
Test Temperature (g)	T_t	21.40	21.40
Mass of Flask + Water (g)	$M_{pw,t}$	671.13	671.09
Mass of Dish + Dry Soil (g)		75.35	76.99
Mass of Dish (g)		0.00	0.00
Mass of Oven Dry Soil (g)	M_s	75.35	76.99
Temperature Coefficient	K	1.00	1.00
Density of Solids (g/cm ³)	ρ_s	2.73	2.73
Specific Gravity at Test Temperature	G_t	2.74	2.74
Specific Gravity at 20°C	$G_{20^\circ C}$	2.74	2.73
AVERAGE SPECIFIC GRAVITY		2.74	

Specific Gravity of Coarse Fraction (ASTM C 127-07)

Percentage Retained on #4 sieve		
Mass of Sample in Water (g)	A	0
Mass of Sample @ SSD (g)	B	0
Mass of Oven Dried Sample (g)	C	0
Bulk G (Oven Dry)	C/(B-A)	
Bulk G (SSD)	B/(B-A)	
Apparent	C/(C-A)	
Absorbion (%)	(B-C)/C	

Combined Specific Gravity

COMBINED SPECIFIC GRAVITY	Gavg @20°C	
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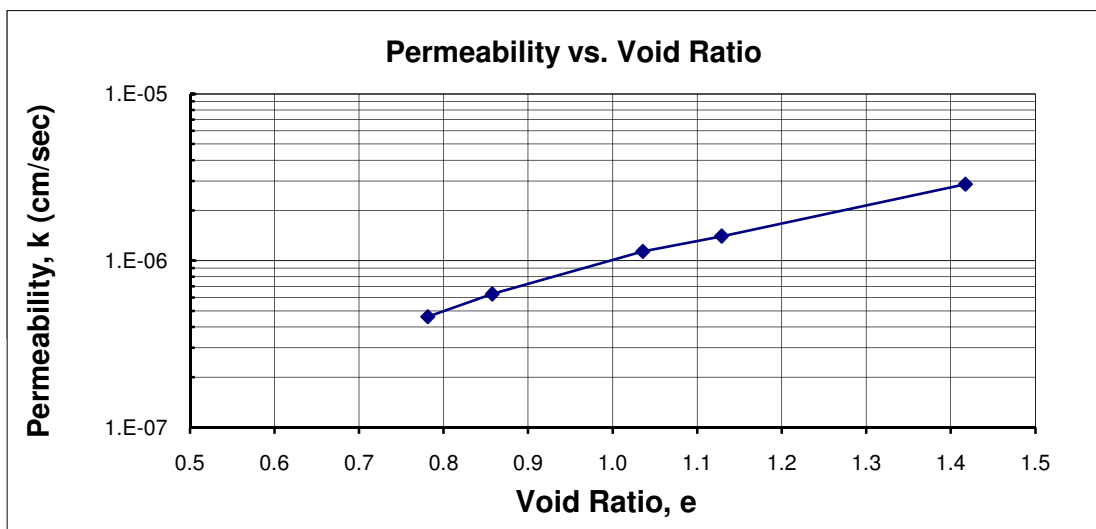
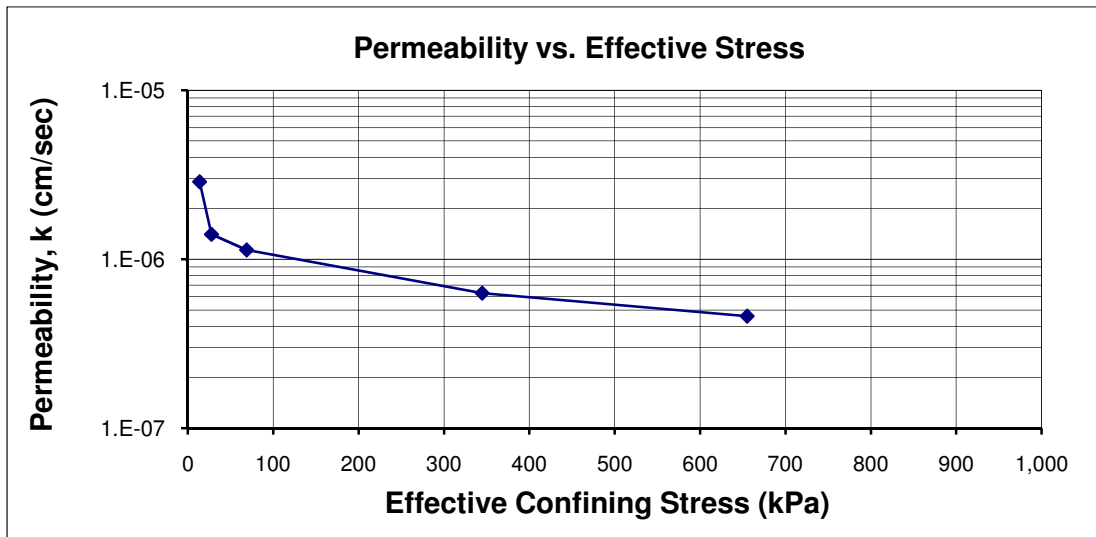
* The test data given herein pertain to the sample provided only. This report constitutes a testing service only. Interpretation of the data can be provided upon request.

TM	01/24/2010	LP	January 26,2010
TESTED BY	DATE	CHECKED BY	DATE

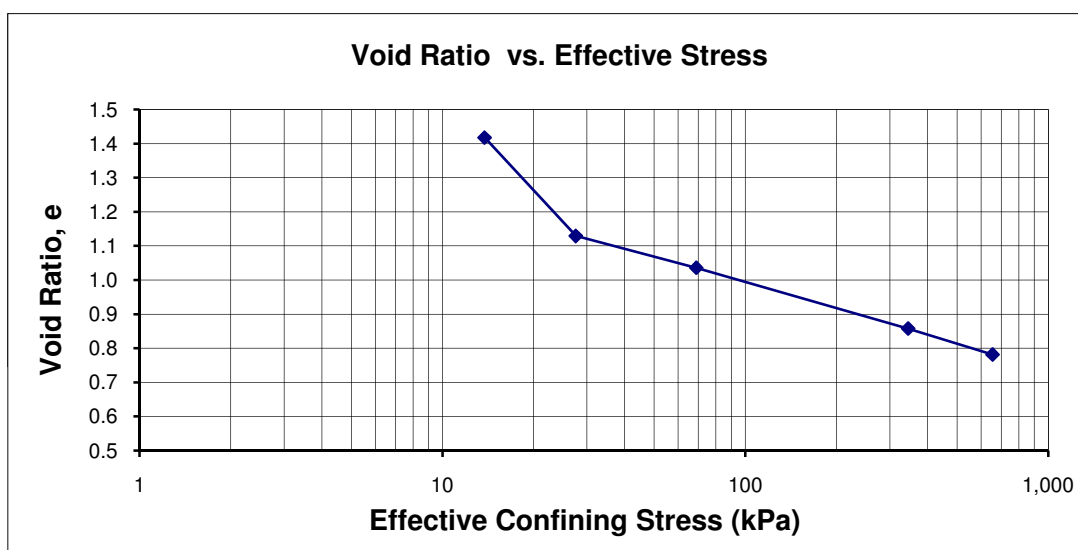
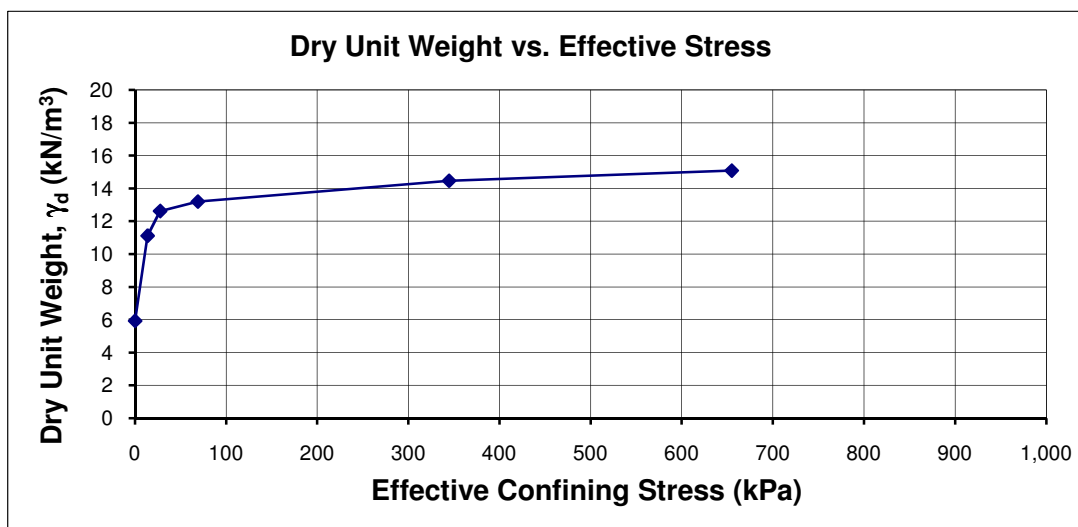
	Initial	Final	
Length =	5.42	2.16	cm
Diameter =	7.10	7.10	cm
Wet Mass =	303.40	168.31	g
Area =	39.59	39.59	cm ²
Volume =	214.6	85.5	cm ³
Moisture Content =	134%	32%	
Specific Gravity =	2.74	2.74	
Dry Mass of Solids =	129.77	127.90	g
Unit Weight =	1.41	1.97	g/cm ³
Dry Unit Weight =	0.60	1.50	g/cm ³
Percent Solids=	42.8%		

Piston Pressure: 48.3 kPa Sample Pressure: 34.5 kPa Consolidation pressure: 13.8 kPa Before Consolidation Initial Sample Height: 5.42 cm Initial Dry Unit Weight: 0.60 g/cm ³ Initial Void Ratio: 3.53 After Consolidation Final Sample Height: 2.85 cm Final Dry Unit Weight: 1.13 g/cm ³ Final Void Ratio: 1.42 Calculations Coefficient of Compressibility, a _v : 1.50E-02 cm ² /g Coefficient of Volume Compressibility, m _v : 3.32E-03 cm ² /g Compression Index, C _c : -			Piston Pressure: 62.1 kPa Sample Pressure: 34.5 kPa Consolidation Pressure: 27.6 kPa Before Consolidation Initial Sample Height: 2.85 cm Initial Dry Unit Weight: 1.13 g/cm ³ Initial Void Ratio: 1.42 After Consolidation Final Sample Height: 2.51 cm Final Dry Unit Weight: 1.29 g/cm ³ Final Void Ratio: 1.13 Calculations Coefficient of Compressibility, a _v : 2.05E-03 cm ² /g Coefficient of Volume Compressibility, m _v : 8.48E-04 cm ² /g Compression Index, C _c : 0.96			Piston Pressure: 103.4 kPa Sample Pressure: 34.5 kPa Consolidation Pressure: 68.9 kPa Before Consolidation Initial Sample Height: 2.51 cm Initial Dry Unit Weight: 1.29 g/cm ³ Initial Void Ratio: 1.13 After Consolidation Final Sample Height: 2.40 cm Final Dry Unit Weight: 1.35 g/cm ³ Final Void Ratio: 1.04 Calculations Coefficient of Compressibility, a _v : 2.21E-04 cm ² /g Coefficient of Volume Compressibility, m _v : 1.04E-04 cm ² /g Compression Index, C _c : 0.23			Piston Pressure: 379.2 kPa Sample Pressure: 34.5 kPa Consolidation Pressure: 344.7 kPa Before Consolidation Initial Sample Height: 2.40 cm Initial Dry Unit Weight: 1.35 g/cm ³ Initial Void Ratio: 1.04 After Consolidation Final Sample Height: 2.19 cm Final Dry Unit Weight: 1.48 g/cm ³ Final Void Ratio: 0.86 Calculations Coefficient of Compressibility, a _v : 6.33E-05 cm ² /g Coefficient of Volume Compressibility, m _v : 3.11E-05 cm ² /g Compression Index, C _c : 0.25			Piston Pressure: 689.5 kPa Sample Pressure: 34.5 kPa Consolidation Pressure: 655.0 kPa Before Consolidation Initial Sample Height: 2.19 cm Initial Dry Unit Weight: 1.48 g/cm ³ Initial Void Ratio: 0.86 After Consolidation Final Sample Height: 2.10 cm Final Dry Unit Weight: 1.54 g/cm ³ Final Void Ratio: 0.78 Calculations Coefficient of Compressibility, a _v : 2.41E-05 cm ² /g Coefficient of Volume Compressibility, m _v : 1.30E-05 cm ² /g Compression Index, C _c : 0.27		
Δ Time (sec)	Permeability k (cm/sec)	Coefficient of Consolidation, c _v (cm ² /sec)	Δ Time (sec)	Permeability k (cm/sec)	Coefficient of Consolidation, c _v (cm ² /sec)	Δ Time (sec)	Permeability k (cm/sec)	Coefficient of Consolidation, c _v (cm ² /sec)	Δ Time (sec)	Permeability k (cm/sec)	Coefficient of Consolidation, c _v (cm ² /sec)	Δ Time (sec)	Permeability k (cm/sec)	Coefficient of Consolidation, c _v (cm ² /sec)
68	3.00E-06	9.04E-04	121	1.40E-06	1.65E-03	144	1.20E-06	1.16E-02	185	6.40E-07	2.06E-02	163	4.80E-07	3.70E-02
88	2.80E-06	8.44E-04	152	1.40E-06	1.65E-03	183	1.10E-06	1.06E-02	195	6.40E-07	2.06E-02	207	4.70E-07	3.62E-02
113	2.80E-06	8.44E-04	197	1.40E-06	1.65E-03	245	1.10E-06	1.06E-02	246	6.20E-07	1.99E-02	259	4.60E-07	3.54E-02
									303	6.30E-07	2.02E-02	321	4.60E-07	3.54E-02
												398	4.60E-07	3.54E-02
Average (of final 3 values)	2.87E-06	8.64E-04	Average (of final 3 values)	1.40E-06	1.65E-03	Average (of final 3 values)	1.13E-06	1.09E-02	Average (of final 3 values)	6.30E-07	2.02E-02	Average (of final 3 values)	4.60E-07	3.54E-02

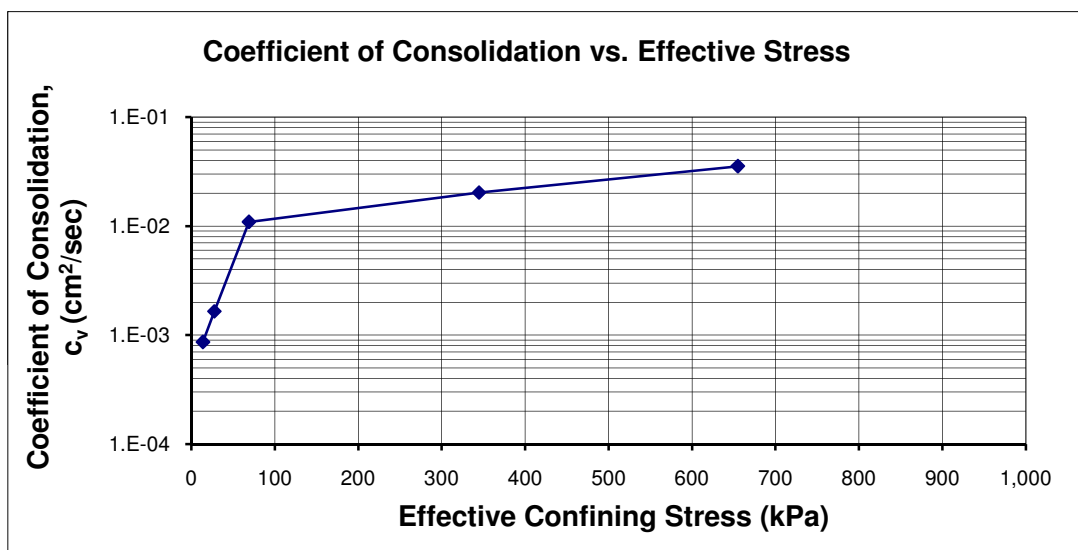
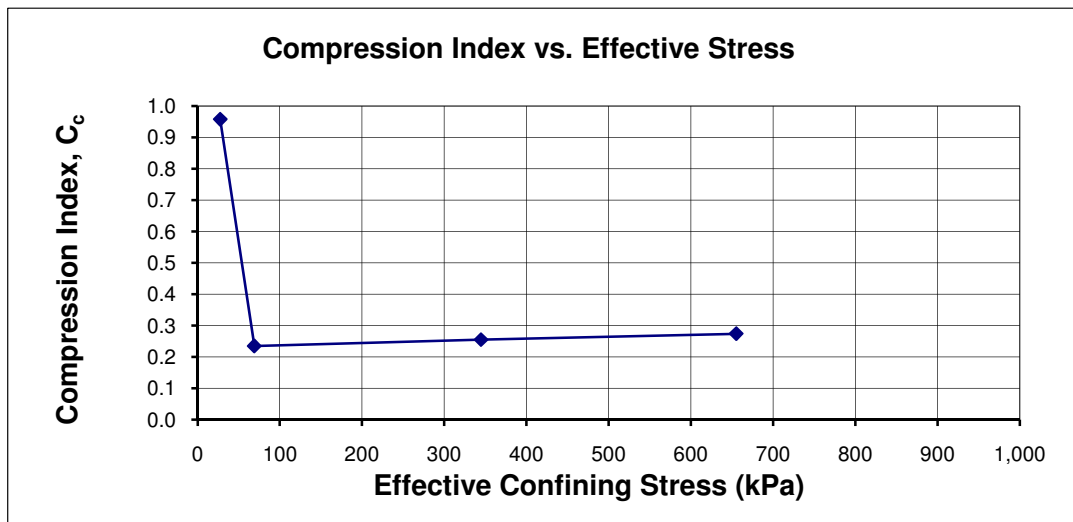
Golder Associates Inc. Denver, Colorado	Title: SLURRY CONSOLIDATION TEST SAMPLE DATA AND CALCULATIONS			
Job Short Title: Dundee/Prel. Assessment TMF				
Sample Designation: Tailings SG-5	Reviewed: JEO	Date: 2/4/2010	Job Number: 09-1221-3019	Figure: 1



Golder Associates Inc. Denver, Colorado		Title: SLURRY CONSOLIDATION TEST RESULTS PERMEABILITY DATA		
Job Short Title: Dundee/Prel. Assessment TMF				
Sample No. Tailings SG-5	Reviewed: JEO	Date: 2/4/2010	Job Number: 09-1221-3019	Figure: 2



Golder Associates Inc. Denver, Colorado		Title: SLURRY CONSOLIDATION TEST RESULTS DENSITY DATA			
Job Short Title: Dundee/Prel. Assessment TMF					
Sample No. Tailings SG-5	Reviewed: JEO	Date: 2/4/2010	Job Number: 09-1221-3019	Figure: 3	



Golder Associates Inc. Denver, Colorado		Title: SLURRY CONSOLIDATION TEST RESULTS COMPRESSION DATA			
Job Short Title: Dundee/Prel. Assessment TMF					
Sample No. Tailings SG-5	Reviewed: JEO	Date: 2/4/2010	Job Number: 09-1221-3019	Figure: 4	

SOIL WATER CHARACTERISTIC CURVE

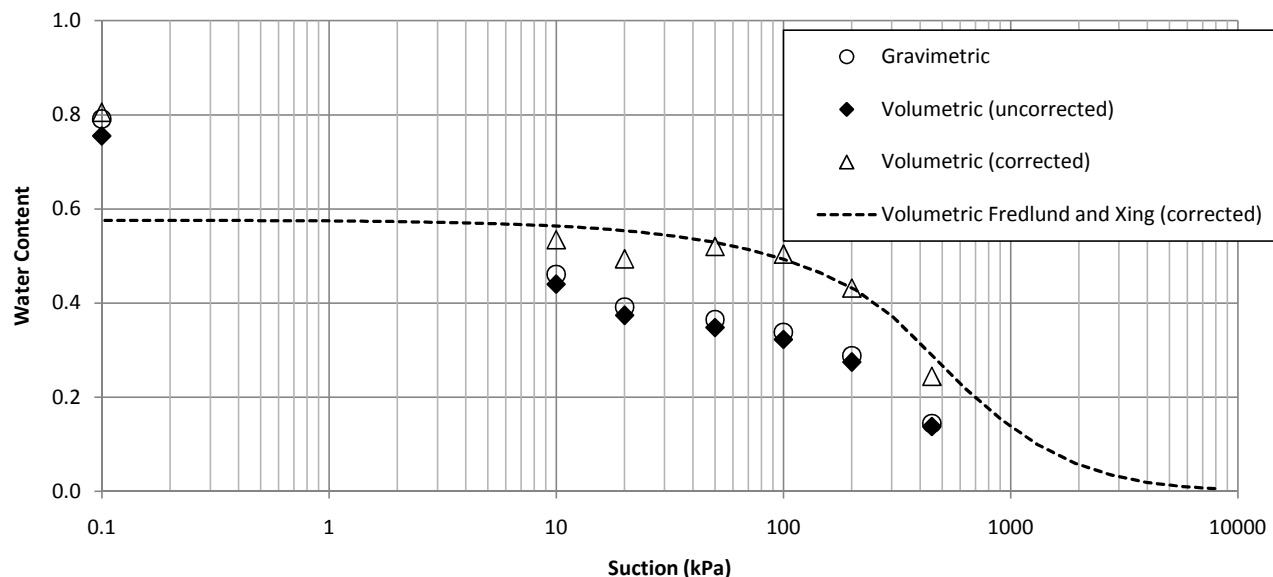
Client:	Dundee Precious (Krumovgrad) BV	Sample Identification	
Project:	Krumovgrad Gold Project	SG-5	
Location:	Bulgaria		
Project No.:	09-1221-3019/5000/3000	Lab ID No:	14

Sample Data

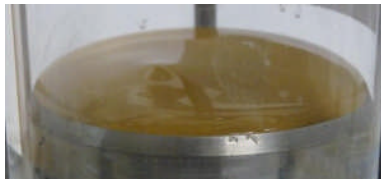
Initial Diameter :	63.8 mm	Initial Mass of Water	78.7 g
Initial Height:	31.9 mm	Final Mass of Water	14.1 g
Initial Volume of Sample:	102.0 cm ³	Mass Solids	97.3 g

Test Results

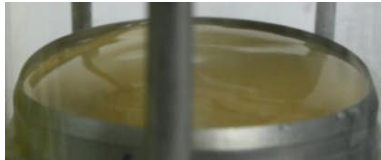
Suction (kPa)	Water Content			Comments
	Gravimetric	Volumetric (uncorrected)	Volumetric (corrected)	
0	0.81	0.77	0.77	- sample prepared as slurry, allowed to settle, then re-mixed and added to cell
0.1	0.79	0.76	0.81	- some water bleed was observed prior to application of suction
10	0.46	0.44	0.53	- volume change was estimated for each suction and used to calculate
20	0.39	0.37	0.49	corrected volumetric water content
50	0.36	0.35	0.52	- sample shrinkage without cracking was observed during the test
100	0.34	0.32	0.50	- curve fit based on corrected volumetric water content and shrinkage test results:
200	0.29	0.27	0.43	Fredlund, D.G. and Xing A. 1994. Equations for the soil-water characteristic curve.
450	0.14	0.14	0.24	Canadian Geotechnical Journal, 31(3) pp. 521-532



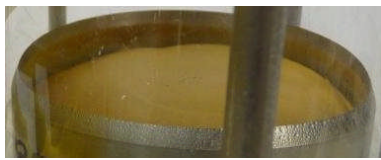
LL	February 27, 2010	FJ/BEW	March 8, 2010
Tested By	Date Completed	Checked By	Date Reviewed



Initial



0 kPa



10 kPa



20 kPa



50 kPa




100 kPa



200 kPa



450 kPa

PROJECT		DUNDEE PRECIOUS (KRUMOVGRAD) BV KRUMOVGRAD GOLD PROJECT BULGARIA			
TITLE		SWCC TEST PHOTOS			
		PROJECT No. 09-1221-3019		PHASE No. 5000	
		DESIGN	BW	8MAR10	SCALE AS SHOWN REV.
		CADD	----		
		CHECK			
		REVIEW			
					FIGURE 1

Direct Shear Testing of Soils Under Consolidated Drained Conditions

Reference
ASTM D 3080-04

Client:	Dundee Precious (Krumovgrad) BV	Borehole.:	Tailings
Project:	Krumovgrad Project	Sample Location:	SG-5 (30 micron blend)
Location:	Bulgaria	Depth (m):	N/A
Project No.:	09-1221-3019/5000	Lab ID No:	14

Test Condition:	SATURATED	Equipment Description:	Refer to comments below
Visual Description:	Light brown SILT, some clay	Normal Load Cell:	Serial No.: Refer to comments below
		Shear Load Cell:	Serial No.: Refer to comments below
Test parameters:	Peak and residual	Vertical LPT:	Serial No.: Refer to comments below

Remarks:	Area correction not applied to normal and shear stress calculation No water added to the shear box
-----------------	---

Initial Sample Dimensions

Test No.	1	2	3			
Shear box geometry	Circle	Circle	Circle			
Diameter (mm)	63.40	63.40	63.40			
Height (mm)	25.45	25.45	25.45			
Area (cm²)	31.57	31.57	31.57			
Volume (cm³)	80.34	80.34	80.34			

Weight Volume Relationships

Sample Type	Bulk Sample					
Dry Mass (g)	118.0	119.0	129.0			
Initial γ_{wet} (kN/m³)	18.66	18.84	18.94			
Final γ_{wet} (kN/m³)	18.30	18.88	20.44			
Initial γ_{dry} (kN/m³)	14.40	14.52	15.75			
Final γ_{dry} (kN/m³)	14.81	15.44	17.20			
Initial water content (%)	29.5	29.7	20.2			
Final water content (%)	23.6	22.3	18.9			

Consolidation Results

Normal Stress (kPa)	100	250	500			
t₉₀ (Taylor Method) (min)	3.6	1.3	0.8			
Calculated t₅₀ (min)	0.84	0.31	0.19			
Change in height ΔH_c (mm)	0.69	1.51	2.14			

Comments:

Equipment Calibration:

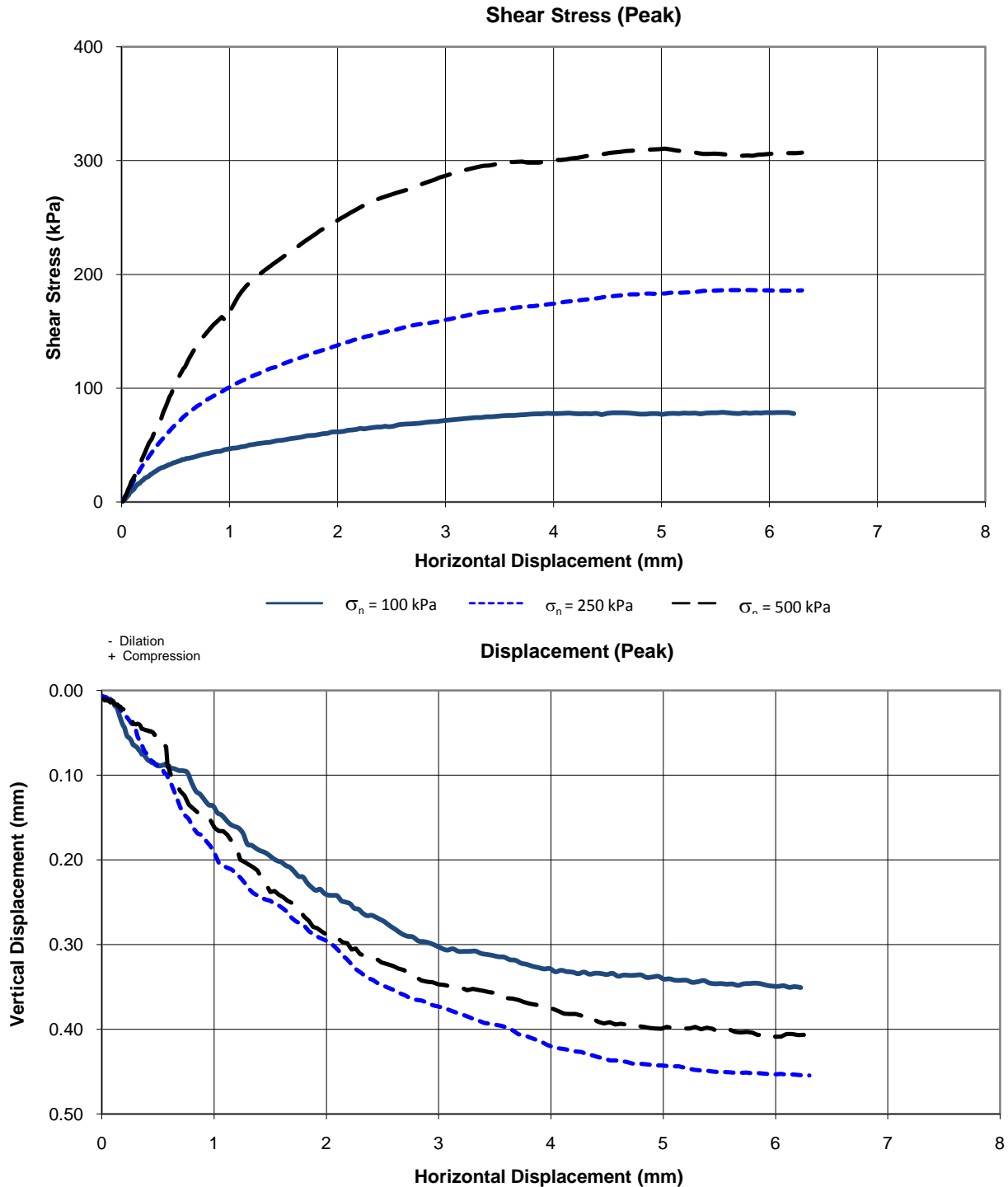
Test -1	Digishear-1	Normal Load Cell - 227408	Shear Load Cell - 227408	Vertical LPT - LP-621
Test -2	Digishear-2	Normal Load Cell - 221643	Shear Load Cell - 266562	Vertical LPT - LP-621
Test -3	Digishear-1	Normal Load Cell - 227408	Shear Load Cell - 2192231	Vertical LPT - LP-567

TM/LL	March 5, 2010	ROB	March 8, 2010
TESTED BY	DATE	CHECKED BY	DATE

Direct Shear Testing of Soils Under Consolidated Drained Conditions

Reference
ASTM D 3080-04

Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	Tailings
Project:	Krumovgrad Project	Sample Location:	SG-5 (30 micron blend)
Location:	Bulgaria	Depth (m):	N/A
Project No.:	09-1221-3019/5000	Lab ID No:	14



TM/LL

March 5, 2010

ROB

March 8, 2010

TESTED BY

DATE

CHECKED BY

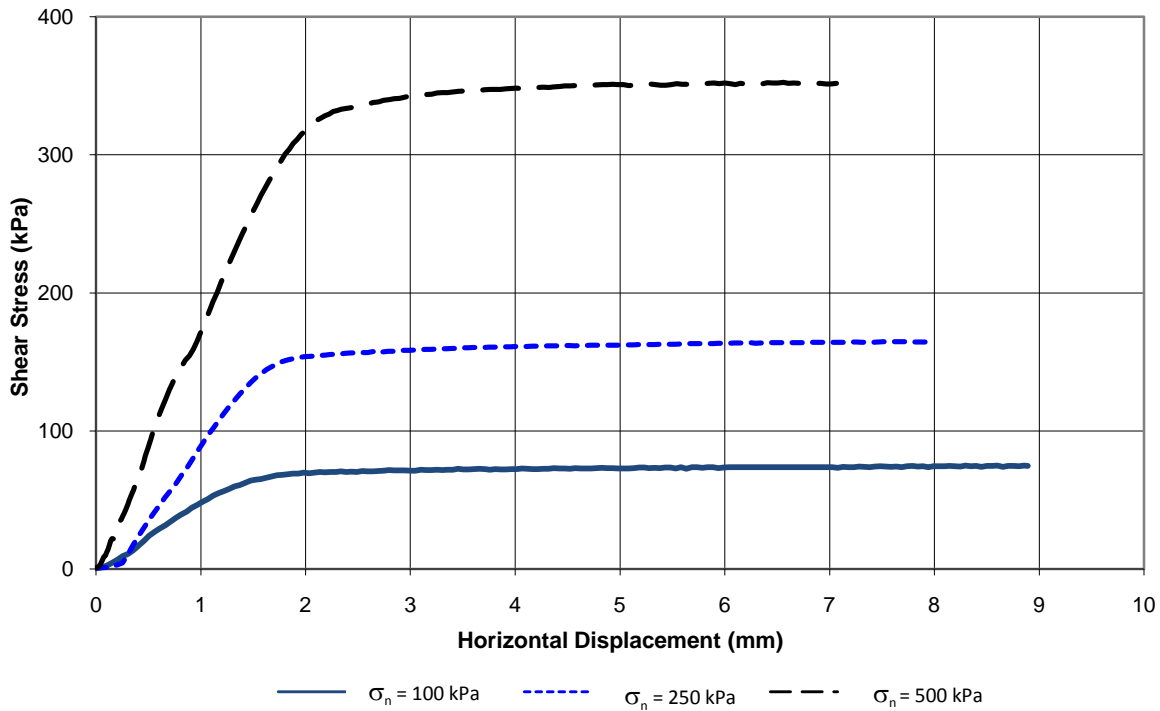
DATE

Direct Shear Testing of Soils Under Consolidated Drained Conditions

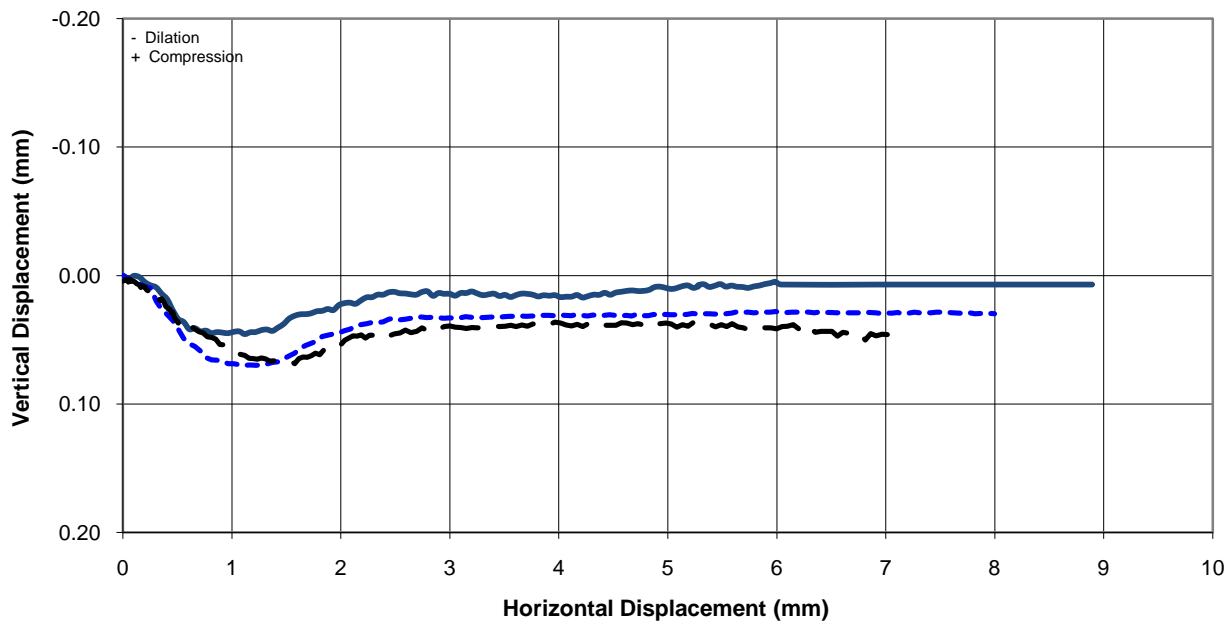
Reference
ASTM D 3080-04

Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	Tailings
Project:	Krumovgrad Project	Sample Location:	SG-5 (30 micron blend)
Location:	Bulgaria	Depth (m):	N/A
Project No.:	09-1221-3019/5000	Lab ID No:	14

Shear Stress (Residual)



Displacement (Residual)

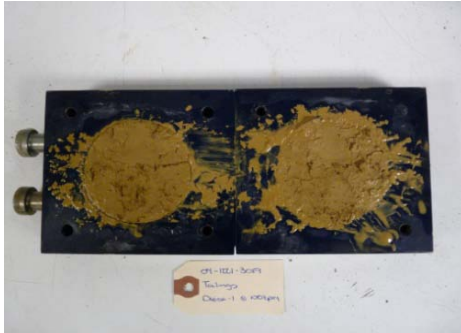


TM/LL	March 5, 2010	ROB	March 8, 2010
TESTED BY	DATE	CHECKED BY	DATE

Direct Shear Testing of Soils Under Consolidated Drained Conditions

Reference
ASTM D 3080-04

Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	Tailings
Project:	Krumovgrad Project	Sample Location:	SG-5 (30 micron blend)
Location:	Bulgaria	Depth (m):	N/A
Project No.:	09-1221-3019/5000	Lab ID No:	123



Test 1 (After Shear)



Test 2 (After Shear)



Test 3 (After Shear)

Remarks:

DIRECT SHEAR TEST - PEAK + RESIDUAL (Saturated)

63.5 mm diameter direct shear specimens were trimmed from material mixed to 29.7 % moisture content and compacted in a 71mm mould

Dtest-3 at 500 kPa - considerable sample leakage during residual pre-shear and final shear

TM/LL

March 5, 2010

ROB

March 8, 2010

TESTED BY

DATE

CHECKED BY

DATE

Direct Shear Testing of Soils Under Consolidated Drained Conditions

Reference
ASTM D 3080-04

Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	Tailings
Project:	Krumovgrad Project	Sample Location:	SG-5 (30 micron blend)
Location:	Bulgaria	Depth (m):	N/A
Project No.:	09-1221-3019/5000	Lab ID No:	14

Peak 1		Peak 2		Peak 3			
Normal Stress , kPa	100	Normal Stress , kPa	250	Normal Stress , kPa	500	Normal Stress , kPa	
Disp Rate, mm/min	0.015	Disp Rate, mm/min	0.015	Disp Rate, mm/min	0.015	Disp Rate, mm/min	

Horz	Shear	Vert	Horz	Shear	Vert	Horz	Shear	Vert	Horz	Shear	Vert
Disp	Stress	Disp	Disp	Stress	Disp	Disp	Stress	Disp	Disp	Stress	Disp
mm	kPa	mm	mm	kPa	mm	mm	kPa	mm	mm	kPa	mm
0.00	0.5	0.008	0.00	0.24	0.006	0.00	0.1	0.009			
0.01	0.8	0.008	0.01	1.57	0.007	0.01	0.5	0.010			
0.03	1.5	0.010	0.03	3.88	0.008	0.03	2.3	0.012			
0.04	3.3	0.009	0.04	5.99	0.008	0.04	5.3	0.011			
0.05	4.7	0.012	0.05	7.83	0.009	0.05	8.4	0.011			
0.06	5.9	0.011	0.06	9.42	0.010	0.06	11.5	0.013			
0.08	8.1	0.010	0.08	11.80	0.012	0.08	13.9	0.014			
0.09	9.4	0.013	0.09	14.08	0.013	0.09	17.2	0.012			
0.10	10.2	0.013	0.10	16.67	0.014	0.10	19.5	0.014			
0.11	11.4	0.018	0.11	18.91	0.015	0.11	21.7	0.016			
0.13	13.3	0.019	0.13	21.23	0.016	0.13	24.1	0.016			
0.14	14.7	0.022	0.14	23.64	0.018	0.14	26.6	0.017			
0.15	16.0	0.028	0.15	25.55	0.019	0.15	29.3	0.020			
0.17	16.2	0.032	0.17	27.55	0.023	0.17	31.7	0.019			
0.18	17.6	0.037	0.18	29.59	0.025	0.18	34.9	0.022			
0.19	18.9	0.041	0.19	31.53	0.026	0.19	37.8	0.022			
0.20	19.5	0.044	0.20	33.18	0.029	0.20	40.4	0.023			
0.22	21.1	0.050	0.22	35.00	0.030	0.22	43.5	0.025			
0.23	21.7	0.054	0.23	36.45	0.033	0.23	46.6	0.028			
0.24	22.1	0.056	0.24	38.14	0.035	0.24	49.2	0.028			
0.25	22.6	0.057	0.25	40.01	0.037	0.25	51.8	0.030			
0.27	24.2	0.060	0.27	41.75	0.040	0.27	53.6	0.032			
0.28	24.9	0.064	0.28	43.51	0.041	0.28	55.6	0.040			
0.29	25.7	0.065	0.29	45.15	0.044	0.29	58.6	0.040			
0.31	26.5	0.066	0.31	46.61	0.048	0.31	61.3	0.040			
0.32	27.2	0.068	0.32	48.32	0.054	0.32	63.0	0.039			
0.33	27.7	0.070	0.33	49.87	0.058	0.33	65.7	0.040			
0.34	28.9	0.072	0.34	51.37	0.063	0.34	68.6	0.041			
0.36	29.4	0.075	0.36	52.92	0.064	0.36	70.4	0.045			
0.37	30.0	0.075	0.37	54.31	0.068	0.37	73.7	0.046			
0.38	30.5	0.077	0.38	55.68	0.073	0.38	77.4	0.047			
0.39	30.6	0.079	0.39	57.37	0.074	0.39	80.4	0.047			
0.41	31.5	0.082	0.41	58.92	0.077	0.41	83.5	0.047			
0.42	31.7	0.083	0.42	60.11	0.079	0.42	86.5	0.048			
0.43	32.6	0.083	0.43	61.23	0.081	0.43	89.5	0.048			

0.45	32.9	0.085	0.45	62.43	0.084	0.45	92.5	0.049			
0.46	33.3	0.085	0.46	63.86	0.084	0.46	94.7	0.050			
0.47	34.2	0.087	0.47	65.24	0.086	0.47	97.9	0.053			
0.48	34.5	0.088	0.48	66.53	0.088	0.48	100.5	0.052			
0.50	34.9	0.087	0.50	67.70	0.090	0.50	103.1	0.055			
0.51	35.3	0.089	0.51	68.92	0.091	0.51	105.5	0.059			
0.52	35.6	0.089	0.52	70.11	0.091	0.52	108.4	0.058			
0.53	36.1	0.088	0.53	71.15	0.092	0.53	110.6	0.061			
0.55	36.5	0.088	0.55	72.15	0.095	0.55	112.8	0.062			
0.56	37.2	0.088	0.56	73.53	0.098	0.56	114.7	0.064			
0.57	37.4	0.086	0.57	74.60	0.098	0.57	117.1	0.067			
0.59	37.6	0.090	0.59	75.82	0.101	0.59	118.4	0.087			
0.60	38.2	0.089	0.62	78.69	0.112	0.62	125.5	0.103			
0.61	38.2	0.091	0.66	81.25	0.125	0.66	132.0	0.111			
0.65	39.0	0.092	0.70	84.01	0.138	0.70	137.8	0.119			
0.69	39.9	0.094	0.74	86.22	0.147	0.74	142.9	0.124			
0.73	41.1	0.095	0.78	88.89	0.152	0.78	147.4	0.135			
0.76	42.0	0.097	0.81	91.09	0.163	0.81	151.6	0.140			
0.80	42.6	0.109	0.85	93.06	0.169	0.85	155.7	0.144			
0.84	43.5	0.119	0.89	95.13	0.171	0.89	158.9	0.149			
0.88	44.3	0.123	0.93	96.86	0.177	0.93	162.5	0.153			
0.92	44.5	0.129	0.97	99.10	0.184	0.97	158.8	0.153			
0.95	45.9	0.135	1.00	101.11	0.193	1.00	167.6	0.162			
0.99	46.5	0.136	1.04	103.13	0.204	1.04	174.4	0.166			
1.03	47.2	0.144	1.08	104.86	0.207	1.08	180.5	0.166			
1.07	47.5	0.147	1.12	106.62	0.209	1.12	185.8	0.170			
1.11	48.3	0.153	1.16	108.25	0.212	1.16	190.1	0.178			
1.14	49.0	0.158	1.20	109.85	0.216	1.20	193.6	0.184			
1.18	50.0	0.160	1.23	111.49	0.221	1.23	196.8	0.200			
1.22	50.5	0.163	1.27	112.94	0.227	1.27	199.4	0.203			
1.26	51.1	0.169	1.31	114.41	0.234	1.31	202.3	0.206			
1.30	51.8	0.181	1.35	116.08	0.239	1.35	205.2	0.209			
1.33	52.2	0.183	1.39	117.47	0.242	1.39	207.7	0.213			
1.37	52.5	0.186	1.42	118.40	0.245	1.42	210.4	0.221			
1.41	53.3	0.189	1.46	120.00	0.247	1.46	213.0	0.228			
1.45	54.0	0.191	1.50	121.33	0.248	1.50	215.7	0.238			
1.49	54.1	0.194	1.54	122.75	0.252	1.54	218.5	0.237			
1.53	54.8	0.198	1.58	124.09	0.254	1.58	220.6	0.241			
1.56	55.7	0.201	1.61	125.30	0.257	1.61	223.1	0.244			
1.60	56.0	0.203	1.65	126.58	0.262	1.65	226.0	0.248			
1.64	56.6	0.207	1.69	127.82	0.268	1.69	228.6	0.251			
1.68	57.2	0.209	1.73	129.15	0.273	1.73	231.1	0.256			
1.72	58.1	0.214	1.77	130.44	0.275	1.77	233.5	0.261			
1.75	58.3	0.219	1.81	131.56	0.278	1.80	236.0	0.267			
1.79	58.5	0.220	1.84	132.67	0.284	1.84	238.7	0.272			
1.83	59.3	0.227	1.88	133.92	0.288	1.88	240.8	0.279			
1.87	60.0	0.232	1.92	134.92	0.291	1.92	243.2	0.281			
1.91	60.1	0.236	1.96	136.14	0.293	1.96	244.9	0.284			
1.94	61.3	0.235	2.00	137.50	0.295	2.00	247.2	0.288			
1.98	61.5	0.240	2.03	138.94	0.298	2.03	249.5	0.287			
2.02	61.7	0.242	2.07	139.87	0.302	2.07	251.5	0.290			
2.06	62.1	0.242	2.11	140.99	0.307	2.11	253.6	0.293			
2.10	63.0	0.242	2.15	142.16	0.313	2.15	255.5	0.298			

2.14	63.2	0.248	2.19	143.18	0.318	2.19	257.6	0.299			
2.17	63.6	0.250	2.22	144.20	0.323	2.22	259.7	0.306			
2.21	64.6	0.252	2.26	145.18	0.329	2.26	261.3	0.305			
2.25	64.2	0.257	2.30	146.08	0.333	2.30	263.3	0.311			
2.29	64.9	0.258	2.34	147.07	0.337	2.34	265.1	0.313			
2.33	65.4	0.263	2.38	147.94	0.340	2.38	266.1	0.316			
2.36	65.8	0.266	2.42	148.71	0.342	2.41	267.6	0.316			
2.40	65.9	0.265	2.45	149.66	0.345	2.45	268.8	0.317			
2.44	66.5	0.267	2.49	150.61	0.348	2.49	269.9	0.321			
2.48	66.1	0.270	2.54	151.40	0.351	2.54	271.6	0.323			
2.52	66.5	0.273	2.59	152.80	0.354	2.59	272.9	0.325			
2.57	67.9	0.278	2.64	154.14	0.357	2.64	274.3	0.329			
2.62	68.2	0.282	2.69	155.12	0.360	2.69	276.4	0.330			
2.67	68.6	0.287	2.75	155.89	0.363	2.74	278.0	0.337			
2.72	68.8	0.290	2.80	156.57	0.365	2.80	279.9	0.338			
2.77	69.2	0.291	2.85	157.05	0.366	2.85	281.5	0.342			
2.82	69.9	0.296	2.90	158.05	0.369	2.90	283.2	0.344			
2.87	70.5	0.296	2.95	158.70	0.372	2.95	285.2	0.345			
2.92	70.6	0.298	3.00	159.83	0.373	3.00	286.6	0.347			
2.97	71.4	0.301	3.05	160.81	0.375	3.05	288.3	0.348			
3.02	71.9	0.304	3.10	161.88	0.378	3.10	289.3	0.349			
3.08	72.3	0.306	3.15	162.92	0.380	3.15	291.1	0.350			
3.13	72.8	0.305	3.20	163.76	0.383	3.20	292.2	0.351			
3.18	73.1	0.308	3.25	164.89	0.385	3.25	293.4	0.354			
3.23	73.7	0.308	3.30	166.13	0.388	3.30	294.5	0.352			
3.28	74.1	0.308	3.36	166.88	0.390	3.35	295.5	0.354			
3.33	74.2	0.308	3.41	167.39	0.393	3.41	295.6	0.355			
3.38	74.9	0.310	3.46	168.09	0.394	3.46	296.5	0.356			
3.43	74.9	0.312	3.51	168.61	0.395	3.51	297.9	0.357			
3.48	75.3	0.313	3.56	169.43	0.396	3.56	298.6	0.359			
3.53	75.7	0.314	3.61	170.16	0.398	3.61	298.7	0.363			
3.58	76.0	0.315	3.66	170.74	0.401	3.66	298.9	0.364			
3.63	76.0	0.318	3.71	171.15	0.406	3.71	299.2	0.366			
3.69	76.5	0.318	3.76	171.72	0.407	3.76	298.3	0.368			
3.74	76.7	0.322	3.81	171.94	0.410	3.81	298.2	0.370			
3.79	77.1	0.323	3.86	172.65	0.412	3.86	298.3	0.371			
3.84	77.3	0.326	3.91	173.06	0.415	3.91	298.9	0.372			
3.89	77.4	0.327	3.97	173.72	0.418	3.96	300.0	0.373			
3.94	77.8	0.329	4.02	174.28	0.421	4.02	300.6	0.376			
3.99	77.6	0.328	4.07	175.06	0.423	4.07	300.6	0.379			
4.04	77.7	0.332	4.12	175.79	0.424	4.12	301.0	0.382			
4.09	77.9	0.330	4.17	176.21	0.425	4.17	301.8	0.382			
4.14	78.0	0.332	4.22	176.88	0.426	4.22	302.4	0.382			
4.19	77.7	0.332	4.27	177.44	0.427	4.27	303.3	0.384			
4.24	77.3	0.334	4.32	177.97	0.429	4.32	304.2	0.389			
4.29	77.6	0.332	4.37	178.39	0.431	4.37	304.6	0.388			
4.35	77.3	0.335	4.42	179.12	0.433	4.42	305.2	0.391			
4.40	77.8	0.334	4.47	180.00	0.434	4.47	305.8	0.393			
4.45	76.7	0.334	4.52	180.43	0.437	4.52	306.9	0.392			
4.50	77.7	0.335	4.57	180.85	0.437	4.57	307.2	0.394			
4.55	78.3	0.334	4.63	181.47	0.438	4.62	307.7	0.393			
4.60	78.4	0.337	4.68	182.07	0.439	4.68	308.4	0.395			
4.65	78.4	0.336	4.73	182.27	0.441	4.73	308.5	0.398			

4.70	78.1	0.336	4.78	182.39	0.441	4.78	309.1	0.396			
4.75	77.6	0.336	4.83	182.74	0.441	4.83	309.3	0.397			
4.80	77.2	0.336	4.88	183.08	0.442	4.88	309.5	0.399			
4.85	77.1	0.339	4.93	182.83	0.443	4.93	309.8	0.399			
4.90	77.6	0.338	4.98	182.99	0.443	4.98	310.1	0.399			
4.96	77.5	0.337	5.03	183.10	0.443	5.03	310.5	0.397			
5.01	77.0	0.341	5.08	183.64	0.444	5.08	309.9	0.399			
5.06	77.6	0.340	5.13	183.81	0.444	5.13	308.9	0.398			
5.11	77.8	0.342	5.18	183.82	0.445	5.18	308.4	0.399			
5.16	77.7	0.342	5.24	183.92	0.447	5.23	308.0	0.399			
5.21	78.1	0.342	5.29	184.29	0.448	5.29	307.8	0.397			
5.26	77.7	0.345	5.34	184.77	0.449	5.34	306.5	0.400			
5.31	78.0	0.344	5.39	185.31	0.449	5.39	305.9	0.398			
5.36	77.4	0.342	5.44	185.44	0.450	5.44	305.9	0.399			
5.41	78.1	0.345	5.49	185.62	0.451	5.49	306.0	0.403			
5.46	78.4	0.346	5.54	185.89	0.451	5.54	305.9	0.400			
5.51	78.2	0.346	5.59	186.01	0.451	5.59	305.3	0.400			
5.57	78.8	0.347	5.64	186.06	0.452	5.64	304.4	0.403			
5.62	78.4	0.346	5.69	185.96	0.452	5.69	303.7	0.404			
5.67	77.9	0.348	5.74	186.00	0.451	5.74	304.2	0.403			
5.72	77.6	0.346	5.79	186.04	0.452	5.79	304.5	0.404			
5.77	78.3	0.346	5.85	185.97	0.452	5.84	304.2	0.407			
5.82	77.9	0.345	5.90	185.93	0.453	5.90	305.2	0.405			
5.87	78.3	0.346	5.95	185.80	0.453	5.95	305.4	0.406			
5.92	78.1	0.348	6.00	185.81	0.453	6.00	305.8	0.409			
5.97	78.6	0.349	6.05	185.54	0.453	6.05	306.2	0.409			
6.02	78.3	0.349	6.10	185.64	0.454	6.10	306.1	0.406			
6.07	78.5	0.349	6.15	185.50	0.454	6.15	306.5	0.406			
6.12	78.4	0.350	6.20	185.53	0.454	6.20	306.4	0.407			
6.18	78.4	0.350	6.25	185.61	0.455	6.25	306.5	0.407			
6.23	77.7	0.351	6.30	185.85	0.455	6.30	307.0	0.408			
6.28	78.3	0.349	6.35	186.29	0.4548	6.35	307.3	0.4119			
6.33	78.5	0.350	6.40	186.45	0.4562	6.40	307.4	0.4086			
6.38	77.8	0.349	6.45	186.73	0.4565	6.45	307.07	0.4083			
6.43	78.1	0.349	6.51	186.70	0.4564	6.51	307.80	0.4092			
6.48	78.2	0.350	6.56	186.68	0.4566	6.56	307.08	0.4102			
6.53	77.8	0.349	6.61	186.77	0.4579	6.61	306.49	0.4092			
6.58	78.3	0.350	6.66	186.91	0.4570	6.66	305.86	0.4089			
6.63	77.7	0.350	6.71	187.27	0.4577	6.71	305.92	0.4064			
6.68	77.6	0.351	6.76	187.37	0.4581	6.76	305.68	0.4078			
6.73	77.6	0.350	6.81	187.27	0.4583	6.81	305.54	0.4093			
6.78	77.8	0.352	6.86	187.44	0.4592	6.86	305.78	0.4126			
6.84	78.2	0.350	6.91	187.40	0.4605	6.91	305.07	0.4120			
6.89	78.0	0.352	6.96	187.31	0.4603	6.96	304.37	0.4116			
6.94	78.1	0.351	7.01	187.21	0.4605	7.01	303.89	0.4127			
6.99	77.5	0.351	7.06	187.06	0.4605	7.06	303.42	0.4128			
7.04	77.8	0.353	7.12	186.80	0.4632	7.11	302.91	0.4136			
7.09	77.6	0.353	7.17	186.89	0.4622	7.17	303.35	0.4147			
7.14	77.2	0.353	7.22	186.61	0.4624	7.22	302.92	0.4136			
7.19	77.7	0.352	7.27	185.99	0.4633	7.27	302.76	0.4137			
7.24	77.0	0.355	7.32	186.31	0.4636	7.32	302.47	0.4144			
7.29	76.2	0.354	7.37	186.45	0.4633	7.37	302.27	0.4138			
7.34	76.9	0.354	7.42	186.31	0.4632	7.42	302.81	0.4136			

[illegible]

Direct Shear Testing of Soils Under Consolidated Drained Conditions

Reference
ASTM D 3080-04

Client:	Dundee Precious (Krumovgrad) BV	Sample No.:	Tailings
Project:	Krumovgrad Project	Sample Location:	SG-5 (30 micron blend)
Location:	Bulgaria	Depth (m):	N/A
Project No.:	09-1221-3019/5000	Lab ID No:	14

Residual 1		Residual 2		Residual 3			
Normal Stress , kPa	100	Normal Stress , kPa	250	Normal Stress , kPa	500	Normal Stress , kPa	
Disp Rate, mm/min	0.015	Disp Rate, mm/min	0.015	Disp Rate, mm/min	0.015	Disp Rate, mm/min	

Horz	Shear	Vert	Horz	Shear	Vert	Horz	Shear	Vert	Horz	Shear	Vert
Disp	Stress	Disp	Disp	Stress	Disp	Disp	Stress	Disp	Disp	Stress	Disp
mm	kPa	mm	mm	kPa	mm	mm	kPa	mm	mm	kPa	mm
0.00	0.5	0.000	0.00	0.60	0.000	0.00	0.9	0.005			
0.05	1.1	0.003	0.05	0.81	0.002	0.01	1.1	0.004			
0.10	2.3	0.000	0.10	1.03	0.005	0.03	1.5	0.003			
0.15	4.4	0.001	0.15	1.68	0.006	0.04	3.1	0.004			
0.20	6.8	0.005	0.20	2.92	0.009	0.05	4.9	0.005			
0.25	9.2	0.008	0.25	4.31	0.010	0.06	7.0	0.003			
0.30	10.9	0.009	0.30	10.68	0.020	0.08	9.0	0.005			
0.36	13.5	0.014	0.36	17.22	0.026	0.09	9.4	0.004			
0.41	16.9	0.019	0.41	23.73	0.030	0.10	11.8	0.005			
0.46	20.5	0.027	0.46	29.85	0.035	0.11	14.3	0.005			
0.51	24.1	0.034	0.51	35.69	0.042	0.13	17.4	0.006			
0.56	27.0	0.036	0.56	41.18	0.049	0.14	20.5	0.007			
0.61	29.5	0.042	0.61	46.56	0.053	0.15	21.9	0.008			
0.66	31.6	0.041	0.66	51.83	0.055	0.17	21.8	0.009			
0.71	34.4	0.044	0.71	56.64	0.059	0.18	22.2	0.008			
0.76	37.0	0.043	0.76	61.76	0.064	0.19	25.1	0.009			
0.81	39.4	0.045	0.81	67.34	0.066	0.20	28.7	0.009			
0.86	41.5	0.044	0.86	72.74	0.066	0.22	31.7	0.011			
0.91	44.4	0.045	0.91	78.58	0.067	0.23	34.7	0.012			
0.97	46.4	0.045	0.97	84.78	0.069	0.24	36.0	0.011			
1.02	48.6	0.044	1.02	90.85	0.069	0.25	38.1	0.013			
1.07	50.6	0.044	1.07	96.53	0.069	0.27	40.3	0.014			
1.12	53.1	0.046	1.12	101.79	0.070	0.28	42.5	0.013			
1.17	54.9	0.044	1.17	107.22	0.070	0.29	44.6	0.018			
1.22	56.4	0.044	1.22	112.41	0.070	0.31	47.0	0.017			
1.27	57.8	0.043	1.27	117.47	0.070	0.32	49.8	0.017			
1.32	59.8	0.042	1.32	122.16	0.069	0.33	52.2	0.019			
1.37	60.7	0.043	1.37	126.59	0.068	0.34	54.8	0.020			
1.42	62.4	0.041	1.42	130.77	0.067	0.36	57.1	0.018			
1.47	64.0	0.038	1.47	134.75	0.065	0.37	59.8	0.020			
1.52	64.6	0.034	1.52	138.33	0.063	0.38	62.4	0.022			
1.58	65.2	0.032	1.58	141.23	0.060	0.39	64.6	0.024			
1.63	66.1	0.030	1.63	144.23	0.057	0.41	66.8	0.025			
1.68	67.0	0.030	1.68	146.37	0.055	0.42	69.1	0.026			
1.73	67.8	0.030	1.73	148.35	0.053	0.43	72.0	0.026			

1.78	68.1	0.028	1.78	150.07	0.051	0.45	75.0	0.029			
1.83	68.6	0.028	1.83	151.19	0.048	0.46	78.1	0.028			
1.88	69.0	0.026	1.88	152.23	0.047	0.47	81.7	0.032			
1.93	69.0	0.027	1.93	152.87	0.046	0.48	84.7	0.035			
1.98	69.6	0.023	1.98	153.57	0.045	0.50	87.9	0.035			
2.03	69.3	0.022	2.03	153.95	0.043	0.51	90.9	0.037			
2.08	69.7	0.021	2.08	154.17	0.042	0.52	93.7	0.036			
2.13	70.1	0.022	2.13	154.56	0.040	0.53	96.9	0.037			
2.18	70.0	0.020	2.19	154.86	0.038	0.55	99.8	0.039			
2.24	70.1	0.017	2.24	155.22	0.038	0.56	102.6	0.039			
2.29	70.3	0.017	2.29	155.53	0.037	0.57	105.4	0.038			
2.34	70.6	0.015	2.34	155.77	0.037	0.59	108.2	0.041			
2.39	70.3	0.015	2.39	156.05	0.036	0.62	115.6	0.039			
2.44	70.3	0.013	2.44	156.33	0.034	0.66	122.7	0.042			
2.49	70.1	0.013	2.49	156.36	0.033	0.70	129.6	0.044			
2.54	70.9	0.014	2.54	156.67	0.035	0.74	136.2	0.045			
2.59	70.6	0.014	2.59	156.61	0.034	0.78	141.6	0.048			
2.64	70.7	0.015	2.64	157.21	0.033	0.81	146.4	0.048			
2.69	71.0	0.015	2.69	157.30	0.033	0.85	151.3	0.049			
2.74	71.2	0.013	2.74	157.55	0.032	0.89	154.4	0.054			
2.79	71.5	0.012	2.74	157.14	0.032	0.93	159.0	0.054			
2.85	71.2	0.016	2.79	157.66	0.033	0.97	165.6	0.055			
2.90	71.3	0.014	2.84	157.66	0.033	1.00	172.5	0.058			
2.95	71.3	0.014	2.89	158.02	0.033	1.04	179.7	0.060			
3.00	71.1	0.014	2.94	158.19	0.033	1.08	186.6	0.061			
3.05	71.2	0.016	2.99	158.23	0.033	1.12	193.8	0.062			
3.10	71.9	0.014	3.04	158.41	0.033	1.16	200.3	0.064			
3.15	71.7	0.014	3.09	158.66	0.033	1.20	207.7	0.065			
3.20	71.5	0.013	3.14	158.95	0.032	1.23	214.4	0.065			
3.25	71.9	0.014	3.19	158.97	0.033	1.27	221.5	0.064			
3.30	71.5	0.015	3.24	159.18	0.033	1.31	228.1	0.065			
3.35	71.9	0.015	3.30	159.31	0.033	1.35	234.5	0.067			
3.40	71.8	0.014	3.35	159.42	0.033	1.39	241.2	0.066			
3.46	72.4	0.016	3.40	159.68	0.032	1.42	247.0	0.066			
3.51	72.0	0.015	3.45	159.68	0.033	1.46	252.9	0.066			
3.56	72.0	0.017	3.50	160.02	0.032	1.50	259.2	0.067			
3.61	72.2	0.015	3.55	160.08	0.032	1.54	265.1	0.067			
3.66	72.5	0.014	3.60	160.25	0.032	1.58	270.9	0.069			
3.71	72.3	0.014	3.65	160.40	0.032	1.61	276.2	0.065			
3.76	71.9	0.015	3.70	160.40	0.032	1.65	281.3	0.063			
3.81	72.3	0.016	3.75	160.67	0.032	1.69	286.4	0.064			
3.86	72.0	0.015	3.80	160.66	0.032	1.73	291.1	0.062			
3.91	72.0	0.016	3.85	160.59	0.031	1.77	295.9	0.060			
3.96	72.2	0.015	3.91	160.80	0.031	1.81	300.5	0.062			
4.01	72.3	0.017	3.96	160.88	0.031	1.84	304.1	0.058			
4.06	72.7	0.017	4.01	161.11	0.031	1.88	308.3	0.056			
4.12	72.5	0.017	4.06	161.10	0.031	1.92	311.2	0.055			
4.17	72.3	0.015	4.11	161.14	0.032	1.96	314.7	0.054			
4.22	72.4	0.017	4.16	161.26	0.031	2.00	317.5	0.054			
4.27	72.6	0.016	4.21	161.17	0.031	2.03	320.2	0.051			
4.32	72.6	0.015	4.26	161.25	0.032	2.07	322.7	0.049			
4.37	72.9	0.015	4.31	161.49	0.031	2.11	325.0	0.047			
4.42	72.7	0.014	4.36	161.44	0.031	2.15	326.8	0.047			

4.47	72.8	0.015	4.41	161.49	0.031	2.19	328.4	0.046			
4.52	72.5	0.013	4.46	161.63	0.031	2.22	329.6	0.049			
4.57	73.0	0.013	4.52	161.65	0.031	2.26	331.3	0.046			
4.62	72.7	0.012	4.57	161.59	0.032	2.30	332.2	0.046			
4.67	72.8	0.012	4.62	161.68	0.031	2.34	332.9	0.045			
4.73	72.7	0.012	4.67	161.83	0.032	2.38	333.5	0.044			
4.78	73.0	0.012	4.72	161.87	0.030	2.42	333.9	0.045			
4.83	73.2	0.011	4.77	161.89	0.031	2.45	334.5	0.047			
4.88	72.9	0.009	4.82	161.92	0.032	2.49	335.2	0.045			
4.93	73.0	0.009	4.87	162.03	0.030	2.54	336.1	0.045			
4.98	72.8	0.010	4.92	162.02	0.031	2.59	336.7	0.043			
5.03	72.7	0.011	4.97	162.07	0.030	2.64	337.8	0.045			
5.08	72.8	0.010	5.02	162.12	0.031	2.69	338.4	0.044			
5.13	73.0	0.008	5.07	162.17	0.031	2.75	339.6	0.041			
5.18	73.5	0.008	5.13	162.26	0.031	2.80	340.0	0.043			
5.23	73.4	0.010	5.18	162.39	0.030	2.85	340.8	0.041			
5.28	73.0	0.009	5.23	162.40	0.030	2.90	341.0	0.042			
5.28	72.9	0.008	5.28	162.51	0.030	2.95	341.8	0.040			
5.33	73.1	0.007	5.33	162.44	0.030	3.00	342.7	0.039			
5.38	72.9	0.009	5.38	162.68	0.030	3.05	343.1	0.040			
5.43	73.4	0.008	5.43	162.58	0.030	3.10	343.3	0.041			
5.48	73.4	0.007	5.48	162.70	0.030	3.15	343.6	0.041			
5.53	72.8	0.009	5.53	162.65	0.030	3.20	343.9	0.040			
5.58	73.6	0.008	5.58	162.86	0.029	3.25	344.9	0.041			
5.63	72.6	0.009	5.63	163.08	0.028	3.30	345.1	0.041			
5.68	73.7	0.009	5.68	163.01	0.029	3.36	345.0	0.040			
5.74	73.6	0.010	5.73	163.06	0.029	3.41	345.5	0.039			
5.79	73.2	0.009	5.79	163.08	0.029	3.46	345.9	0.040			
5.84	73.7	0.008	5.84	163.21	0.029	3.51	346.1	0.039			
5.89	73.6	0.007	5.89	163.13	0.029	3.56	346.6	0.039			
5.94	73.1	0.006	5.94	163.31	0.029	3.61	346.5	0.040			
5.99	73.5	0.005	5.99	163.28	0.028	3.66	346.7	0.038			
6.04	73.6	0.007	6.04	163.29	0.029	3.71	347.1	0.039			
6.93	73.6	0.007	6.09	163.49	0.029	3.76	347.5	0.038			
6.98	73.6	0.007	6.14	163.50	0.029	3.81	347.5	0.038			
7.03	73.6	0.007	6.19	163.64	0.029	3.86	347.4	0.039			
7.08	73.1	0.007	6.24	163.71	0.028	3.91	348.0	0.038			
7.13	73.9	0.007	6.29	163.46	0.029	3.97	348.0	0.036			
7.18	73.8	0.007	6.34	163.53	0.029	4.02	348.4	0.037			
7.23	73.6	0.007	6.40	163.71	0.028	4.07	347.9	0.039			
7.28	74.1	0.007	6.45	163.82	0.029	4.12	348.4	0.039			
7.33	73.9	0.007	6.50	163.87	0.029	4.17	348.3	0.038			
7.38	73.7	0.007	6.55	163.77	0.029	4.22	348.7	0.040			
7.43	74.0	0.007	6.60	163.79	0.029	4.27	349.1	0.037			
7.48	74.4	0.007	6.65	163.70	0.029	4.32	348.8	0.039			
7.54	74.2	0.007	6.70	163.90	0.029	4.37	349.3	0.038			
7.59	73.9	0.007	6.75	163.90	0.029	4.42	349.5	0.039			
7.64	74.0	0.007	6.80	163.94	0.029	4.47	349.9	0.039			
7.69	73.8	0.007	6.85	163.99	0.029	4.52	349.9	0.039			
7.74	74.4	0.007	6.90	164.05	0.029	4.58	350.1	0.037			
7.79	74.5	0.007	6.95	164.07	0.030	4.63	350.5	0.037			
7.84	74.2	0.007	7.01	163.95	0.029	4.68	350.6	0.038			
7.89	74.3	0.007	7.06	164.11	0.030	4.73	350.3	0.038			

7.94	73.6	0.007	7.11	164.14	0.029	4.78	350.6	0.039			
7.99	74.5	0.007	7.16	163.94	0.030	4.83	351.0	0.040			
8.04	74.4	0.007	7.21	164.22	0.029	4.88	350.9	0.038			
8.09	74.5	0.007	7.26	164.21	0.029	4.93	351.1	0.037			
8.15	74.5	0.007	7.31	164.10	0.029	4.98	350.8	0.037			
8.20	74.3	0.007	7.36	164.17	0.029	5.03	350.9	0.038			
8.25	74.2	0.007	7.41	164.12	0.029	5.08	350.2	0.040			
8.30	74.8	0.007	7.46	164.37	0.029	5.13	350.5	0.038			
8.35	74.3	0.007	7.51	164.43	0.029	5.19	350.3	0.039			
8.40	74.7	0.007	7.56	164.45	0.029	5.24	350.7	0.037			
8.45	74.0	0.007	7.61	164.41	0.029	5.29	351.5	0.035			
8.50	74.5	0.007	7.67	164.44	0.029	5.34	350.9	0.037			
8.55	74.6	0.007	7.72	164.46	0.030	5.39	350.5	0.038			
8.60	74.8	0.007	7.77	164.51	0.029	5.44	350.5	0.040			
8.65	73.9	0.007	7.82	164.35	0.030	5.49	351.0	0.038			
8.70	74.5	0.007	7.87	164.25	0.030	5.54	351.6	0.040			
8.75	74.7	0.007	7.92	164.39	0.030	5.59	351.1	0.037			
8.81	74.4	0.007	7.97	164.30	0.030	5.64	351.2	0.040			
8.86	74.8	0.007	8.00	164.40	0.030	5.69	351.3	0.041			
8.89	74.7	0.007				5.74	351.6	0.042			
						5.80	351.3	0.041			
						5.85	351.8	0.040			
						5.90	352.0	0.041			
						5.95	351.7	0.041			
						6.00	351.9	0.042			
						6.05	351.6	0.040			
						6.10	350.9	0.040			
						6.15	351.8	0.038			
						6.20	351.3	0.041			
						6.25	351.7	0.045			
						6.30	351.7	0.041			
						6.35	351.4	0.044			
						6.41	352.3	0.043			
						6.46	351.9	0.044			
						6.51	352.1	0.044			
						6.56	352.5	0.047			
						6.61	351.7	0.044			
						6.66	352.0	0.045			
						6.71	351.8	0.044			
						6.76	351.5	0.045			
						6.81	352.0	0.050			
						6.86	351.7	0.045			
						6.91	351.9	0.047			
						6.96	351.4	0.046			
						7.02	351.3	0.046			
						7.07	351.8	0.047			
TM/LL			March 5, 2010			ROB			March 8, 2010		