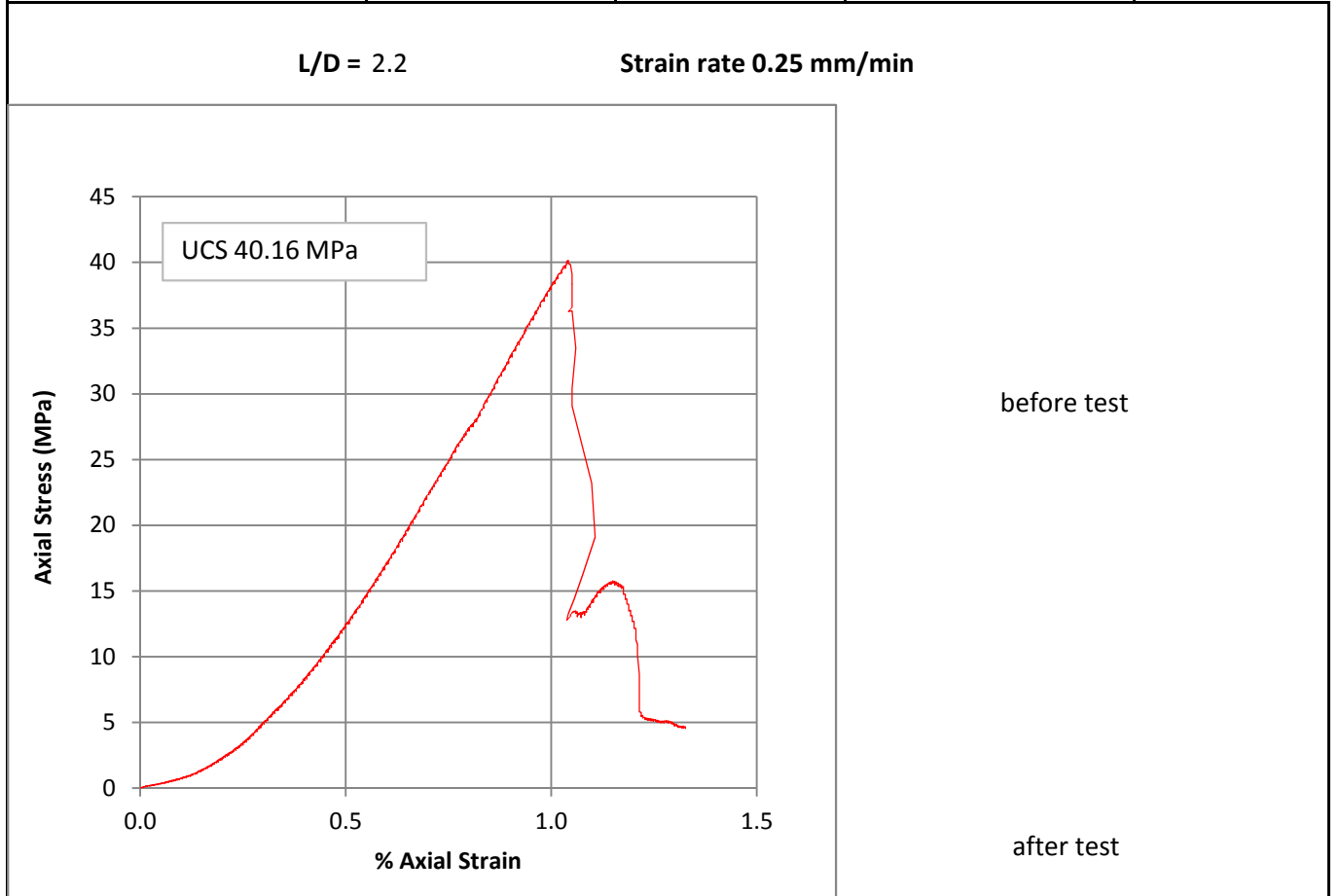


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-334B	April 24, '12
Operator: ch	<b>Sample:</b> RT-11-334B AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 64.7-65.0m depth		

Dimensions in mm			Initial	
Initial	147.71	147.12	Area mm <sup>2</sup>	3,670
Length	147.38	147.56	Volume mm <sup>3</sup>	541,070
Avg Length	<b>147.44</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.55</b>
Initial	68.40	68.07	Water Content %	<b>1.1</b>
Diameter	68.69	68.26	Dry Density Mg/m <sup>3</sup>	<b>2.52</b>
Avg Diameter	<b>68.36</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		FT3	
Container	0.00	77.31	g
Specimen + container	1378.21	936.48	g
Dry Specimen + container		926.90	g
Water content		<b>1.1</b>	%



### UCS Test Results

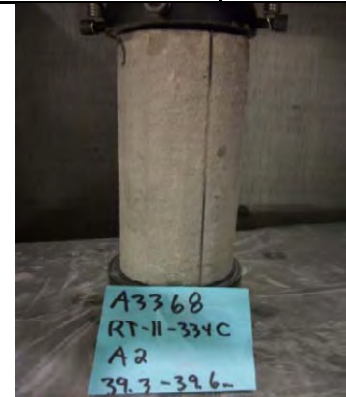
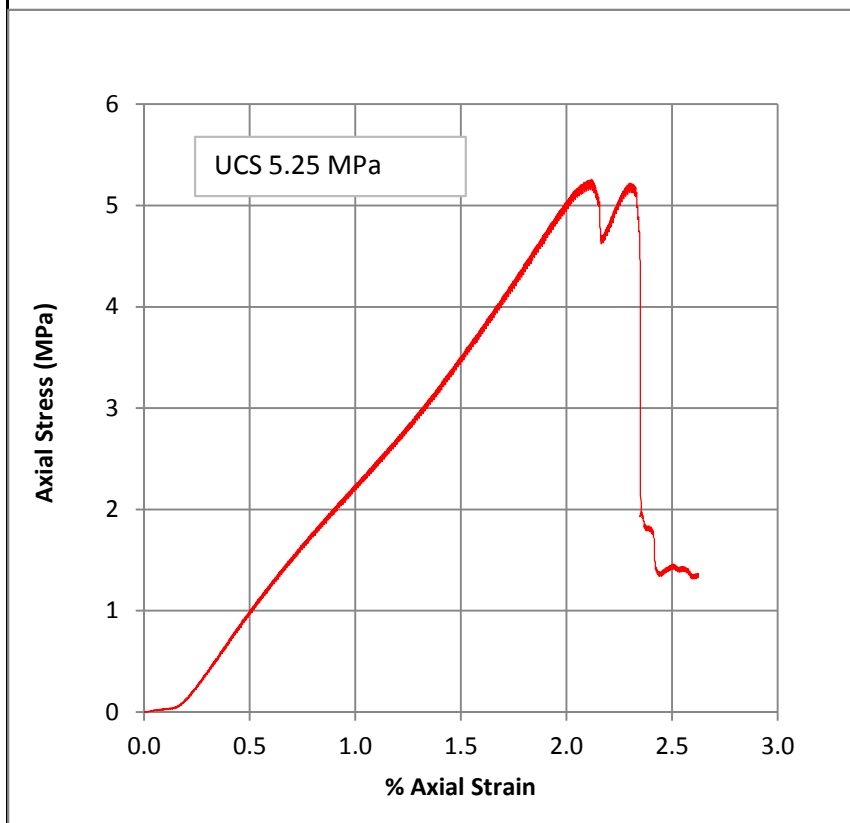
<b>Project:</b> A3368	<b>Location:</b> - RT-12-334C	April 26, '12
Operator: ch	<b>Sample:</b> RT-11-334C AS-02	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 39.3-39.6m depth		

Dimensions in mm			Initial	
Initial	144.23	144.37	Area mm <sup>2</sup>	3,689
Length	144.30	144.17	Volume mm <sup>3</sup>	532,133
Avg Length	<b>144.27</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.38</b>
Initial	68.20	68.36	Water Content %	<b>8.4</b>
Diameter	68.82	68.74	Dry Density Mg/m <sup>3</sup>	<b>2.20</b>
Avg Diameter	<b>68.53</b>			

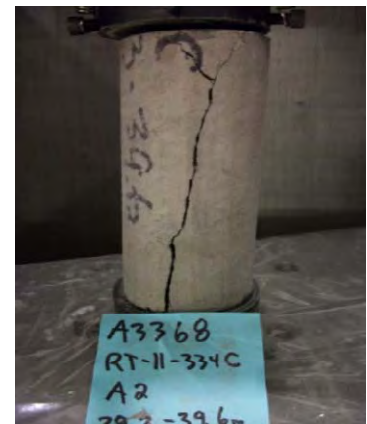
Room Temperature			
Water content			
	Before Test	After test	units
Container #		HH1	
Container	0.00	202.85	g
Specimen + container	1267.00	927.70	g
Dry Specimen + container		871.54	g
Water content		<b>8.4</b>	%

L/D = 2.1

Strain rate 0.25 mm/min



before test



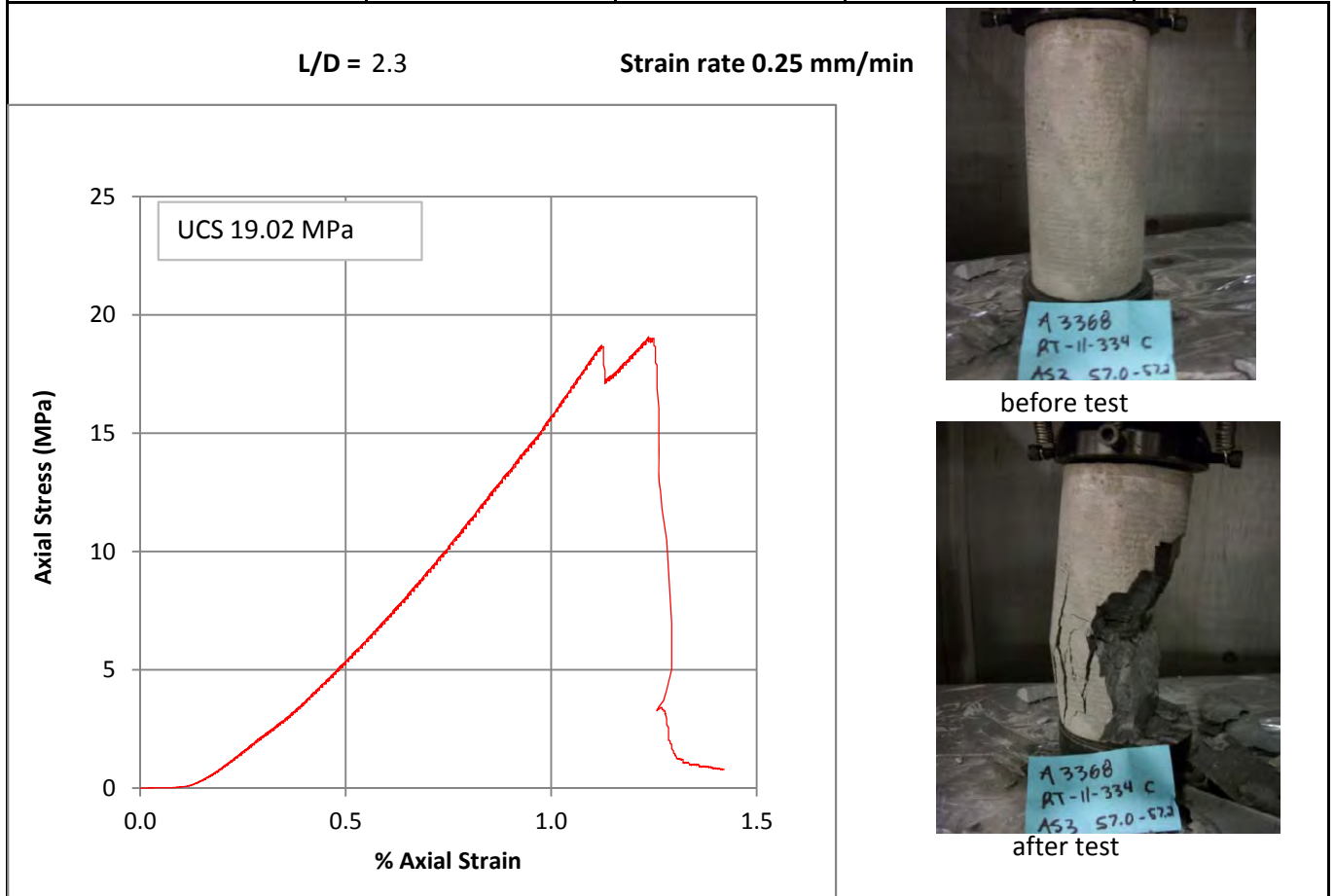
after test

### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-334C	May 11, '12
Operator: ch	<b>Sample:</b> RT-11-334C, (57.0-57.2m) AS-03	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 57.0-57.2m depth		

Dimensions in mm			Initial	
Initial	160.04	160.11	Area mm <sup>2</sup>	3,676
Length	160.09	160.15	Volume mm <sup>3</sup>	588,455
Avg Length	<b>160.10</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.44</b>
Initial	68.72	68.34	Water Content %	<b>6.5</b>
Diameter	68.31	68.27	Dry Density Mg/m <sup>3</sup>	<b>2.29</b>
Avg Diameter	<b>68.41</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		M3	
Container	0.00	99.65	g
Specimen + container	1437.97	792.01	g
Dry Specimen + container		749.63	g
Water content		<b>6.5</b>	%

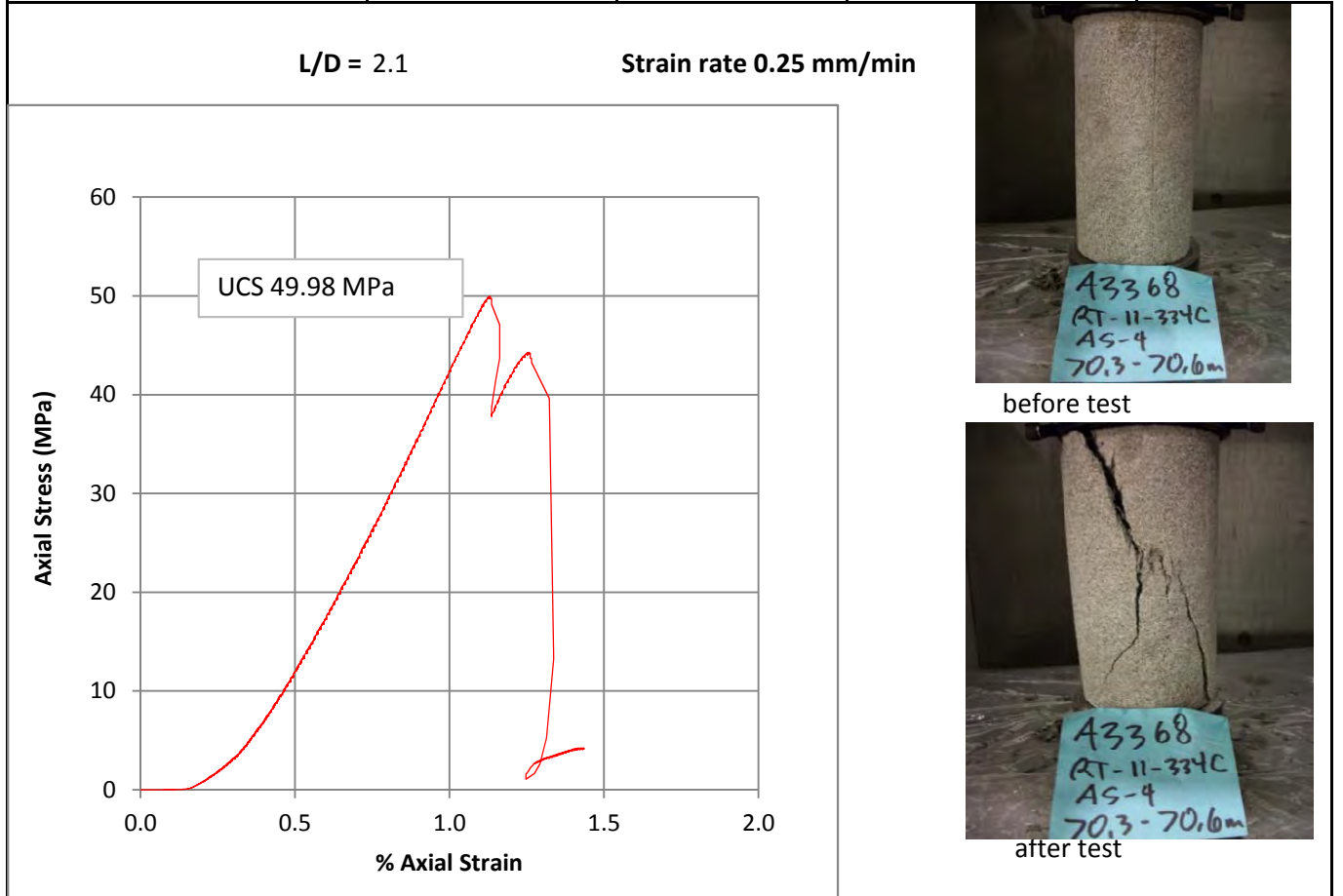


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-334C	May 15, '12
Operator: ch	<b>Sample:</b> RT-11-334C-AS-4	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 70.3-70.6m depth		

Dimensions in mm			Initial	
Initial	142.41	142.55	Area mm <sup>2</sup>	3,703
Length	142.50	142.53	Volume mm <sup>3</sup>	527,638
Avg Length	<b>142.50</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.55</b>
Initial	68.66	68.51	Water Content %	<b>1.6</b>
Diameter	68.66	68.82	Dry Density Mg/m <sup>3</sup>	<b>2.51</b>
Avg Diameter	<b>68.66</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		KT2	
Container	0.00	131.23	g
Specimen + container	1345.31	930.37	g
Dry Specimen + container		917.49	g
Water content		<b>1.6</b>	%

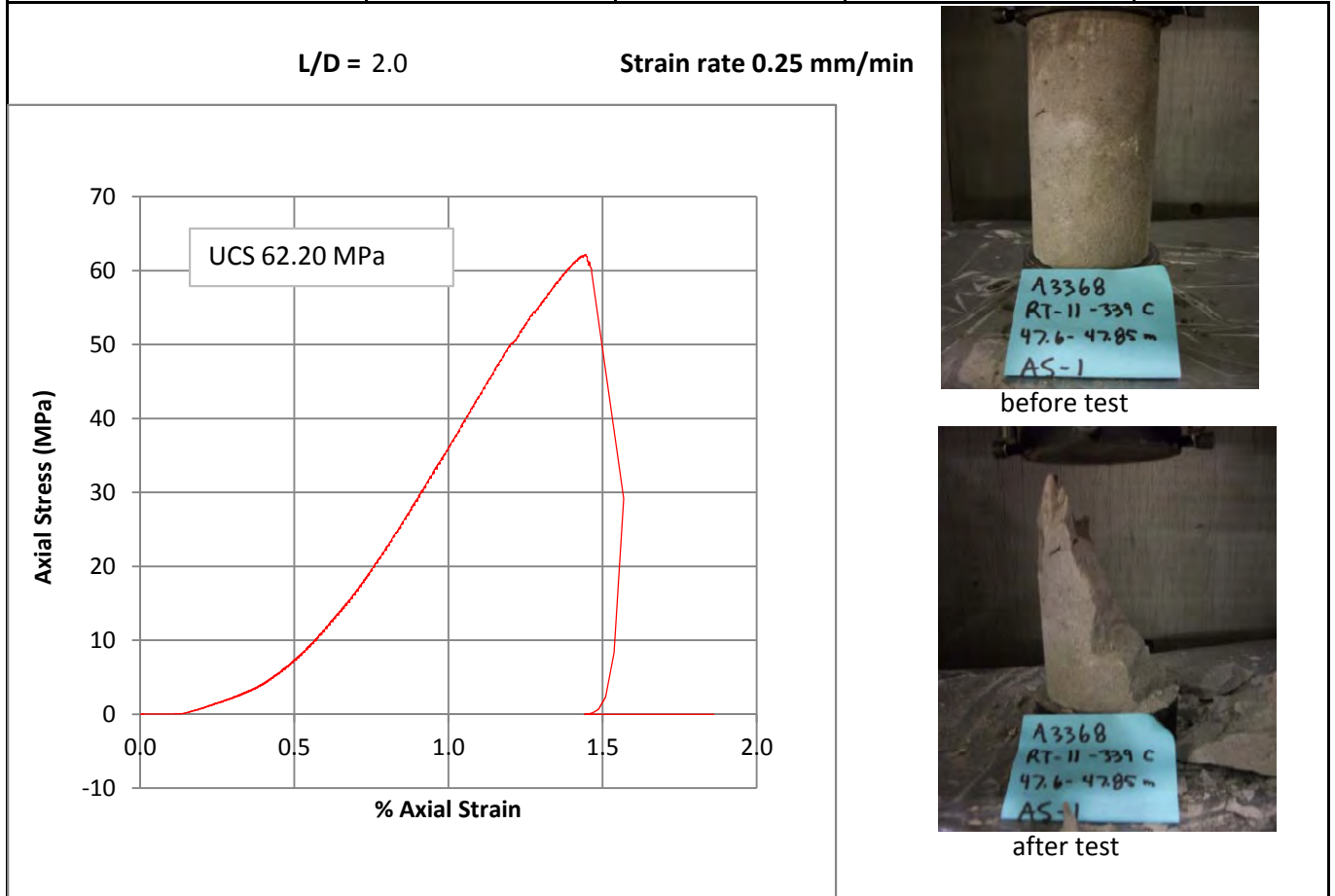


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-339C	April 26, '12
Operator: ch	<b>Sample:</b> RT-11-339C AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 47.0-47.85m depth		

Dimensions in mm			Initial	
Initial	139.25	139.19	Area mm <sup>2</sup>	3,624
Length	139.22	139.15	Volume mm <sup>3</sup>	504,536
Avg Length	<b>139.20</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.54</b>
Initial	67.96	68.02	Water Content %	<b>2.7</b>
Diameter	68.02	67.73	Dry Density Mg/m <sup>3</sup>	<b>2.48</b>
Avg Diameter	<b>67.93</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		X28	
Container	0.00	124.48	g
Specimen + container	1283.29	810.27	g
Dry Specimen + container		792.35	g
Water content		<b>2.7</b>	%



### UCS Test Results

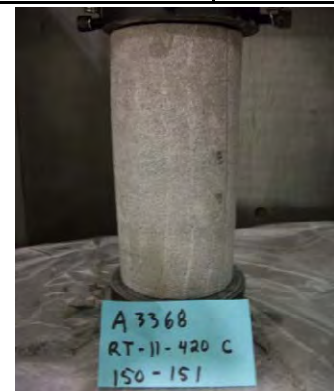
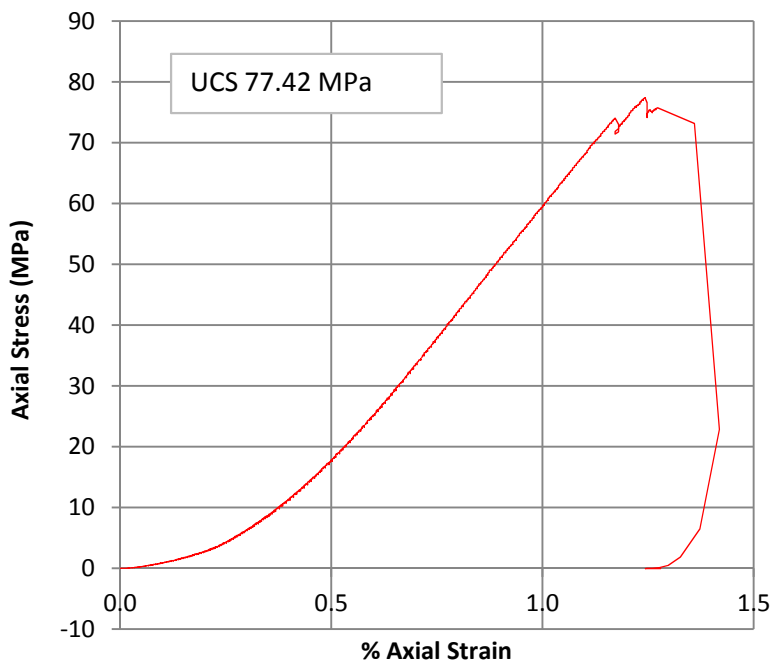
<b>Project:</b> A3368	<b>Location:</b> - RT-12-420C	April 26, '12
Operator: ch	<b>Sample:</b> RT-11-420C AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 150-151m depth 45.7 - 46.0 m		

Dimensions in mm			Initial	
Initial	151.60	151.9	Area mm <sup>2</sup>	3,677
Length	151.88	151.64	Volume mm <sup>3</sup>	557,996
Avg Length	<b>151.76</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.53</b>
Initial	68.40	68.56	Water Content %	<b>0.6</b>
Diameter	68.26	68.47	Dry Density Mg/m <sup>3</sup>	<b>2.52</b>
Avg Diameter	<b>68.42</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		X3D	
Container	0.00	177.44	g
Specimen + container	1413.23	965.10	g
Dry Specimen + container		960.64	g
Water content		<b>0.6</b>	%

L/D = 2.2

Strain rate 0.25 mm/min



before test



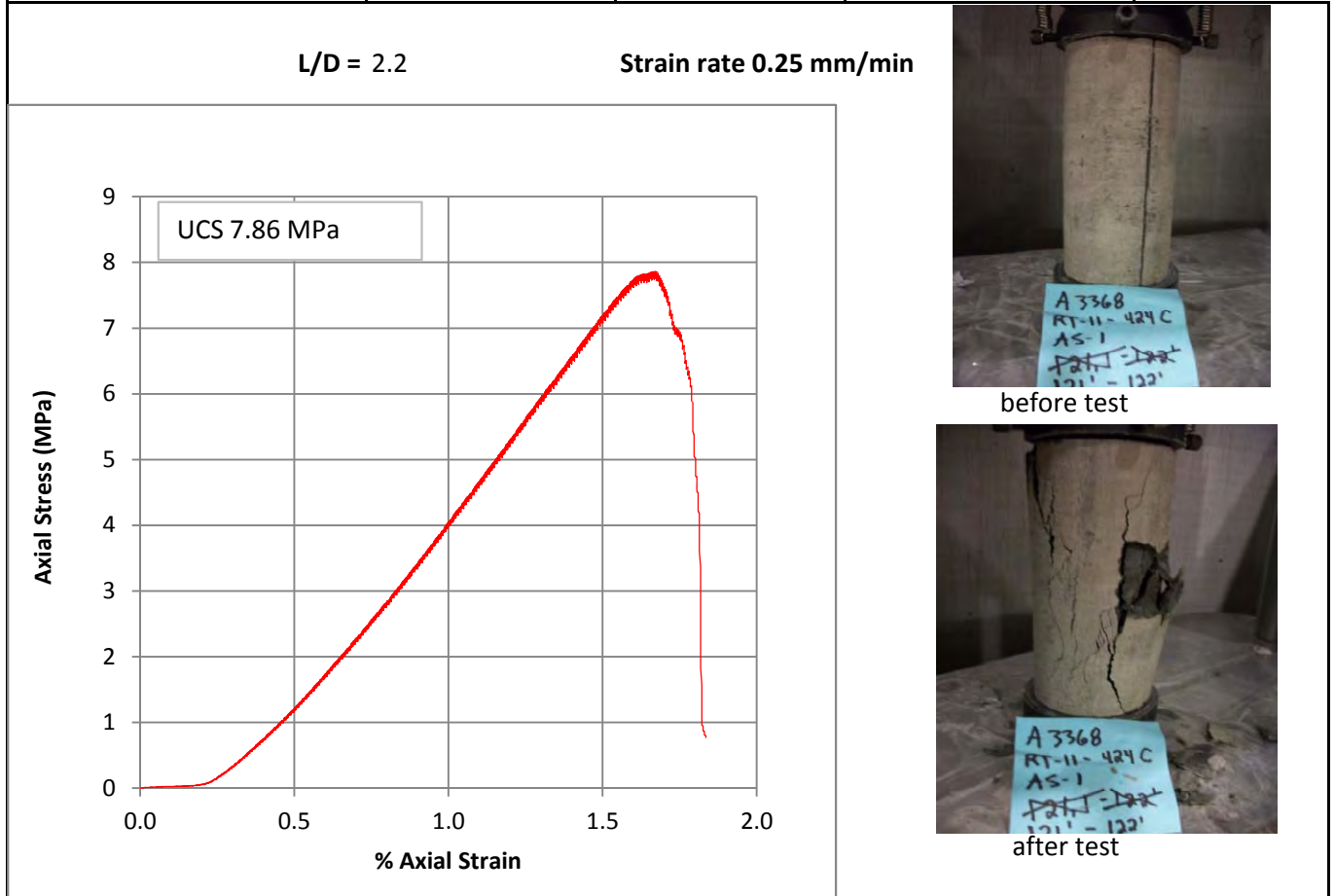
after test

### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-424C	April 27, '12
Operator: ch	<b>Sample:</b> RT-11-424C AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 121' - 122' depth 36.9 - 37.2 m		

Dimensions in mm			Initial	
Initial	151.94	151.89	Area mm <sup>2</sup>	3,690
Length	151.91	151.98	Volume mm <sup>3</sup>	560,641
Avg Length	<b>151.93</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.40</b>
Initial	68.67	68.65	Water Content %	<b>7.4</b>
Diameter	68.6	68.26	Dry Density Mg/m <sup>3</sup>	<b>2.23</b>
Avg Diameter	<b>68.55</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		ZZ	
Container	0.00	186.95	g
Specimen + container	1344.47	1034.84	g
Dry Specimen + container		976.35	g
Water content		<b>7.4</b>	%

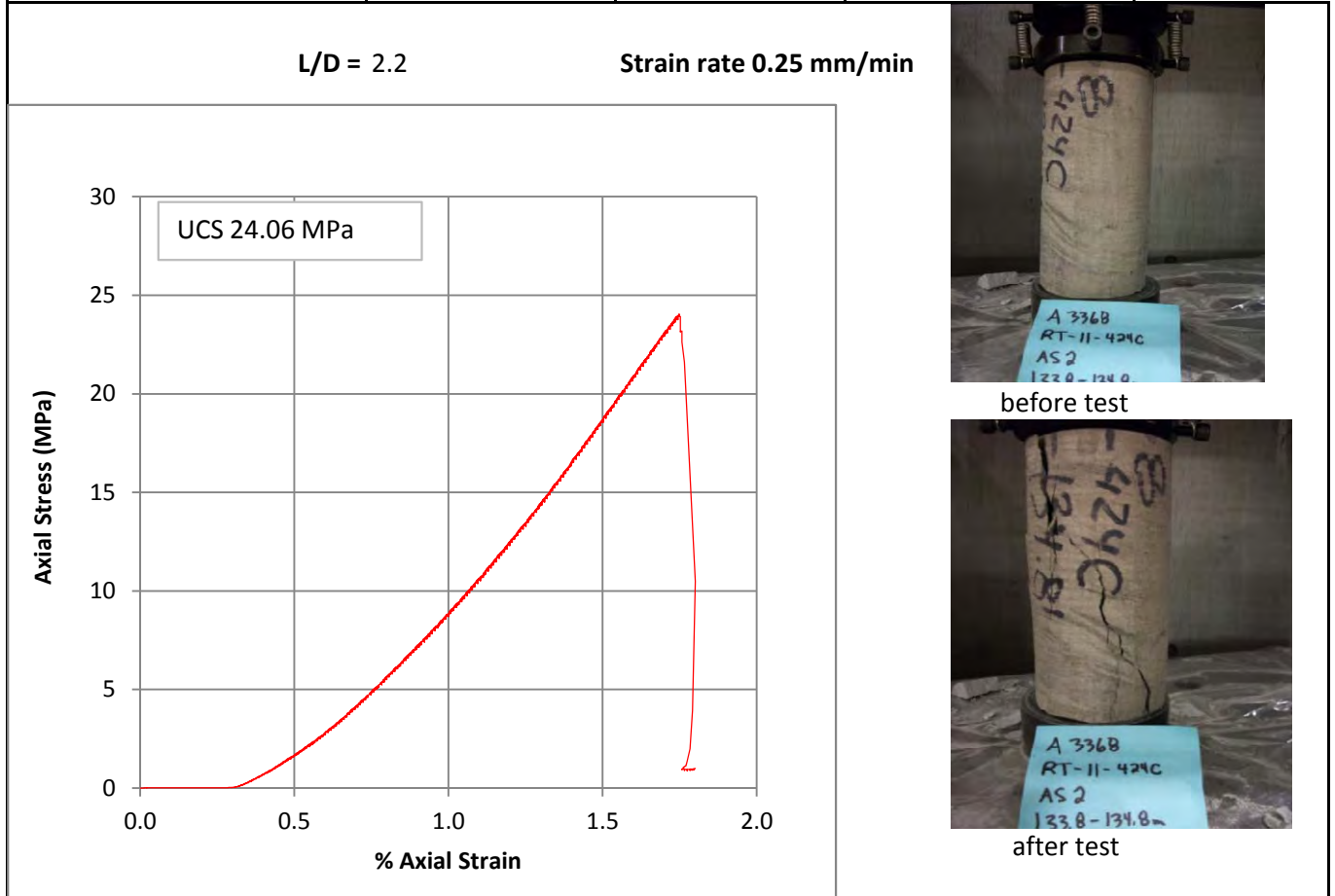


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-424C	May 11, '12
Operator: ch	<b>Sample:</b> RT-11-424C, (133.8-134.8) AS-02	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 133.8-134.8 depth 40.8 - 41.1 m		

Dimensions in mm			Initial	
Initial	146.48	146.83	Area mm <sup>2</sup>	3,656
Length	146.50	146.96	Volume mm <sup>3</sup>	536,311
Avg Length	<b>146.69</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.47</b>
Initial	68.25	68.20	Water Content %	<b>5.9</b>
Diameter	68.19	68.27	Dry Density Mg/m <sup>3</sup>	<b>2.33</b>
Avg Diameter	<b>68.23</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		X28	
Container	0.00	124.98	g
Specimen + container	1322.99	840.90	g
Dry Specimen + container		801.25	g
Water content		<b>5.9</b>	%



### UCS Test Results

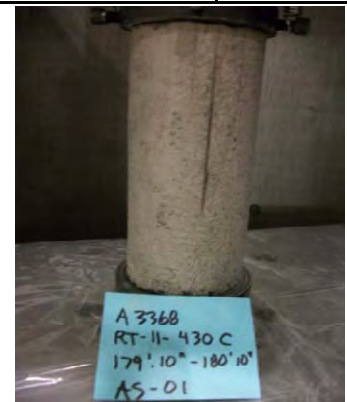
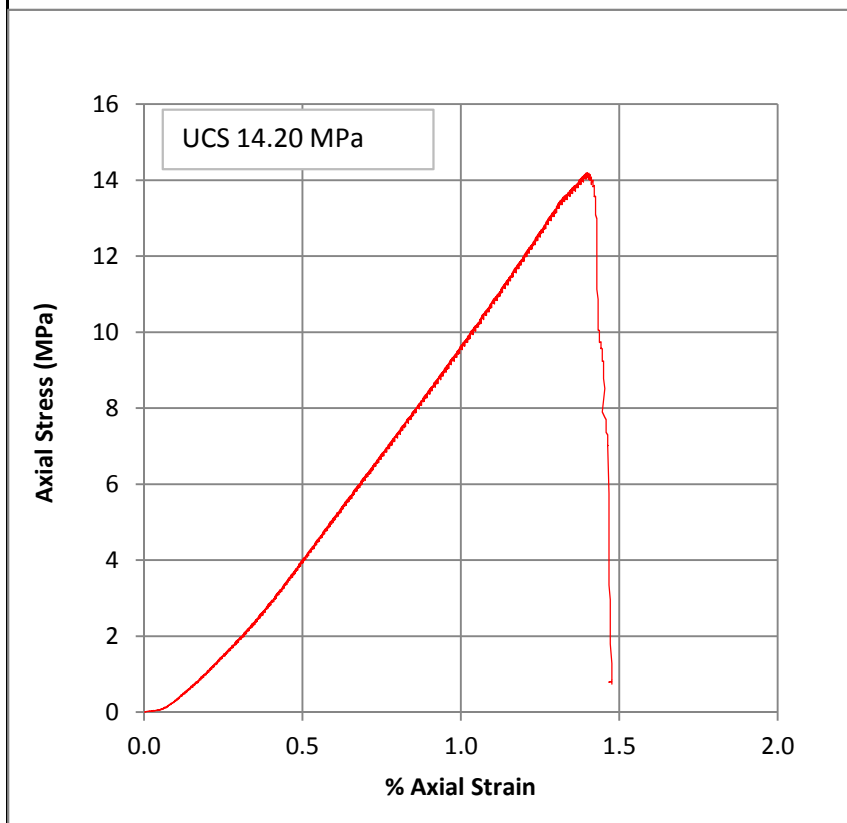
<b>Project:</b> A3368	<b>Location:</b> - RT-12-430C	April 27, '12
Operator: ch	<b>Sample:</b> RT-11-430C AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 179' 10" - 180' 10" depth 54.8 - 55.1 m		

Dimensions in mm			Initial	
Initial	149.29	149.37	Area mm <sup>2</sup>	3,686
Length	149.26	149.28	Volume mm <sup>3</sup>	550,293
Avg Length	<b>149.30</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.43</b>
Initial	68.61	68.30	Water Content %	<b>6.2</b>
Diameter	68.38	68.73	Dry Density Mg/m <sup>3</sup>	<b>2.29</b>
Avg Diameter	<b>68.51</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		D56	
Container	0.00	171.27	g
Specimen + container	1336.97	918.03	g
Dry Specimen + container		874.48	g
Water content		<b>6.2</b>	%

L/D = 2.2

Strain rate 0.25 mm/min



before test

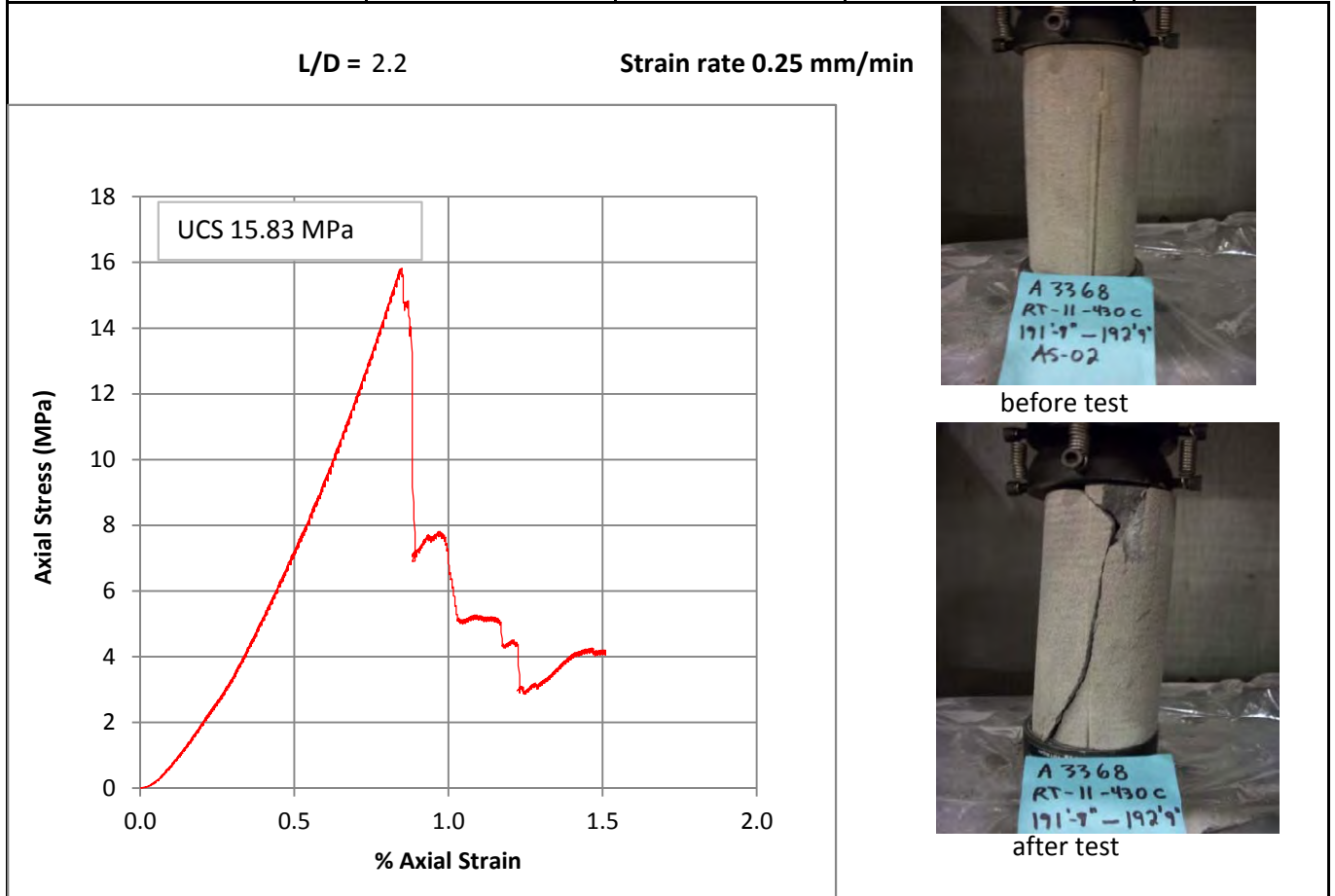
after test

### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-430C	April 25, '12
Operator: ch	<b>Sample:</b> RT-11-430C AS-02	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 191' 9"-192' 9" depth 57.8 - 58.1 m		

Dimensions in mm			Initial	
Initial	148.10	148.06	Area mm <sup>2</sup>	3,690
Length	148.12	148.16	Volume mm <sup>3</sup>	546,545
Avg Length	<b>148.11</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.45</b>
Initial	68.78	68.60	Water Content %	<b>5.6</b>
Diameter	68.3	68.5	Dry Density Mg/m <sup>3</sup>	<b>2.32</b>
Avg Diameter	<b>68.55</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		S1M	
Container	0.00	116.66	g
Specimen + container	1339.58	898.35	g
Dry Specimen + container		856.62	g
Water content		<b>5.6</b>	%



### UCS Test Results

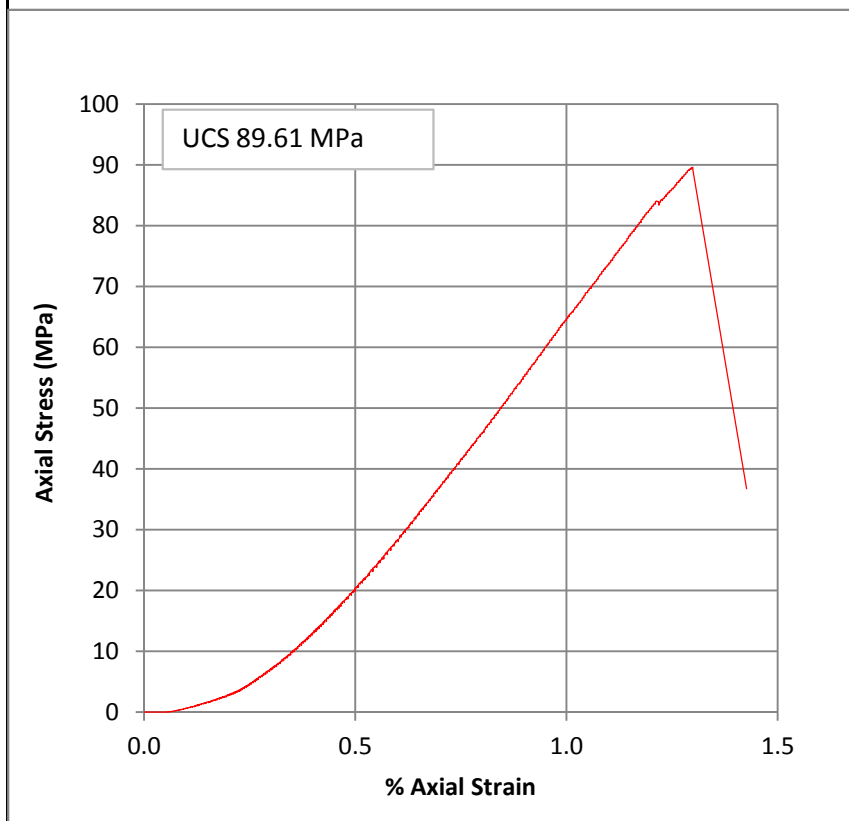
<b>Project:</b> A3368	<b>Location:</b> - RT-12-495C	April 16, '12
Operator: ch	<b>Sample:</b> RT-11-495-- AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 38.0-38.3m depth		

Dimensions in mm			Initial	
Initial	150.31	150.09	Area mm <sup>2</sup>	3,698
Length	150.13	149.72	Volume mm <sup>3</sup>	554,922
Avg Length	<b>150.06</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.57</b>
Initial	68.58	68.62	Water Content %	<b>1.3</b>
Diameter	68.61	68.66	Dry Density Mg/m <sup>3</sup>	<b>2.54</b>
Avg Diameter	<b>68.62</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		KT2	
Container	0.00	130.71	g
Specimen + container	1427.90	639.86	g
Dry Specimen + container		633.16	g
Water content		<b>1.3</b>	%

L/D = 2.2

Strain rate 0.25 mm/min



before test



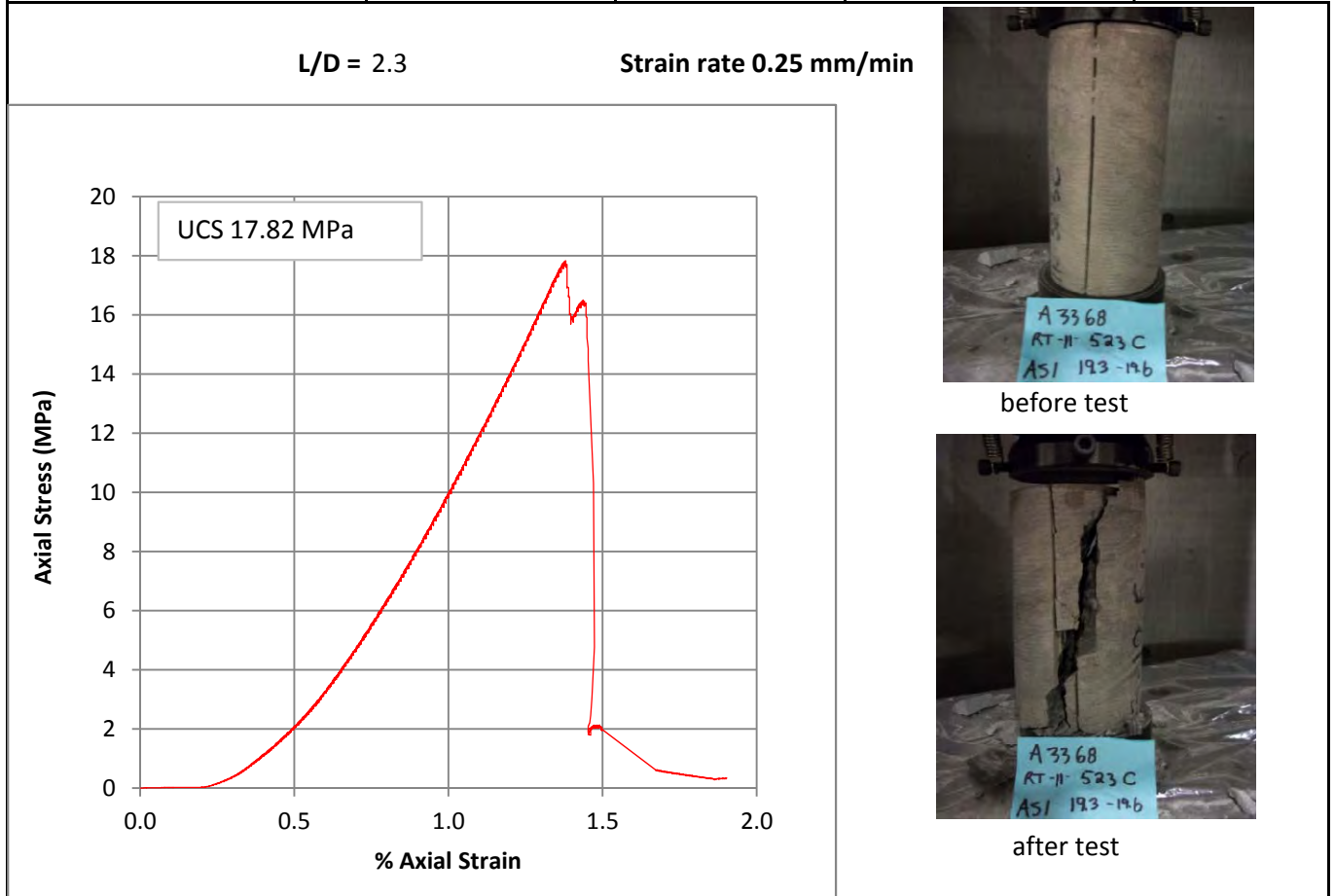
after test

### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-523C	May 11, '12
Operator: ch	<b>Sample:</b> RT-11-523C, (19.3-19.6) AS-1	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 19.3-19.6 depth		

Dimensions in mm			Initial	
Initial	156.66	156.73	Area mm <sup>2</sup>	3,669
Length	156.85	156.87	Volume mm <sup>3</sup>	575,242
Avg Length	<b>156.78</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.46</b>
Initial	68.18	68.28	Water Content %	<b>5.5</b>
Diameter	68.40	68.54	Dry Density Mg/m <sup>3</sup>	<b>2.33</b>
Avg Diameter	<b>68.35</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		XX	
Container	0.00	145.27	g
Specimen + container	1416.27	896.64	g
Dry Specimen + container		857.20	g
Water content		<b>5.5</b>	%



### UCS Test Results

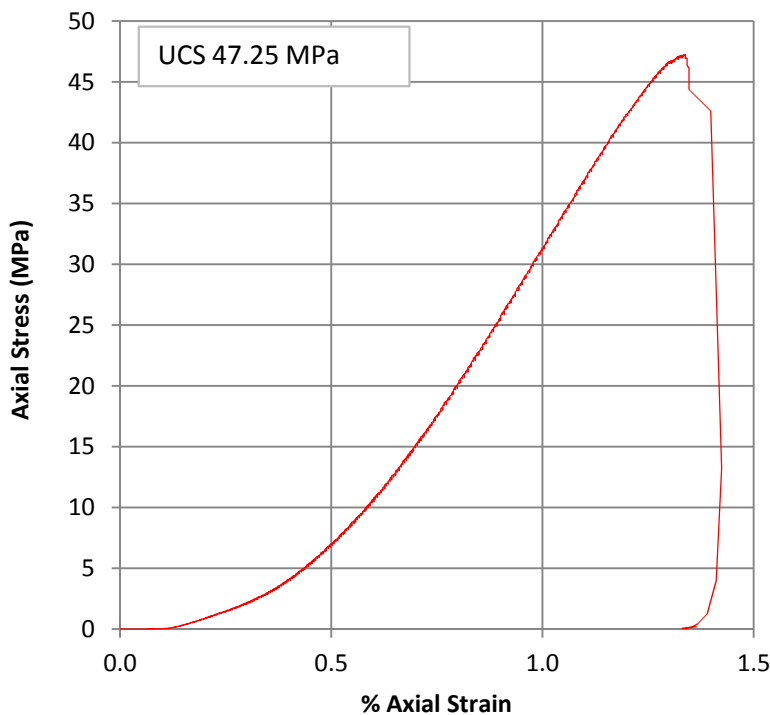
<b>Project:</b> A3368	<b>Location:</b> - RT-12-544C	April 25, '12
Operator: ch	<b>Sample:</b> RT-11-544C AS-01	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 61.2-61.5m depth		

Dimensions in mm			Initial	
Initial	148.05	147.98	Area mm <sup>2</sup>	3,708
Length	147.99	147.95	Volume mm <sup>3</sup>	548,823
Avg Length	<b>147.99</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.47</b>
Initial	68.62	68.84	Water Content %	<b>3.7</b>
Diameter	68.61	68.79	Dry Density Mg/m <sup>3</sup>	<b>2.38</b>
Avg Diameter	<b>68.72</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		KT2	
Container	0.00	130.76	g
Specimen + container	1354.80	791.21	g
Dry Specimen + container		767.74	g
Water content		<b>3.7</b>	%

L/D = 2.2

Strain rate 0.25 mm/min

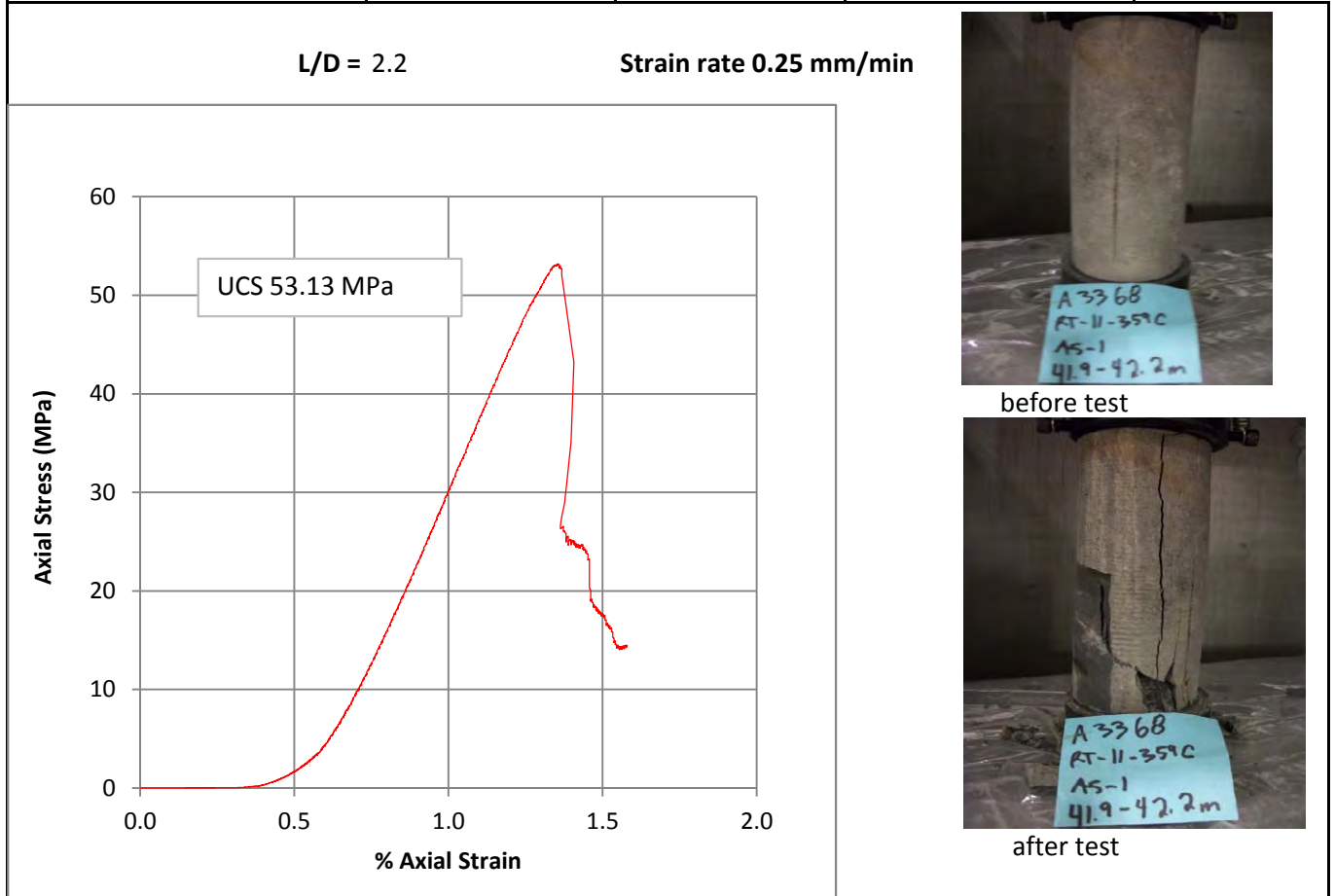


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-549C	May 15, '12
Operator: ch	<b>Sample:</b> RT-11-359C-AS-1	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 41.9-42.2m depth		

Dimensions in mm			Initial	
Initial	150.33	150.39	Area mm <sup>2</sup>	3,685
Length	150.45	150.35	Volume mm <sup>3</sup>	554,153
Avg Length	<b>150.38</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.62</b>
Initial	68.58	68.50	Water Content %	<b>2.5</b>
Diameter	68.46	68.45	Dry Density Mg/m <sup>3</sup>	<b>2.56</b>
Avg Diameter	<b>68.50</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		JJ44	
Container	0.00	183.74	g
Specimen + container	1451.71	1136.29	g
Dry Specimen + container		1113.00	g
Water content		<b>2.5</b>	%

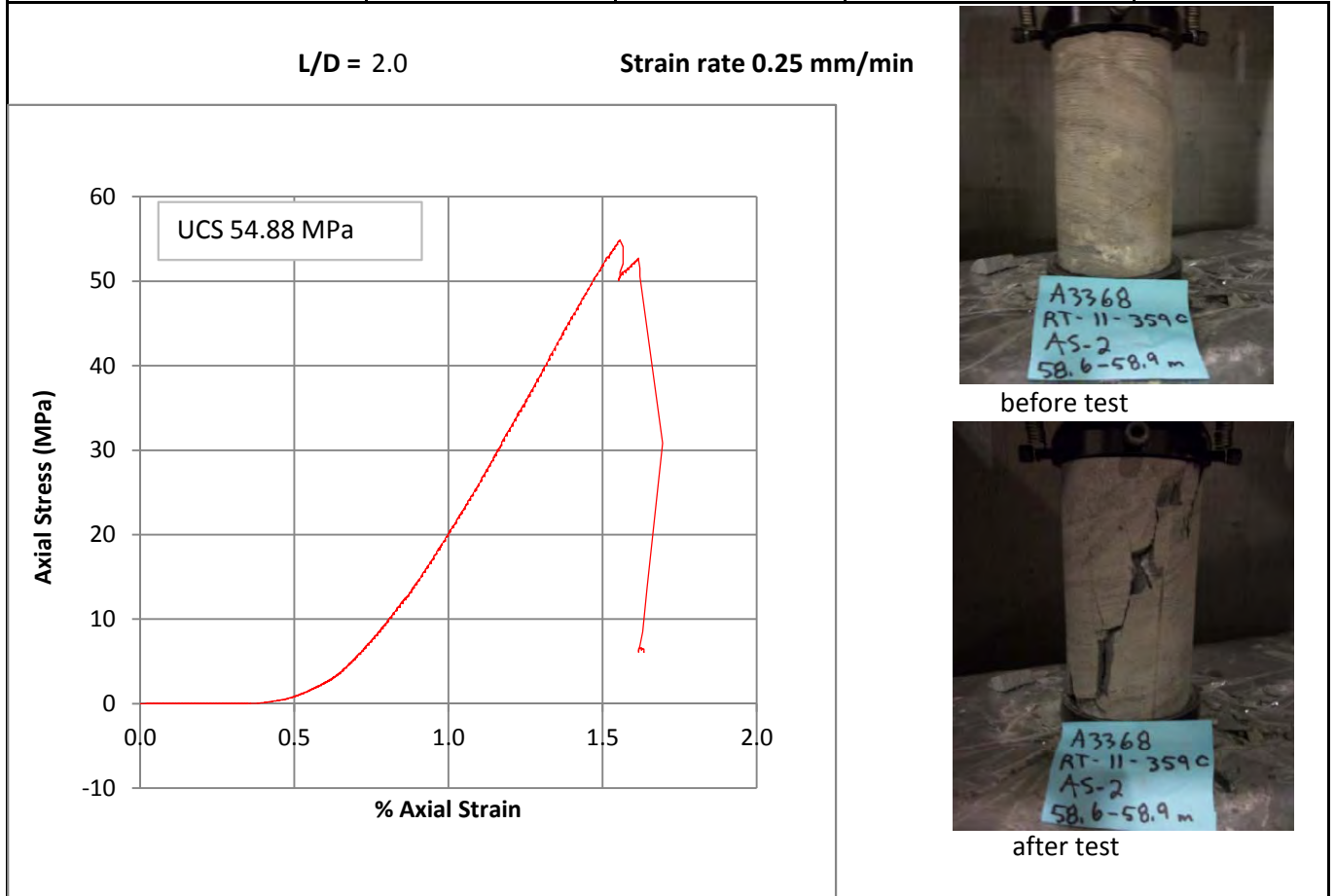


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-549C	May 11, '12
Operator: ch	<b>Sample:</b> RT-11-359C, (58.6-58.9m) AS-02	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 58.6-58.9m depth		

Dimensions in mm			Initial	
Initial	138.77	138.68	Area mm <sup>2</sup>	3,692
Length	138.54	138.74	Volume mm <sup>3</sup>	512,055
Avg Length	<b>138.68</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.57</b>
Initial	68.75	68.51	Water Content %	<b>2.8</b>
Diameter	68.30	68.70	Dry Density Mg/m <sup>3</sup>	<b>2.50</b>
Avg Diameter	<b>68.57</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		D58	
Container	0.00	171.78	g
Specimen + container	1318.18	1022.79	g
Dry Specimen + container		999.80	g
Water content		<b>2.8</b>	%

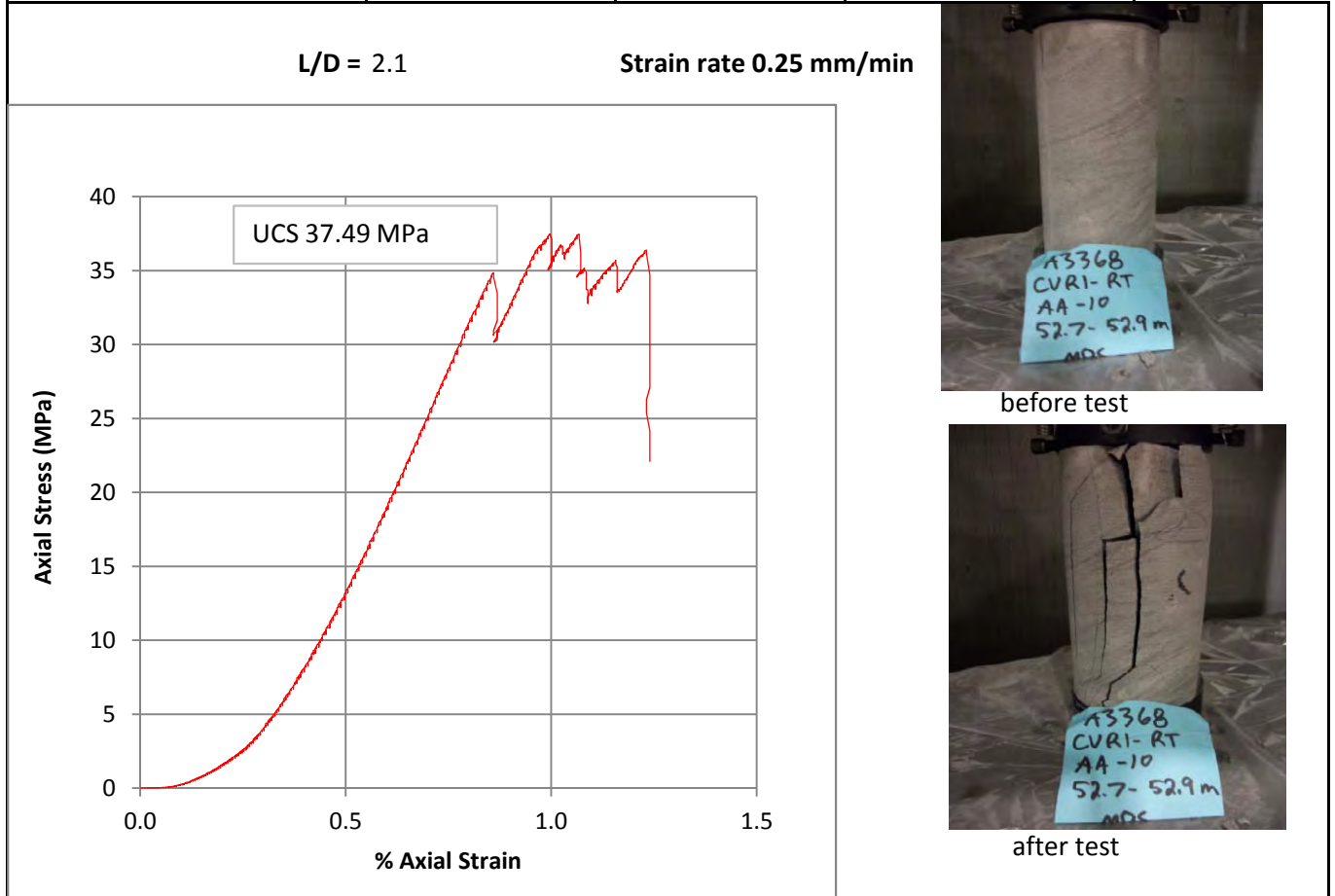


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-612C	April 20, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-10	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 52.7-52.9m depth		

Dimensions in mm			Initial	
Initial	143.30	143.51	Area mm <sup>2</sup>	3,692
Length	143.35	143.24	Volume mm <sup>3</sup>	529,211
Avg Length	<b>143.35</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.53</b>
Initial	68.44	68.57	Water Content %	<b>3.0</b>
Diameter	68.59	68.64	Dry Density Mg/m <sup>3</sup>	<b>2.46</b>
Avg Diameter	<b>68.56</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		X28	
Container	0.00	124.51	g
Specimen + container	1339.82	634.85	g
Dry Specimen + container		620.15	g
Water content		<b>3.0</b>	%

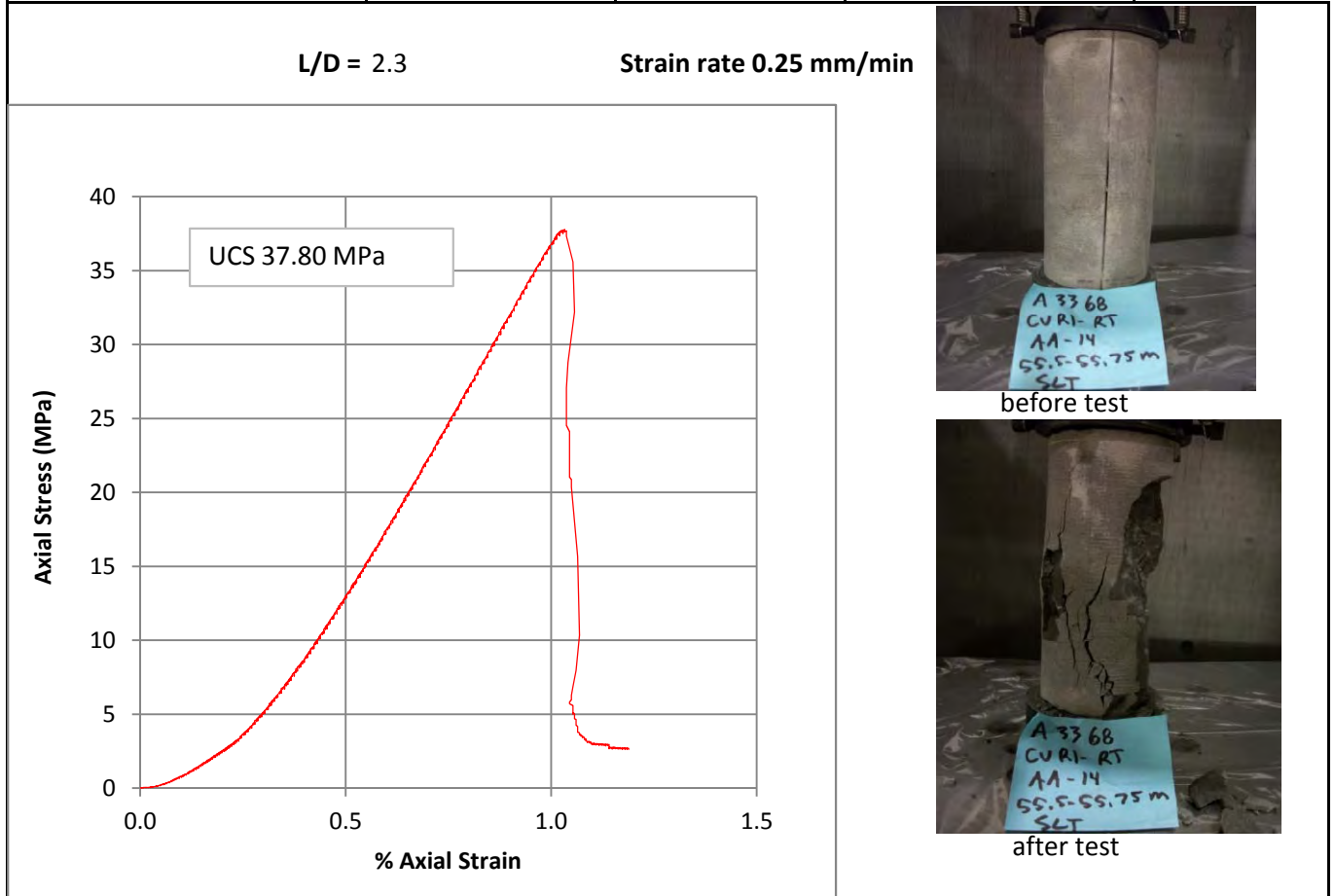


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-616C	April 26, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-14	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 55.5-55.75m depth		

Dimensions in mm			Initial	
Initial	159.20	159.22	Area mm <sup>2</sup>	3,683
Length	159.20	159.3	Volume mm <sup>3</sup>	586,422
Avg Length	<b>159.23</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.51</b>
Initial	68.56	68.73	Water Content %	<b>4.1</b>
Diameter	68.25	68.37	Dry Density Mg/m <sup>3</sup>	<b>2.41</b>
Avg Diameter	<b>68.48</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		M3	
Container	0.00	99.14	g
Specimen + container	1473.49	732.00	g
Dry Specimen + container		706.98	g
Water content		<b>4.1</b>	%

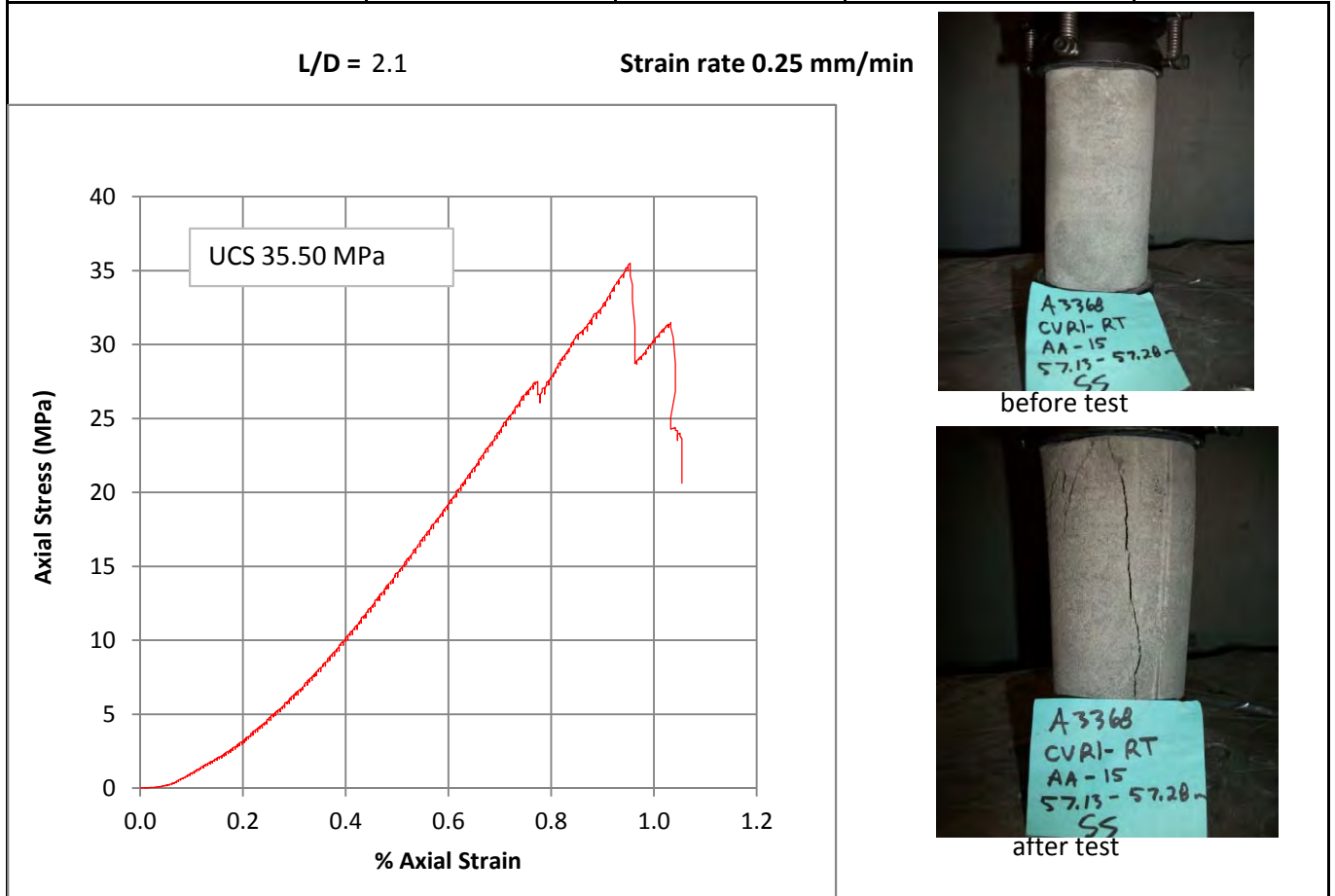


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-616C	April 23, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-15 SS	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 57.13-57.28m depth		

Dimensions in mm			Initial	
Initial	144.44	144.52	Area mm <sup>2</sup>	3,676
Length	144.46	144.54	Volume mm <sup>3</sup>	531,088
Avg Length	<b>144.49</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.46</b>
Initial	68.49	68.28	Water Content %	<b>3.7</b>
Diameter	68.34	68.53	Dry Density Mg/m <sup>3</sup>	<b>2.37</b>
Avg Diameter	<b>68.41</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		-	
Container	0.00	113.73	g
Specimen + container	1304.44	648.40	g
Dry Specimen + container		629.14	g
Water content		<b>3.7</b>	%

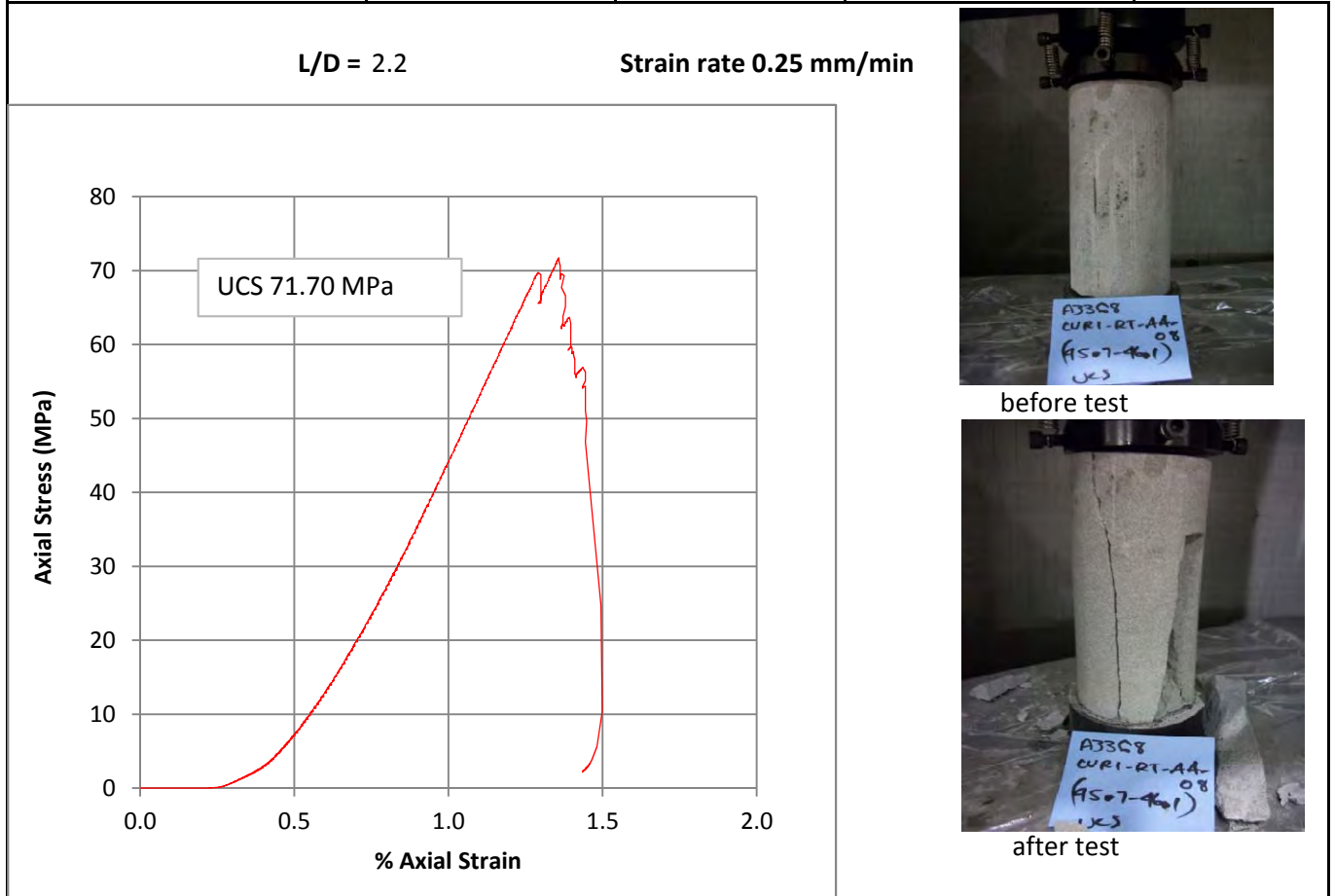


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-672C	May 14, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-08, (45.7-46.1)	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 45.7-46.1m depth		

Dimensions in mm			Initial	
Initial	149.42	149.72	Area mm <sup>2</sup>	3,676
Length	149.69	149.29	Volume mm <sup>3</sup>	549,654
Avg Length	<b>149.53</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.51</b>
Initial	68.28	68.48	Water Content %	<b>0.5</b>
Diameter	68.60	68.29	Dry Density Mg/m <sup>3</sup>	<b>2.50</b>
Avg Diameter	<b>68.41</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		KT2	
Container	0.00	131.20	g
Specimen + container	1379.79	979.65	g
Dry Specimen + container		975.33	g
Water content		<b>0.5</b>	%

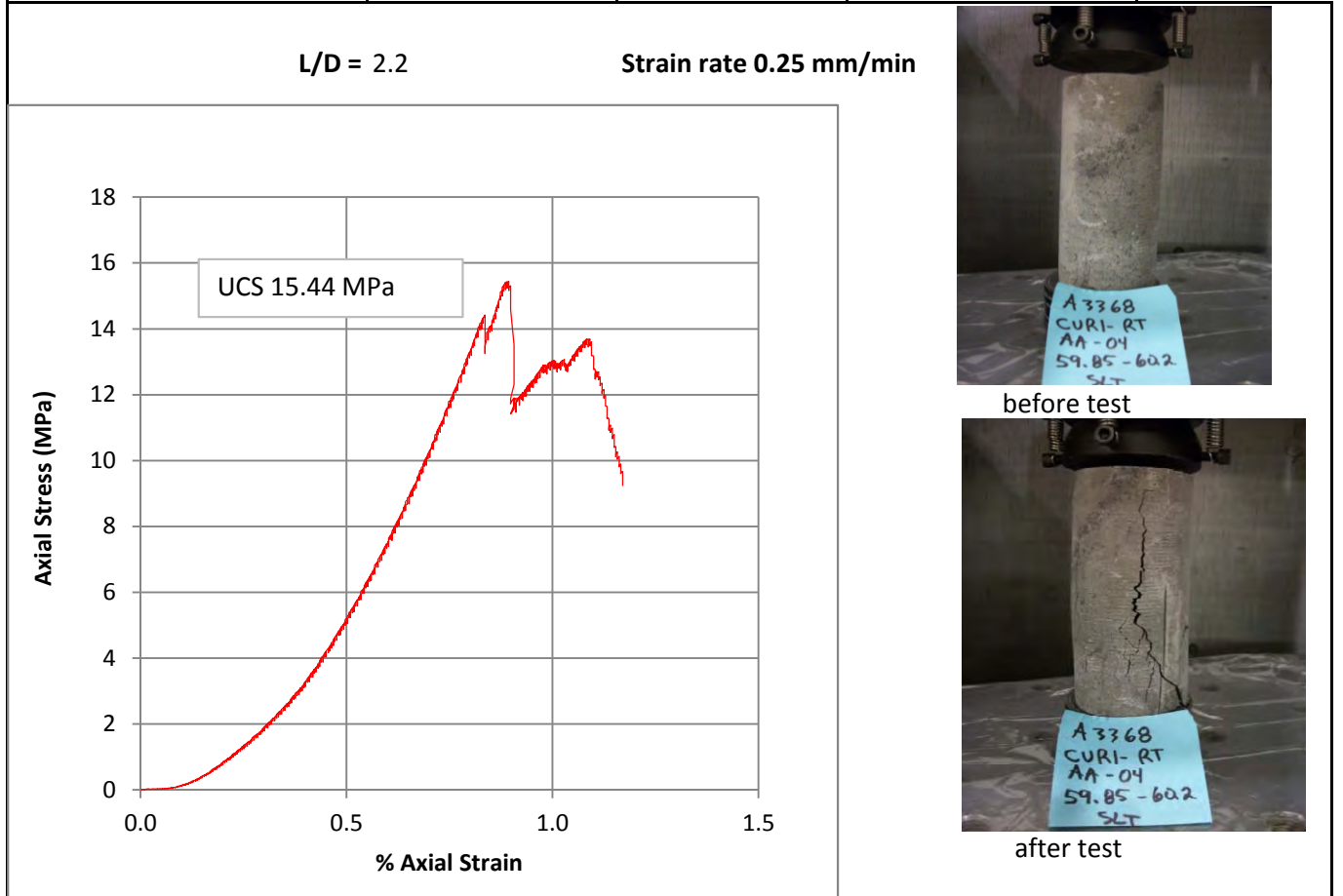


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-680C	April 16, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-04 SLT	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 59.85-60.2m depth		

Dimensions in mm			Initial	
Initial	151.79	151.97	Area mm <sup>2</sup>	3,678
Length	151.83	151.93	Volume mm <sup>3</sup>	558,578
Avg Length	<b>151.88</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.50</b>
Initial	68.48	68.41	Water Content %	<b>4.6</b>
Diameter	68.32	68.51	Dry Density Mg/m <sup>3</sup>	<b>2.39</b>
Avg Diameter	<b>68.43</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		XX	
Container	0.00	144.82	g
Specimen + container	1395.85	685.09	g
Dry Specimen + container		661.21	g
Water content		<b>4.6</b>	%



### UCS Test Results

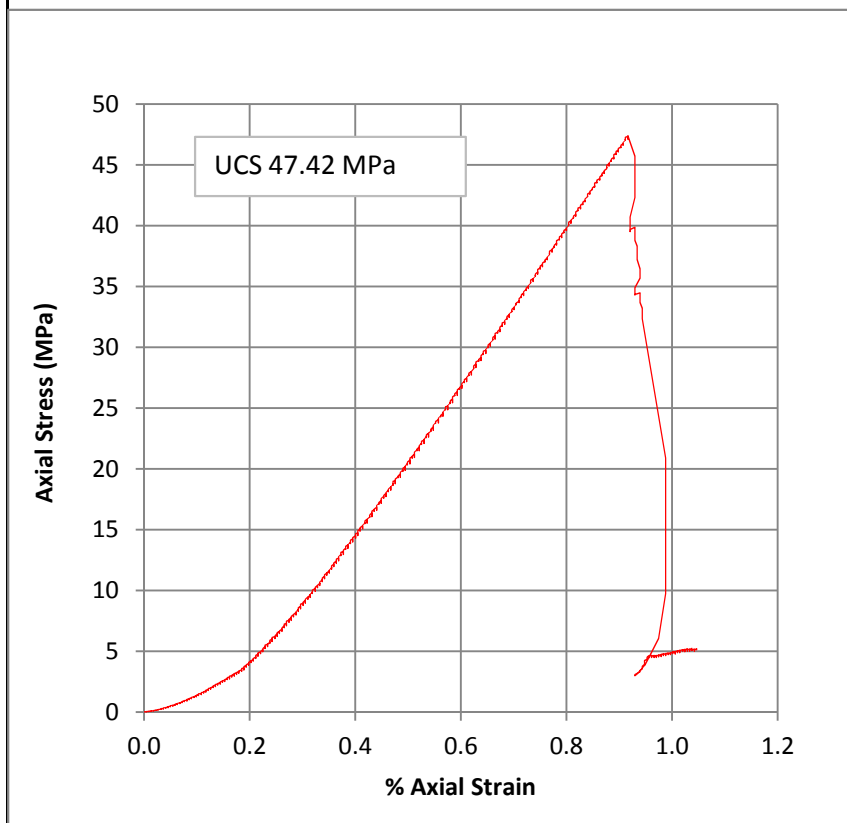
<b>Project:</b> A3368	<b>Location:</b> -RT-12-680C	April 27, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-05	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 61.84-62.35m depth		

Dimensions in mm			Initial	
Initial	141.41	141.49	Area mm <sup>2</sup>	3,690
Length	141.48	141.31	Volume mm <sup>3</sup>	521,867
Avg Length	<b>141.42</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.53</b>
Initial	68.57	68.54	Water Content %	<b>3.3</b>
Diameter	68.52	68.55	Dry Density Mg/m <sup>3</sup>	<b>2.45</b>
Avg Diameter	<b>68.55</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		A00	
Container	0.00	98.15	g
Specimen + container	1321.83	792.89	g
Dry Specimen + container		770.82	g
Water content		<b>3.3</b>	%

L/D = 2.1

Strain rate 0.25 mm/min



before test



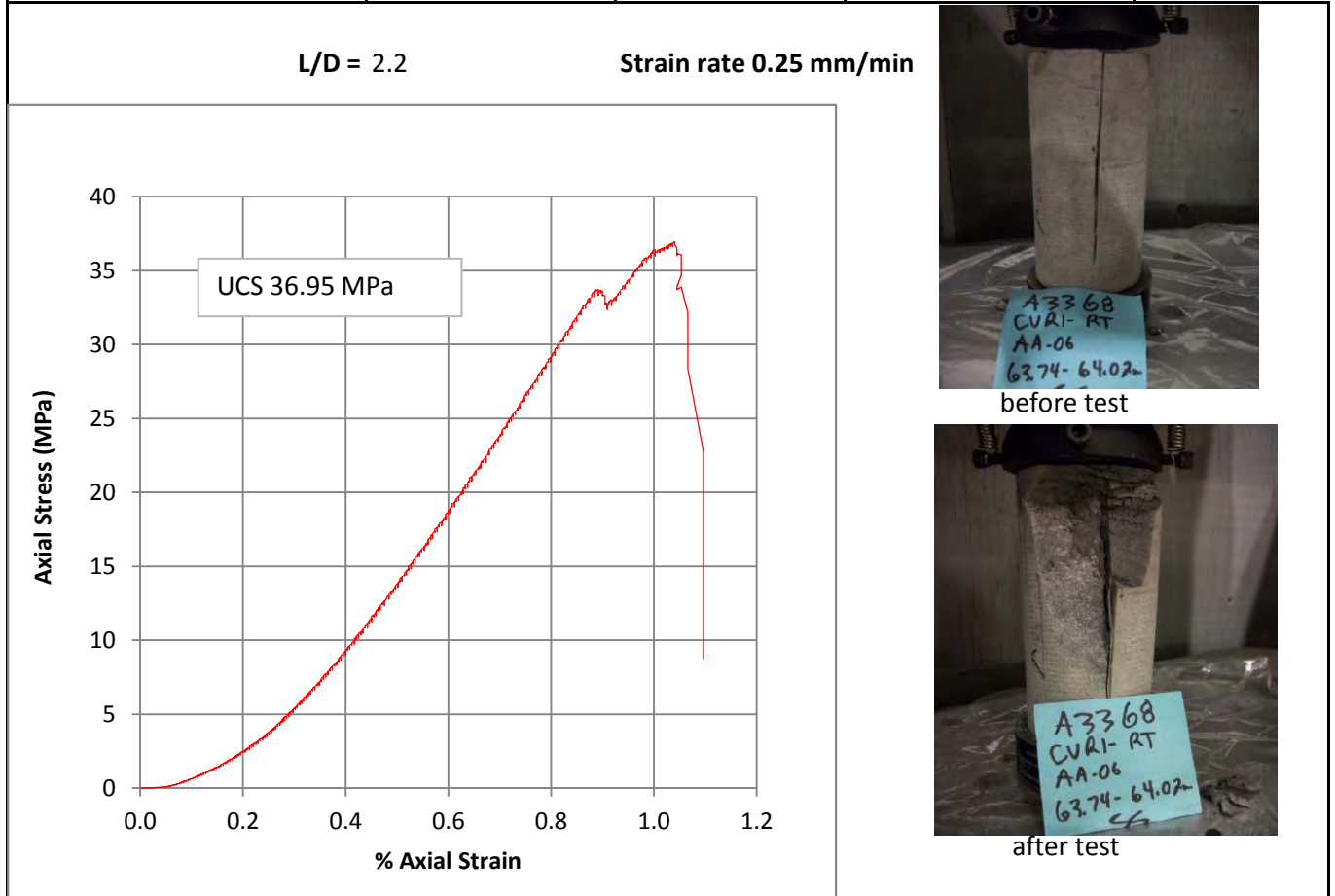
after test

### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-680C	April 16, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-06 SS	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 63.74-64.02m depth		

Dimensions in mm			Initial	
Initial	149.70	149.3	Area mm <sup>2</sup>	3,694
Length	149.39	149.74	Volume mm <sup>3</sup>	552,358
Avg Length	<b>149.53</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.52</b>
Initial	68.38	68.70	Water Content %	<b>3.7</b>
Diameter	68.48	68.76	Dry Density Mg/m <sup>3</sup>	<b>2.43</b>
Avg Diameter	<b>68.58</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		M3	
Container	0.00	99.2	g
Specimen + container	1390.46	584.44	g
Dry Specimen + container		567.26	g
Water content		<b>3.7</b>	%

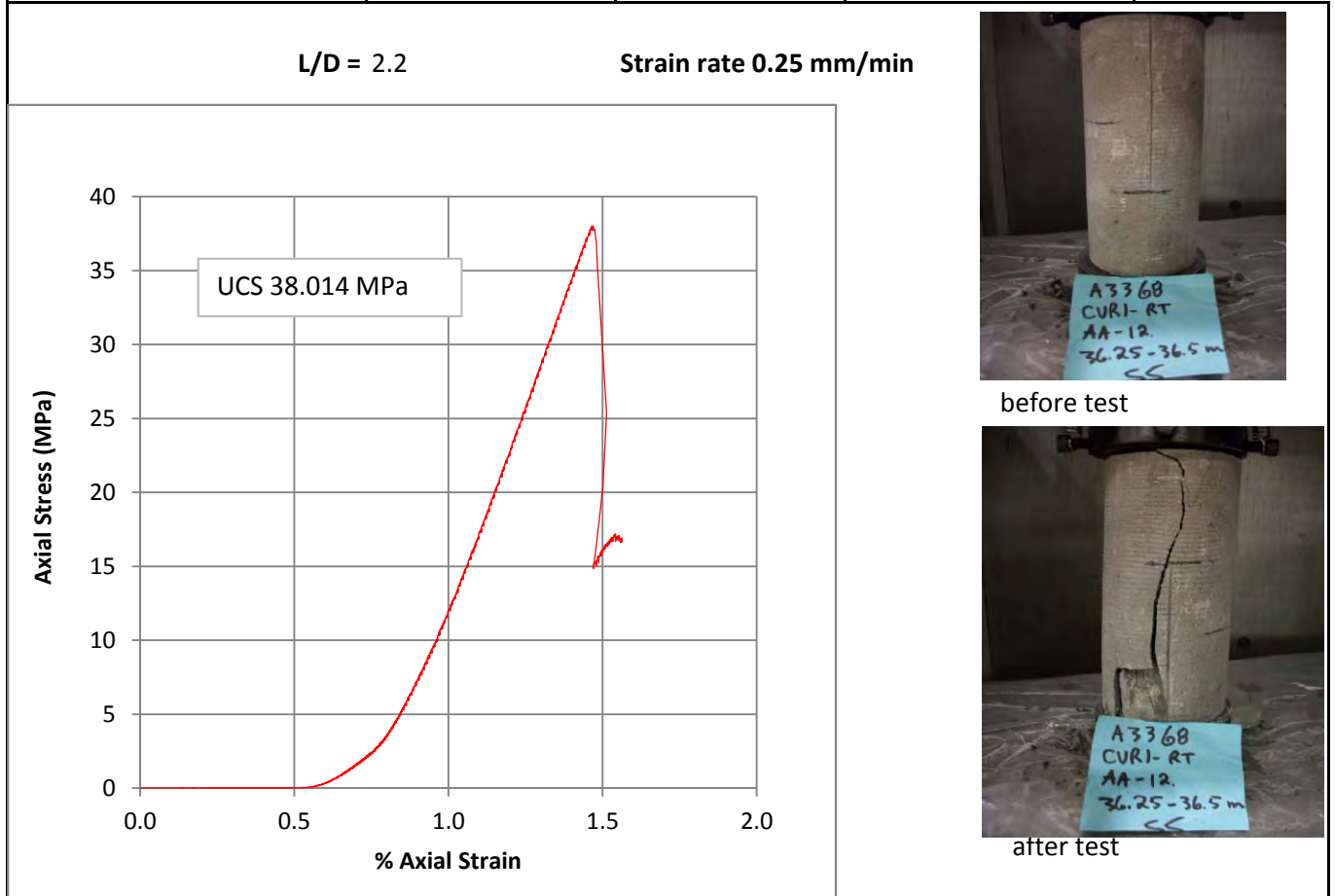


### UCS Test Results

<b>Project:</b> A3368	<b>Location:</b> - RT-12-719C	May 15, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-12	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 36.25-36.5m depth		

Dimensions in mm			Initial	
Initial	151.52	151.5	Area mm <sup>2</sup>	3,669
Length	151.56	151.6	Volume mm <sup>3</sup>	556,003
Avg Length	<b>151.55</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.58</b>
Initial	68.54	68.10	Water Content %	<b>2.1</b>
Diameter	68.37	68.38	Dry Density Mg/m <sup>3</sup>	<b>2.52</b>
Avg Diameter	<b>68.35</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		YYZ	
Container	0.00	184.81	g
Specimen + container	1432.29	1062.54	g
Dry Specimen + container		1044.21	g
Water content		<b>2.1</b>	%



### UCS Test Results

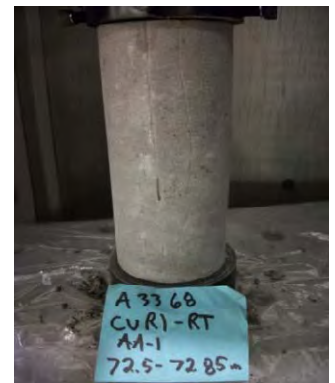
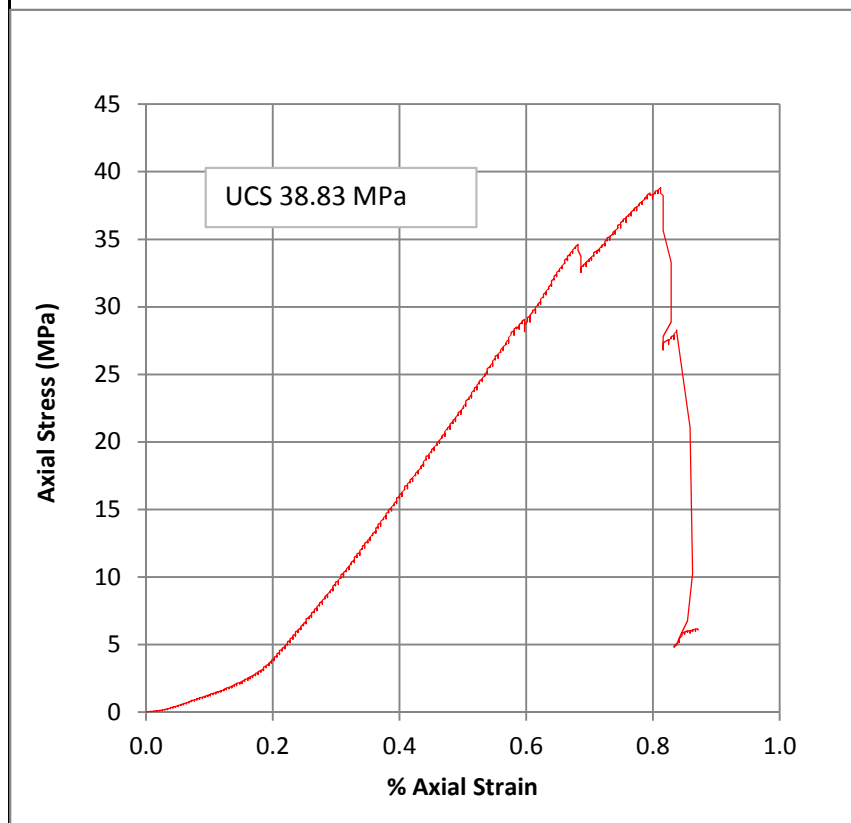
<b>Project:</b> A3368	<b>Location:</b> -RT-12-737A	May 15, '12
Operator: ch	<b>Sample:</b> CVRI RT-AA-1	
Test Type: UCS	<b>Specimen:</b> 1	
Specimen Type: Intact		
Specimen Preparation: core samples from 72.5-72.85m depth		

Dimensions in mm			Initial	
Initial	150.97	151.01	Area mm <sup>2</sup>	3,696
Length	150.98	150.95	Volume mm <sup>3</sup>	558,061
Avg Length	<b>150.98</b>		Bulk Density Mg/m <sup>3</sup>	<b>2.52</b>
Initial	68.81	68.62	Water Content %	<b>3.1</b>
Diameter	68.7	68.28	Dry Density Mg/m <sup>3</sup>	<b>2.45</b>
Avg Diameter	<b>68.60</b>			

Room Temperature			
Water content			
	Before Test	After test	units
Container #		X31	
Container	0.00	177.9	g
Specimen + container	1407.82	1269.00	g
Dry Specimen + container		1235.75	g
Water content		<b>3.1</b>	%

L/D = 2.2

Strain rate 0.25 mm/min



before test



after test

## Terms, Symbols and Abbreviations

Field geotechnical description of a rock is achieved through a brief description of the following points. All points should be included to accurately describe a rock for rock mechanics applications.

- 1) Total Core Recovery %
- 2) Rock Quality Designation (Description) (RQD) %
- 3) Rock Mass Condition Rating
- 4) Intact Material (Rock and Soil) Strength Classification
- 5) Joint/fracture count
- 6) CSIR (RMR) GEOMECHANICS CLASSIFICATION
- 7) Q-Value, Discontinuity Classification

### 1) Core Recovery (CR)

The total core recovery is the amount of core recovered in each core run expressed as a percentage.

$$TCR = [\text{Core recovered (cm)} / \text{Drilled length (cm)}] * 100$$

### 2) Rock Quality Designation (Description) (RQD)

The RQD is a bulk determination of the general geotechnical condition of the core expressed as a percentage of each core run. It is the sum of all core piece lengths in excess of 10 cm divided by the total length of the core run. It includes all core smaller than 10 cm broken during or after drilling.

$$RQD = [\text{Sum of intact core pieces } > 10 \text{ cm} / \text{Drilled Length (cm)}] * 100$$

### 3) Rock Mass Condition Rating

The Rock Mass Condition Rating provides an indication of the condition of the soil (either rock, mixed, or soil). It is based on the ISRM weathering index standard (Brown, 1981 "*Suggested Methods for Rock Characterization Testing and Monitoring*" International Society for Rock Mechanics).

Rock Mass Condition Rating (RMCR)			
Material	Term	Symbol	General Material Condition Description
Rock	Fresh	C1	No degradation of rock strength due to hydrothermal alteration or weathering near surface. May have slight discoloration on major discontinuity surfaces.
	Weakly to Moderately Degraded	C2	Discoloration and a drop in rock strength from "Fresh" rock values due to alteration or weathering
Mixed	Strongly Degraded	C3	Less than 50% of the material has had its strength degraded to soil (strength $\leq R_0$ ). "Fresh" to "Moderately Degraded" rock is present either as a continuous framework or as corestones.
	Extremely Degraded	C4	More than 50% of the material has had its strength degraded to soil (strength $\leq R_0$ ). "Fresh to Moderately Degraded" rock is present either as a discontinuous framework or as corestones
Soil	Completely Degraded	C5	All of the material has been degraded to soil (strength $\leq R_0$ ). However the original mass structure (visible mineralogy and fractures) may remain visible.
	Residual Soil	C6	All of the material has been degraded to soil (strength $\leq R_0$ ). None of the original mass structure (visible mineralogy and fractures) remains.

#### 4) Intact Material (Soil and Rock) Strength Classification

The Intact Material (Rock and Soil) Strength Classification provides an indication of rock strength and provides an estimation of the uniaxial compressive strength (USC) for the material (Brown, 1981 "Suggested Methods for Rock Characterization Testing and Monitoring" International Society for Rock Mechanics).

INTACT MATERIAL (ROCK AND SOIL) STRENGTH CLASSIFICATION			
Grade	Description	Field Identification	Approximate Range of Uniaxial Compressive Strength (Mpa)
G	Granular Soil	Cohesionless, friable, granular, soil, sand	0
S2	Soft Clay	Easily penetrated several centimeters with a nail	<0.025
S3	Firm Clay	Easily penetrated several centimeters with thumb with moderate pressure	0.025-0.1
S4	Stiff Clay	Readily indented by thumb, but penetrated only with great effort; Crumbles under moderate pressure from a nail	0.10-0.25
R0	Extremely Weak Rock	Indented by thumbnail	0.25-1.0
R1	Very Weak Rock	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife	1.0-5.0
R2	Weak Rock	Can be peeled by a pocked knife with difficulty, shallow indentations made by firm blow with point of geological hammer	5.0-25
R3	Medium Strong Rock	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with a single blow of a geological hammer	25-50
R4	Strong Rock	Specimen requires more than one blow of a geological hammer to fracture it	50-100
R5	Very Strong Rock	Specimen requires many blows of geological hammer to fracture it	100-250
R6	Extremely Strong Rock	Specimen can only be chipped with a geological hammer	>250

#### 5) Joint\Fracture Count

The fracture count is the total number of natural fractures (i.e. not made during drilling or during post drilling activities) present in each core interval.

**6) CSIR (RMR) -Value, GEOMECHANICS CLASSIFICATION OF JOINTED ROCK MASSES  
CLASSIFICATION PARAMETERS AND THEIR RATINGS**

PARAMETER		RANGES OF VALUES							
1	Strength of intact rock material	Point load	> 8 Mpa	4 - 8 Mpa	2- 4 MPa	1 - 2 MPa	For this low range		
		Uniaxial compressive strength	> 200 MPa	100 - 200 MPa	50 - 100 MPa	25 = 50 MPa	10- 25 Mpa	3-10 MPa	1 - 3 MPa
Rating			<b>15</b>	<b>12</b>	<b>7</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>0</b>
2	Drill core quality RQD		90% - 100%	75% - 90%	50%- 75%	25% 50%	<25%		
	Rating		20	17	13	8	3		
3	Spacing ' of joints		>3m	1-3m	0.3-1m	50 - 300 mmm	< 50 mm		
	Rating		<b>30</b>	<b>25</b>	<b>20</b>	<b>10</b>	<b>5</b>		
4	Condition of joints		Very rough surfaces Not continuous No separation Hard joint won rock	Slightly rough surfaces Separation (1 mm Hard joint wall rock	Slightly rough surfaces Separation <1mm Soft joint wall rock	Slickensided surfaces or - Gouge <5 mm thick or Joints open 1- 5mm Continuous joints	Soft gouge >5mm thick or Joints open >5mm Continuous joints		
			Rating		<b>25</b>	<b>20</b>	<b>12</b>	<b>6</b>	<b>0</b>
5	Ground water	Inflow per 10m tunnel length	None		<25 litres /min.	25- 125 litres/min	> 125 litres/min.		
		Ratio	Joint water pressure	OR		OR		OR	OR
			major principal stress	0		0.0 - 02	0.2-0.5	>05	
		General conditions		OR	Completely dry	OR Moist only (Interstitial water	OR Water under moderate pressure	OR Severe veer problems	
Rating		<b>10</b>		<b>7</b>	<b>4</b>	<b>0</b>			

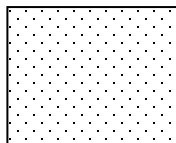
## 7) Q-Value, Discontinuity Classification (Barton et al., 1974)

Joint set spacing, Joint roughness and Joint Alteration are a combination of small scale “roughness” and intermediate “shape” of fracture.

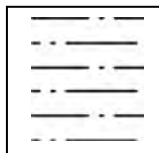
(After: Barton, N., et al, 1974, Engineering classification of rock masses for design of tunnel support. Rock Mechanics, 6 (4), pp. 189-236)).

Parameter	Description	Jn (Value)
Joint Set Number (Jn)	massive, no or few joints	0.5 - 1.0
	one joint set	2
	one joint set plus random	3
	two joint sets	4
	two joint sets plus random	6
	three joint sets	9
	three joint sets plus random	12
	four or more joint sets (heavily fractured) crushed rock (earthlike)	15 20
Parameter	Description	Jr (Value)
Joint Roughness (Jr)	Rough and wavy or stepped	3
	Smooth and wavy or stepped	2
	Rough and planar or slickensided and wavy or stepped	1.5
	Smooth and planar	1
	Slickensided or polished and planar	0.5
Parameter	Description	Ja (Value)
Joint Alteration (Ja)	<b>Unfilled Joints</b>	
	Staining only, no alteration	1
	Slightly altered joint walls	2
	Silty or sandy coatings	3
	Clay coatings	4
	<b>Filled Joints</b>	
	Stiff clay filling <5 mm thick	6
	Soft clay filling <5 mm thick	8
	Stiff clay filling >5 mm thick	10
Soft clay filling >5 mm thick	15	

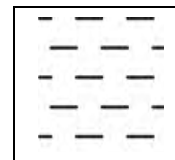
## Symbols



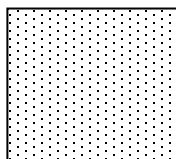
Sandstone



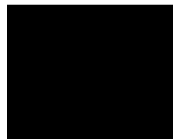
Silty Mudstone



Mudstone



Siltstone



Coal

## **Abbreviations**

### **Rock Type**

MS - mudstone  
SS - sandstone  
SlSt - siltstone  
SLMS - silty mudstone  
Coal  
Clay

### **Color**

br. - brown  
dr.br - dark brown  
  
blk. - black  
gr. - grey  
dr.gr. - dark grey

### **Texture**

mass - massive  
lam - laminated  
  
blocky

**Appendix 44-2**

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ALS Laboratory Group: Coal Composite Samples  
Laboratory Results July, 2012

Robb Trend Project

Coal Sample Results – 2012 Core Program

Coal Composite Samples  
Laboratory Results  
July, 2012

COAL SAMPLES

Val d’Or Seam	7
Arbour Seam	7
McPherson Seam	2
McLeod Seam	1
Silkstone Seam	2
Mynheer Seam	11

Robb Trend Project

Coal Sample Results – 2012 Core Program

## Val d'Or Seam

Robb Trend Project

Coal Sample Results – 2012 Core Program

RT-11-339C

Val d'Or Seam

Sample Horizon: 35.0 to 44.5



CERTIFICATE OF ANALYSIS

Preliminary Report 31-Jul-12  
Final Report

Coal Valley Resources Inc.  
1600 Oxford Tower  
10235-101 Street  
Edmonton, AB  
T5J 3G1, Canada

WORKORDER: RC12020552

Hole: RT-11-339C  
Seam: Val D'or  
Diameter: 63.5mm  
Depth: 35.0m to 44.5m  
Plies: A,B,C,D,E,F,G,H

Raw Analysis

	Wt (g)	Mois%	Ash%	VM%	F.C.%	S%	CV (kcal/kg)	Cl %	RD	ARD
Raw Coal	34450	6.69	20.39	31.85	41.07	0.15	5223	0.02	1.46	1.45

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
Laboratory Manager



CERTIFICATE OF ANALYSIS

Preliminary Report  
Final Report

31-Jul-12

Coal Valley Resources Inc.  
1600 Oxford Tower  
10235-101 Street  
Edmonton, AB  
T5J 3G1, Canada

WORKORDER: RC12020552  
  
Hole: RT-11-339C  
Seam: Val D'or  
Diameter: 63.5mm  
Depth: 35.0m to 44.5m  
Plies: A,B,C,D,E,F,G,H

---

SIZING AFTER 20 DROPS

Size (mm)	Weight (g)	Weight %
+50	1503	4.4
-50	32947	95.6

We certify the analysis reported hereon was determined in accordance with the modified procedure for Drop Shatter Testing.

<original signed by>

Brett Warden  
Laboratory Manager



CERTIFICATE OF ANALYSIS

Preliminary Report  
Final Report

31-Jul-12

Coal Valley Resources Inc.  
1600 Oxford Tower  
10235-101 Street  
Edmonton, AB  
T5J 3G1, Canada

WORKORDER: RC12020552

Hole: RT-11-339C  
Seam: Val D'or  
Diameter: 63.5mm  
Depth: 35.0m to 44.5m  
Plies: A,B,C,D,E,F,G,H

DRY SIZING

ASTM Standard  
of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	2768	8.0	8.0
-31.5+25	1407	4.1	12.1
-25+16	2716	7.9	20.0
-16+8	4533	13.2	33.2
-8+4	4694	13.6	46.8
-4+2	7378	21.4	68.2
-2	10955	31.8	100.0

D4749  
(split with RSD)

**\*All losses allocated to -2mm fraction**

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
Laboratory Manager



**CERTIFICATE OF ANALYSIS**

Preliminary Report  
 Final Report

31-Jul-12

Coal Valley Resources Inc.  
 1600 Oxford Tower  
 10235-101 Street  
 Edmonton, AB  
 T5J 3G1, Canada

WORKORDER: RC12020552  
 Hole: RT-11-339C  
 Seam: Val D'or  
 Diameter: 63.5mm  
 Depth: 35.0m to 44.5m  
 Plies: A,B,C,D,E,F,G,H

**WET SIZING**

ASTM Standard  
 of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	583	2.3	2.3
+25	724	2.8	5.1
+16	1527	6.0	11.1
+12.5	1010	4.0	15.0
+8	2193	8.6	23.6
+4	3697	14.5	38.1
+2	5629	22.0	60.1
+1	4770	18.7	78.8
+0.5	2410	9.4	88.2
+0.25	1151	4.5	92.7
+0.15	460	1.8	94.5
+0.063	532	2.1	96.6
+0.038	296	1.2	97.7
-0.038	581	2.3	100.0

D4749  
 (split with RSD)

\*All losses allocated to -0.038mm fraction

Sample was attrited in maximum 50kg lots with 18 cubes and 150 L of water or equivalent mass for 5 min @ 20 rpm

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
 Laboratory Manager



**CERTIFICATE OF ANALYSIS**

Preliminary Report  
 Final Report

31-Jul-12

Coal Valley Resources Inc.  
 1600 Oxford Tower  
 10235-101 Street  
 Edmonton, AB  
 T5J 3G1, Canada

WORKORDER: RC12020552

Hole: RT-11-339C  
 Seam: Val D'or  
 Diameter: 63.5mm  
 Depth: 35.0m to 44.5m  
 Plies: A,B,C,D,E,F,G,H

**ANALYSIS**

ASTM Standard  
 of Analysis

**FLOAT SINK ANALYSIS**

**AIR-DRIED BASIS**

SIZE: +12.5mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.35	302	7.9	7.26	5.59	6500	0.0
S1.35 - F1.40	975	25.5	7.14	9.70	6206	0.0
S1.40 - F1.45	705	18.5	7.45	13.40	5793	0.0
S1.45 - F1.50	449	11.8	6.88	19.28	5411	0.0
S1.50 - F1.55	479	12.6	6.68	24.07	5053	0.0
S1.55 - F1.60	212	5.5	5.91	24.69	4680	0.0
S1.60 - F1.70	344	9.0	5.50	30.80	4112	*
S1.70 - F1.80	144	3.8	5.16	45.27	3503	*
S1.80 - F1.90	46	1.2	4.35	55.60	2729	*
S1.90 - F2.00	48	1.3	3.66	60.48	2266	*
S2.00	114	3.0	2.28	83.55	712	*

D4371  
 D3172  
 D4239  
 D720

SIZE: -12.5mm x +1.0mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.30	9	0.2	6.38	3.79	6753	0.0
S1.30 - F1.35	1273	31.3	7.28	4.15	6524	0.0
S1.35 - F1.40	1094	26.9	6.86	8.72	6223	0.0
S1.40 - F1.45	475	11.7	6.44	14.01	5822	0.0
S1.45 - F1.50	284	7.0	6.49	19.00	5433	0.0
S1.50 - F1.55	192	4.7	6.42	23.30	5127	0.0
S1.55 - F1.60	124	3.1	6.49	27.82	4743	0.0
S1.60 - F1.70	149	3.7	5.36	35.24	4138	*
S1.70 - F1.80	87	2.1	4.76	43.43	3503	*
S1.80 - F1.90	65	1.6	4.39	51.06	2856	*
S1.90 - F2.00	46	1.1	4.33	56.61	2259	*
S2.00	265	6.5	3.65	76.71	595	*

SIZE: 1mm x 0.15mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.35	316	30.0	7.09	3.15	6553	0.0
S1.35 - F1.40	234	22.2	7.05	6.49	6292	0.0
S1.40 - F1.45	98	9.3	6.41	11.61	5968	0.0
S1.45 - F1.50	63	6.0	6.36	15.87	5626	0.0
S1.50 - F1.55	44	4.2	6.20	18.74	5385	0.0
S1.55 - F1.60	43	4.0	6.46	22.28	5058	0.0
S1.60 - F1.70	47	4.4	5.70	31.90	4356	*
S1.70 - F1.80	24	2.3	5.61	40.07	3639	*
S1.80 - F1.90	16	1.5	5.21	47.97	2978	*
S1.90 - F2.00	13	1.2	4.77	55.18	2221	*
S2.00	157	14.9	3.46	76.08	447	*

**FROTH FLOTATION**

SIZE: 0.15mm x 0.038mm						
TIME	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
15 SEC	11	2.9	4.73	11.98	6018	0.0
30 SEC	4	1.0	5.07	12.36	5946	0.0
60 SEC	4	1.2	5.70	12.95	5879	0.0
90 SEC	1	0.4	NSS	13.62	5877	0.0
Tails (T2)	22	5.8	6.75	31.10	4198	0.0
Tails (T1)	336	88.8	6.97	44.59	3004	0.0

PARAMETERS: 10% PULP DENSITY, COND. TIME 90 SECOND  
 0.667 KG/T 10:1 KERO:MIBC, DENVER CELL, 1200 RPM

**FINES**

SIZE: -0.038mm		
Mois %	Ash %	GCV (kcal/kg)
6.83	63.65	1531

NSS = Not Sufficient Sample

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

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 Plies: A,B,C,D,E,F,G,H

**ANALYSIS**

ASTM Standard  
 of Analysis

**FLOAT SINK ANALYSIS**

**AIR-DRIED BASIS**

CUMULATIVE WEIGHT % SIZE: +12.5mm						
S.G	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.35	7.9	7.9	7.26	5.59	6500	0.0
S1.35 - F1.40	25.5	33.4	7.17	8.73	6276	0.0
S1.40 - F1.45	18.5	51.9	7.27	10.39	6104	0.0
S1.45 - F1.50	11.8	63.7	7.20	12.03	5976	0.0
S1.50 - F1.55	12.6	76.2	7.11	14.01	5824	0.0
S1.55 - F1.60	5.5	81.8	7.03	14.74	5747	0.0
S1.60 - F1.70	9.0	90.8	6.88	16.33	5584	-
S1.70 - F1.80	3.8	94.5	6.81	17.49	5501	-
S1.80 - F1.90	1.2	95.7	6.78	17.97	5466	-
S1.90 - F2.00	1.3	97.0	6.74	18.52	5425	-
S2.00	3.0	100.0	6.60	20.47	5284	-

D4371  
 D3172  
 D4239  
 D720

CUMULATIVE WEIGHT % SIZE: 12.5mm x 1.0mm						
S.G	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.30	0.2	0.2	6.38	3.79	6753	0.0
S1.30 - F1.35	31.3	31.6	7.27	4.15	6526	0.0
S1.35 - F1.40	26.9	58.5	7.08	6.25	6386	0.0
S1.40 - F1.45	11.7	70.2	6.98	7.54	6292	0.0
S1.45 - F1.50	7.0	77.2	6.93	8.58	6215	0.0
S1.50 - F1.55	4.7	81.9	6.90	9.43	6152	0.0
S1.55 - F1.60	3.1	85.0	6.89	10.09	6101	0.0
S1.60 - F1.70	3.7	88.6	6.82	11.13	6020	-
S1.70 - F1.80	2.1	90.8	6.78	11.89	5961	-
S1.80 - F1.90	1.6	92.4	6.73	12.58	5906	-
S1.90 - F2.00	1.1	93.5	6.71	13.11	5863	-
S2.00	6.5	100.0	6.51	17.25	5520	-

CUMULATIVE WEIGHT % SIZE: 1mm x 0.15mm						
S.G	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.35	30.0	30.0	7.09	3.15	6553	0.0
S1.35 - F1.40	22.2	52.2	7.07	4.57	6442	0.0
S1.40 - F1.45	9.3	61.5	6.97	5.64	6370	0.0
S1.45 - F1.50	6.0	67.5	6.92	6.55	6304	0.0
S1.50 - F1.55	4.2	71.7	6.88	7.26	6250	0.0
S1.55 - F1.60	4.0	75.7	6.85	8.06	6187	0.0
S1.60 - F1.70	4.4	80.1	6.79	9.37	6086	-
S1.70 - F1.80	2.3	82.4	6.76	10.21	6019	-
S1.80 - F1.90	1.5	83.9	6.73	10.91	5963	-
S1.90 - F2.00	1.2	85.1	6.70	11.54	5910	-
S2.00	14.9	100.0	6.22	21.14	5097	-

**FROTH FLOTATION**

CUMULATIVE WEIGHT % SIZE 0.15mm x 0.038mm						
TIME	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
15 SEC (P2)	2.9	2.9	4.73	11.98	6018	0.0
30 SEC (P3)	1.0	3.9	4.82	12.08	5999	0.0
60 SEC (P4)	1.2	5.0	5.02	12.28	5971	0.0
90 SEC (P5)	0.4	5.4	-	12.37	5965	0.0
Tails (T2)	5.8	11.2	-	22.09	5048	0.0
Tails (T1)	88.8	100.0	-	42.07	3233	0.0

**FINES**

CUMULATIVE WEIGHT % SIZE: -0.038mm		
Mois %	Ash %	CV (kcal/kg)
6.83	63.65	1531

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
 Laboratory Manager

Robb Trend Project

Coal Sample Results – 2012 Core Program

RT-11-420C

Val d'Or Seam

Sample Horizon: 23.8 to 33.2



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WORKORDER: RC12020557

Hole: RT-11-420C  
Seam: Val D'or  
Diameter: 63.5mm  
Depth: 23.8m to 33.2m  
Plies: A,B,C,D,E,F,G,H

Raw Analysis

	Wt (g)	Mois%	Ash%	VM%	F.C.%	S%	CV (kcal/kg)	Cl %	RD	ARD
Raw Coal	23750	6.27	12.81	34.37	46.55	0.06	5822	0.01	1.47	1.41

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

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Laboratory Manager



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Plies: A,B,C,D,E,F,G,H

---

SIZING AFTER 20 DROPS

Size (mm)	Weight (g)	Weight %
+50	1140	4.8
-50	22610	95.2

We certify the analysis reported hereon was determined in accordance with the modified procedure for Drop Shatter Testing.

<original signed by>

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Depth: 23.8m to 33.2m  
Plies: A,B,C,D,E,F,G,H

DRY SIZING

ASTM Standard  
of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	2171	9.1	9.1
-31.5+25	1157	4.9	14.0
-25+16	2767	11.7	25.7
-16+8	3873	16.3	42.0
-8+4	3451	14.5	56.5
-4+2	4312	18.2	74.7
-2	6020	25.3	100.0

D4749  
(split with RSD)

\*All losses allocated to -2mm fraction

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

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 Seam: Val D'or  
 Diameter: 63.5mm  
 Depth: 23.8m to 33.2m  
 Plies: A,B,C,D,E,F,G,H

WET SIZING

ASTM Standard  
 of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	376	2.1	2.1
+25	579	3.2	5.4
+16	1116	6.3	11.6
+12.5	1006	5.6	17.3
+8	2211	12.4	29.7
+4	3256	18.3	48.0
+2	3607	20.2	68.2
+1	2786	15.6	83.9
+0.5	1343	7.5	91.4
+0.25	669	3.8	95.1
+0.15	254	1.4	96.6
+0.063	235	1.3	97.9
+0.038	85	0.5	98.4
-0.038	291	1.6	100.0

D4749  
 (split with RSD)

\*All losses allocated to -0.038mm fraction

Sample was attrited in maximum 50kg lots with 18 cubes and 150 L of water or equivalent mass for 5 min @ 20 rpm

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 Depth: 23.8m to 33.2m  
 Plies: A,B,C,D,E,F,G,H

ANALYSIS

ASTM Standard  
 of Analysis

FLOAT SINK ANALYSIS

AIR-DRIED BASIS

SIZE: +12.5mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.35	328	10.7	7.27	4.92	6493	0.0
S1.35 - F1.40	1054	34.4	6.59	8.57	6221	0.0
S1.40 - F1.45	639	20.9	6.37	13.49	5870	0.0
S1.45 - F1.50	275	9.0	6.03	19.82	5406	0.0
S1.50 - F1.55	137	4.5	5.78	20.76	5215	0.0
S1.55 - F1.60	40	1.3	5.28	24.23	4917	0.0
S1.60 - F1.70	190	6.2	4.87	32.11	4260	*
S1.70 - F1.80	176	5.8	4.45	41.23	3427	*
S1.80 - F1.90	152	5.0	3.59	53.47**	2715	*
S1.90 - F2.00	23	0.8	2.94	48.51*	2111	*
S2.00	47	1.5	2.40	55.67	1719	*

D4371  
 D3172  
 D4239  
 D720

SIZE: -12.5mm x +1.0mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.30	10	0.2	7.70	3.29	6639	0.0
S1.30 - F1.35	1729	29.0	7.55	3.71	6531	0.0
S1.35 - F1.40	2108	35.4	7.23	7.60	6269	0.0
S1.40 - F1.45	847	14.2	6.57	12.94	5884	0.0
S1.45 - F1.50	459	7.7	6.29	16.78	5586	0.0
S1.50 - F1.55	216	3.6	5.44	21.21	5220	0.0
S1.55 - F1.60	122	2.0	5.38	26.09	4843	0.0
S1.60 - F1.70	158	2.7	5.07	33.25	4267	*
S1.70 - F1.80	80	1.3	4.48	39.95	3632	*
S1.80 - F1.90	52	0.9	4.01	45.95	2971	*
S1.90 - F2.00	46	0.8	3.40	50.62	2421	*
S2.00	128	2.2	1.96	61.95	1227	*

SIZE: 1mm x 0.15mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.35	362	31.8	7.05	2.88	6524	0.0
S1.35 - F1.40	346	30.3	7.14	5.42	6314	0.0
S1.40 - F1.45	130	11.4	6.68	10.49	5960	0.0
S1.45 - F1.50	77	6.8	6.51	13.96	5681	0.0
S1.50 - F1.55	54	4.8	7.04	16.29	5476	0.0
S1.55 - F1.60	31	2.8	6.74	21.82	5053	0.0
S1.60 - F1.70	31	2.8	6.15	29.85	4406	*
S1.70 - F1.80	17	1.5	5.27	38.16	3709	*
S1.80 - F1.90	13	1.1	4.99	45.60	3018	*
S1.90 - F2.00	9	0.8	4.69	52.56	2381	*
S2.00	69	6.0	1.75	61.20	693	*

FROTH FLOTATION

SIZE: 0.15mm x 0.038mm						
TIME	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
15 SEC	29	15.2	7.03	8.79	6144	0.0
30 SEC	16	8.3	6.99	8.68	6137	0.0
60 SEC	13	7.0	7.29	9.04	6094	0.0
90 SEC	4	2.0	7.36	10.03	5996	0.0
Tails (T2)	11	5.8	6.36	27.35	4306	0.0
Tails (T1)	116	61.6	6.22	29.70	3976	0.0

PARAMETERS: 10% PULP DENSITY, COND. TIME 90 SECOND  
 0.667 KG/T 10:1 KERO:MIBC, DENVER CELL, 1200 RPM

FINES

SIZE: -0.038mm		
Mois %	Ash %	GCV (kcal/kg)
5.55	42.38	2930

\* = Lab bottle checked  
 \*\* = Lab bottle checked and sample re-prepped  
 Samples marked with a \* or \*\* were tested with HCl and had a positive reaction

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard  
 Methods of analysis of Coal.

<original signed by>

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 of Analysis

**FLOAT SINK ANALYSIS**

**AIR-DRIED BASIS**

CUMULATIVE WEIGHT % SIZE: +12.5mm						
S.G.	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.35	10.7	10.7	7.27	4.92	6493	0.0
S1.35 - F1.40	34.4	45.1	6.75	7.70	6285	0.0
S1.40 - F1.45	20.9	66.0	6.63	9.53	6154	0.0
S1.45 - F1.50	9.0	75.0	6.56	10.77	6064	0.0
S1.50 - F1.55	4.5	79.4	6.51	11.33	6017	0.0
S1.55 - F1.60	1.3	80.8	6.49	11.54	5999	0.0
S1.60 - F1.70	6.2	87.0	6.38	13.01	5875	-
S1.70 - F1.80	5.8	92.7	6.26	14.76	5722	-
S1.80 - F1.90	5.0	97.7	6.12	14.01	5570	-
S1.90 - F2.00	0.8	98.5	6.10	13.90	5543	-
S2.00	1.5	100.0	6.04	14.55	5484	-

D4371  
 D3172  
 D4239  
 D720

CUMULATIVE WEIGHT % SIZE: 12.5mm x 1.0mm						
S.G.	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.30	0.2	0.2	7.70	3.29	6639	0.0
S1.30 - F1.35	29.0	29.2	7.55	3.71	6532	0.0
S1.35 - F1.40	35.4	64.6	7.38	5.84	6388	0.0
S1.40 - F1.45	14.2	78.8	7.23	7.12	6297	0.0
S1.45 - F1.50	7.7	86.5	7.15	7.98	6233	0.0
S1.50 - F1.55	3.6	90.2	7.08	8.51	6193	0.0
S1.55 - F1.60	2.0	92.2	7.04	8.90	6163	0.0
S1.60 - F1.70	2.7	94.9	6.98	9.59	6110	-
S1.70 - F1.80	1.3	96.2	6.95	10.01	6075	-
S1.80 - F1.90	0.9	97.1	6.92	10.33	6047	-
S1.90 - F2.00	0.8	97.8	6.90	10.65	6019	-
S2.00	2.2	100.0	6.79	11.75	5915	-

CUMULATIVE WEIGHT % SIZE: 1mm x 0.15mm						
S.G.	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.35	31.8	31.8	7.05	2.88	6524	0.0
S1.35 - F1.40	30.3	62.1	7.09	4.12	6421	0.0
S1.40 - F1.45	11.4	73.5	7.03	5.11	6350	0.0
S1.45 - F1.50	6.8	80.3	6.99	5.86	6293	0.0
S1.50 - F1.55	4.8	85.1	6.99	6.44	6248	0.0
S1.55 - F1.60	2.8	87.8	6.98	6.92	6210	0.0
S1.60 - F1.70	2.8	90.6	6.96	7.62	6155	-
S1.70 - F1.80	1.5	92.1	6.93	8.11	6116	-
S1.80 - F1.90	1.1	93.2	6.91	8.56	6079	-
S1.90 - F2.00	0.8	94.0	6.89	8.93	6048	-
S2.00	6.0	100.0	6.58	12.07	5726	-

**FROTH FLOTATION**

CUMULATIVE WEIGHT % SIZE 0.15mm x 0.038mm						
TIME	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
15 SEC (P2)	15.2	15.2	7.03	8.79	6144	0.0
30 SEC (P3)	8.3	23.5	7.02	8.75	6142	0.0
60 SEC (P4)	7.0	30.5	7.08	8.82	6131	0.0
90 SEC (P5)	2.0	32.5	7.10	8.89	6122	0.0
Tails (T2)	5.8	38.4	6.98	11.70	5846	0.0
Tails (T1)	61.6	100.0	6.51	22.80	4693	0.0

**FINES**

CUMULATIVE WEIGHT % SIZE: -0.038mm		
Mois %	Ash %	CV (kcal/kg)
5.55	42.38	2930

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
 Laboratory Manager

Robb Trend Project

Coal Sample Results – 2012 Core Program

RT-11-495C

Val d'Or Seam

Sample Horizon: 33.8 to 49.0



CERTIFICATE OF ANALYSIS

Preliminary Report 30-Jul-12  
Final Report

Coal Valley Resources Inc.  
1600 Oxford Tower  
10235-101 Street  
Edmonton, AB  
T5J 3G1, Canada

WORKORDER: RC12020429

Hole: RT-11-495C  
Seam: Val D'or  
Diameter: 63.5mm  
Depth: 33.8m to 49.0m  
Plies: A,B,C,D,E,F,G,H

Raw Analysis

	Wt (g)	Mois%	Ash%	VM%	F.C.%	S%	CV (kcal/kg)	Cl %	RD	ARD
Raw Coal	36500	7.69	16.82	32.50	42.99	0.15	5562	0.01	1.46	1.44

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
Laboratory Manager



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Depth: 33.8m to 49.0m  
Plies: A,B,C,D,E,F,G,H

---

SIZING AFTER 20 DROPS

Size (mm)	Weight (g)	Weight %
+50	3008	8.2
-50	33492	91.8

We certify the analysis reported hereon was determined in accordance with the modified procedure for Drop Shatter Testing.

<original signed by>

Brett Warden  
Laboratory Manager



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Seam: Val D'or  
Diameter: 63.5mm  
Depth: 33.8m to 49.0m  
Plies: A,B,C,D,E,F,G,H

DRY SIZING

ASTM Standard  
of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	1969	5.4	5.4
-31.5+25	2202	6.0	11.4
-25+16	3022	8.3	19.7
-16+8	4821	13.2	32.9
-8+4	4887	13.4	46.3
-4+2	8020	22.0	68.3
-2	11579	31.7	100.0

D4749  
(split with RSD)

\*All losses allocated to -2mm fraction

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
Laboratory Manager



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 T5J 3G1, Canada

WORKORDER: RC12020429  
 Hole: RT-11-495C  
 Seam: Val D'or  
 Diameter: 63.5mm  
 Depth: 33.8m to 49.0m  
 Plies: A,B,C,D,E,F,G,H

**WET SIZING**

ASTM Standard  
 of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	741	2.7	2.7
+25	323	1.2	3.9
+16	1564	5.7	9.6
+12.5	1016	3.7	13.3
+8	2563	9.4	22.7
+4	4273	15.6	38.3
+2	6206	22.7	61.0
+1	4886	17.9	78.8
+0.5	2305	8.4	87.2
+0.25	1274	4.7	91.9
+0.15	583	2.1	94.0
+0.063	654	2.4	96.4
+0.038	205	0.7	97.2
-0.038	780	2.8	100.0

D4749  
 (split with RSD)

\*All losses allocated to -0.038mm fraction

Sample was attrited in maximum 50kg lots with 18 cubes and 150 L of water or equivalent mass for 5 min @ 20 rpm

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
 Laboratory Manager



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 Seam: Val D'or  
 Diameter: 63.5mm  
 Depth: 33.8m to 49.0m  
 Plies: A,B,C,D,E,F,G,H

**ANALYSIS**

ASTM Standard  
 of Analysis

**FLOAT SINK ANALYSIS**

AIR-DRIED BASIS

SIZE: +12.5mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.35	121	9.9	7.60	4.10	6514	0.0
S1.35 - F1.40	299	24.5	7.01	8.84	6187	0.0
S1.40 - F1.45	196	16.0	6.55	12.29	5901	0.0
S1.45 - F1.50	70	5.8	6.21	19.07	5454	0.0
S1.50 - F1.55	142	11.6	5.82	26.46	5060	0.0
S1.55 - F1.60	68	5.5	5.97	28.16	4673	0.0
S1.60 - F1.70	66	5.4	5.49	31.74	4143	*
S1.70 - F1.80	62	5.1	4.61	45.52	3398	*
S1.80 - F1.90	83	6.8	3.84	48.65	2954	*
S1.90 - F2.00	11	0.9	3.56	50.47	2541	*
S2.00	104	8.5	1.98	84.53	614	*

D4371  
 D3172  
 D4239  
 D720

SIZE: -12.5mm x +1.0mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.30	39	0.6	7.89	3.32	6593	0.5
S1.30 - F1.35	1949	32.4	8.03	3.96	6514	0.0
S1.35 - F1.40	1685	28.0	7.44	8.03	6261	0.0
S1.40 - F1.45	506	8.4	7.04	13.19	5882	0.0
S1.45 - F1.50	434	7.2	6.76	17.34	5552	0.0
S1.50 - F1.55	327	5.4	6.92	22.17	5149	0.0
S1.55 - F1.60	225	3.7	6.60	28.19	4690	0.0
S1.60 - F1.70	257	4.3	5.92	34.38	4236	*
S1.70 - F1.80	126	2.1	5.07	44.05	3477	*
S1.80 - F1.90	106	1.8	4.52	50.64	2928	*
S1.90 - F2.00	85	1.4	4.17	58.02	2245	*
S2.00	282	4.7	3.13	71.00	962	*

SIZE: 1mm x 0.15mm						
S.G.	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
F1.35	370	27.0	7.90	2.86	6546	0.0
S1.35 - F1.40	382	27.9	7.62	5.80	6340	0.0
S1.40 - F1.45	134	9.8	7.17	11.15	5965	0.0
S1.45 - F1.50	90	6.5	7.13	14.98	5667	0.0
S1.50 - F1.55	82	6.0	7.15	17.83	5414	0.5
S1.55 - F1.60	53	3.9	6.87	23.71	4962	0.0
S1.60 - F1.70	63	4.6	6.42	31.59	4313	*
S1.70 - F1.80	28	2.1	5.72	40.16	3625	*
S1.80 - F1.90	26	1.9	5.36	47.79	2918	*
S1.90 - F2.00	20	1.4	4.97	56.37	2221	*
S2.00	122	8.9	2.80	69.89	664	*

**FROTH FLOTATION**

SIZE: 0.15mm x 0.038mm						
TIME	WT(g)	WT%	Mois %	Ash %	GCV (kcal/kg)	FSI
15 SEC	17	9.8	6.91	9.00	6149	0.0
30 SEC	10	5.6	7.01	9.21	6159	0.0
60 SEC	9	5.4	7.16	9.40	6087	0.0
90 SEC	5	2.8	7.39	9.64	6101	0.0
Tails (T2)	19	11.1	6.73	21.02	5043	0.0
Tails (T1)	112	65.3	6.88	29.06	4315	0.0
PARAMETERS:	10% PULP DENSITY, COND. TIME 90 SECOND 0.667 KG/T 10:1 KERO:MIBC, DENVER CELL, 1200 RPM					

**FINES**

SIZE: -0.038mm		
Mois %	Ash %	GCV (kcal/kg)
6.51	46.40	2997

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
 Laboratory Manager



**CERTIFICATE OF ANALYSIS**

Preliminary Report  
 Final Report

30-Jul-12

Coal Valley Resources Inc.  
 1600 Oxford Tower  
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WORKORDER: RC12020429

Hole: RT-11-495C  
 Seam: Val D'or  
 Diameter: 63.5mm  
 Depth: 33.8m to 49.0m  
 Plies: A,B,C,D,E,F,G,H

**ANALYSIS**

ASTM Standard  
 of Analysis

**FLOAT SINK ANALYSIS**

**AIR-DRIED BASIS**

CUMULATIVE WEIGHT % SIZE: +12.5mm						
S.G	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.35	9.9	9.9	7.60	4.10	6514	0.0
S1.35 - F1.40	24.5	34.4	7.18	7.48	6281	0.0
S1.40 - F1.45	16.0	50.4	6.98	9.01	6160	0.0
S1.45 - F1.50	5.8	56.2	6.90	10.04	6088	0.0
S1.50 - F1.55	11.6	67.8	6.68	12.85	5912	0.0
S1.55 - F1.60	5.5	73.3	6.63	14.01	5818	0.0
S1.60 - F1.70	5.4	78.7	6.55	15.23	5703	-
S1.70 - F1.80	5.1	83.8	6.43	17.07	5563	-
S1.80 - F1.90	6.8	90.6	6.24	19.43	5368	-
S1.90 - F2.00	0.9	91.5	6.21	19.73	5340	-
S2.00	8.5	100.0	5.85	25.26	4937	-

D4371  
 D3172  
 D4239  
 D720

CUMULATIVE WEIGHT % SIZE: 12.5mm x 1.0mm						
S.G	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
F1.30	0.6	0.6	7.89	3.32	6593	0.5
S1.30 - F1.35	32.4	33.0	8.03	3.95	6516	0.0
S1.35 - F1.40	28.0	61.0	7.76	5.82	6399	0.0
S1.40 - F1.45	8.4	69.4	7.67	6.71	6337	0.0
S1.45 - F1.50	7.2	76.6	7.59	7.71	6263	0.0
S1.50 - F1.55	5.4	82.0	7.54	8.67	6189	0.0
S1.55 - F1.60	3.7	85.8	7.50	9.52	6124	0.0
S1.60 - F1.70	4.3	90.1	7.43	10.70	6034	-
S1.70 - F1.80	2.1	92.1	7.37	11.46	5976	-
S1.80 - F1.90	1.8	93.9	7.32	12.19	5919	-
S1.90 - F2.00	1.4	95.3	7.27	12.87	5865	-
S2.00	4.7	100.0	7.08	15.60	5635	-

CUMULATIVE WEIGHT % SIZE: 1mm x 0.15mm						
S.G	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
S1.30 - F1.35	27.0	27.0	7.90	2.86	6546	0.0
S1.35 - F1.40	27.9	54.9	7.76	4.35	6441	0.0
S1.40 - F1.45	9.8	64.7	7.67	5.38	6369	0.0
S1.45 - F1.50	6.5	71.2	7.62	6.26	6305	0.0
S1.50 - F1.55	6.0	77.2	7.58	7.16	6236	0.0
S1.55 - F1.60	3.9	81.1	7.55	7.95	6175	0.0
S1.60 - F1.70	4.6	85.7	7.49	9.22	6075	-
S1.70 - F1.80	2.1	87.8	7.45	9.95	6017	-
S1.80 - F1.90	1.9	89.7	7.40	10.76	5951	-
S1.90 - F2.00	1.4	91.1	7.36	11.47	5892	-
S2.00	8.9	100.0	6.96	16.66	5428	-

**FROTH FLOTATION**

CUMULATIVE WEIGHT % SIZE 0.15mm x 0.038mm						
TIME	WT%	CUM WT%	Mois %	Ash %	CV (kcal/kg)	FSI
15 SEC (P2)	9.8	9.8	6.91	9.00	6149	0.0
30 SEC (P3)	5.6	15.4	6.95	9.08	6153	0.0
60 SEC (P4)	5.4	20.8	7.00	9.16	6136	0.0
90 SEC (P5)	2.8	23.6	7.05	9.22	6132	0.0
Tails (T2)	11.1	34.7	6.95	12.99	5784	0.0
Tails (T1)	65.3	100.0	6.90	23.49	4824	0.0

**FINES**

CUMULATIVE WEIGHT % SIZE: -0.038mm		
Mois %	Ash %	CV (kcal/kg)
6.51	46.40	2997

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
 Laboratory Manager

Robb Trend Project

Coal Sample Results – 2012 Core Program

RT-11-544C

Val d'Or Seam

Sample Horizon: 57.5 to 68.4



CERTIFICATE OF ANALYSIS

Preliminary Report 10-Aug-12  
Final Report

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1600 Oxford Tower  
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WORKORDER: RC12020424

Hole: RT-11-544C  
Seam: Val D'or  
Diameter: 63.5mm  
Depth: 57.5m to 68.4m  
Plies: A,B,C,D,E,F,G,H

Raw Analysis

	Wt (g)	Mois%	Ash%	VM%	F.C.%	S%	CV (kcal/kg)	Cl %	RD	ARD
Raw Coal	38700	5.55	20.34	31.24	42.87	0.23	5311	0.02	1.52	1.46

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
Laboratory Manager



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Depth: 57.5m to 68.4m  
Plies: A,B,C,D,E,F,G,H

---

SIZING AFTER 20 DROPS

Size (mm)	Weight (g)	Weight %
+50	2746	7.1
-50	35954	92.9

We certify the analysis reported hereon was determined in accordance with the modified procedure for Drop Shatter Testing.

<original signed by>

Brett Warden  
Laboratory Manager



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Plies: A,B,C,D,E,F,G,H

DRY SIZING

ASTM Standard  
of Analysis

Size (mm)	Weight (g)	Weight %	Cum.Weight %
+31.5	6890	17.8	17.8
-31.5+25	2987	7.7	25.5
-25+16	4310	11.1	36.7
-16+8	6050	15.6	52.3
-8+4	4969	12.8	65.1
-4+2	5673	14.7	79.8
-2	7821	20.2	100.0

D4749  
(split with RSD)

\*All losses allocated to -2mm fraction

We certify the analysis reported hereon was determined in accordance with the applicable ASTM Standard Methods of analysis of Coal.

<original signed by>

Brett Warden  
Laboratory Manager