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CONCRETE AGGREGATE ASSESSMENT

McNab Creek, British Columbia

Submitted to:

BURNCO Rock Products
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager



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REPORT





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1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by BURSCO Rock Products (BURSCO) to carry out exploration of a potential aggregate source located near McNab Creek, situated on the north shore of Howe Sound, British Columbia. This report provides a summary of Golder's efforts to date in the geological investigation of the site, and the sampling and testing of the material, with particular emphasis on its potential use as aggregate in Portland cement concrete.

2.0 BACKGROUND

The site consists of 77 ha of land, situated on a post-glacial alluvial fan-delta that contains unconsolidated sand and gravel on top of granitic bedrock, possibly with some metamorphic rock types. The property was most recently used for logging, log dump and log storage area until 2005.

Mining activity took place from 1947 to 1963 (MINfile 092GNW009) at a quarry located in the southwestern portion of the property, described as being on the shoreline of Thornbrough Channel, 3.2 km west along the coastline from the mouth of McNab Creek. Today an approximately 5-7 m tall and 50-100 m long quarry face remains as result of previous mining activity, as illustrated in Figure 1. Between 1955 and 1963, 12531 tonnes of material described on the MINfile webpage as "slate" was quarried for use as flagstone, asphalt roofing granules and filler. The rock is described as metavolcanic and metasedimentary rock that forms a roof pendant in Jurassic to Tertiary Coast Plutonic Complex quartz diorite.



Figure 1: Remnant quarry face on the McNab Creek site



2.1 Previous work

The earliest aggregate potential assessment work undertaken at the McNab site was conducted in 1970 on a 107 ha property by H. R. Stirling, P.Eng., Consulting Engineer, on behalf of for Construction Aggregates Ltd. That project consisted of the drilling of nine Becker holes to a maximum depth of 39 m on the west side of McNab Creek and physical aggregate quality testing.

In addition, in 2005, EBA Engineering Consultants Ltd. conducted an investigation that consisted of 4 sonic holes drilled to approximately 14 m depth.

Thurber Engineering undertook a test pitting and laboratory testing program in 2008, on behalf of BURNCO. This consisted of the excavation of 40 test pits to a depth of 2 – 5 m, and gradation testing of bulk samples from nine test pits. The report by Thurber also referenced the earlier Stirling and EBA studies at the site. General conclusions from these earlier investigations, as indicated in Thurber's report, were as follows:

- The deposit contains at least 51 million tons (30 million m³) of granular material, of which 77% lies below the water table (Stirling report);
- 46.5 million tons (25 Million m³) could be extracted to yield 38 million tons (20 million m³) of marketable gravel with excavation of up to 36 m below the water table (Construction Aggregates Ltd.);
- The quality of aggregate as determined by soundness, LA abrasion and other laboratory tests was judged to be “satisfactory” and “completely acceptable for concrete and asphalt aggregate except for the presence of up to 40% of metamorphic rock in the deposit” (Construction Aggregates Ltd.);
- A clay layer was detected in the middle of the deposit from 9.0 to 11.5 mm depth (EBA Engineering Consultants Ltd.);
- Bedrock was encountered at 13.7 m depth (EBA Engineering Consultants Ltd.);
- The deposit generally contained well graded granular material with varying silt, cobble and boulder contents (Thurber Engineering); and
- When encountered, the water table was at 1 to 3 m depth (Thurber Engineering).

The report by Thurber recommended that additional gradation testing be carried out and that the quality of the material to be evaluated through materials testing with reference to the BC Ministry of Transportation's criteria.

The current investigation forms part of Golder's efforts to assist BURNCO in developing an aggregate extraction operation at the McNab Creek site.



3.0 SAMPLING

In consultation with the client, Golder developed a staged program of test pitting and Becker hammer drilling. Test pitting was carried out in May 2009 and Becker drilling was conducted in June 2010. The location of test pits and drillholes are shown in Figure 2. Testing was performed on samples in accordance with CSA A23.1-23.2-09. Initial testing consisted of grain size analysis and the results formed the basis for further aggregate quality testing; the results from the laboratory testing are detailed in Section 4 of this report. In addition, one sample was collected in April 2009 from the northeast bank of the “Constructed groundwater channel” located on the property, and sieve analysis and organic impurities testing was carried out on this sample.

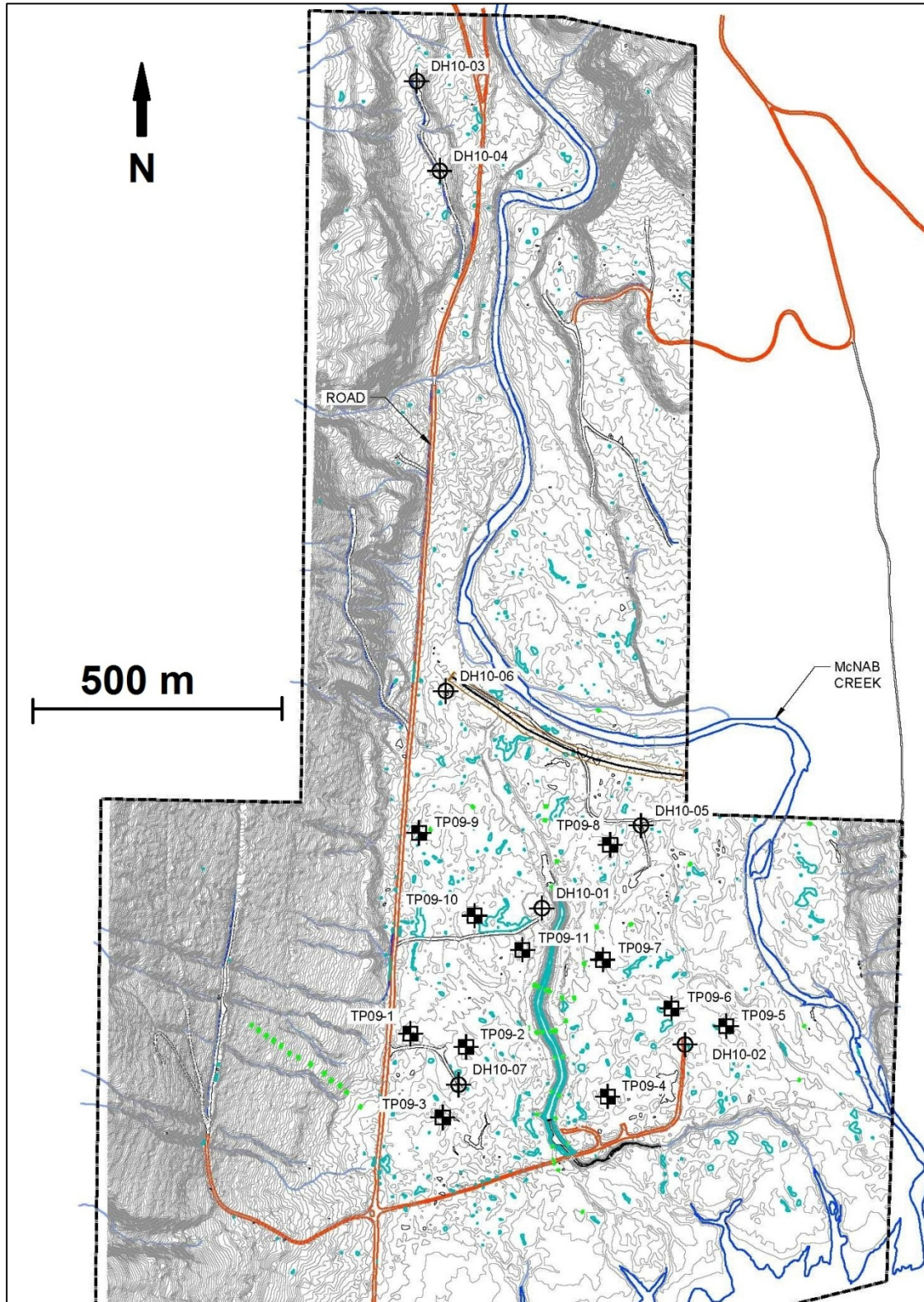


Figure 2: Location of test pits and Becker drillholes



3.1 Test pits

Eleven test pits were dug, using an excavator, to a depth of about 4 m. Details of their depths and coordinates are provided in Table 1.

Table 1: Test pit locations and depths

Test Pit	Sa. #	Depth (m)	Latitude	Longitude	Northing	Easting	Elevation	EOH (m)
TP 09-1	1	2.5-3.9	49.5658	123.3954	5490436	471406	5	3.9
TP 09-2	1	3.0-3.5	49.5656	123.3939	5490409	471518	7	4.3
	2	4.3						
TP 09-3	1	3.7	49.5643	123.3945	5490267	471471	2	3.7
TP 09-4	1	3.8	49.5647	123.3899	5490309	471804	5	4.0
TP 09-5	1	1.0-1.5	49.5660	123.3866	5490451	472043	5	4.0
	2	1.9						
	3	3.5-4.0						
TP 09-6	1	0.8-1.2	49.5663	123.3882	5490487	471933	4	4.4
	2	4.0-4.4						
TP 09-7	1	3.7	49.5672	123.3901	5490585	471794	21	3.7
TP 09-8	1	4.0-4.5	49.5693	123.3899	5490817	471809	9	4.5
TP 09-9	1	4.4	49.5695	123.3952	5490841	471423	19	4.4
TP 09-10	1	0.5-1.0	49.5680	123.3937	5490674	471535	9	4.3
	2	4.3						
TP 09-11	1	4.2	49.5674	123.3923	5490605	471632	18	4.2

Some of the test pits are illustrated in Figure 3 to Figure 6. Overall, cobbles and boulders were present at various depths throughout the test pits, and the sandy top layer in Test pit 5, illustrated in Figure 6, was an unusual occurrence.

Detailed test pit logs are provided in Appendix A.

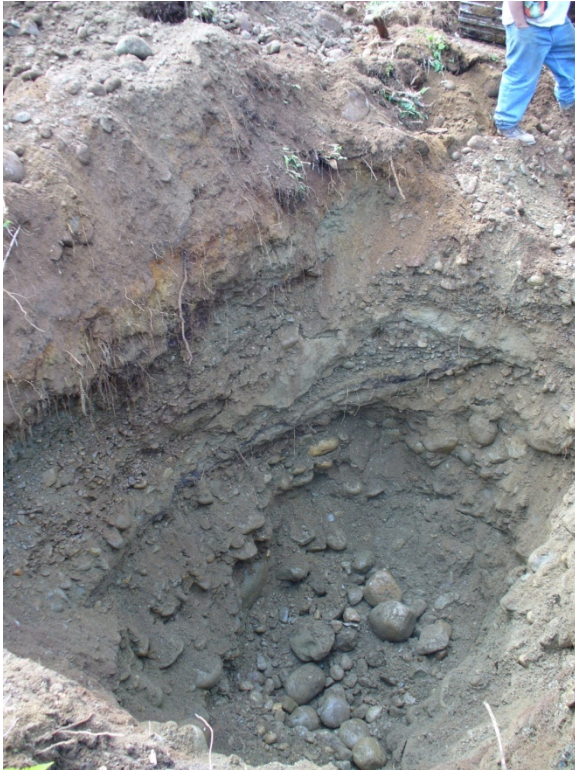


Figure 3: Test pit 11



Figure 4: Test pit 7



Figure 5: Test pit 10



Figure 6: Test pit 5



3.2 Becker drilling

The seven drillhole locations are indicated in Figure 2. In addition to the sampled drillholes, attempts were made to drill in the northern portion of the site. However, these drillholes, DH 10-3 and DH 10-4, encountered bedrock at very shallow depths and drilling was halted shortly after initiation. Similarly, DH 10-6 was only drilled to a depth of 16 m due to encountering bedrock at a shallow depth.

The depths of the remaining drillholes ranged from 33 to 48.5 m. Complete drillhole logs are provided in Appendix B. Samples used in the concrete aggregate assessment program originated from DH 10-1, DH 10-2, DH 10-5, DH 10-06 and DH 10-07 with material from DH 10-06 being included in grain size analysis only. The samples that were analyzed with respect to grain size are listed in Table 2.

Table 2: List of drillhole samples

Drillhole	DH10-01	DH10-02	DH10-05	DH10-06	DH10-07
Location (GPS NAD83 UTM 10N) and elevation above sea level	5490689mN, 471671mE 12.77 m	5490414mN, 471960mE 7.19 m	5490856mN, 471871mE 13.40 m	5491127mN, 471477mE 19.16 m	5490333mN, 471503mE 8.71 m
	Sample depth, m (ft)				
	3.0 – 6.1 (10 – 20)	3.0 – 4.6 (10 – 15)	1.5 – 3.0 (5 – 10)	1.5 – 3.0 (5 – 10)	3.0 – 4.6 (10 – 15)
	6.1 – 7.6 (20 – 25)	4.6 – 6.1 (15 – 20)	3.0 – 4.6 (10 – 15)	3.0 – 4.6 (10 – 15)	4.6 – 6.1 (15 – 20)
	7.6 – 9.1 (25 – 30)	6.1 – 7.6 (20 – 25)	4.6 – 6.1 (15 – 20)	4.6 – 6.1 (15 – 20)	6.1 – 7.6 (20 – 25)
	9.1 – 10.7 (30 – 35)	7.6 – 9.1 (25 – 30)	6.1 – 9.1 (20 – 30)	6.1 – 7.6 (20 – 25)	7.6 – 9.1 (25 – 30)
	10.7 – 12.2 (35 – 40)	9.1 – 12.2 (30 – 40)	9.1 – 10.7 (30 – 35)	7.6 – 9.1 (25 – 30)	9.1 – 12.2 (30 – 40)
	13.7 – 15.2 (45 – 50)	12.2 – 13.7 (40 – 45)	10.7 – 12.2 (35 – 40)	9.1 – 10.7 (30 – 35)	12.2 – 13.7 (40 – 45)
	15.2 – 16.8 (50 – 55)	13.7 – 15.2 (45 – 50)	12.2 – 13.7 (40 – 45)	15.2 – 16.8 (50 – 55)	13.7 – 15.2 (45 – 50)
	16.8 – 18.3 (55 – 60)	15.2 – 16.8 (50 – 55)	13.7 – 15.2 (45 – 50)	No Depth	15.2 – 18.3 (50 – 60)
	18.3 – 19.8 (60 – 65)	16.8 – 18.3 (55 – 60)	15.2 – 16.8 (50 – 55)		18.3 – 19.8 (60 – 65)
	19.8 – 21.3 (65 – 70)	18.3 – 19.8 (60 – 65)	16.8 – 18.3 (55 – 60)		21.3 – 22.9 (70 – 75)
	21.3 – 22.9 (70 – 75)	18.3 – 21.3 (65 – 70)	18.3 – 19.8 (60 – 65)		22.9 – 24.4 (75 – 80)
	22.9 – 24.4 (75 – 80)	21.3 – 22.9 (70 – 75)	19.8 – 21.3 (65 – 70)		24.4 – 25.9 (80 – 85)
	24.4 – 27.4 (80 – 90)	22.9 – 24.4 (75 – 80)	22.9 – 24.4 (75 – 80)		25.9 – 27.4 (85 – 90)



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Drillhole	DH10-01	DH10-02	DH10-05	DH10-06	DH10-07
	27.4 – 29.0 (90 – 95)	24.4 – 25.9 (80 – 85)	24.4 – 25.9 (80 – 85)		27.4 – 29.0 (90 – 95)
	29.0 – 30.5 (95 – 100)	25.9 – 27.4 (85 – 90)	25.9 – 27.4 (85 – 90)		29.0 – 30.5 (95 – 100)
	30.5 – 32.0 (100 – 105)	27.4 – 29.0 (90 – 95)	27.4 – 29.0 (90 – 95)		30.5 – 31.1 (100 – 102)
	32.0 – 33.5 (105 – 110)	29.0 – 30.5 (95 – 100)	29.0 – 30.5 (95 – 100)		30.5 – 32.0 (100 – 105)
	33.5 – 35.1 (110 – 115)	32.0 – 33.5 (105 – 110)	30.5 – 33.5 (100 – 110)		30.5 (100)
	35.1 – 36.6 (115 – 120)	33.5 – 35.1 (110 – 115)			32.0 – 33.5 (105 – 110)
	36.6 – 38.1 (120 – 125)	35.1 – 36.6 (115 – 120)			
	38.1 – 39.6 (125 – 130)	36.6 – 39.6 (120 – 130)			
	39.6 – 42.7 (130 – 140)	39.6 – 41.1 (130 – 135)			
	42.7 – 44.2 (140 – 145)	41.1 – 42.7 (135 – 140)			
	44.2 – 45.7 (145 – 150)	42.7 – 44.2 (140 – 145)			
	45.7 – 47.2 150 – 155				
	47.2 – 48.8 (155 – 160)				
	49.4 – EOH (162 – EOH)				

4.0 TEST RESULTS

The samples obtained from the test pitting and Becker drilling were subjected to sieve analysis as individual five foot depth range samples. Petrographic examination, alkali-aggregate testing, acid rock drainage and leachable metals testing and physical durability testing were carried out on samples produced by combining individual samples, based on similarities in grain size distribution and depth interval.

The physical tests were conducted in accordance with CSA A23.1/A23.2-09, “Concrete materials and methods of concrete construction/Test methods and standard practices for concrete”, which in Canada form the basis for the assessment of concrete aggregates.



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These tests were supplemented by ASTM test standards, where appropriate. The testing program consisted of:

- Sieve analysis of fine and coarse aggregate (CSA A23.2-2A);
- Clay lumps in natural aggregates (CSA A23.2-3A);
- Low-density granular material in aggregate (CSA A23.2-4A);
- Relative density and absorption of fine aggregate (CSA A23.2-6A);
- Organic impurities in fine aggregate for concrete (CSA A23.2-7A);
- Soundness of aggregate by use of magnesium sulphate (CSA A23.2-9A);
- Relative density and absorption of coarse aggregate (CSA A23.2-12A);
- Potential expansivity of aggregates (procedure for length change due to alkali-aggregate reaction in concrete prisms at 38°C, CSA 23.2-14A);
- Petrographic Examination of Coarse and Fine Aggregate (CSA A23.2-15A);
- Resistance to degradation of small size aggregate by abrasion and impact in the Los Angeles machine (CSA 23.2-16A);
- Resistance of fine aggregate to degradation by abrasion in the Micro-Deval apparatus (CSA 23.2-23A);
- Resistance of coarse aggregate to degradation by abrasion in the Micro-Deval apparatus (CSA 23.2-29A);
- Detection of alkali silica reactive aggregate by accelerated expansion of mortar bars (CSA A23.2-25A); and
- Durability Index (ASTM D 3744).

The results of the testing program are summarized in Table 3 and discussed further in Section 4.1 to 4.11.

In addition to the above mentioned physical testing, we also undertook preliminary chemical testing to determine the potential for acid rock drainage and to identify elevated levels of metals or other elements that may potentially leach into the environment in which the material is used. This consisted of acid-base accounting, mass spectrometry on a four acid leach and metals leachable using the shake flask method.



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Table 3: Summary of concrete aggregate laboratory testing results

Test pit/drillhole number	Depth (m) in Becker drillholes	Relative Density (SSD) CSA A23.2-12A, -6A		Absorption (%) CSA A23.2-12A, -6A		Clay lumps (%) CSA A23.2-3A	Org. imp. CSA A23.2-7A	Micro-Deval (%loss) CSA A23.2-29A, -23A		Sulphate soundness (%loss) CSA A23.2-9A		LA Abrasion (% loss), CSA A23.2-16A	Low density (%), CSA A23.2-4A		Accelerated Mortar Bar Test (% expansion) CSA A23.2-25A		Durability Index ASTM C 3744	Petrographic examination CSA A23.2-15A		Concrete Prism Test CSA A23.2-14A		
		Coarse	Fine	Coarse	Fine	Fine	Fine	Coarse	Fine	Coarse	Fine	Coarse	Coarse	Fine	Coarse	Fine	Coarse	Coarse, PN	Fine, % weak part.	Coarse	Fine	
DH10-01	13.7 – 18.3						4													In progress		
	19.8 – 27.4						3	6.5	9.5											In prog.	In prog.	
	27.4 – 35.1						2													In prog.	In prog.	
	35.1 – 44.2						1			0.7	5.7											
	44.2 – 47.2						2															
	49.4 - EOH						2		8.4													
DH10-02	7.6 – 16.8						5															
	16.8 – 21.3						4	6.0	8.7	0.4	6.1				0.298	0.150		138.2				
	21.3 – 29.0						5															
DH10-05	32.0 – 44.2						1															
	1.5 – 10.7						5															
	10.7 – 16.8	2.71	2.64	0.64	1.72		4	5.6	9.8	2.3	4.4	22.2										
	16.8 – 21.3	2.73	2.60	0.57	2.69		3	6.1	9.1	0.4	5.1											
	22.9 – 30.5	2.74	2.67	0.56	0.91		1	5.7	8.1	0.4	6.3	20.9	0.0	0.0	0.317	0.202	87	125.3	2.8			
DH10-07	30.5 – 33.5	2.71	2.67	0.62	0.99		<1	5.2	8.3	0.6	6.1											
	13.7 – 15.2, 18.3 – 19.8	2.73	2.66	0.66	1.25		4	6.2	8.9		6.3			0.0	0.306	0.180			3.9			
	21.3 – 29.0	2.75	2.67	0.55	1.25		3	6.1	8.3	0.2	6.5	20.0		0.0	0.279	0.182	85	125.3				
TP 09-2	30.5 – 33.5	2.72	2.66	0.57	1.13		2	5.3	9.7		7.6			0.0		0.160		125.4	6.4			
	Sa 1, Sa 2	2.76	2.66	0.53	1.89	0	>5	6.3	14.6			18.3	0.0		0.378	0.136						
	TP09-4, 7, 8, and 6-2		2.76	2.61	0.68	2.70	0	>5	7.9	14.3	9.4	10.2	18.6	0.0		0.375	0.125					
		Sa. 1		2.59		2.18		<5		16.9												
	TP09-5		2.74	2.64	0.68	2.43	0	5	7.4	14.4			19.1	0.0								
TP 09-1	Sa. 1						<5															
TP 09-3	Sa. 1						<5															
TP 09-5	Sa. 3						<5															
Spawning channel	surface						>5															



4.1 Sieve analyses

Individual sieve analysis test reports are provided in Appendix C. A technical memorandum issued in January, 2011 provided detailed comments and charts in relation to the sieve analysis results. This section provides an overview of the sieve analysis test results. Individual grain size distributions for the test pit samples and for each of the tested drillholes are illustrated in Figure 7 to Figure 12. On these charts, the sieve sizes are plotted on the x-axis with no relationship between particle size and distance along the horizontal axis. These charts should not be used to make geometrical estimations that do not correspond with exact data points.

Visual estimates during test pitting, as well as interpretation of blow counts during drilling, suggest that at least 30% of the material was boulder sized material. For practical reasons the sampling program was limited to only those particle sizes which were less than 3 inches. This must be considered in evaluating the variation of particles sizes across this site and with depth.

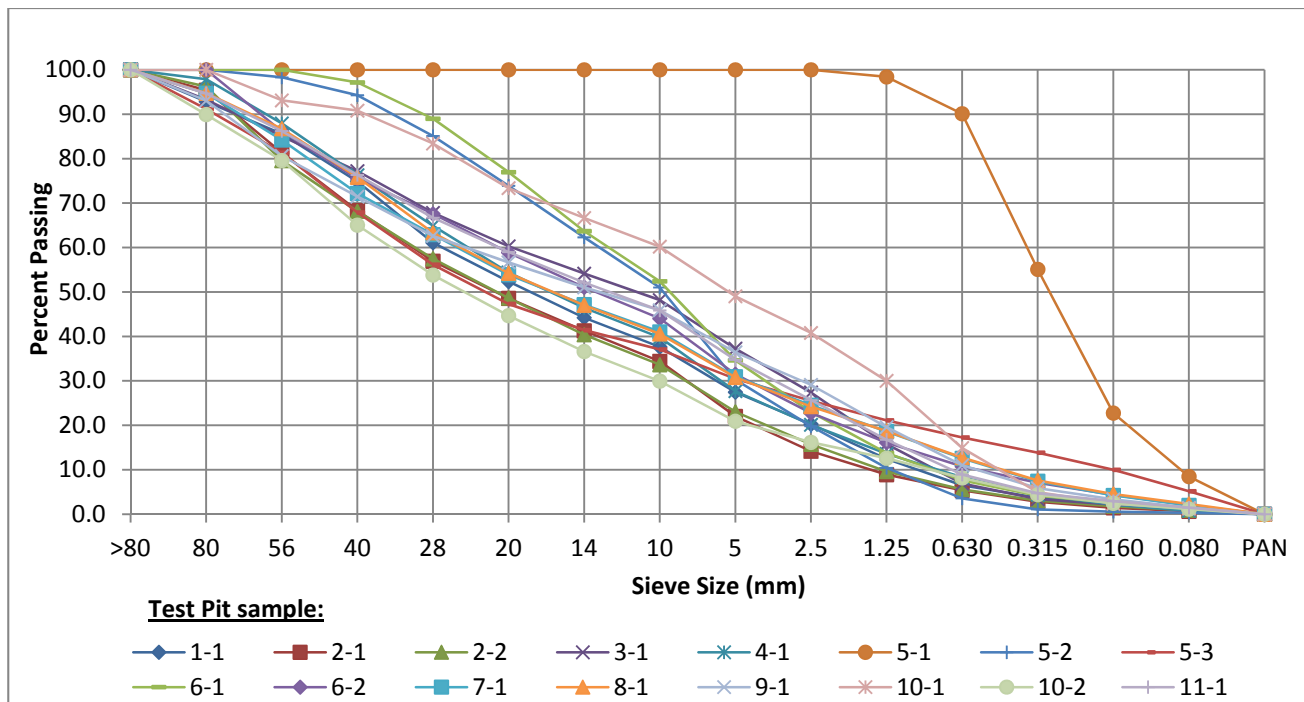


Figure 7: Summary of grain size distribution of test pit samples



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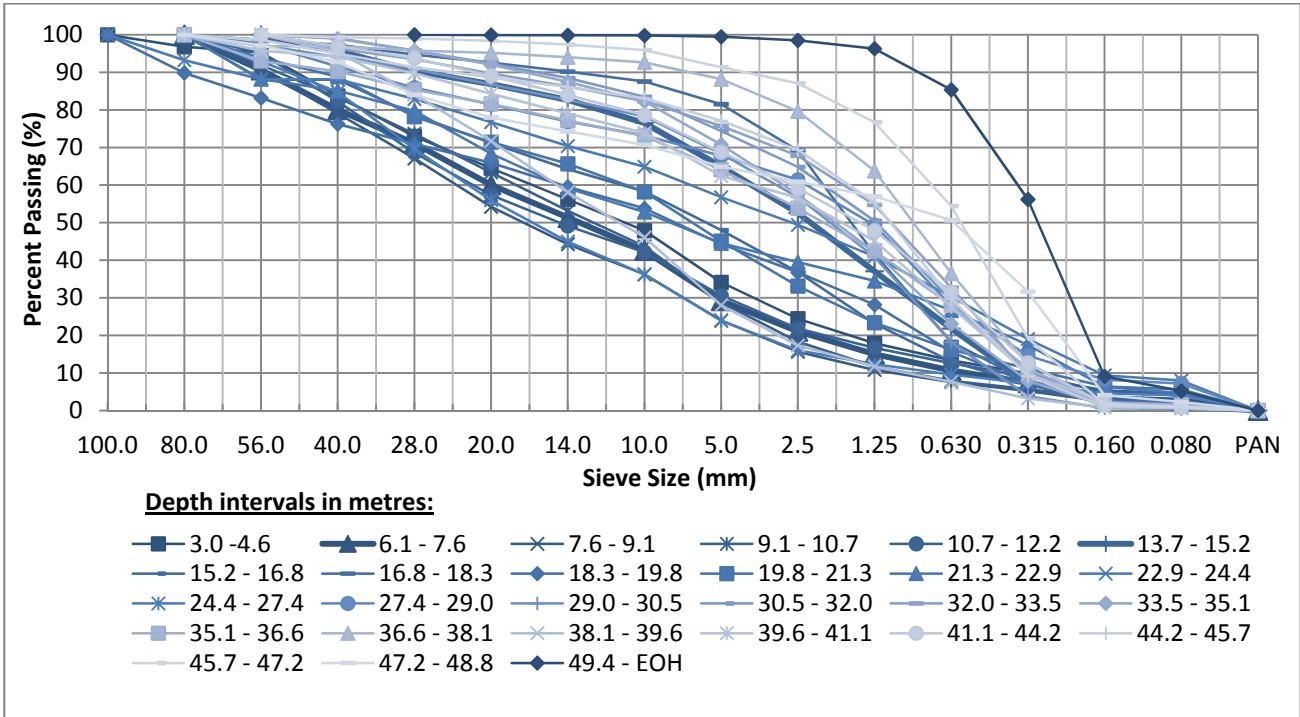


Figure 8: Grain size distribution for samples from DH 10-01

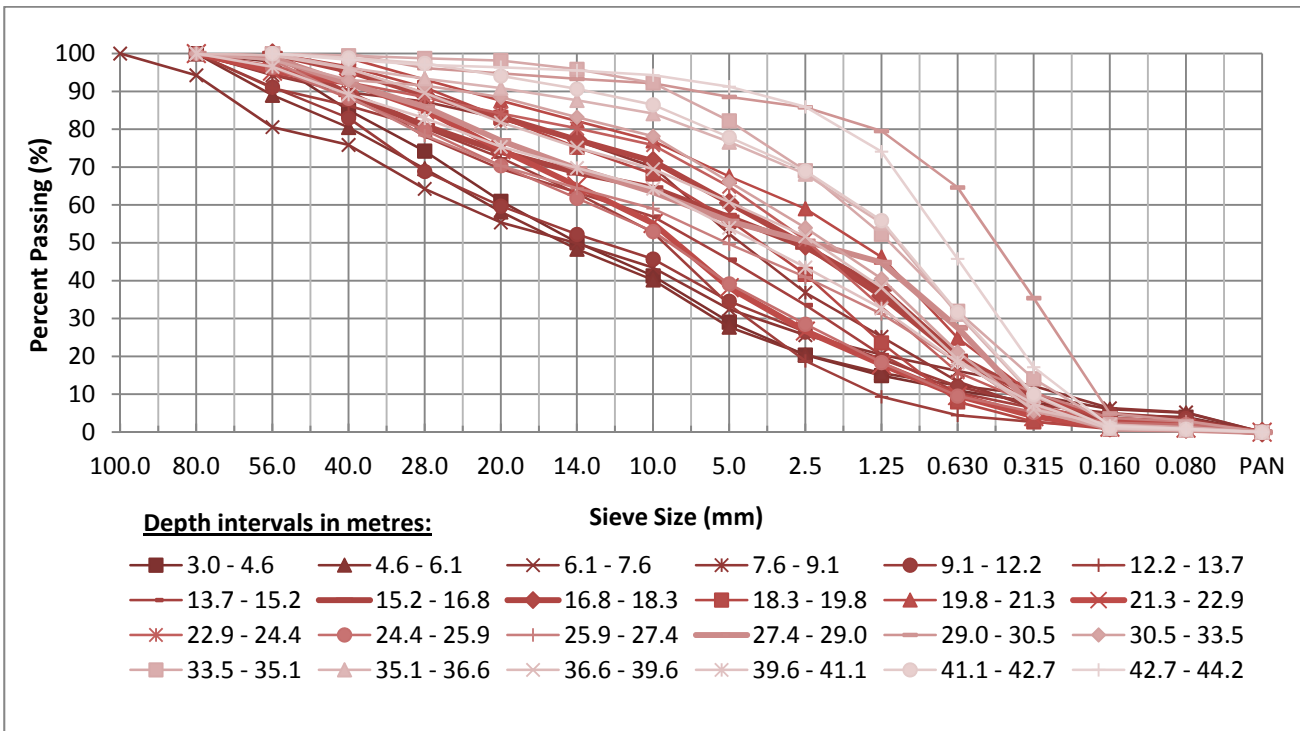


Figure 9: Grain size distribution for samples from DH 10-02



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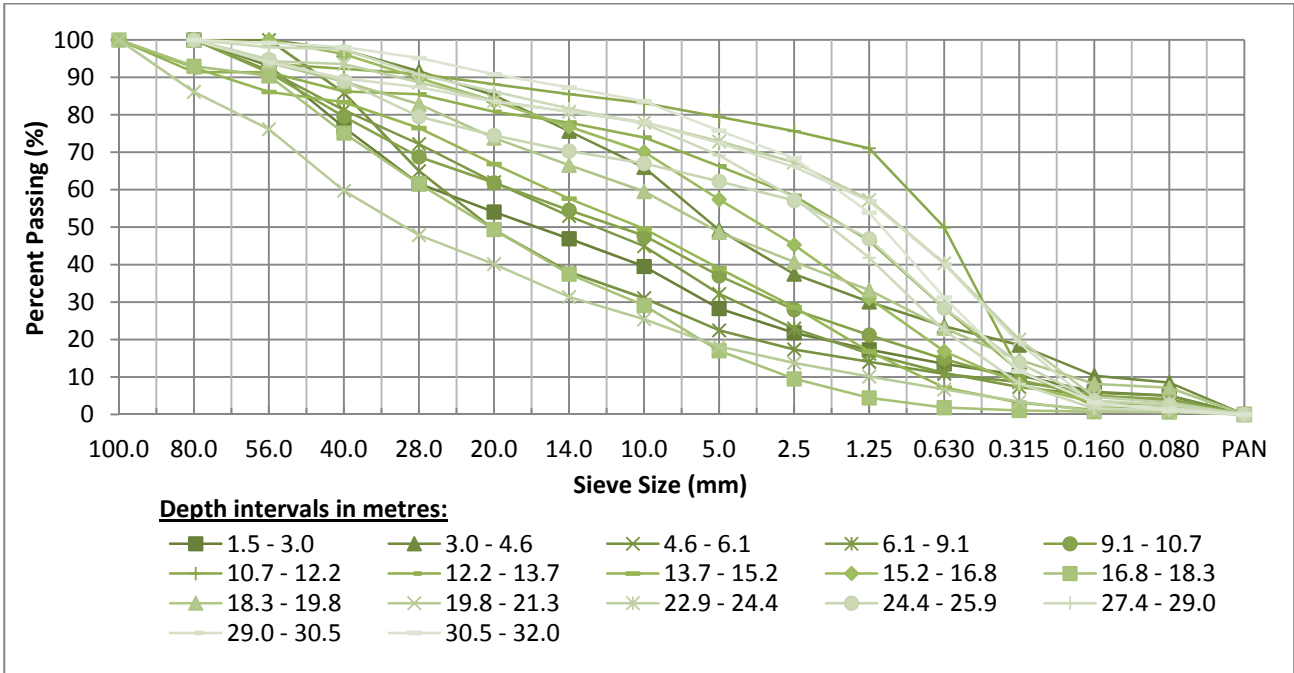


Figure 10: Grain size distribution for samples from DH 10-05

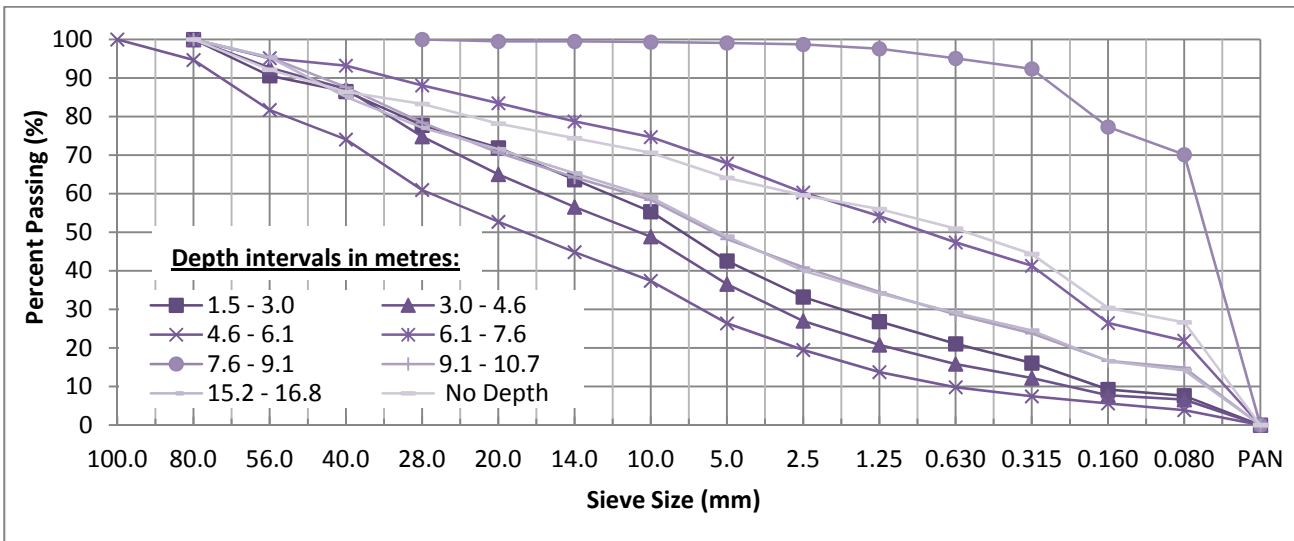


Figure 11: Grain size distribution for samples from DH 10-06

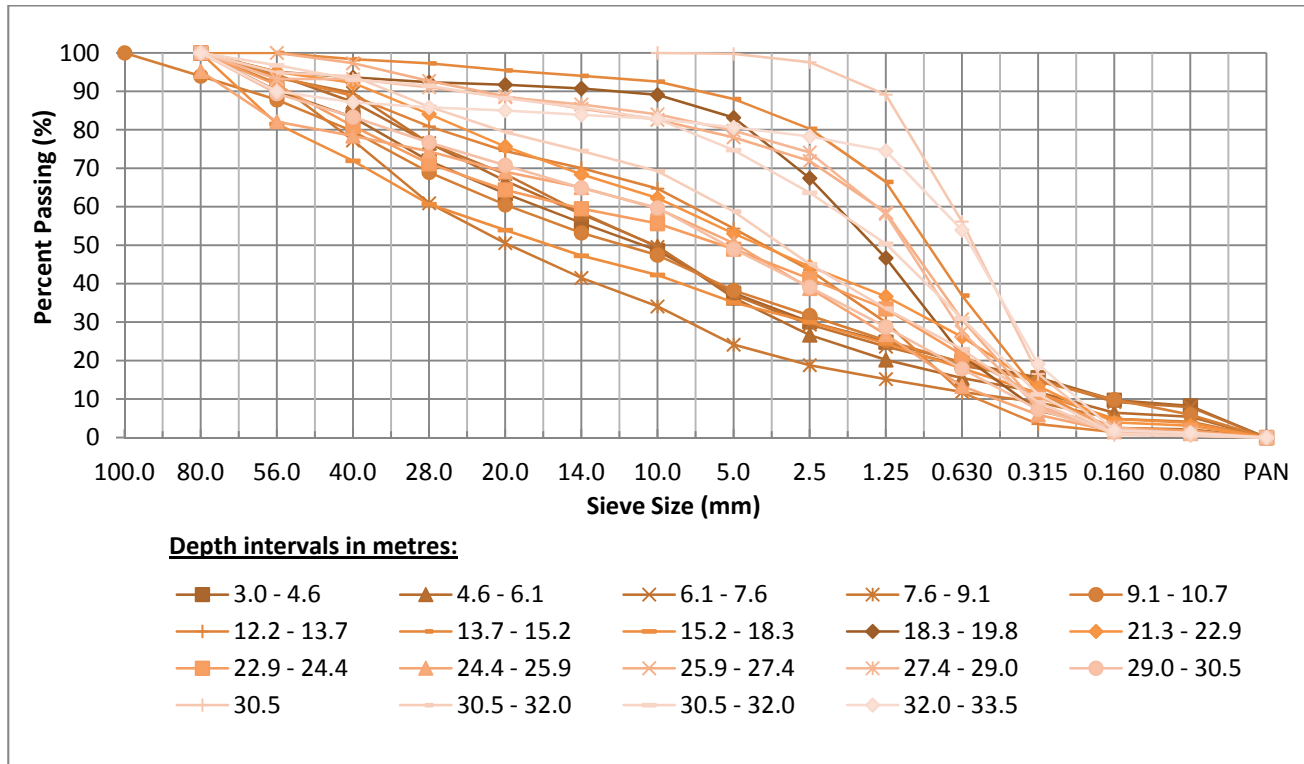


Figure 12: Grain size distribution for samples from DH 10-07

4.1.1 Test Pit Material Gradations

The maximum boulder size in the test pit holes ranged from 0.4 to 0.8 m. In general the material encountered in the test pits consisted of gravel, cobbles and boulders with some sand. The samples collected excluded large boulders and the maximum particle size given in the sieve analysis was 80 mm. With a couple of exceptions, the sieved sample material was composed of about 50-80% gravel (5 - 80 mm), while the content of material finer than 0.080 mm in the passing 5 mm fraction was generally less than 10%. Samples that differed from this description included sample 5-1 from test pit 09-5 at a depth of 1-1.5 m, which consisted of bands of fine sand and silt, alternating with somewhat coarser sand. Sample 09-1 from 0.5 to 1 m depth in TP 09-10 consisted of sand with some gravel, cobbles and boulders.

4.1.2 Drillhole Material Gradations

The Becker drillhole samples showed a wider variation in grain size distribution than that of the material in the test pits, which would be expected with a larger number of samples and depth ranges. As in the test pits, maximum boulder size was estimated to be about 0.4 to 0.8 m. The drill configuration is such that only material to about 4" (100 mm) is returned to the surface; when larger rocks are encountered by the drill, these are fractured and broken up, so that angular fractured pieces with a maximum size of about 4" are the only materials that can be recovered. Consequently, these were not included in the sieve analyses. The gravel content in the drillhole samples ranged widely from about ten percent to 80%; samples with the highest gravel content



generally originated from depth ranges closer to the surface. Silt and finer material generally made up less than 10% of the samples, with notable exceptions in DH10-06, where silt contents of 25% and higher were encountered. This highlights that some siltier zones are likely to be encountered within the deposit. Based upon the intended method of excavation (*i.e.*, clamshell dredge on a barge), these zones will not be able to be practically avoided; thus, processing of siltier materials should be anticipated periodically as mining of the deposit progresses.

Grain size generally decreased with depth and in DH 10-01, DH 10-02 and DH 10-07 a couple of the deepest samples consisted of pure sand. This horizon was not intercepted in DH 10-05.

4.1.3 Summary of gradation

Overall, the grain size distribution data indicates that the deposit includes a wide range of grain sizes. Considering the exclusion in the sampling program of cobbles and boulders which are known to be present throughout certain zones of the deposit, or inferred to be present, the average sand (-5.0 mm) to gravel (+5.0 mm) ratios was estimated to 50:50.

As requested, we conducted a review of the grain size distribution in the various drillholes and the drillhole logs in an effort to identify traceable, distinct units with respect to grain size. Zones that were 4.6 – 7.6 m (15-25 ft) thick contained more gravel in the size range 5 to 28 mm compared to other depths/elevations; these were identified in three of the four drillholes. In DH 10-01, such a zone occurred at 19.8 – 27.4 m (65 - 90 ft) depth, in DH 10-02 at 21.3 – 29.0 m (70 – 95 ft) below surface and in DH 10-05 at 16.8 – 21.3 m (55 - 70 ft) depth below surface. These contained 30-45 % material retained on the 5 to 20 mm sieves. Below and above these depths, the material was generally sandier, particularly at greater depths. DH 10-07 did not appear to contain a distinctly gravelly zone.

In all drillholes, the horizons below the upper 1.5 – 3.0 m (5 - 10 ft) or so of overburden to about 9 m (30 ft) depth also contained 30-45% material retained on the 5 to 20 mm sieves. Generally, these identified sections also contained coarser material that measured 80 mm in diameter and more.

Based upon these observations, we provide the following comments:

- Blending of materials will be essential in order to achieve and maintain desired sand-to-gravel ratios that are required for some products. The proposed method of excavation, the high-speed clamshell dredge, is well-suited to this purpose, as it is capable of large-size excavation over a significant depth, thereby mixing material over a good depth profile;
- Washing of the materials is indicated. While a more sensitive analysis is required to further evaluate this requirement, the present analysis suggests that in order to achieve the required low fines contents required for concrete aggregates, washing/removal of silt-sized material will be necessary; and
- Oversize (*i.e.*, >2" material) will be used by crushing and blending into the products. The crushers will need to be selected/selected to handle a significant volume of large-size material. Some larger size materials (large boulders) may be reserved for other potential uses on site, or may be utilized elsewhere in applications that require large size boulders, such as armourstone, *etc.*



4.2 Petrographic examination

The Petrographic examination provides information on the geological and mineralogical composition and engineering quality characteristics. Petrographic examination was carried out in accordance with CSA A23.2-15A on four coarse samples and three fine samples. Coarse samples constituted material coarser than 5 mm and the fine samples comprised material passing the 5 mm sieve. Fine samples were examined on a sieve fraction basis and included sieve fractions that comprised at least 5% of the sample. The results are presented in Appendix D and Table 4 provides a summary of some key indicators from the petrographic examination.

Table 4: Summary of petrographic examination, CSA A3.2-15A

COARSE SAMPLES				
Sample	DH 10-02: 16.8 – 21.3 m	DH 10-05: 22.9 – 30.5 m	DH 10-07: 21.3 – 29.0 m	DH 10-07: 30.5 – 33.5 m
PN	138.2	125.3	125.3	125.4
FINE SAMPLES				
Sample	DH 10-05: 75-100		DH 10-07:45-65	
Weak particles (%)	2.8		3.9	
			6.4	

The Petrographic Number (or “PN”) is an index of a coarse aggregate’s overall physical-mechanical quality and is based on the sorting of the particles into “good”, “fair” and “poor” quality categories, in addition to the lithological classification of the particles making up each sample. Each category is assigned a multiplier – 1 for “good”, 3 for “fair” and 6 for “poor” – which is multiplied by the percentage that each category represents in the sample. A petrographic number of “100” would indicate a material that contains only good category particles, which is fairly uncommon. The PN thus obtained can then be compared to the values in Table 5, which is the PN scale given in CSA A23.2-15A, Attachment A2.

Table 5: PN limits for various engineering applications for aggregate.

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base



A comparison with the PN limits in Table 5 indicates that three of the four samples would be considered suitable for all concrete applications, based on the petrographic examination, while sample DH 10-05:55-70 would be considered to be suitable for only some of the concrete applications in Table 5. The higher petrographic number for this sample can be attributable primarily to higher proportion of weathered and oxidized particles. This in turn may be a function of the shallower depths from which this sample was collected, as compared to the other samples. However, because this is the only sample from DH 10-02 in the petrographic examination and no petrographic information regarding samples from greater depths in this drillhole was produced to enable a further assessment, there could be other factors that influence the PN in this sample.

4.2.1 Lithological composition

The material in all four coarse samples consisted of a mixture of plutonic and metamorphic rock types with minor volcanic rocks. The plutonic rocks ranged in composition from granite to diorite. The metamorphic rocks were amphibolite, metasandstone/metasiltstone and phyllite. Proportions of plutonic to metamorphic rocks varied from 1:1 to 2:1 in the four coarse samples.

The petrographic examination of the fine samples identified the same rock types as were present in the coarse samples, and single-mineral grains composed of the dominant constituent minerals in the various rock types. Single mineral grains accounted for roughly half of the particles in the fine samples, primarily in the finest size fractions; these consisted primarily of quartz and feldspar, with some pyroxene, biotite and, in some samples, magnetite/ilmenite.

4.2.1.1 Plutonic Rocks

Granite and minor granodiorite were composed primarily of quartz, feldspar, biotite, amphibole, ilmenite and sphene. The dominant minerals in diorite were feldspar, amphibole, ilmenite and magnetite, with minor biotite in some particles. Grain size was typically medium grained, but some granite particles were coarse grained. Some of the plutonic rocks were altered and slightly metamorphosed with an almost schistose texture.

4.2.1.1.1 Oxidation and weathering of plutonic rocks

In general, plutonic igneous rock types make for good quality construction materials. However, weathering and oxidation can have a negative effect on the strength of the gravel and sand particles that are produced from plutonic sources. This was the case with these rocks, with granite being the rock type most affected by weathering and oxidation.

A larger proportion of the granite particles were affected by weathering and oxidation in the shallower sample from DH 10-02 than in the deepest sample from DH 10-07, as can be expected with the deeper material being buried and more protected from the oxidizing environment. However, even at more than 30 m depth, the proportion of the granite particles that were weathered and oxidized amounted to nearly 20% of the granite in the coarse samples. In the shallowest sample, this proportion was almost 30%.



The mafic plutonic rock diorite was also affected by weathering and oxidation, but to a lesser degree than the granite. Only in the shallowest sample did the proportion of oxidized and weathered diorite exceed 10% of the diorite particles.

Oxidation and weathering was also evident in the fine samples; in some cases, oxidation products masked the composition of the particles during examination. Particles that were weakened by weathering and oxidation were separately classified. Biotite, and to a lesser extent muscovite and chlorite, affected by oxidation was common in the finest sieve size fractions; these particles are thought to originate largely from the plutonic rocks, particularly granite and altered granite.

4.2.1.2 *Metamorphic rocks*

The metamorphic rocks were of two types. One was amphibolite, which is thought to originate from the metamorphism of mafic igneous rocks (Matthews and Monger, 2010), and the other type is metasedimentary.

4.2.1.2.1 *Amphibolite*

This rock type was composed of feldspar, amphibole, with some biotite and ilmenite. Sulphide minerals, such as pyrite, chalcopyrite and arsenopyrite were also observed in this rock type. The amphibolite was dark grey or greenish grey and very fine to medium grained. In terms of major minerals, the amphibolite was very similar to diorite; the preferential orientation of needle-shaped amphibole distinguished it from diorite. Most of the particles belonging to this rock type were strong and hard. Minor oxidation and weathering was observed on the amphibolite, particular in the sample from 16.8 – 21.3 m (55 – 70 ft) depth in drillhole DH 10-02. This had a negative impact on the strength of the particles.

4.2.1.2.2 *Metasediments*

Metasedimentary rocks consisted of brown to grey metasandstone and metasilstone and grey phyllite. An abandoned quarry face, mentioned in Section 2.0, contains these rock types.

Phyllite is a rock type that is dominantly composed of phyllosilicates including mica, chlorite and clay minerals. Petrographic examination of one thin section of phyllite and metasilstone identified abundant muscovite and biotite, together with minor quartz, possible clay mixed with organic material, and ilmenite. Mica has a flat crystal structure which is typically reflected in particle morphology of mica grains and in the rocks composed of mica. It tends to be weak and friable. Flat and elongated particle shapes were frequently observed in the phyllite in the examined samples. However, many of the phyllite particles exhibited better physical properties than is generally associated with phyllite. It is therefore thought that some phyllite particles contained very fine grained quartz, as was observed in thin section; this is thought to have had a beneficial effect on the strength of these particles.

Closely related to the phyllite are metasandstone and metasilstone. These rock types were of varying grain size and were sometimes interlaminated with finer grained phyllite laminae. Dominant minerals were quartz, muscovite, biotite and minor ilmenite. These rock fragments were generally of good engineering quality.



4.2.2 Petrographic examination – summary and discussion

The material examined was mainly composed of rock types that would be expected to provide good quality engineering material. Weathered and oxidized material occurred at depths exceeding 30 m (100 ft), this appeared to be associated with reduced strength of these particles. In addition, in the fine samples, the presence of phyllite, mica and chlorite constituted weak materials. However, it would be expected that processing such as screening, crushing and blending of crushed oversize materials may serve to improve the quality of the processed product.

It should be noted that the petrographic examination was carried out on samples that contained some proportion of crushed material, but only of material up to 80 mm nominal size. As indicated in Section 4.1, the deposit contains a large proportion of material up to about 0.5 m particle size, which would be expected to provide a larger proportion of unoxidized material after crushing than the gravel in its as-is condition.

4.3 Specific gravity and absorption

The testing for relative density and absorption was carried out in accordance with CSA 23.2-6A and 12A for fine and coarse aggregate respectively, and included seven drillhole samples and four test pit samples. For one of the test pit samples, only the fine portion was tested. Individual test reports are located in Appendix E and results are summarized in Table 6. Test pit samples are highlighted in grey in order to be easily distinguishable from the drillhole samples in this and subsequent tables containing physical testing results.

Table 6: Summary of relative density and absorption results, CSA A23.2-6A and 12A

Table with 6 columns: Test Pit/ Drillhole Number, Depth (m), Relative density (SSD) (COARSE, FINE), and Absorption (%) (COARSE, FINE). Rows include DH 10-05, DH10-07, TP 09-2, TP09-4, 7, 8, 6-2, TP09-5, and TP09-9 and 11.

In general the relative density for the samples reflects typical values for normal weight aggregate materials (2.60 – 2.80) as encountered in southwestern British Columbia. The absorption for the coarse aggregate is less than one percent, which is what can be expected in a deposit comprising the rock types encountered.



There is a distinct difference in absorption for the fine samples in the test pit samples on one hand and the drillhole samples on the other, with the exception of DH 10-05: 16.8 – 21.3 m (55 – 70 ft). This difference is likely due to more intense weathering in the more surficial samples in the test pits.

4.4 Clay Lumps

The clay lump test was carried out in accordance with CSA 23.2-3A on three test fine pit samples. This test identifies any loosely held together material that tends to disintegrate upon prolonged exposure to water. Appendix F contains individual test reports and the results are summarized in Table 7.

Table 7: Results from Clay Lump testing

Test Pit/Drillhole Number	Sample	Clay Lumps (%)
		FINE
TP 09-2	Sa 1 and 2	0
TP09-4, 7, 8, and 6-2		0
TP09-9 and 11		0
CSA Table 12 limit		1

The results indicate that no clay lumps or friable particles were present in the tested samples.

4.5 Organic Impurities

The organic impurities test is conducted on fine aggregate to determine whether organic components that may interfere with the strength development during setting of concrete are present. All drillhole samples and test pit samples were subjected to the organic impurities test in accordance with CSA A.23.2-7A, which entails placing the sample under test in sodium hydroxide solution for 24 hours and comparison of the colour of the resulting leachate with standard colour plates number 1-5.

According to Clause 4.2.3.3.2 in CSA A23.1, a fine aggregate fails the organic impurities test if the colour is darker than 3.

Individual test reports are presented in Appendix G and the results are provided in Table 3. Review of the table indicates that all of the test pit samples failed the organic impurities test with readings of “5” or higher, as did one surficial sample collected from the “constructed groundwater channel” on the property.

In the drillhole samples from DH 10-01, DH 10-05 and DH 10-07, the plate number obtained in the organic impurities test generally decreased with depth, so that shallower drillhole samples typically failed the test, if they originated from depths above 16.8 – 19.8 m (55 – 65 ft) depth, while deeper samples passed the test. In DH 10-02 this trend was not observed and a sample as deep as 21.3 – 29.0 m (70 – 95 ft) exhibited an organics impurities test result of 5.



4.6 Micro-Deval abrasion

Micro-Deval abrasion testing was carried out in accordance with CSA 23.2-23A and -29A for fine and coarse aggregate respectively. This is a method in which the resistance to abrasion in the presence of water is measured and the result is expressed as percent loss.

Individual test reports are provided in Appendix H and the results are summarized in Table 8. It provides results for 12 coarse samples and 14 fine samples from test pits and drillholes.

Table 8: Results from Micro-Deval testing CSA A23.2-23A and 29A

Test Pit/Drillhole Number	Depth (m)/ Sample	Micro-Deval Results (% Loss)	
		COARSE	FINE
DH 10-01	19.8 – 27.4	6.5	9.5
	49.4 - EOH		8.4
DH 10-02	16.8 – 21.3	6.0	8.7
DH 10-05	10.7 – 16.8	5.6	9.8
	16.8 – 21.3	6.1	9.1
	22.9 – 30.5	5.7	8.1
	30.5 – 33.5	5.2	8.3
DH10-07	13.7 – 15.2, 18.3 – 19.8	6.2	8.9
	21.3 0 29.0	6.1	8.3
	30.5 – 33.5	5.3	9.7
TP 09-2	Sa 1 and 2	6.3	14.6
TP09-4, 7, 8, 6-2		7.9	14.3
TP09-5	Sa. 1		16.9
TP09-9 and 11		7.4	14.4
CSA Table 12 limit		17.0¹	20.0¹

Note: 1. For concrete subject to freezing and thawing.

Comparison of the results with the specified limits in CSA A23.2-09 Table 12 indicates that the test values conform to the limits set by CSA.

The fine Micro-Deval results for the test pit samples were typically 14% and higher, while the results for the drillhole samples were less than 10% loss. This is the same relationship as seen for the absorption measured for the fine samples and is thought to be due to the higher degree of weathering in the more surficial material.

It should also be noted that the loss for TP 09-05 Sa 1, originating from a depth of 1 – 1.5 m, was only marginally within the CSA accepted limits.



4.7 Magnesium Sulphate Soundness

Magnesium sulphate testing provides an estimate of a material’s durability and is an accepted alternative test method to the freezing-and thawing test. It involves five cycles of immersion in magnesium sulphate solution alternating with oven drying, to encourage the growth of magnesium sulphate crystals that mimic the action of growing ice crystals.

The testing was carried out in accordance with CSA A23.2-9A. The testing included one sample from a test pit and seven coarse samples and nine fine samples from the drillhole program.

Individual test results are reported in Appendix I and summarized in Table 9.

Table 9: Sulphate soundness test result summary

Test Pit/Drillhole Number	Depth (m)	Sulphate Soundness Results (% Loss)	
		COARSE	FINE
DH 10-01	35.1 – 44.2	0.7	5.7
DH 10-02	16.8 – 21.3	0.4	6.1
DH 10-05	10.7 – 16.8	2.3	4.4
	16.8 – 21.3	0.4	5.1
	22.9 – 30.5	0.4	6.3
	30.5 – 33.5	0.6	6.1
DH10-07	13.7 – 15.2, 18.3 – 19.8		6.3
	21.3 0 29.0	0.2	6.5
	30.5 – 33.5		7.6
TP09-4, 7, 8, 6-2		9.4	10.2
CSA Table 12 limit		12.0 ¹	16.0

Note: 1. For concrete subject to freezing and thawing.

Comparison of the results with the CSA limit indicates that the material complies with the limits for concrete aggregate established by CSA. As noted for the Micro-Deval and absorption results, the loss is higher in the shallower test pit sample than in the drillhole samples, due to more intense weathering near the surface of the deposit. In the case of the sulphate soundness testing, the difference is pronounced in the results for both the coarse and fine material.

4.8 Los Angeles Abrasion

This test is designed to determine a material’s resistance by impact and abrasion and is carried out on aggregate in dry condition. The LA abrasion test was carried out in accordance with CSA A23.2-16A.

Three samples from drillholes and three test pit samples were tested. Results are presented in Table 10 and individual test reports can be found in Appendix J.

The test results indicate that all the samples have a loss that is less than the maximum limit specified by CSA, and generally represent material of good physical quality with respect to impact and abrasion



Table 10: Los Angeles Abrasion test results

Test Pit/Drillhole Number	Depth (m)/ Sample	LA Abrasion Results (% Loss)
DH10-05	10.7 – 16.8	22.2
	22.9 – 30.5	20.9
DH10-07	21.3 – 29.0	20.0
TP 09-2	Sa 1 and 2	18.3
TP09-4, 7, 8, and 6-2		18.6
TP09-9 and 11		19.1
CSA Table 12 limit		50.0

4.9 Low-density granular materials

This test uses a liquid with a specified density to identify lightweight particles in a normal density aggregate. The test was carried out in accordance with CSA A23.2-4A and individual test reports are provided in Appendix K.

Results are summarized in Table 11 and they indicate that no low density granular material were present in the tested samples.

Table 11: Low density results

Test Pit/Drillhole Number	Depth (m)/ Sample	Low Density Granular Material Content (%)	
		COARSE	FINE
DH10-05	22.9 – 30.5	0.0	0.0
	13.7 – 15.2, 18.3 – 19.8		0.0
DH10-07	21.3 – 29.0		0.0
	30.5 – 33.5		0.0
TP 09-2	Sa 1 and 2	0.0	
TP09-4, 7, 8, and 6-2		0.0	
TP09-9 and 11		0.0	
CSA Table 12 limit		0.5	0.5

4.10 Durability index

The durability index is a measure of a material’s tendency to produce fines when agitated in the presence of water. The result is derived from measuring the height of the column of sediment produced by agitation, which is then allowed to settle in a stock calcium chloride solution for a prescribed length of time.

The testing was carried out in accordance with ASTM D 3744 on the coarse fraction of two drillhole samples.

Test reports are contained in Appendix L and Table 12 provides a summary of the results.



Table 12: Durability test results

Test Pit/Drillhole Number	Depth (m)/Sample	Durability Index
DH10-05	22.9 – 30.5	87
DH10-07	21.3 – 29.0	85

The results indicate that the coarse material is relatively resistant to breakdown in water during agitation. Therefore, it is not expected that the material would produce excessive fines during transportation and handling.

4.11 Alkali-aggregate reaction

Alkali-aggregate reaction (AAR) is a potentially deleterious reaction that occurs between the aggregate and alkalis in the cement in Portland cement concrete. This reaction can cause expansion and cracking, leading to premature deterioration of concrete. In CSA A.23.1/2-09, two test procedures for assessing AAR potential of materials proposed for use as concrete aggregates are described - the accelerated mortar bar test (CSA A23.2-25A) and the concrete prism test (CSA A23.2-14A). We have initiated both types of AAR testing.

The accelerated mortar bar test (AMBT) is carried out on sand-sized material which is mixed with standard cement and water to produce mortar, which is cast into bars that are subjected to elevated temperature while being stored in a sodium hydroxide solution. The solution ensures adequate supply of alkalis and the elevated temperature accelerates the deleterious reaction. The lengths of the bars are measured periodically over a four week period and, using the ratio relative to the initial length reading, expansion over time is charted. The expansion at 14 days after the zero reading is compared to the specified CSA limit to determine whether the material is to be classified as ‘innocuous’ or ‘potentially expansive’.

The concrete prism test (CPT) is a one year test that, similar to the AMBT, compares the length change over time with an initial reading, but it utilizes concrete prisms in which a coarse and fine aggregate is used. For testing of a fine material, a non-reactive coarse material is used and vice versa.

4.11.1 AMBT

Thirteen sets of mortar bars were prepared, utilizing four coarse and five fine samples from drillholes, and two coarse and two fine materials from test pits.

Individual test reports are provided in Appendix M and the results are summarized in Table 13.



Table 13: AMBT results

Test Pit/Drillhole Number	Depth (m)/Sample	AMBT Result (% Expansion at 14 days)	
		COARSE	FINE
DH10-02	16.8 – 21.3	0.298	0.150
DH10-05	22.9 – 30.5	0.317	0.202
DH10-07	13.7 – 15.2, 18.3 – 19.8	0.306	0.180
	21.3 – 29.0	0.279	0.182
	30.5 – 33.5		0.160
TP 09-2	Sa 1 and 2	0.378	0.136
TP09-4, 7, 8, and 6-2		0.375	0.125
CSA 14 day criteria		0.15	0.15

The results indicate that all of the coarse sample would be considered to be “potentially expansive” with respect to AAR and two of the seven fine samples would be judged to be innocuous in relation to AAR. Based on the AMBT results alone, some mitigative measures would be required when using the potentially reactive materials in concrete mixes.

4.11.2 CPT

The AMBT can be considered to be a screening procedure for AAR, and when available, CPT results override the results from the AMBT. Therefore, the concrete prism test is underway on the samples indicated in Table 3. Results from the one year readings will be available in August 2012. These results will be compared to the maximum limit of 0.04% set by CSA to determine the potential AAR reactivity of the samples.

At the time of writing, the twenty six week readings range from 0.009 to 0.012%. Review of these preliminary results suggests that the final result is likely to indicate that the material can be classified as ‘innocuous’ with respect to AAR.

Interim reports with updated expansion data can be provided as these tests continue. Thirty nine week measurements are scheduled for mid-May, 2012.

4.12 Concrete compressive strength

As part of the CPT program, cylinders were cast from the mix, and subsequently tested with respect to their compressive strength; the results are summarized in Table 14. Test reports are provided in Appendix N

The design compressive strength was 45 MPa at 28 days. This strength level was attained for two of the five mixes, both of these being cast using coarse sample material.



AGGREGATE ASSESSMENT

The sample with the lowest compressive strength, DH 10-01:65-90, was listed as being produced from a “dirty” fine sample. The descriptor “dirty” refers to a visually excessive amount of fine material; the sieve analysis of this sample confirms this, indicating that the amount passing the 0.080 mm sieve was 12.6%. (The limit for material finer than 0.080 mm specified by CSA for fine concrete aggregate is 3.0%.)

Sample DH 10-01:13.7 – 18.3 m (45 – 60 ft), fine portion and DH 10-01: 27.4 – 35.1 m (90 – 115 ft) contained 2.1% and 2.2% respectively of material finer than 0.080 mm, which complies with the CSA specified limit. It is thought that the high fines content in sample DH 10-01: 19.8 – 27.4 m (65 – 90 ft) at least in part would be responsible for the low compressive strength in the concrete produced from it.

High fines content does not appear provide an explanation for DH 10-01: 13.7 – 18.3 m (45 – 60 ft), coarse and fine and DH 10-01: 27.4 – 35.1 m (90 – 115 ft), fine failing to achieve the design strengths. Nor is it high organic impurities content, because DH 10-01: 27.4 – 35.1 m (90 - 115 ft) yielded a result of “2” in the organic impurities test, which complies with the CSA specified limit, as indicated in Table 3. It is possible that the fine material in these samples contain relatively high proportions of weak material, similar to that identified in DH 10-07: 100 – 110 in the petrographic examination. This material consisted of mica, chlorite, phyllite, weathered and weak particles, together accounting for 6.4% of the fine portion of sample DH 10-07: 100 – 110.

It should be noted that concrete prism test mixes are cast using high cement content, which should produce a fairly high strength concrete and a best case scenario result. Therefore, the relatively low compressive strengths attained for DH 10-01: 13.7 – 18.3 m (45 – 60 ft), coarse and fine and in particularly DH 10-01: 27.4 – 35.1 m (90 – 115 ft), fine, may be an indication that the fine material in the deposit is of less than optimal quality.

Table 14: Compressive Strength for Cylinders Cast from the Concrete Prism Mixes.

Drillhole Number	Depth (m)/Sample	Compressive Strengths (MPa)		
		7 Days	28 Days	56 Days
DH 10-01	13.7 – 18.3 m, coarse and fine	36.3	43.7	44.1
	19.8 – 27.4, coarse	38.2	47.0	48.8
	19.8 – 27.4, fine (dirty)	32.2	40.2	43.7
	27.4 – 35.1 m, coarse	39.7	47.7	51.6
	27.4 – 35.1 m, fine	36.2	44.3	47.5

4.13 Summary

In its as-received condition, the coarse material complies with the limits specified by CSA for concrete aggregate. However, some fine samples were found to contain excessive amounts of organic impurities, material finer than 0.080 mm and weak particles.



5.0 CHEMICAL SCREENING TESTING

Limited chemical screening testing was carried out to identify any potential concerns with respect to acid rock drainage and leaching of metals. This testing consisted of acid-base accounting, total metals and metals leachable using the shakeflask extraction method.

5.1 Acid rock drainage – acid-base accounting

Acid rock drainage (ARD) occurs when sulphides contained in geological material is exposed to oxygen in the presence of water. The primary reaction product of concern, when this oxidation reaction occurs, is sulphuric acid. Pyrite is the main mineral involved in the reaction initially, but as this self-perpetuating reaction progresses, other less easily oxidized sulphides take part as well. Other minerals, such as calcite -- and on a longer term basis, plagioclase among others -- can have a neutralizing effect on acid produced by the oxidation of sulphides.

Many factors determine whether the acid generating reaction will take place, including sulphide species, crystal form and stability, size of the sulphide grains, presence of bacteria and pH and composition of the water involved in the reaction. The screening testing identifies whether sulphides are present in the material, which is a determining factor in assessing whether the reaction can potentially take place. It also determines whether potentially neutralizing material is contained in the material.

Acid-base accounting (ABA) is used as a screening method for identifying the potential for ARD. Several variants of the test procedure exist, which each have their advantages and disadvantages; in this case the Sobek method was used.

The testing is carried out on a sample that is crushed and pulverized so that 80% of the sample passes the 0.075 mm sieve, in order to make all sulphide and neutralizing minerals available in the analysis. Several parameters are measured; maximum potential acidity (MPA) is derived from the total sulphur content of the sample, which can be measured directly using a LECO oven and the neutralizing potential (NP) is measured on the sample upon interaction with hydrochloric acid. Both properties are expressed as “equivalent tonnes CaCO_3 ”, and the evaluation of the ratio of these, “NP:MPA”, determines whether the material is considered to be PAG (Potentially Acid Generating), non-PAG or uncertain. According to Price (2009), if the ratio is less than 1, the material is a PAG material, if it is more than 2, it is a non-PAG material and between 1 and 2, the result is uncertain.

Other measurements that provide further detail on the ARD properties of a sample include total inorganic carbon and CO_2 content, which is used to calculate CaCO_3 NP, which is the portion of the NP that can be attributed to the presence of calcite or other carbonates. Total sulphur and total sulphide were measured using a LECO oven and the sulphate content was analysed using two different methods, to determine the speciation of the sulphur present in the sample.



5.1.1 Results

The testing was carried out by ALS Minerals, Vancouver. Test reports are provided in Appendix O and the results are summarized in Table 15.

Carbonate content was generally low, with the total inorganic carbon content at or below detection limit, which is supported by the petrographic examination where very little or no calcite was observed in the samples.

Comparison of the NP to the CaCO₃ NP indicates that a component of the NP is attributable to minerals other than carbonates. This is likely primarily plagioclase present in the plutonic rocks that accounted for 50% or more of the coarse fraction of the material that was included in the petrographic examination. Sulphur and sulphide contents are generally low, in sample DH 10-07: 21.3 – 29.0 m (70 – 95 ft) and DH 10-07: 30.5 – 33.5 m (100 - 110 ft), total sulphur and sulphide values are below the detection limit. In sample DH 10-05: 22.9 – 30.5 m (75 - 100 ft), some of the sulphur is present as sulphate. As the MPA is based on the total sulphur content, this value is an overestimation for this sample. Nevertheless, this sample, and all the other samples, plot well within the area that defines non-PAG material, as illustrated in Figure 13.

The ARD testing indicates that the materials represented by the tested samples are not considered to be a potential source for ARD.

Table 15: Acid-base accounting results.

Sample	DH 10-05: 22.9 – 30.5 m	DH 10-07: 13.7 – 19.8 m	DH 10-07: 21.3 – 29.0 m	DH 10-07: 30.5 – 33.5 m
Date Sampled	June, 2010	June, 2010	June, 2010	June, 2010
Paste pH	8.5	8	7.7	7.8
Total inorganic carbon (%)	<0.05	<0.05	0.05	<0.05
Carbon as CO ₂ (%)	0.2	<0.2	0.2	<0.2
CaCO ₃ NP	4.5	<4.5	4.5	<4.5
Sulphur, total (%)	0.02	<0.01	0.02	<0.01
Sulphur as sulphate, Carbonate leach	0.02	<0.01	<0.01	<0.01
Sulphur as sulphate, HCl leach (%)	0.01	0.01	0.01	<0.01
Sulphur as sulphide (%)	0.01	<0.01	0.01	<0.01
MPA (Eq. CaCO ₃ /tonne)	0.6	<0.3	0.6	<0.3
NP	8	7	7	6
NP:MPA	13.3	23.3	11.7	20.0

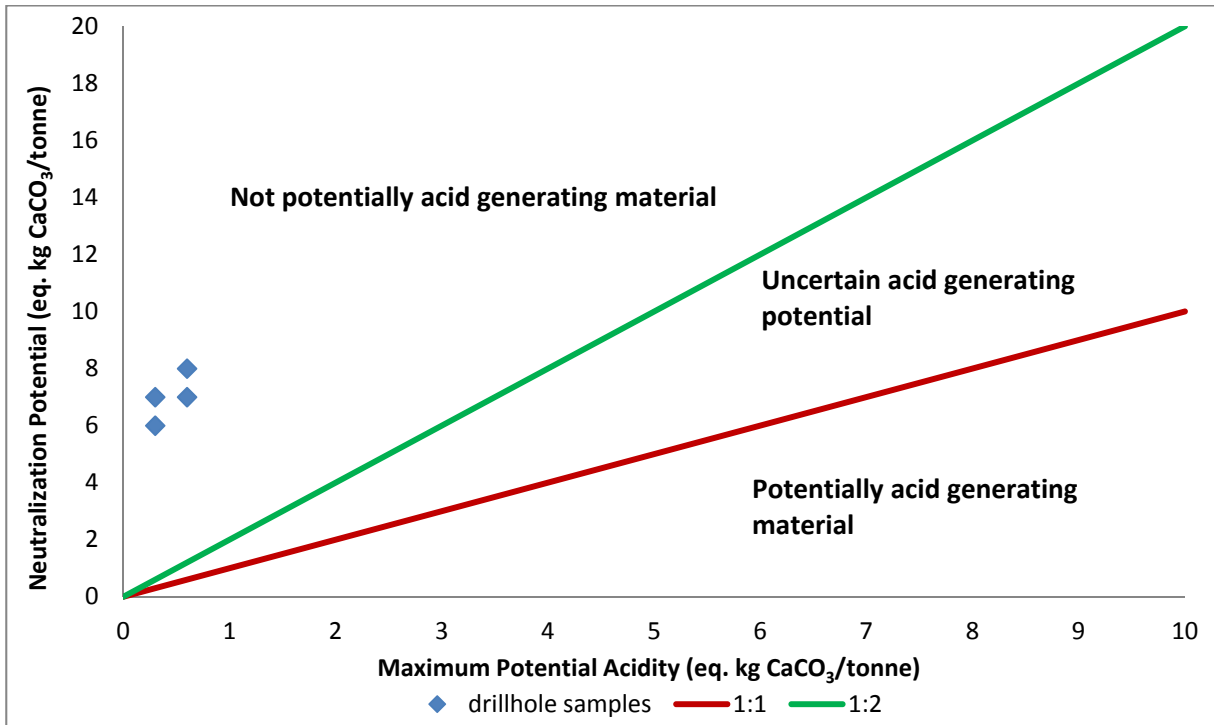


Figure 13: Plot of NP versus MPA for the McNab Creek samples

5.2 Elemental Analysis

Elemental analysis was carried out by ALS Minerals, using inductively coupled plasma mass spectrometry (ICP-MS), inductively coupled plasma atomic emissions spectroscopy (ICP-AES) and atomic absorption spectroscopy (AAS; mercury only) on an aqua regia leachate. This leaching method dissolves quantitatively most base metals, but may provide incomplete dissolution of many common elements in geological material. The certificate of analysis is provided in Appendix O.

The primary purpose of this analysis was to identify elevated contents of metals or other elements that could potentially leach into the environment upon interaction with water and oxygen. Therefore, the results were compared to average crustal abundances from three different references, and a fourth reference in regards to gold, and any exceedance of the highest concentration cited in the references by three times or more were highlighted. The result of this comparison is presented in Table 16. The sources for the reference values in Table 16 were:

- 1) Elements of Mineralogy – Brian Mason and L. G. Berry, 1968. W. H. Freeman and Company;
- 2) Rudnick, R. L. and D. M. Fountain, 1995. Rev. Geophys. 33: 267 – 309;
- 3) The continental Crust: Its composition and Evolution - Taylor S. R. and S. M. McLennan, 1985. Blackwell Scientific Publishers, Oxford. and Taylor S. R. and S. M. McLennan, 1995. Rev. Geophys. 33: 241-265. References 2 and 3 are from Cornell University, Earth and Atmospheric Sciences web site: <http://www.geo.cornell.edu/geology/classes/geochemdata/CrustalAbundances.html>; and
- 4) Gold Occurrences, R. James Weick, 1994. Compilation on the occurrence of gold, the Newfoundland and Labrador Geological Survey web site: <http://www.nr.gov.nl.ca/mines&en/geosurvey/education/gold.stm>.



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Table 16: Results from the multi-element analysis together with three selected sets of reference values for average crustal abundances.

Element	Unit	DH 10-05: 22.9 – 30.5	DH 10-07:			Reference Values		
			13.7 – 19.8	21.3 – 29.0	30.5 – 33.5	Ref 1	Ref 2	Ref 3
Silver (Ag)	ppm	0.04	0.04	0.04	0.04	0.7		0.080
Aluminum (Al)	ppm	1.73	1.58	1.8	1.59	8.23		
Arsenic (As)	ppm	4.2	5.2	5.9	4.2	2		1
Gold (Au)	ppm	<0.2	<0.2	<0.2	<0.2	0.005 ⁴		
Boron (B)	ppm	<10	<10	<10	<10		10	
Barium (Ba)	ppm	100	90	100	100	425	390	250
Beryllium (Be)	ppm	0.14	0.13	0.14	0.16	3		1.5
Bismuth (Bi)	ppm	0.08	0.08	0.09	0.08	0.2		0.060
Caesium (Ca)	%	0.61	0.52	0.6	0.5	4.15		
Cadmium (Cd)	ppm	0.05	0.05	0.05	0.04	0.2		0.098
Cerium (Ce)	ppm	12.25	13.45	12.7	13.05		42	33
Cobalt (Co)	ppm	6.7	6	7.5	6.4	25	25	29
Chromium (Cr)	ppm	72	68	73	66	100	119	185
Cesium (Cs)	ppm	2.07	1.78	2.3	2.12		2.6	1
Copper (Cu)	ppm	20.1	18.9	20.9	17.3	55	24	75
Iron (Fe)	%	2.14	2.11	2.31	1.95	5.63		
Gallium (Ga)	ppm	4.5	4.14	4.71	4.32	15	16	18
Germanium (Ge)	ppm	0.06	0.06	0.06	0.07			1.6
Hafnium (Hf)	ppm	0.08	0.08	0.08	0.08		3.7	3
Indium (In)	ppm	0.01	0.01	0.011	0.011			0.050
Mercury (Hg)	ppm	<0.01	0.01	0.01	<0.01	0.08		
Potassium (K)	%	0.28	0.21	0.28	0.27	2.09		
Lanthanum (La)	ppm	6.3	6.9		6.7	30	18	16
Lithium (Li)	ppm	18.8	17.3	19.4	18.5		11	13
Magnesium (Mg)	%	0.52	0.46	0.57	0.51	2.33		
Manganese (Mn)	ppm	265	248	277	269	950		
Molybdenum (Mo)	ppm	0.78	1.06	0.83	0.85	2		1
Sodium (Na)	%	0.16	0.13	0.12	0.11	2.36		
Niobium (Nb)	ppm	0.21	0.34	0.3	0.29		12	11
Nickel (Ni)	ppm	17.8	18.8	21.2	18.3	75	51	105
Phosphorous (P)	ppm	320	330	400	290	1050	12.6	8
Lead (Pb)	ppm	2.9	2.6	2.9	2.4	13		0.001
Rubidium (Rb)	ppm	18.4	14.7	19.2	18.4		58	32
Rhenium (Re)	ppm	<0.001	<0.001	<0.001	<0.001		0.00004	
Sulphur (S)	%	<0.01	<0.01	<0.01	<0.01	0.026		
Antimony (Sb)	ppm	0.26	0.25	0.27	0.26	0.2		0.2



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Element	Unit	DH 10-05: 22.9 – 30.5	DH 10-07:			Reference Values		
			13.7 – 19.8	21.3 – 29.0	30.5 – 33.5	Ref 1	Ref 2	Ref 3
Scandium (Sc)	ppm	4.1	3.7	4	3.9	22	22	30
Selenium (Se)	ppm	0.3	0.3	0.3	0.3	0.05		0.05
Tin (Sn)	ppm	0.3	0.3	0.3	0.3	2		2.5
Strontium (Sr)	ppm	46.2	40.4	43.5	37.6	375	325	260
Tantalum (Ta)	ppm	<0.01	0.01	<0.01	<0.01		1.1	1
Thorium (Th)	ppm	3.7	3.4	4	4	10	5.6	3.5
Thallium (Tl)	ppm	0.15	0.12	0.16	0.15			0.36
Titanium (Ti)	%	0.097	0.087	0.099	0.101	0.57		
Uranium (U)	ppm	0.82	1.01	1	0.98	3	1.42	0.91
Vanadium (V)	ppm	55	54	61	45		151	230
Tungsten (W)	ppm	0.4	0.55	0.52	0.34	2		1
Y (Yttrium)	ppm	5.45	5.41	5.65	5.56		20	20
Zinc (Zn)	ppm	37	32	39	34	70	73	80
Zirconium (Zr)	ppm	1.9	2	2	1.8		123	100

Review of the data indicates that none of the elements analysed consistently exceeded all of the referenced values. Based on this, there is no expectation that the material analysed would provide a significant source of metals of other potentially harmful elements to the environment in which it will be placed when used as construction aggregate.

This analysis is preliminary in nature and as the aqua regia digestion method only provides a partial dissolution of the geological material, the data was not compared to relevant guidelines or limits established by the Province of British Columbia or Federal legislation. Therefore, should the material be considered for use other than as concrete aggregate in an environment in which specific limits apply, it is advisable to conduct a more thorough analysis which employs a more complete digestion of the material, and to compare the data to applicable legislative limits and guidelines concerning the environment where it is proposed to be used.

5.3 Leachable metals

The total element analysis in the preceding section presented a preliminary estimate of the relative amounts of the different elements available in the material. The metals leachable analysis provides further identification of elements that are readily available and potentially leachable from the material upon interaction with oxygen and water.

The method used for this preliminary analysis was the shakeflask extraction method (SFE), carried out by ALS Environmental in Burnaby. The material is pulverized to 80% passing 0.075 mm and introduced into a container with distilled water at a 1:3 solid to liquid ratio. The container is agitated for a 24 hour period after which the water is extracted, filtered and analysed with respect to the leached metals using the method appropriate to each element.



The results were compared to the 2006 BC Water quality Guidelines (BCWQG), proposed and approved, maximum and average exposure limits with respect to Freshwater aquatic life. The guidelines used in the BCWQG are site specific and the selection of guidelines take into consideration factors such as proximity to wells for drinking water, the presence of freshwater bodies, marine or estuarine environments and agricultural land uses. For this preliminary investigation, the freshwater aquatic guidelines were selected, as they generally present the most stringent limits. The results of the SFE analysis are presented in Table 17 together with the freshwater aquatic limits in the BCWQG. Elements which do not have set limits in BCWQG are not included. The certificate of analysis from ALS Environmental, which provides the complete analysis, is located in Appendix P.

Elements identified as potentially leachable in all of the samples were aluminum, copper, iron and vanadium. Zinc and arsenic were identified in elevated levels in one and three of the samples respectively. These are elements that could leach into the environment, if conditions were conducive. Parameters which determine if leaching will occur include:

- pH of the water interacting with the material;
- Ambient temperature;
- Availability of oxygen; and
- Other environmental factors.

Therefore, it is not predetermined that elements identified in the ML analysis as potentially leachable will cause a problem. Further testing would be required, should the material be proposed for use in applications for which this would be a concern. If the material is used a concrete aggregate, it will not be leachable to the same extent being cast in the cement matrix as if it was directly exposed to air and water.



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Table 17: SFE Results and BC Water Quality Guidelines

Parameter	BC Water Quality Guidelines (Approved and Working) (Criteria) for Freshwater Aquatic Life ^{1,2}		Notes	DH 10-05	DH 10-07	DH 10-07	DH 10-07
	30 Day Average Guidelines	Maximum Guidelines		22.9 – 30.5 m	13.7 – 19.8 m	21.3 – 29.0 m	30.5 – 33.5 m
pH		6.5 to 9 (unrestricted change permitted)		7.77	7.51	7.74	8.03
Hardness (mg/L CaCO ₃) calc.				10	10	10	6
Aluminum	0.005 to 0.05 mg/L (avg.)	0.02 to 0.1 mg/L (max.)	pH	1.03	1.81	1.65	2.09
Antimony		0.02 mg/L		0.00261	0.00156	0.003	0.00258
Arsenic		0.005 mg/L		0.0065	0.0046	0.0051	0.0094
Barium	1 mg/L (avg.)	5 mg/L (max.)		0.0083	0.0299	0.0147	0.0173
Beryllium	0.0053 mg/L (chronic criterion)			<0.00050	<0.00050	<0.00050	<0.00050
Boron		1.2 mg/L		0.031	0.033	0.031	0.037
Cadmium		$(10 \exp (0.86[\log(\text{hardness})]-3.2))/1000$	H	<0.000050	<0.000050	<0.000050	<0.000050
Chromium		0.001 mg/L (Cr ^{VI}), 0.0089 mg/L (Cr ^{III})	V	0.00108	0.00159	0.0017	0.00271
Cobalt	0.004 mg/L (avg.)	0.110 mg/L (max.)		0.00032	0.00045	0.00052	0.00054
Copper	0.002 mg/L H ≤ 50 mg/L (avg.) (0.04(H))/1000 mg/L with H > 50 mg/L (avg.)	$(0.094 (\text{hardness}+2))/1000 \text{ mg/L (max.)}$	H	0.0031	0.007	0.0061	0.01
Iron		0.35 mg/L		0.59	0.893	1.11	1.47
Lead	none for H ≤ 8mg/L (0.0031 + e^{(1.273 ln(avg. hardness)-4.705)})/1000 for H>8 mg/L	0.003 mg/L for H ≤ 8mg/L (e ^{(1.273 ln(hardness)-1.46)})/1000 for H>8 mg/L	H	0.00041	0.00064	0.00045	0.00068
Lithium	0.014 to 0.096 (secondary to chronic)	0.87 mg/L		<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.0044(H) + 0.605 (30 day avg.)	0.01102(H) + 0.54 (max.)	H	<0.011	0.0227	0.019	0.0387
Mercury	0.00002 mg/L (avg.)	none proposed		<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum	1 mg/L (avg.)	2 mg/L (max.)		0.00722	0.00956	0.0117	0.0144
Nickel		0.025 to 0.15 mg/L	H	0.00085	0.00179	0.00194	0.002
Phosphorus		None (Streams), 0.005 to 0.015 mg/L (Lakes)		<0.30	<0.30	<0.30	<0.30
Potassium		373-432 mg/L as KCl		7.07	5.86	7.98	5.45
Selenium	0.002 mg/L (avg.)*	0.002 mg/L (max.)*		0.00071	<0.00050	<0.00050	<0.00050
Silver	0.00005 mg/L ≤ 100 mg/L (H) to 0.0015 mg/L >100 mg/L (H) (avg.)	0.0001 mg/L ≤ 100 mg/L (H) to 0.003 mg/L >100 mg/L (H) (max.)	H	<0.000050	<0.000050	<0.000050	<0.000050
Thallium		0.0003 mg/L		<0.00010	<0.00010	<0.00010	<0.00010
Titanium	2 mg/L (Scenedesmus), 4.6 mg/L (Daphnia)			0.035	0.057	0.067	0.09
Uranium		0.3 mg/L		0.000171	0.000691	0.000441	0.000605
Vanadium		0.006 mg/L		0.0081	0.0067	0.0075	0.0117
Zinc	0.0075 mg/L H ≤ 90 mg/L (7.5 + 0.75 x (H -90))/1000 (30 day avg.) H > 90 mg/L	0.033 mg/L H ≤ 90 mg/L (33 + 0.75 x (H -90))/1000 (max.) H > 90 mg/L	H	<0.010	<0.010	<0.010	0.023

Reference:

1. BC Ministry of Environment. "British Columbia Approved Water Quality Guidelines". Updated January 2010.

2. BC Ministry of Environment. "A Compendium of Working Water Quality Guidelines for British Columbia". Updated August 2006

Notes:

Italics and boxed analytical results exceed the BCWQG maximum criteria
Bold and boxed analytical results exceed the BCWQG 30 day average criteria.
 < = Less than the detection limit indicated.

* denotes that the BCWQG reports selenium both a 30 day average and a maximum guideline.
 Test: 24 Hour Leach Extraction Test at 3:1 Liquid to Solid Ratio, filtered with 0.45 micron membrane filter.
 Concentrations are in milligrams per litre (mg/L) except where specified.
 pH = guideline is pH dependent; H = guideline is hardness dependent; V = guideline is valence dependent.



6.0 SUMMARY

This report provided test data to assist in the characterization of samples of sand and gravel proposed for use as aggregate, to assess their suitability for such uses. Specific tests were conducted to evaluate grain size distribution, lithological composition, physical engineering quality and chemical characteristics.

Some key points include:

- Grain size is variable from cobble- and boulder-size particles to silt-sized material, with relatively coarser near-surface zones and another gravel rich zone, which is discernible to varying degrees in the deposit;
- Lithologically, the material is indicated to be composed of at least 50% plutonic rock types, mixed with various proportions of amphibolite and metasedimentary rock types;
- The quality of the material is, based on the petrographic examination, less dependent on the lithological composition than the degree of weathering and oxidation, which is generally more intense in surficial units;
- This trend appears to mirror the differences observed in some of the test results for the test pit samples as compared with deeper drillhole samples, particularly in the Micro-Deval, Sulphate Soundness and Specific Gravity and Absorption tests (fine only);
- The PNs obtained in the petrographic examination suggest that weathering and oxidation may have some influence on the quality of the material to depths of approximately 21 m (70 ft);
- Overall the tested samples comply with the physical testing criteria for coarse concrete aggregate provided in Table 12 of CSA A23.1-09;
- Organic material was present in sufficient amounts in many of the samples that the fine portion of the samples failed the organic impurities test, in particular those sampled at depths shallower than 17 – 20 m (55 - 65 ft);
- Compressive strength results indicate that the quality of the fine sample material may be less than optimal, due to the presence of mica, chlorite, phyllite and particles weakened by weathering. Further assessment of this characteristic may be warranted once production is initiated;
- The accelerated mortar bar test identified the material as potentially reactive with respect to AAR. The concrete prism testing is underway and will provide further insight into the AAR potential of the material;
- The material represented by the tested samples did not constitute a potential source for ARD; and
- Although the total elements analysis did not discern any elevated concentrations of metals or other elements that could be a potential environmental concern in the material, the metals leachable test identified the potential for leaching of aluminum, arsenic, copper, iron, vanadium and zinc in one or more of the samples. Further testing is required to characterize the leaching characteristics of the material, should it be proposed for uses other than concrete aggregate, and leaching of metals could be a potential issue.



As indicated in Section 4.1.3, processing of the material is envisioned to include crushing of oversize material, blending and washing to homogenize the grain size distribution of the product and reduce silt content. Processing is also be expected have the effect of improving physical quality, reducing the organic impurities content and averaging the physical properties as influenced by varying degrees of weathering at different depths.

7.0 CONCLUSION

The material in its as is condition complies with most requirements in CSA A23.1/A23.2 for concrete aggregate with the exception of organic impurities and silt content. Processing of material is anticipated to include crushing of oversize material, blending and washing; therefore, the expectation would be that an overall improvement of the quality of the material would result.

Testing should be carried out on such processed material produced on a trial scale basis, to characterize the projected quality of the final product and to ensure effective and sufficient removal of deleterious organic impurities and weak components in the fine aggregate.

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Anett Briggs, P.Geo.
Geoscientist

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ORIGINAL SIGNED

Fred Shrimmer, P.Geo.
Associate / Senior Geoscientist



8.0 REFERENCES

Matthews, W.H. and Monger, J.: Roadside Geology of Southern British Columbia. Heritage House Publishing Co. Ltd, 2010.

Price WA (2009): Prediction Manual of Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1



APPENDIX A

Test Pit Logs

TP 09-01	Surface characteristics	Location
	Vegetated with grass, brush and seedlings, close to intersection	N: 5490435.70, E: 471406.05
Depth (m)	Description	Sample depth (m)
0.0 – 0.7	<ul style="list-style-type: none"> - vegetated surface - rootlets - moist - dark brown - overburden, loamy 	
0.7 – 0.75	ash layer	
0.75 – 1.0	<ul style="list-style-type: none"> - rusty brown, tan yellow - silty sand - fine to medium grained - moist, firm 	
1.0 -1.7	<ul style="list-style-type: none"> - sand - fine to Medium grained - grey to brown - firm 	
1.7 – 2.9	<ul style="list-style-type: none"> - cobbly, sandy gravel w/ some boulders @ maximum diameter 0.6 m - moist - 35% sand/cobble/boulders/gravel 	2.5 – 4.0
2.9 – 3.9	<ul style="list-style-type: none"> - moist - 35% sand/cobble/boulders/gravel EOH	

TP 09-02	Surface characteristics	Location
	Vegetated surface, slash, off arm 1 towards spawning channel	N: 5490408.51, E: 471518.02
Depth (m)	Description	Sample depth (m)
0.0 – 0.8	<ul style="list-style-type: none"> - Overburden, firm - Abundant rootlets - Brown to red (log rot) - Loamy, silt - Organic rich - Silt with some fine sand 	
0.8 – 3.7	<ul style="list-style-type: none"> - Bouldery, cobbly gravel with some sand - Boulders to 0.4m diameter - Greyish brown - Silty matrix - Moist - Slightly finer sand than TP09-1 	3.0 – 3.5
3.7 – 4.4	<ul style="list-style-type: none"> - Moist - Equal parts cobble/gravel EOH	4.3 m

TP 09-03	Surface characteristics	Location
	Light vegetation, moss, fern, shrub, in hollow/depression	N: 5490266.77, E: 471471.11
Depth (m)	Description	Sample depth (m)
0.0 – 0.7	<ul style="list-style-type: none"> - Dark brown to red - Rootlets - Rusty - Overburden, firm - Moist - Loamy, silt with trace sand - Rotted cedar 	
0.7 – 3.9	<ul style="list-style-type: none"> - Cobbly, sandy gravel with some boulder - Silty - Grey-brown - Boulders to 0.4 m diameter - Sand medium to coarse grained EOH	3.7 m

TP 09-04	Surface characteristics	Location
	Shrubs, grass, southwest of spawning channel	N: 5490308.96, E: 471803.90
Depth (m)	Description	Sample depth (m)
0.0 – 0.6	<ul style="list-style-type: none"> - Overburden - firm, moist - silt with some sand - grey to brown - less organic rich than TP09-2/3 	
0.6 – 0.9	<ul style="list-style-type: none"> - Medium sand - Grey to brown - Loose, moist - Sand lens 	
0.9 – 1.6	<ul style="list-style-type: none"> - Sandy silt - Firm, moist - Brown - With sandier interbeds - Grey sand 	
1.6 – 4.0	<ul style="list-style-type: none"> - Starts to get boney - Sandy, cobbly gravel with some boulders @ max size 0.4 m - Some silt - Brown, some grey - Moist to wet - Med to coarse grained EOH	3.8 – 4.0

TP 09-05	Surface characteristics	Location
	Vegetated, heavy shrubbery, cul-de-sac	N: 5490450.98, E: 472042.86
Depth (m)	Description	Sample depth (m)
0.0 – 0.7	<ul style="list-style-type: none"> - Overburden - Rootlets - Firm, moist - Brown - Clayey silt 	
0.7 – 1.0	<ul style="list-style-type: none"> - Silt with some clay 	
1.0 – 1.45	<ul style="list-style-type: none"> - Alternating 1) silt with some sand & trace clay (firm), and, 2) sand with trace silt (loose) - Interbeds at 5-10 cm thickness Grey-brown	Sample 1.0 – 1.45 m, #1
1.45 – 1.9	<ul style="list-style-type: none"> - Sandy silt - Trace rootlets - Firm, moist - Brown 	
1.9 – 2.2	<ul style="list-style-type: none"> - Gravelly sand - Grey to brown - Coarse sand 	Sample 1.9 m, #2
2.2 – 4.0	<ul style="list-style-type: none"> - Brown with some silt - Sandy silt with some cobbles and boulder and some gravel - Oxidation no cobbles and boulders - Max boulder size is 0.8 m - Ground water seepage - Wet at the bottom - Sloughing EOH	Sample 3.5 – 4.0 m

TP 09-06	Surface characteristics	Location
	Vegetated, grass, some small shrubs, depression	N: 5490487.17, E: 471933.18
Depth (m)	Description	Sample depth (m)
0.0 – 0.3	<ul style="list-style-type: none"> - Overburden - Moist, firm - Rootlets - Brown - Clayey, silty, sand 	
0.3 – 0.55	<ul style="list-style-type: none"> - Silt with some fine sand - Oxidized layer at bottom 3-4 m - Firm - Moist 	
0.55 – 0.65	<ul style="list-style-type: none"> - Loose sand with some silt - Brown 	
0.65 – 0.8	<ul style="list-style-type: none"> - Silt as above - Rootlets 	

TP 09-06, depth (m)	Description	Sample depth (m)
0.8 – 1.2	<ul style="list-style-type: none"> - Interbedded silt and sandy gravel - Patchy oxidation staining 	#1 : 0.8 – 1.2
1.2 – 1.3	<ul style="list-style-type: none"> - Silty clay 	
1.3 – 4.4	<ul style="list-style-type: none"> - Bouldery, sandy, silty cobble with some gravel - Brown - Moist but not very wet - Silty - Medium to coarse grained sand EOH	#2 : 4.0 – 4.4

TP 09-07	Surface characteristics	Location
	Small trees 2 m tall, moss, a few shrubs, east of northern part of spawning channel	N: 5490585.06, E: 471794.32
Depth (m)	Description	Sample depth (m)
0.0 – 0.2	<ul style="list-style-type: none"> - Overburden dark - Firm, moist - Silty with some sand - Rootlets 	
0.3 – 3.7	<ul style="list-style-type: none"> - Boulders with some cobble, some sand, some silt and trace gravel - Brown throughout EOH	3.7

TP 09-08	Surface characteristics	Location
	Vegetated with light moss and fern, northeast of spawning channel	N: 5490817.42, E: 471808.64
Depth (m)	Description	Sample depth (m)
0.0. – 0.5	<ul style="list-style-type: none"> - Sandy silt - Brown - Firm - Low organics - Moist - Rootlets 	
0.5 – 1.8	<ul style="list-style-type: none"> - Bouldery cobble, some sand, some gravel - Coarse sand, some silt - Brown greyish - Damp 	
1.8 – 4.5	<ul style="list-style-type: none"> - Brownish grey - Moist - Max boulder 1 m - More wet towards bottom EOH	4.0 – 4.5

TP 09-09	Surface characteristics	Location
	Light vegetation, grass with some shrubs, logs, flat, slightly depressed, beside road	N: 5490840.59, E: 471423.06
Depth (m)	Description	Sample depth (m)
0.0 – 0.1	<ul style="list-style-type: none"> - Overburden - Moist - Dark brown/red - Rootlets 	
0.1 – 0.7	<ul style="list-style-type: none"> - Sandy silt - Brown - Firm - Moist - Slightly loose - Some organic rootlets - Some clay knobs 	
0.7 – 2.1	<ul style="list-style-type: none"> - Gravelly cobble with some boulders and some sand - Brown - Damp - Max boulder @ 0.6 m 	
2.1 – 4.4	<ul style="list-style-type: none"> - As above - Grey - Max boulder @ 1 m - Groundwater flow/seep, clean EOH	4.4

TP 09-10	Surface characteristics	Location
	Trees, grass, fern, near helipad	N: 5490673.94, E: 471535.09
Depth (m)	Description	Sample depth (m)
0.0 – 0.2	<ul style="list-style-type: none"> - Overburden - Rootlets - Root rot - Rusty - Moist - Firm/loose - Silt with trace sand 	
0.2 – 0.5	<ul style="list-style-type: none"> - Clayey silt with some pebble - Brown, firm, moist 	
0.5 – 1.0	<ul style="list-style-type: none"> - Medium to coarse sand - Cobbly sand with some gravel and some boulder - Low silt - Damp - Rootlets stop 	0.5 – 1.0
1.0 – 4.3	<ul style="list-style-type: none"> - Cobbly, sandy boulders with some sand - Grey, brownish - Moist - Loosely consolidated (sloughs easy) EOH	4.3

TP 09-11	Surface characteristics	Location
	Vegetated , shrubs, moss and grass	N: 5490408.51, E: 471518.02
Depth (m)	Description	Sample depth (m)
0.0 – 0.4	<ul style="list-style-type: none"> - Overburden - Brown to red - Rootlets - Damp 	
0.4 – 1.5	<ul style="list-style-type: none"> - Sandy silt - Rootlets - Brown - Firm, damp 	
1.5 – 2.3	<ul style="list-style-type: none"> - Gravelly pebble with some sand, trace boulder @ 0.2m 	
2.3 – 2.6	<ul style="list-style-type: none"> - Sandy silt - Rootlets - Firm - Damp 	
2.6 – 4.2	<ul style="list-style-type: none"> - Bouldery cobble with some sand and some gravel - Damp - Grey to brown - Max boulder size 0.5 m - No significant moisture EOH	4.2



APPENDIX B

Becker Drillhole Logs

RECORD OF BECKER OPEN HOLE: DH10-01

LOCATION:

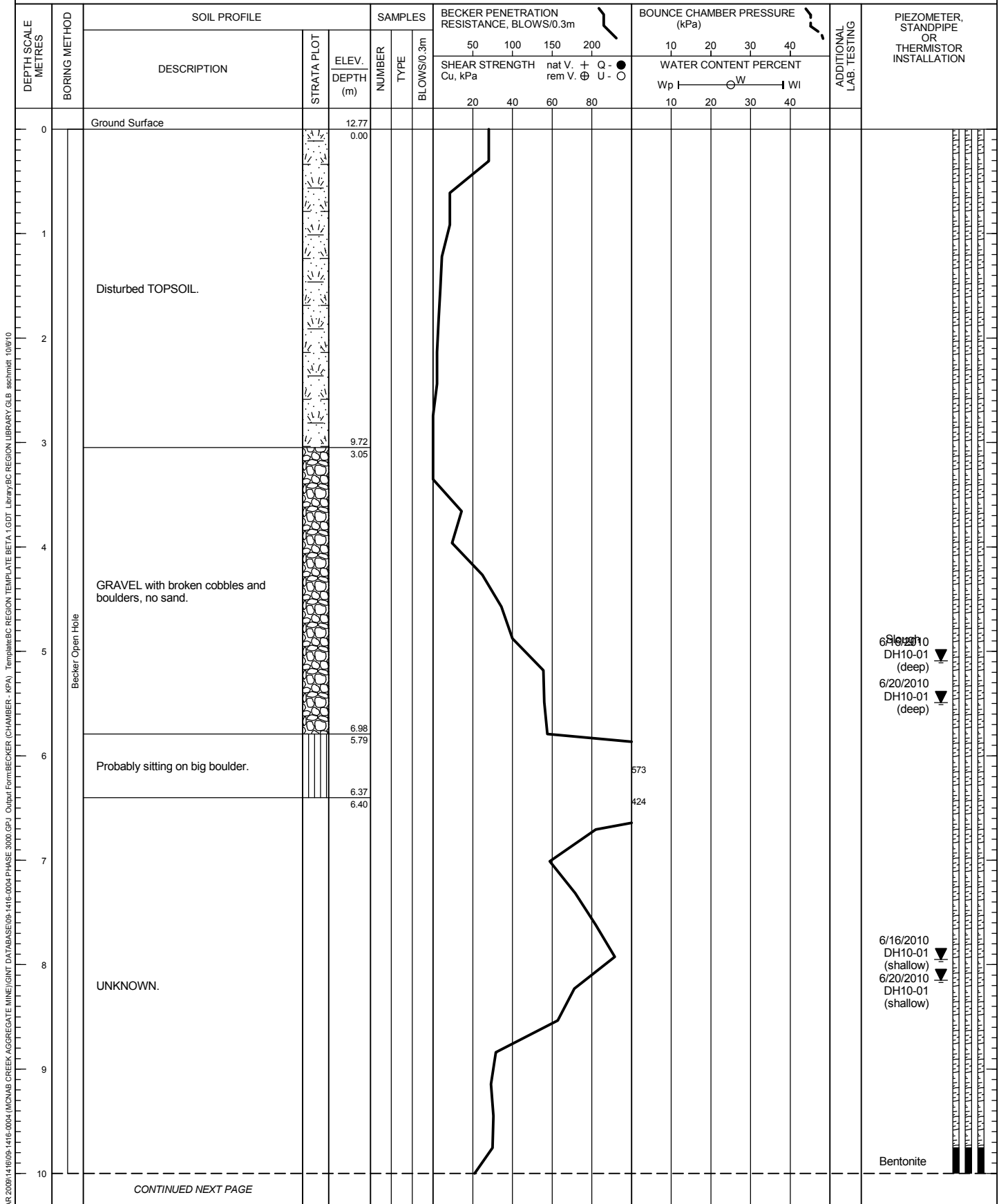
N: 5490688.37 E: 471672.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 14, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable



6/16/2010
DH10-01 (deep)

6/20/2010
DH10-01 (deep)

6/16/2010
DH10-01 (shallow)

6/20/2010
DH10-01 (shallow)

Bentonite

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File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK ASSESSMENT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/6/10



RECORD OF BECKER OPEN HOLE: DH10-01

LOCATION:

N: 5490688.37 E: 471672.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 14, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								50 100 150 200		nat V. + Q - rem V. ⊕ U - ○		10 20 30 40				Wp ----- W ----- Wi	
10	Becker Open Hole	UNKNOWN. (continued)		2.10													
11		Damp SILT, some sand.		10.67											Bentonite		
12				0.88											Filter Sand		
13		Silty GRAVEL with broken COBBLES, some sand.		11.89													
14		Coarse SAND with some angular gravel, with iron oxidation, brown silty water.		13.41											Slough		
15				-0.64													
16		Medium to coarse SAND with silt and broken cobbles.		14.94											Slotted PVC Pipe		
17				-3.69													
18		Relatively clean SAND, coarse, trace pebbles, boulders, cobbles and silt.		16.46											Bentonite		
19		Broken BOULDERS with some coarse sand.		17.98											Slough		
20			-6.74														
		Silty GRAVEL with some fine sand.		19.51													
		CONTINUED NEXT PAGE															

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-01

LOCATION:

N: 5490688.37 E: 471672.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 14, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	50	100	150	200	10	20			30
20	Becker Open Hole	Silty GRAVEL with some fine sand. (continued)	[Strata Plot]	-8.26 21.03												
21		GRAVEL with some broken cobble, fine sand and silt.	[Strata Plot]	-9.79 22.56												
22		Coarse SAND with some gravel, fine sand and silt.	[Strata Plot]	-11.31 24.08												
23		Coarse GRAVEL with some coarse sand and silt.	[Strata Plot]	-12.83 25.60												
24		Coarse GRAVEL with some coarse sand and silt.	[Strata Plot]	-14.36 27.13												
25		Coarse GRAVEL with some coarse sand and silt.	[Strata Plot]	-15.88 28.65												
26		Coarse to medium SAND, trace fine sand and silt water.	[Strata Plot]													
27		Fine to coarse SAND with medium SAND, some gravel. Sample flooded, may not be representable.	[Strata Plot]													
28																
29																
30																

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File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/6/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-01

LOCATION:

N: 5490688.37 E: 471672.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 14, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		WATER CONTENT PERCENT			
								50	100	150	200	nat V. +	rem V. ⊕		
30	Becker Open Hole			-17.41											
				30.18											
31		Gravelly, coarse SAND with some fine sand.													
					-18.93										
					31.70										
32		Gravelly, medium SAND, some coarse sand.													
					-20.45										
					33.22										
33		Gravelly, medium to coarse SAND.													
					-21.98										
				34.75											
34	Gravelly, medium to coarse SAND.														
				-23.50											
				36.27											
35	Medium to coarse, sandy GRAVEL with boulders and cobbles. Refusal Boulder.														
				-25.03											
				37.80											
36	Coarse to medium SAND with gravel.														
				-26.55											
				39.32											
37	Coarse GRAVEL.														
				-28.10											
				30.60											
38	Gravelly, coarse to medium SAND. Lots of water.														
				-29.80											
				32.30											
39															
				-31.50											
				34.00											
40															

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DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-01

LOCATION:

N: 5490688.37 E: 471672.49 UTM Zone: 10
Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 14, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
							50 100		150 200		Wp		Wi			
40	Becker Open Hole	Gravelly, coarse to medium SAND. Lots of water. (continued)	[Strata Plot]	-28.07 40.84											Slough Filter Sand Filter Sand	
41		Coarse to medium, sandy GRAVEL.	[Strata Plot]													
42		Medium to coarse, sandy GRAVEL.	[Strata Plot]	-29.60 42.37												
43		Gravelly, medium to coarse SAND.	[Strata Plot]	-31.12 43.89												
44		Gravelly, medium to coarse SAND.	[Strata Plot]	-32.65 45.42												
45		Medium SAND, trace gravel.	[Strata Plot]	-34.17 46.94												
46		Medium, sandy GRAVEL with cobbles, some fine sand.	[Strata Plot]	-35.69 48.46												
47				-36.61 49.38												
48			End of Becker Open Hole.													
49																
50																

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK ASSESSMENT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-02

LOCATION:

N: 5490410.514 E: 471958.259 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 16, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
0		Ground Surface		7.19 0.00											
1		Disturbed TOPSOIL and FILL.													
2															
3		Disturbed, dry, broken COBBLES and GRAVEL, some fine to coarse sand and silt.		4.45 2.74											
4															
5	Becker Open Hole	Broken COBBLES some coated in fine sand, some fine sand, trace silt.		2.92 4.27											
6															
7		Fine SAND with broken cobbles and gravel.		1.40 5.79											
8		Coarse, sandy GRAVEL with trace silt, with broken cobbles. Water at 7.8m.		-0.13 7.32											
9															
10		GRAVEL, with pebbles, minor sand.		-1.65 8.84											

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6/18/2010
DH10-02 (deep) ▼
6/20/2010
DH10-02 (deep) ▼
6/18/2010
DH10-02 (shallow)
6/20/2010
DH10-02 (shallow)

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-02

LOCATION:

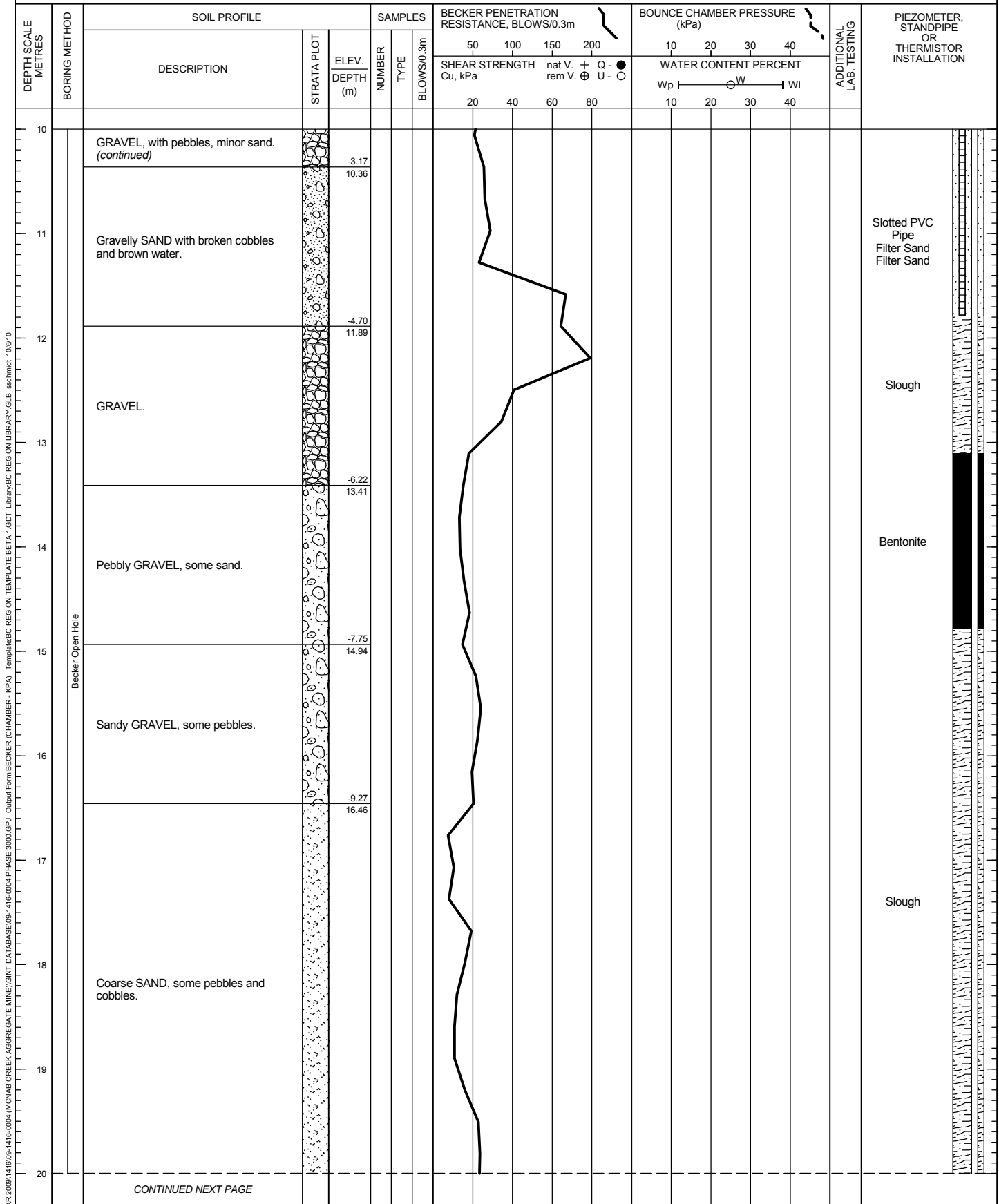
N: 5490410.514 E: 471958.259 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 16, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable



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DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

RECORD OF BECKER OPEN HOLE: DH10-02

LOCATION:

N: 5490410.514 E: 471958.259 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 16, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION			
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	50		100		150				200		
								SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT						
20	Becker Open Hole	Coarse SAND, some pebbles and cobbles. <i>(continued)</i>	[Strata Plot: Sand with pebbles]	-14.15														
21				21.34														
22		GRAVEL		[Strata Plot: Gravel]	-15.67													
23					22.86													
24		Coarse SAND and GRAVEL, trace fine sand.		[Strata Plot: Sand and gravel]	-16.89													
25					24.08													
26		Coarse GRAVEL.		[Strata Plot: Coarse gravel]	-18.41													
27					25.60													
28	GRAVEL, some sand, broken cobbles, minor silt.	[Strata Plot: Gravel with sand]	-19.94															
29			27.13															
30	Medium SAND with gravel and cobbles.	[Strata Plot: Sand with gravel]	-21.46															
31			28.65															
32	Coarse SAND with gravel.	[Strata Plot: Sand with gravel]																
		CONTINUED NEXT PAGE																

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RECORD OF BECKER OPEN HOLE: DH10-02

LOCATION:

N: 5490410.514 E: 471958.259 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 16, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	50	100	150	200	10	20			30
30	Becker Open Hole	Coarse SAND with gravel. (continued)		-22.99											Slough Bentonite Slotted PVC Pipe Filter Sand	
				30.18												
31		Coarse SAND. Poor Recovery.														
32																
33		Sandy GRAVEL, very red water.														
34		SAND, some gravel.														
35	SAND, broken cobbles.															
36																
37	SAND with some coarse gravel, broken cobbles.															
38	Medium SAND with some gravel and broken cobbles, clear water.															
39																
40	Fine SAND.															
		CONTINUED NEXT PAGE														

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DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

PROJECT No.: 09-1416-0004

RECORD OF BECKER OPEN HOLE: DH10-02

SHEET 5 OF 5
DATUM: Local

LOCATION:

N: 5490410.514 E: 471958.259 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 16, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		WATER CONTENT PERCENT				
								50	100	150	200	nat V. +	rem V. ⊕			Q - ●
40	Becker Open Hole	Fine SAND. (continued)		-33.65 40.84												
41																
42		Medium SAND with some gravel.														
43																
44		Medium SAND with some fine SAND.			-36.70 43.89											
45		SANDS heaved up pipe to 39.624m.														
46		End of Becker Open Hole.		-38.53 45.72												
47																
48																
49																
50																

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\08-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

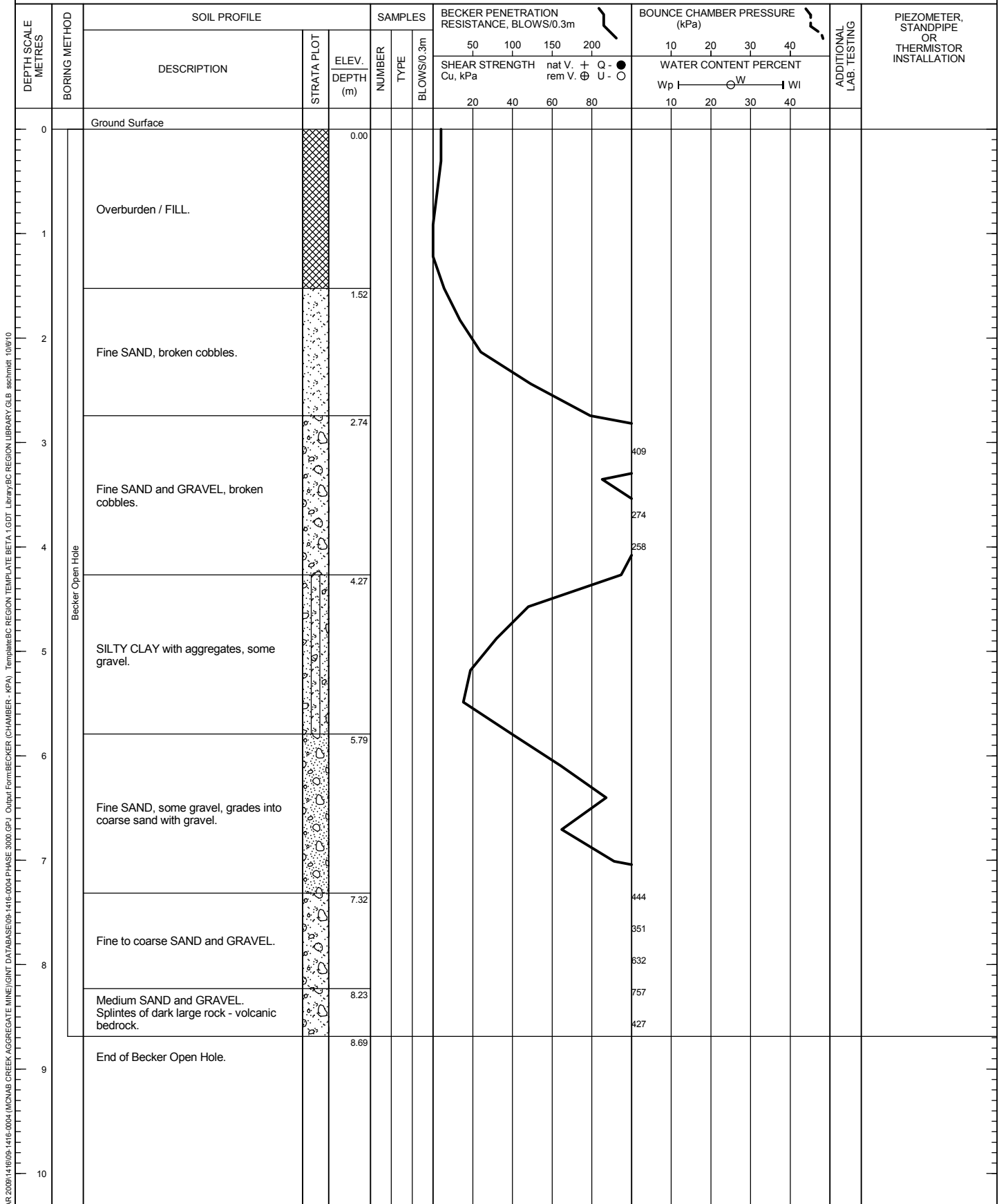
RECORD OF BECKER OPEN HOLE: DH10-03

LOCATION:

DRILLING DATE: June 17, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable



File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/6/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-04

LOCATION:

DRILLING DATE: June 17, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								50	100	150	200	nat V. +	rem V. ⊕		
0	Becker Open Hole	Ground Surface		0.00											
1		Overburden / FILL with woody debris.													
2		Silty SAND and GRAVEL.		2.13											
3		Rock chips, mainly fine grained mafic - volcanic? BEDROCK confirmed at 2.4m using excavator.		2.74											
3.35	End of Becker Open Hole.		3.35												
4															
5															
6															
7															
8															
9															
10															

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-05

LOCATION:

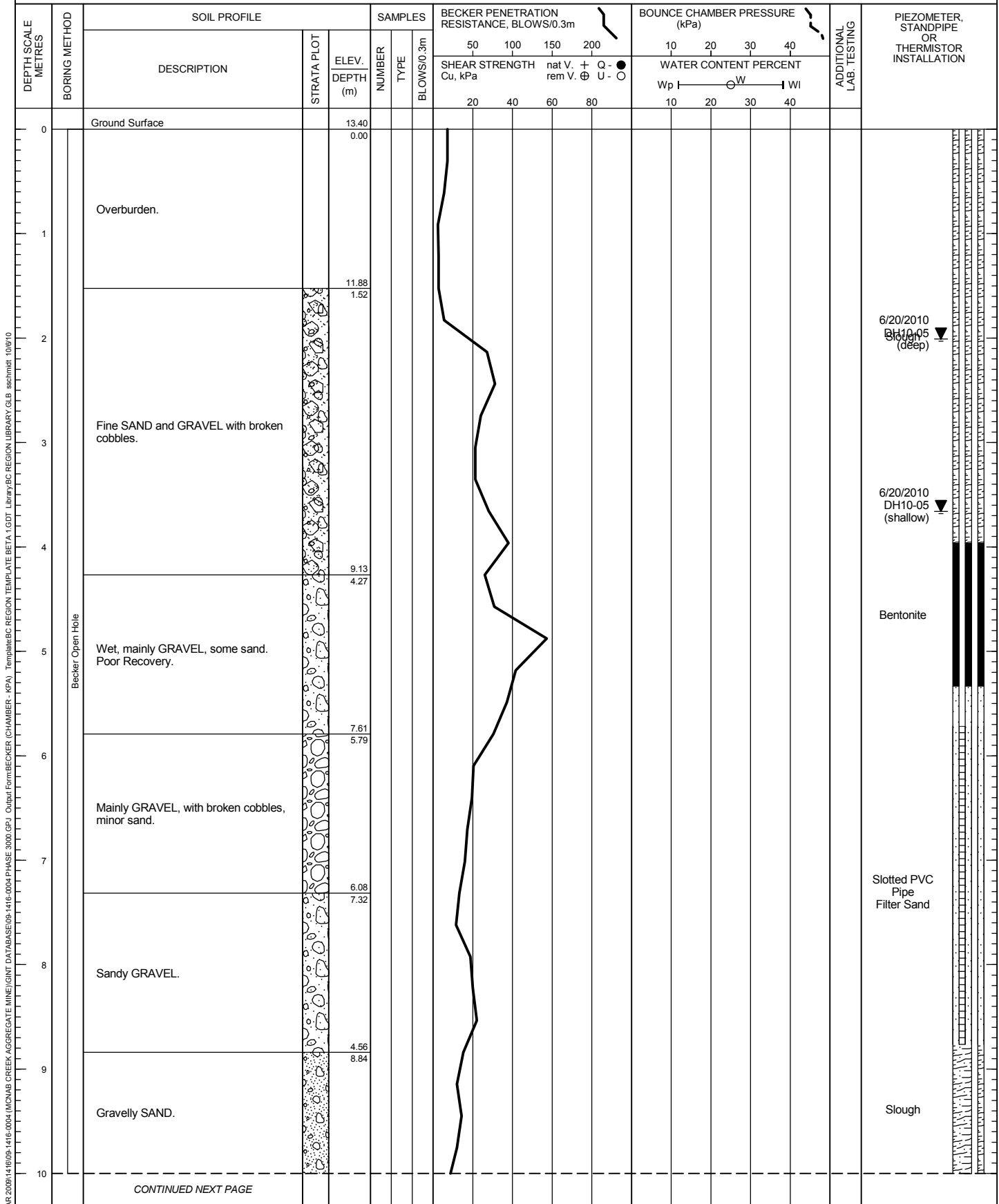
N: 5490859.15 E: 471862.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 18, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable



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DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

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File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ, Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

RECORD OF BECKER OPEN HOLE: DH10-05

LOCATION:

N: 5490859.15 E: 471862.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 18, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								50 100 150 200		nat V. + Q - rem V. ⊕ U - ○		10 20 30 40				Wp ----- W ----- Wi	
10	Becker Open Hole	Gravelly SAND. (continued)		3.04											Slough Bentonite Slough		
				10.36													
11		Medium to coarse SAND, some gravel. A lot of brown water at 11m.															
					1.51												
12		Medium to coarse SAND, minor gravel, red water.			11.89												
						-0.01											
13					13.41												
14		GRAVEL, minor coarse sand.															
						-1.54											
15	Greyish, coarse SAND, some gravel.		14.94														
				-3.06													
16			16.46														
17	GRAVEL, minor sand.																
				-4.58													
18			17.98														
19	GRAVEL, becoming more sandy and silty.																
				-6.11													
20			19.51														
		CONTINUED NEXT PAGE															

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-05

LOCATION:

N: 5490859.15 E: 471862.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 18, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	50	100	150	200	10	20		
20	Becker Open Hole	GRAVEL and broken COBBLES. Poor Recovery.		-7.94											
21				21.34											
22		Silty, sandy GRAVEL.		-9.16											
23				22.56											
24		Well graded SAND, some cobbles and silt.		-10.68											
25			24.08												
26	Well graded SAND, some gravel and cobbles.		-12.20												
27			25.60												
28	Well graded SAND, some gravel. Water becomes clearer at 27.1m.														
29															
30															

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

File: X:\ACTIVE\YEAR 2009\141609-1416-0004\MCKNAB CREEK ASSESSMENT DATABASE\09-1416-0004 PHASE 3000.GPJ, Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

RECORD OF BECKER OPEN HOLE: DH10-05

LOCATION:

N: 5490859.15 E: 471862.49 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 18, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								nat V. +	rem V. ⊕	Q - ●	U - ○	Wp	Wi		
30	Becker Open Hole			-16.78											
31				30.18											
32		Well graded SAND, minor gravel.													Filter Sand Slotted PVC Pipe
33				-19.82											
34		End of Becker Open Hole.		33.22											
35															
36															
37															
38															
39															
40															

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\GIS\NT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-06

LOCATION:

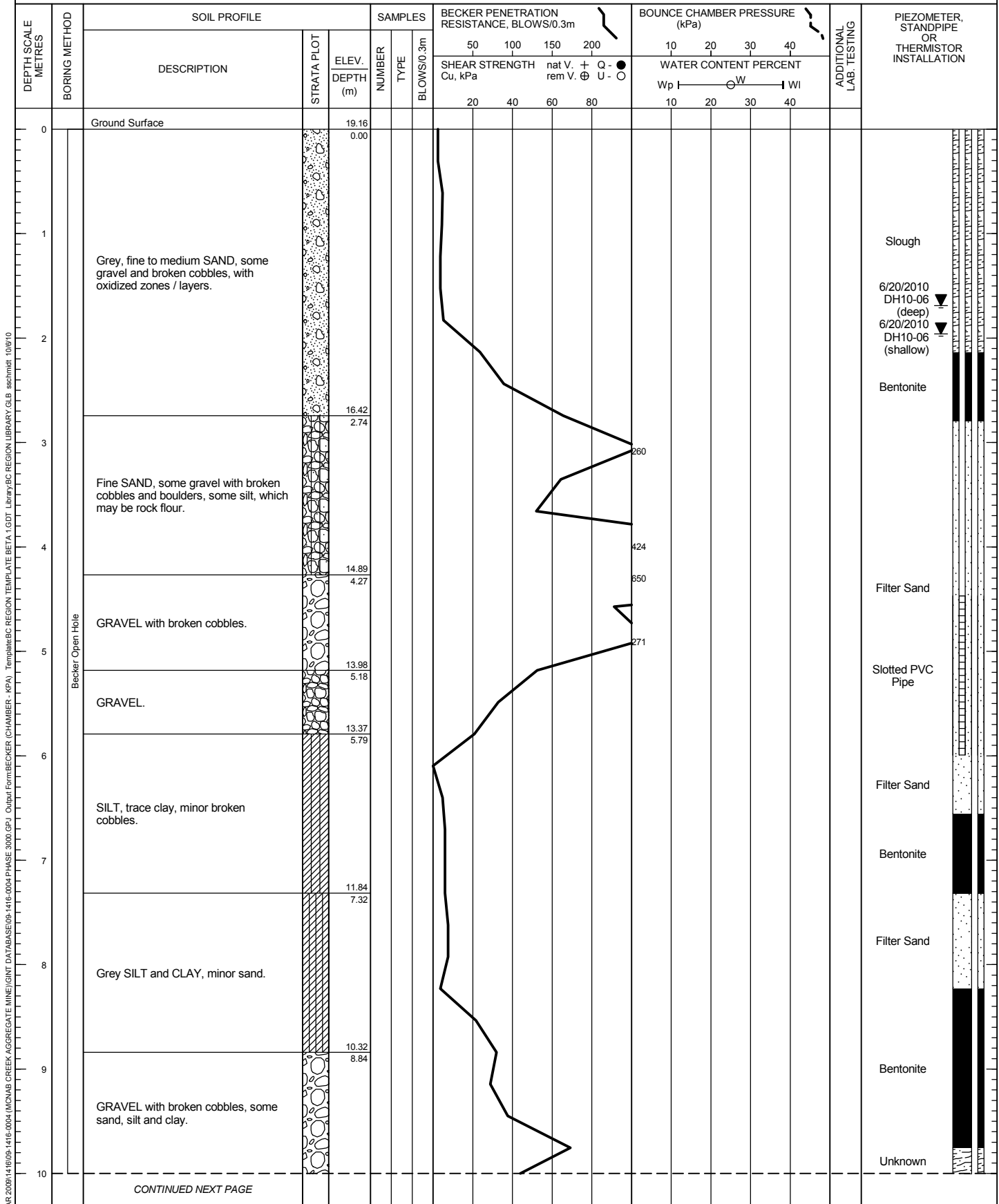
N: 5491143.745 E: 471479.292 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 18, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable



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File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK ASSESSMENT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10



RECORD OF BECKER OPEN HOLE: DH10-06

LOCATION:

N: 5491143.745 E: 471479.292 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 18, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		WATER CONTENT PERCENT				
								50	100	150	200	nat V. +	rem V. ⊕			Q - ●
10	Becker Open Hole	GRAVEL with broken cobbles, some sand, silt and clay. (continued)		8.80 10.36											Unknown	
11		Grey, silty, clayey, gravelly SAND. Broken boulder stuck twice.									543 307					
12		Moist to damp, but not wet, sandy, clayey SILT with some gravel. Possible TILL.		6.97 12.19												
13		Grey CLAYEY SILT with some sand and gravel. Possibly TILL or LACUSTRINE.		5.75 13.41												Slotted PVC Pipe Filter Sand
14		Refusal BEDROCK, dark volcanic rock.		4.22 14.94												
15		End of Becker Open Hole.		3.01 16.15												

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\GIS\NT DATABASE\08-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-07

LOCATION:

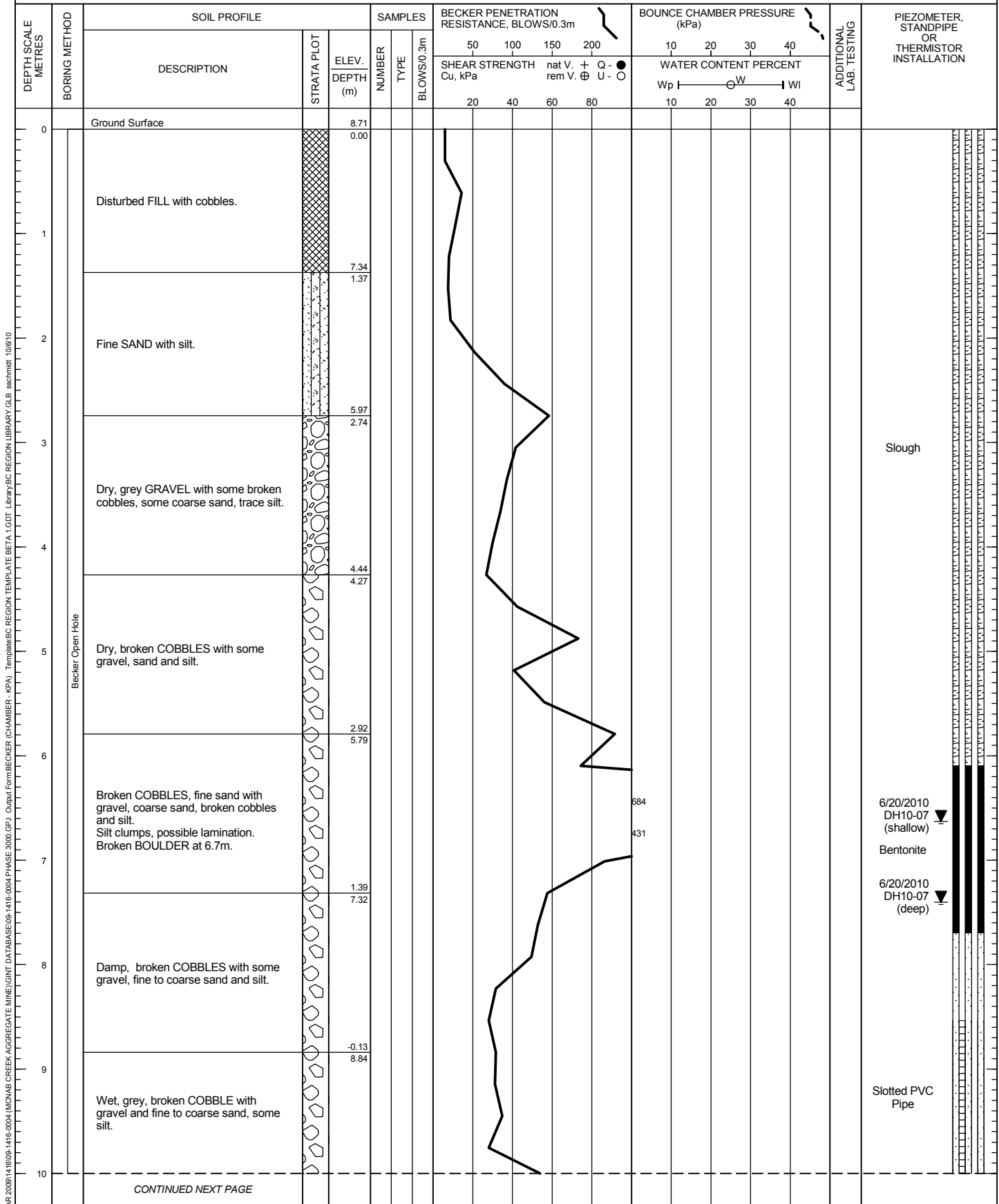
N: 5490328.653 E: 471505.111 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 19, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable



File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNIT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/6/10

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6/20/2010
DH10-07
(shallow) ▼
Bentonite
6/20/2010
DH10-07
(deep) ▼

Slotted PVC Pipe



RECORD OF BECKER OPEN HOLE: DH10-07

LOCATION:

N: 5490328.653 E: 471505.111 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 19, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		WATER CONTENT PERCENT				
								50	100	150	200	nat V. +	rem V. ⊕			Q - ●
10	Becker Open Hole	Wet, grey, broken COBBLE with gravel and fine to coarse sand, some silt. <i>(continued)</i>		-1.65 10.36												
11		Silty, well graded SAND with gravel and some cobbles, brown silty water.														Slotted PVC Pipe Filter Sand Filter Sand
12				-3.18 11.89												Filter Sand
13		Medium to coarse SAND with some gravel, brown silty water.														
14		Clean, well graded SAND, with trace gravel.		-4.70 13.41												Bentonite
15					-6.23 14.94											
16		No sample, due to jam.														Slough
17																
18																
19		Clean, coarse SAND, trace gravel.		-9.58 18.29												Bentonite
20	Coarse SAND with coarse, sandy gravel. No Sample Recovered.		-10.80 19.51												Slough	
		CONTINUED NEXT PAGE														

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK ASSESSMENT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:

RECORD OF BECKER OPEN HOLE: DH10-07

LOCATION:

N: 5490328.653 E: 471505.111 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 19, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								50 100 150 200		nat V. + Q - rem V. ⊕ U - ○		10 20 30 40				Wp ----- W ----- Wi	
20	Becker Open Hole	Coarse SAND with coarse, sandy gravel. No Sample Recovered. (continued)													Slough		
21				-12.32 21.03													
22		Gravelly, well graded SAND with some water.														Bentonite	
23				-13.85 22.56													
24		Gravelly, coarse SAND with iron oxidation.															
25				-15.37 24.08													
26		Gravelly, coarse SAND with broken cobbles.															
27				-16.89 25.60													
28		Medium SAND with trace gravel.															
29				-18.42 27.13												Slough	
30			-19.94 28.65														
		SAND.															
		CONTINUED NEXT PAGE															

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK AGGREGATE MINE\IGNT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10



PROJECT No.: 09-1416-0004

RECORD OF BECKER OPEN HOLE: DH10-07

SHEET 4 OF 4
DATUM: Local

LOCATION:

N: 5490328.653 E: 471505.111 UTM Zone: 10

Survey Provided by: Peter M. Gordon Land Surveying Inc., Dated September 7, 2010

DRILLING DATE: June 19, 2010

DRILLING CONTRACTOR: Beck Drilling and Environmental Services Ltd.

PENETRATION TEST HAMMER, Variable

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		BECKER PENETRATION RESISTANCE, BLOWS/0.3m				BOUNCE CHAMBER PRESSURE (kPa)				ADDITIONAL LAB. TESTING	PIEZOMETER, STANDPIPE OR THERMISTOR INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		WATER CONTENT PERCENT				
								50	100	150	200	nat V. +	rem V. ⊕			Q - ●
30	Becker Open Hole	SAND. (continued)		-21.47											Slough Slotted PVC Pipe Slotted PVC Pipe	
		Gravelly SAND.		30.18												
31		SAND, minor gravel.		-22.38												
				31.09												
32		Well graded SAND, with cobbles, reddish brown water.		-22.99												
				31.70												
33				-24.51												
		End of Becker Open Hole.		33.22												
34																
35																
36																
37																
38																
39																
40																

File: X:\ACTIVE\YEAR 2009\1416\09-1416-0004\MCKNAB CREEK ASSESSMENT DATABASE\09-1416-0004 PHASE 3000.GPJ Output Form\BECKER (CHAMBER - kPa) Template\BC REGION TEMPLATE BETA 1.GDT Library\BC REGION LIBRARY\GLB_schmidt_10/0/10

DEPTH SCALE

1 : 50



LOGGED: F.S./A.B.

CHECKED:



APPENDIX C

Sieve Analysis Reports

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 10, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-1 Sa. 1, Depth: 2.5-4.0m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 28, 2009

SAMPLED BY: BH/FHS/DH(Client)

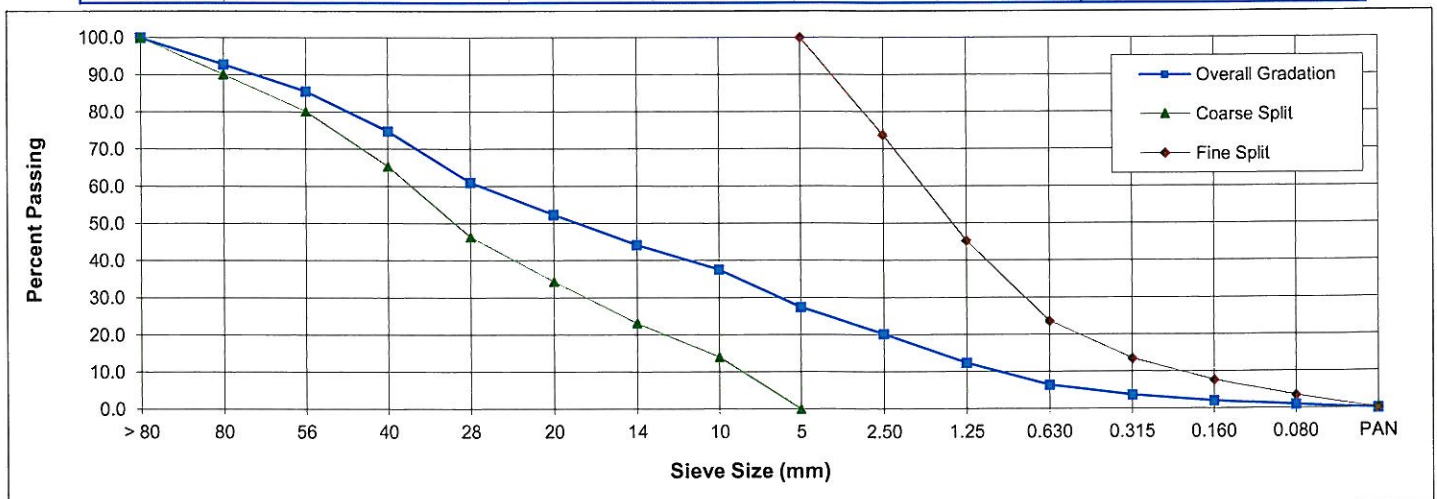
DATE TESTED: June 8-10, 2009

TESTED BY: TD/DC

LOCATION (NAD-83 UTM 10N): 5490436N 471406E

ALTITUDE (NAD-83): 5 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	7.2	92.8	9.9		90.1		
56	7.2	85.6	9.9		80.2		
40	10.7	74.9	14.8		65.4		
28	13.8	61.1	19.0		46.4		
20	8.7	52.4	12.0		34.3		
14	8.2	44.2	11.2		23.1		
10	6.6	37.6	9.1		14.0		
5	10.2	27.5	14.0		0.0	100.0	
2.50	7.2	20.2		26.3		73.7	
1.25	7.8	12.4		28.4		45.3	
0.630	5.9	6.5		21.6		23.7	
0.315	2.8	3.7		10.2		13.5	
0.160	1.6	2.1		5.8		7.7	
0.080	1.2	1.0		4.2		3.5	
PAN	1.0	0.0		3.5		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.36
 % finer than 80 µm of the +5 mm portion: 0.08

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 10, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

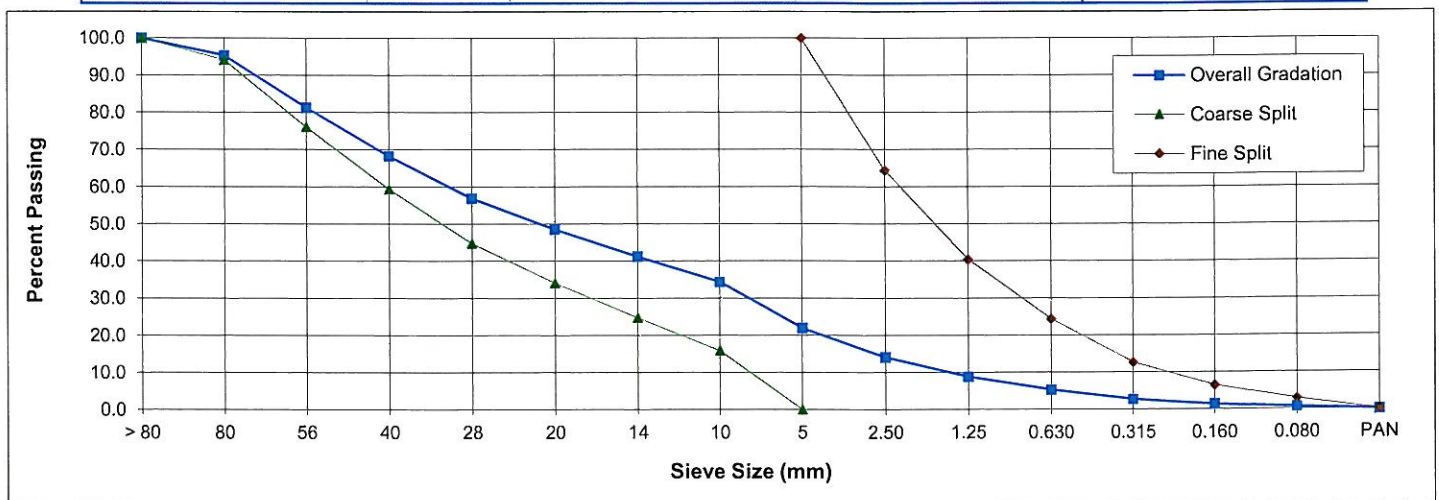
PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-2 Sa. 1, Depth: 3.0-3.5 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 28, 2009
 DATE TESTED: June 8-10, 2009
 LOCATION (NAD-83 UTM 10N): 5490409N 471518E

SAMPLED BY: BH/FHS/DH(Client)
 TESTED BY: TD/DC
 ALTITUDE (NAD-83): 7 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	4.6	95.4	5.9		94.1		
56	14.1	81.4	18.0		76.1		
40	13.0	68.3	16.7		59.4		
28	11.4	56.9	14.6		44.8		
20	8.4	48.6	10.7		34.1		
14	7.3	41.3	9.4		24.7		
10	6.9	34.4	8.8		15.9		
5	12.4	22.0	15.9		0.0	100.0	
2.50	7.8	14.2		35.6		64.4	
1.25	5.3	8.9		23.9		40.4	
0.630	3.5	5.4		16.0		24.4	
0.315	2.6	2.8		11.7		12.7	
0.160	1.4	1.4		6.2		6.4	
0.080	0.8	0.7		3.6		2.9	
PAN	0.6	0.0		2.9		0.0	
Total	100.0	100.0	100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.52
 % finer than 80 µm of the +5 mm portion: 0.06

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 10, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

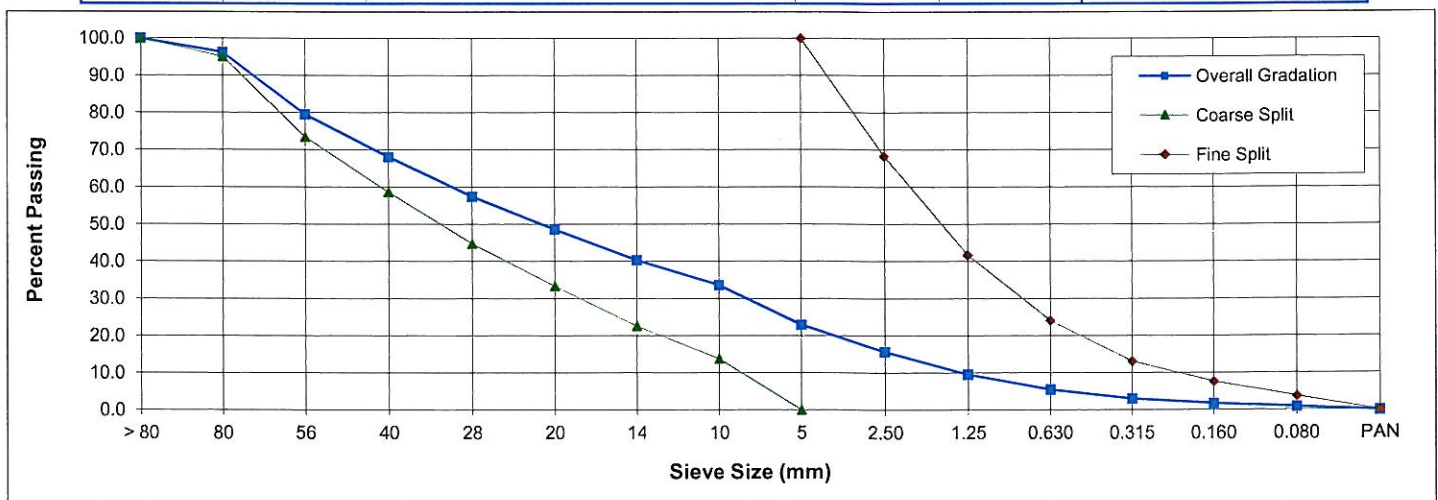
PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-2 Sa. 2, Depth: 4.3 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 28, 2009
 DATE TESTED: June 8-10, 2009
 LOCATION (NAD-83 UTM 10N): 5490409N 471518E

SAMPLED BY: BH/FHS/DH(Client)
 TESTED BY: DC
 ALTITUDE (NAD-83): 7 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	3.8	96.2	4.9		95.1		
56	16.6	79.6	21.6		73.5		
40	11.4	68.1	14.9		58.6		
28	10.7	57.5	13.9		44.8		
20	8.8	48.6	11.5		33.3		
14	8.3	40.4	10.7		22.5		
10	6.7	33.6	8.8		13.8		
5	10.6	23.0	13.8		0.0	100.0	
2.50	7.3	15.7		31.7		68.3	
1.25	6.1	9.6		26.6		41.7	
0.630	4.0	5.6		17.6		24.1	
0.315	2.5	3.0		10.9		13.1	
0.160	1.2	1.8		5.4		7.7	
0.080	0.9	0.9		4.0		3.7	
PAN	0.9	0.0		3.7		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.45
 % finer than 80 µm of the +5 mm portion: 0.08

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 10, 2009
 Project number: 09-1416-0004.4000

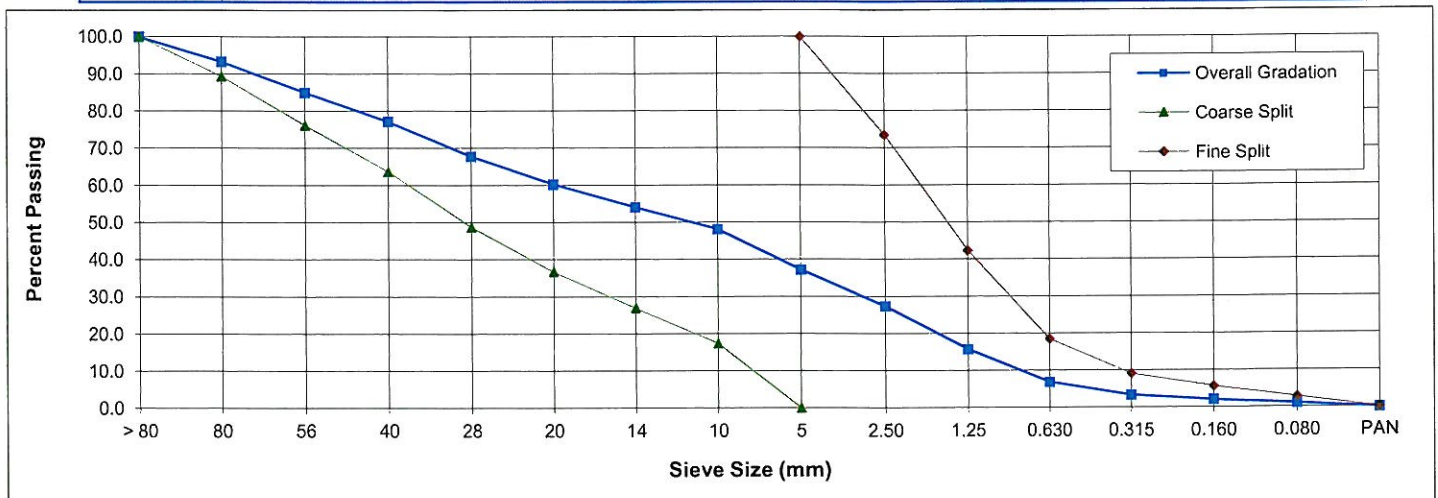
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-3 Sa. 1, Depth: 3.7 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 28, 2009
 DATE TESTED: June 8-10, 2009
 LOCATION (NAD-83 UTM 10N): 5490267N 471471E

SAMPLED BY: BH/FHS/DH(Client)
 TESTED BY: DC/IC
 ALTITUDE (NAD-83): -2 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	6.7	93.3	10.7		89.3		
56	8.3	85.0	13.2		76.1		
40	7.8	77.2	12.4		63.7		
28	9.4	67.8	15.0		48.7		
20	7.5	60.3	12.0		36.7		
14	6.1	54.1	9.8		26.9		
10	6.0	48.2	9.5		17.4		
5	10.9	37.3	17.4		0.0	100.0	
2.50	9.9	27.4		26.5		73.5	
1.25	11.6	15.8		31.1		42.4	
0.630	8.9	6.9		23.9		18.5	
0.315	3.5	3.4		9.4		9.1	
0.160	1.3	2.1		3.4		5.7	
0.080	1.1	1.0		2.9		2.8	
PAN	1.0	0.0		2.8		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.51
 % finer than 80 µm of the +5 mm portion: 0.08

Reported by: B. Hudson

Reviewed by: 
 P. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 15, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

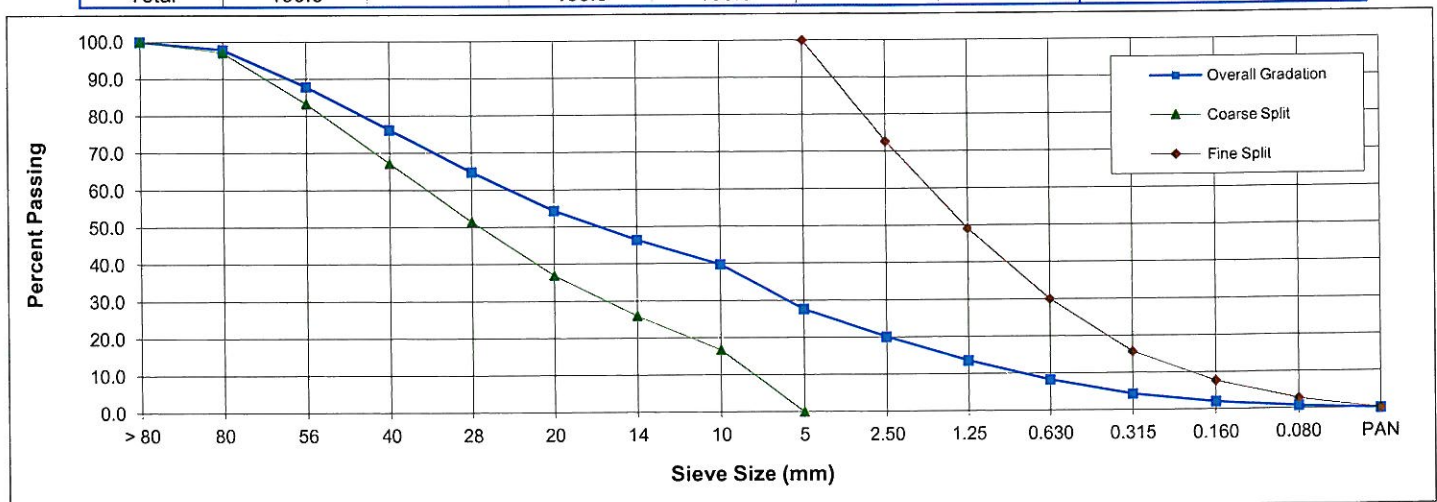
PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-4 Sa. 1, Depth: 3.8 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009
 DATE TESTED: June 10-15, 2009
 LOCATION (NAD-83 UTM 10N): 5490309N 471804E

SAMPLED BY: BH/AB/DH(Client)
 TESTED BY: DC/PC
 ALTITUDE (NAD-83): -5 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	2.1	97.9	2.9		97.1		
56	10.0	87.9	13.8		83.3		
40	11.7	76.3	16.1		67.2		
28	11.4	64.9	15.7		51.5		
20	10.5	54.4	14.5		36.9		
14	7.9	46.4	11.0		25.9		
10	6.7	39.8	9.2		16.7		
5	12.1	27.7	16.7		0.0	100.0	
2.50	7.6	20.1		27.3		72.7	
1.25	6.5	13.6		23.6		49.1	
0.630	5.3	8.3		19.1		29.9	
0.315	4.0	4.3		14.3		15.7	
0.160	2.2	2.1		7.9		7.7	
0.080	1.4	0.8		5.0		2.7	
PAN	0.8	0.0		2.7		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.25
 % finer than 80 µm of the +5 mm portion: 0.11

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
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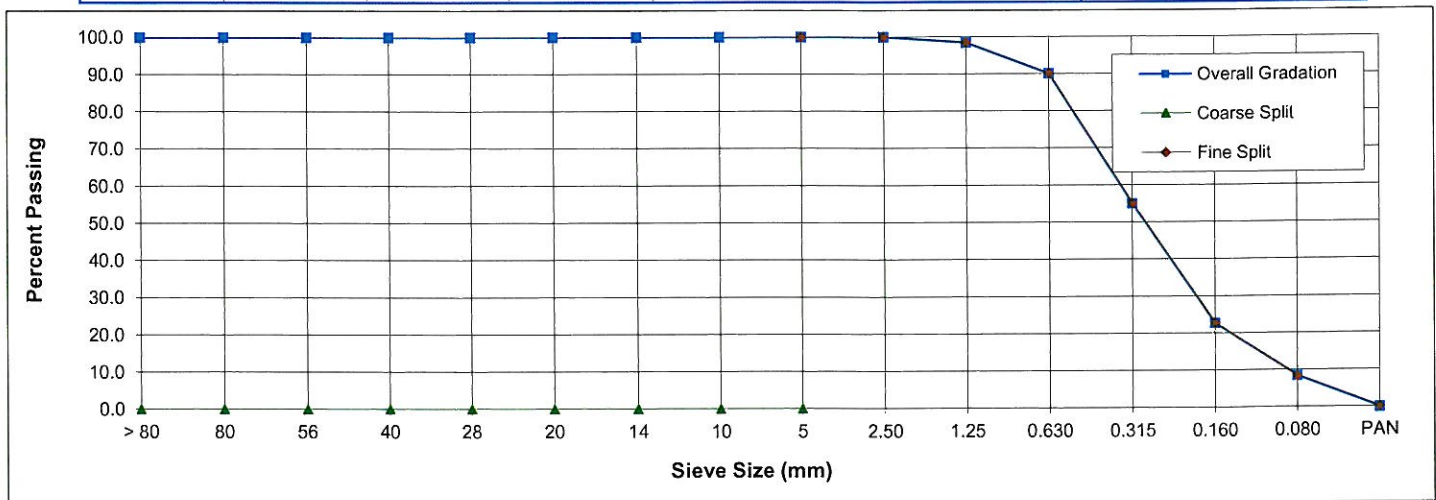
June 15, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-5 Sa. 1, Depth: 1.0-1.5 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009 SAMPLED BY: BH/AB/DH(Client)
 DATE TESTED: June 10-15, 2009 TESTED BY: DC/DT
 LOCATION (NAD-83 UTM 10N): 5490451N 472043E ALTITUDE (NAD-83): 5 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	-	-	-	-	
80	0.0	100.0	-	-	-	-	
56	0.0	100.0	-	-	-	-	
40	0.0	100.0	-	-	-	-	
28	0.0	100.0	-	-	-	-	
20	0.0	100.0	-	-	-	-	
14	0.0	100.0	-	-	-	-	
10	0.0	100.0	-	-	-	-	
5	0.0	100.0	-	-	-	100.0	
2.50	0.0	100.0		0.0		100.0	
1.25	1.6	98.4		1.6		98.4	
0.630	8.3	90.1		8.3		90.1	
0.315	35.0	55.1		35.1		55.0	
0.160	32.3	22.8		32.4		22.7	
0.080	14.3	8.5		14.3		8.4	
PAN	8.3	0.0		8.4		0.0	
Total	99.9		0.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 1.34
 % finer than 80 µm of the +5 mm portion: -

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 15, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-5 Sa. 2, Depth: 1.9 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

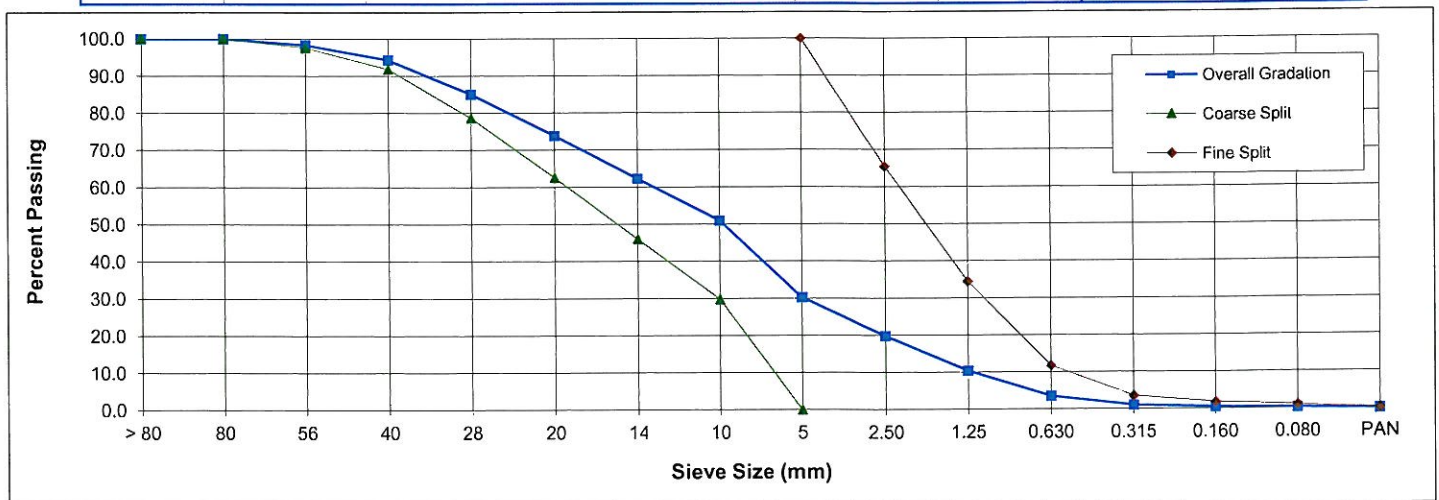
DATE TESTED: June 10-15, 2009

TESTED BY: DC/DT

LOCATION (NAD-83 UTM 10N): 5490451N 472043E

ALTITUDE (NAD-83): 5 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	1.7	98.3	2.4		97.6		
40	4.0	94.3	5.8		91.8		
28	9.2	85.1	13.2		78.6		
20	11.2	73.9	16.1		62.5		
14	11.6	62.3	16.6		45.9		
10	11.3	51.0	16.2		29.7		
5	20.7	30.3	29.7		0.0	100.0	
2.50	10.5	19.8		34.6		65.4	
1.25	9.4	10.4		31.0		34.4	
0.630	6.9	3.6		22.7		11.8	
0.315	2.5	1.1		8.2		3.5	
0.160	0.5	0.6		1.7		1.8	
0.080	0.2	0.3		0.8		1.0	
PAN	0.3	0.0		1.0		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.83
 % finer than 80 µm of the +5 mm portion: 0.09

Reported by: B. Hudson

Reviewed by: 
 P. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 15, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-5 Sa. 3, Depth: 3.5-4.0 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

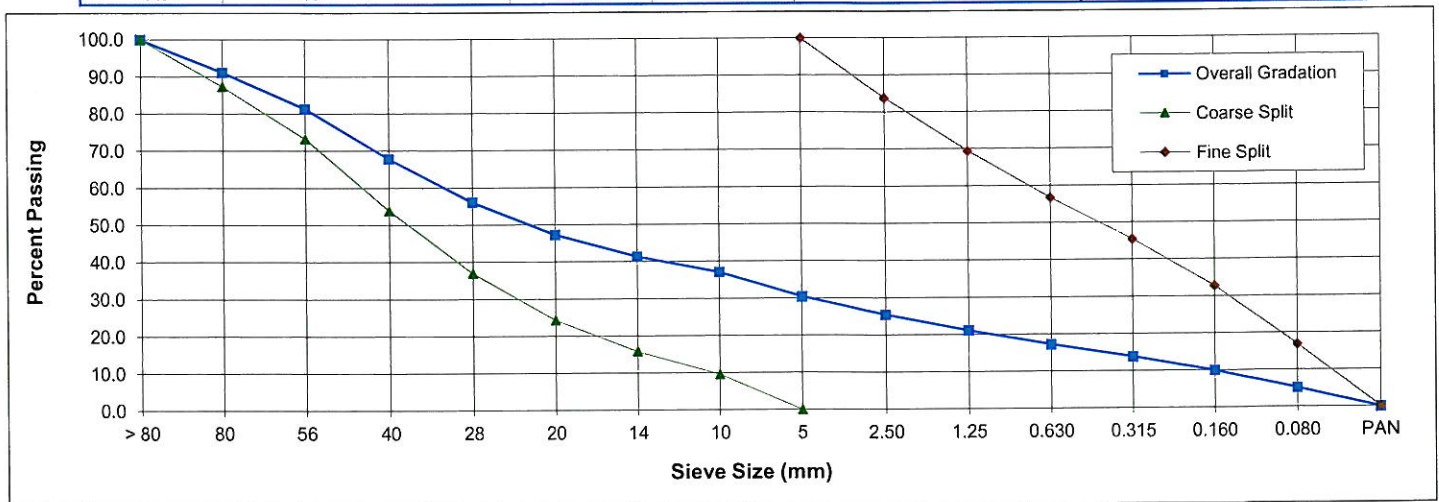
DATE TESTED: June 10-15, 2009

TESTED BY: DC/DT

LOCATION (NAD-83 UTM 10N): 5490451N 472043E

ALTITUDE (NAD-83): 5 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	8.8	91.2	12.7		87.3		
56	9.8	81.4	14.1		73.2		
40	13.5	67.9	19.3		53.8		
28	11.8	56.1	16.9		36.9		
20	8.8	47.3	12.7		24.3		
14	5.9	41.4	8.5		15.8		
10	4.3	37.1	6.2		9.6		
5	6.6	30.4	9.6		0.0	100.0	
2.50	4.9	25.5		16.2		83.8	
1.25	4.4	21.1		14.4		69.4	
0.630	3.8	17.3		12.7		56.7	
0.315	3.4	13.8		11.3		45.5	
0.160	3.8	10.0		12.7		32.8	
0.080	4.8	5.2		15.9		16.9	
PAN	5.1	0.0		16.9		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.12
 % finer than 80 µm of the +5 mm portion: 0.07

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
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June 15, 2009
 Project number: 09-1416-0004.4000

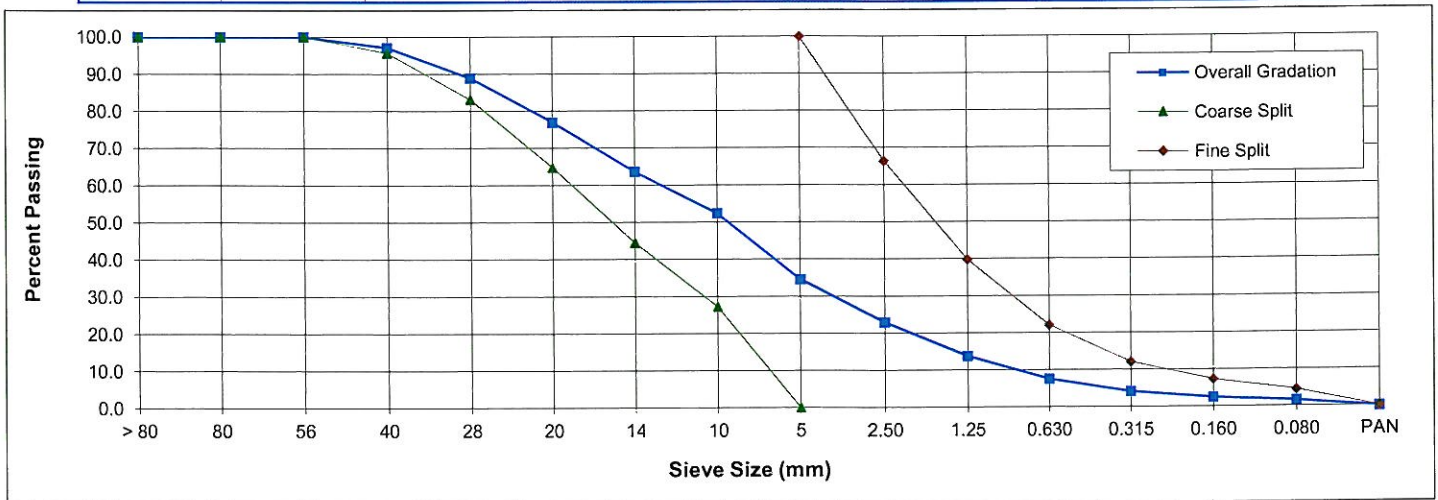
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-6 Sa. 1, Depth: 0.8-1.2 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009
 DATE TESTED: June 10-15, 2009
 LOCATION (NAD-83 UTM 10N): 5490487N 471933E

SAMPLED BY: BH/AB/DH(Client)
 TESTED BY: IC
 ALTITUDE (NAD-83): -4 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	0.0	100.0	0.0		100.0		
40	2.9	97.1	4.4		95.6		
28	8.2	89.0	12.5		83.1		
20	12.0	77.0	18.4		64.8		
14	13.3	63.7	20.3		44.5		
10	11.3	52.4	17.2		27.2		
5	17.8	34.6	27.2		0.0	100.0	
2.50	11.7	23.0		33.6		66.4	
1.25	9.2	13.8		26.6		39.8	
0.630	6.1	7.6		17.7		22.0	
0.315	3.4	4.2		9.9		12.1	
0.160	1.6	2.5		4.7		7.4	
0.080	1.0	1.5		2.9		4.5	
PAN	1.6	0.0		4.5		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.52
 % finer than 80 µm of the +5 mm portion: 0.09

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 15, 2009
 Project number: 09-1416-0004.4000

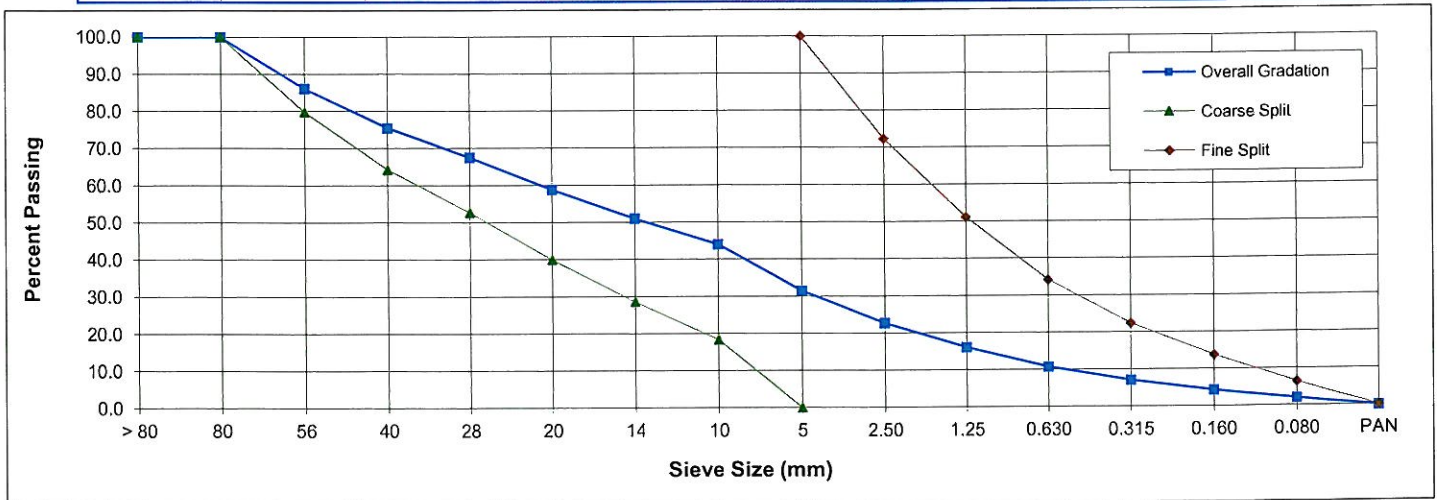
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-6 Sa. 2, Depth: 4.4 m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009
 DATE TESTED: June 10-15, 2009
 LOCATION (NAD-83 UTM 10N): 5490487N 471933E

SAMPLED BY: BH/AB/DH(Client)
 TESTED BY: IC/DC
 ALTITUDE (NAD-83): -4 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	13.9	86.1	20.2		79.8		
40	10.6	75.5	15.5		64.2		
28	7.9	67.6	11.6		52.7		
20	8.7	58.9	12.7		40.0		
14	7.8	51.1	11.4		28.6		
10	7.0	44.0	10.3		18.3		
5	12.6	31.5	18.3		0.0	100.0	
2.50	8.7	22.8		27.7		72.3	
1.25	6.7	16.1		21.2		51.1	
0.630	5.3	10.8		17.0		34.1	
0.315	3.7	7.1		11.7		22.4	
0.160	2.7	4.3		8.6		13.8	
0.080	2.3	2.0		7.4		6.4	
PAN	2.0	0.0		6.4		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.06
 % finer than 80 µm of the +5 mm portion: 0.09

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 16, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-7 Sa. 1, Depth: 3.7m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

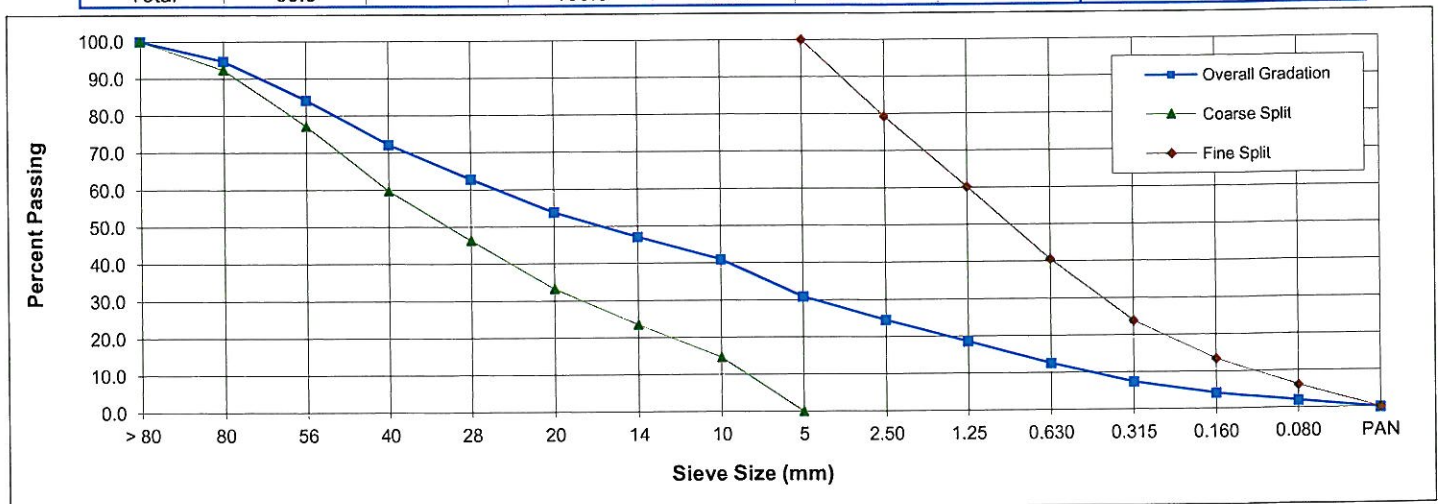
DATE TESTED: June 10-15, 2009

TESTED BY: IC/DC

LOCATION (NAD-83 UTM 10N): 5490585N 471794E

ALTITUDE (NAD-83): 21 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	5.3	94.7	7.7		92.3		
56	10.5	84.2	15.2		77.1		
40	12.0	72.2	17.4		59.7		
28	9.3	62.9	13.4		46.3		
20	9.0	53.9	13.1		33.3		
14	6.7	47.2	9.8		23.5		
10	6.1	41.0	8.9		14.6		
5	10.1	30.9	14.6		0.0	100.0	
2.50	6.4	24.5		20.8		79.2	
1.25	5.9	18.6		19.1		60.2	
0.630	6.1	12.6		19.6		40.5	
0.315	5.2	7.4		16.7		23.8	
0.160	3.2	4.2		10.4		13.4	
0.080	2.3	2.0		7.3		6.1	
PAN	1.9	0.0		6.1		0.0	
Total	99.9		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.83
 % finer than 80 µm of the +5 mm portion: 0.09

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 16, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-8 Sa. 1, Depth: 4.0-4.5m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

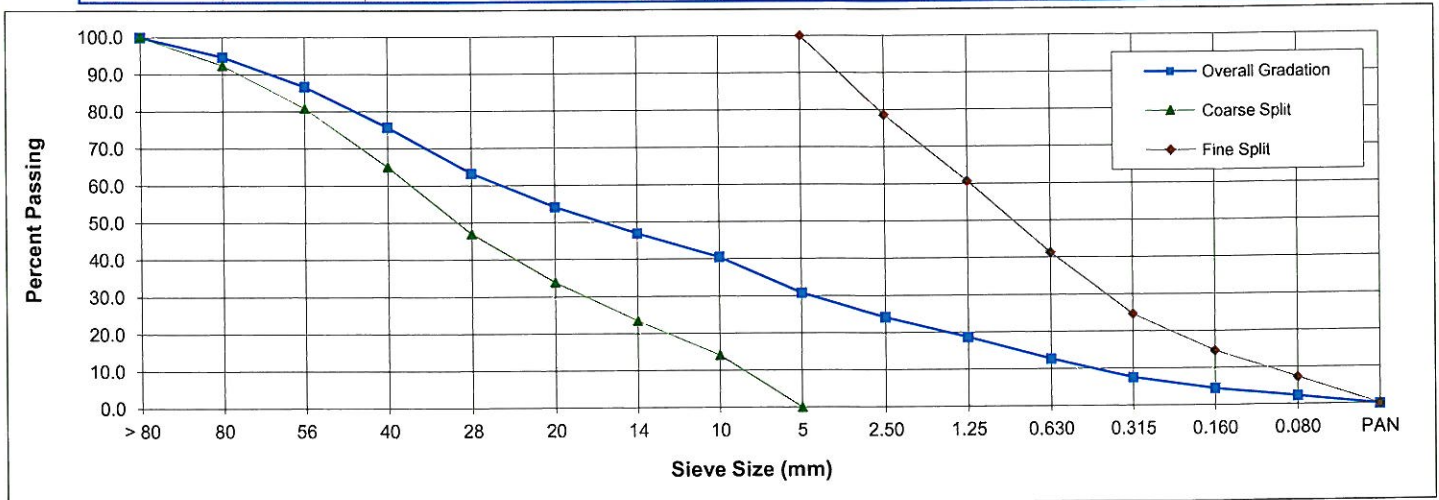
DATE TESTED: June 10-15, 2009

TESTED BY: IC/DC/DT

LOCATION (NAD-83 UTM 10N): 5490817N 471809E

ALTITUDE (NAD-83): 9 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	5.3	94.7	7.6		92.4		
56	8.0	86.8	11.5		80.9		
40	10.9	75.8	15.8		65.1		
28	12.5	63.3	18.1		47.0		
20	9.1	54.2	13.1		33.9		
14	7.2	47.0	10.4		23.4		
10	6.4	40.6	9.3		14.1		
5	9.8	30.8	14.1		0.0	100.0	
2.50	6.6	24.2		21.3		78.7	
1.25	5.5	18.7		18.0		60.7	
0.630	6.0	12.7		19.4		41.3	
0.315	5.1	7.6		16.7		24.6	
0.160	3.1	4.5		10.0		14.6	
0.080	2.2	2.3		7.3		7.3	
PAN	2.3	0.0		7.3		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.80
 % finer than 80 µm of the +5 mm portion: 0.07

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 16, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-9 Sa. 1, Depth: 4.4m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

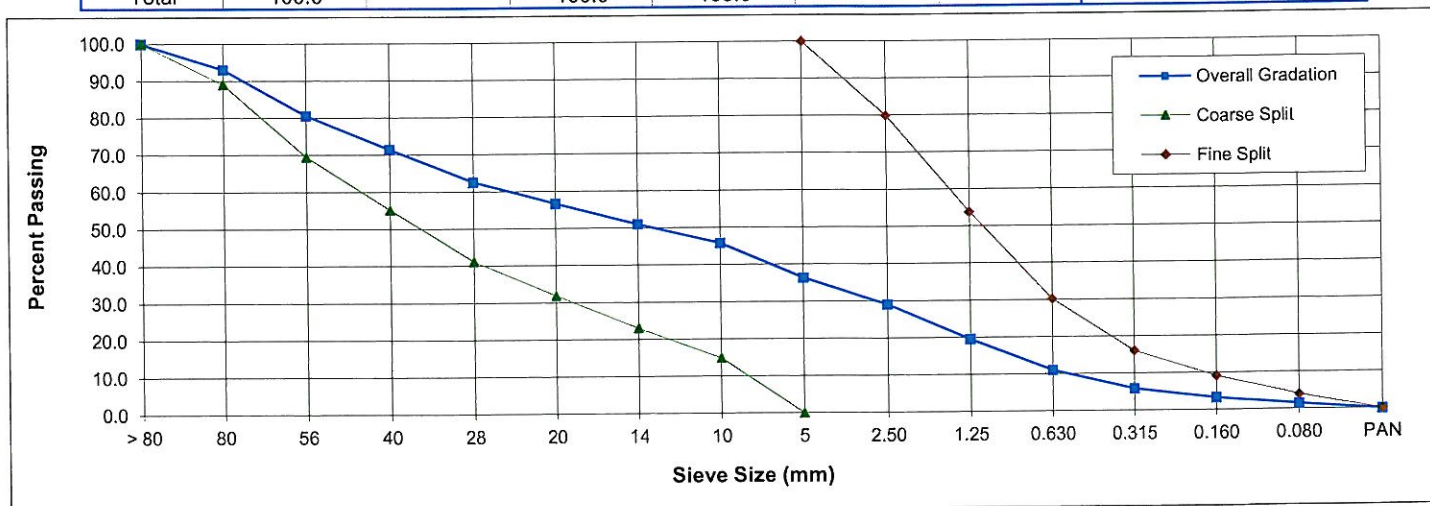
DATE TESTED: June 10-15, 2009

TESTED BY: DT

LOCATION (NAD-83 UTM 10N): 5490841N 471423E

ALTITUDE (NAD-83): 19 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	6.9	93.1	10.9		89.1		
56	12.5	80.6	19.6		69.5		
40	9.1	71.5	14.4		55.1		
28	8.9	62.6	13.9		41.2		
20	5.9	56.7	9.3		31.8		
14	5.6	51.1	8.8		23.0		
10	5.2	45.9	8.1		14.9		
5	9.5	36.4	14.9		0.0	100.0	
2.50	7.3	29.1		20.1		79.9	
1.25	9.5	19.6		26.1		53.8	
0.630	8.6	11.0		23.6		30.2	
0.315	5.2	5.9		14.2		16.1	
0.160	2.5	3.3		6.9		9.1	
0.080	1.9	1.5		5.1		4.0	
PAN	1.4	0.0		4.0		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.11
 % finer than 80 µm of the +5 mm portion: 0.04

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 16, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

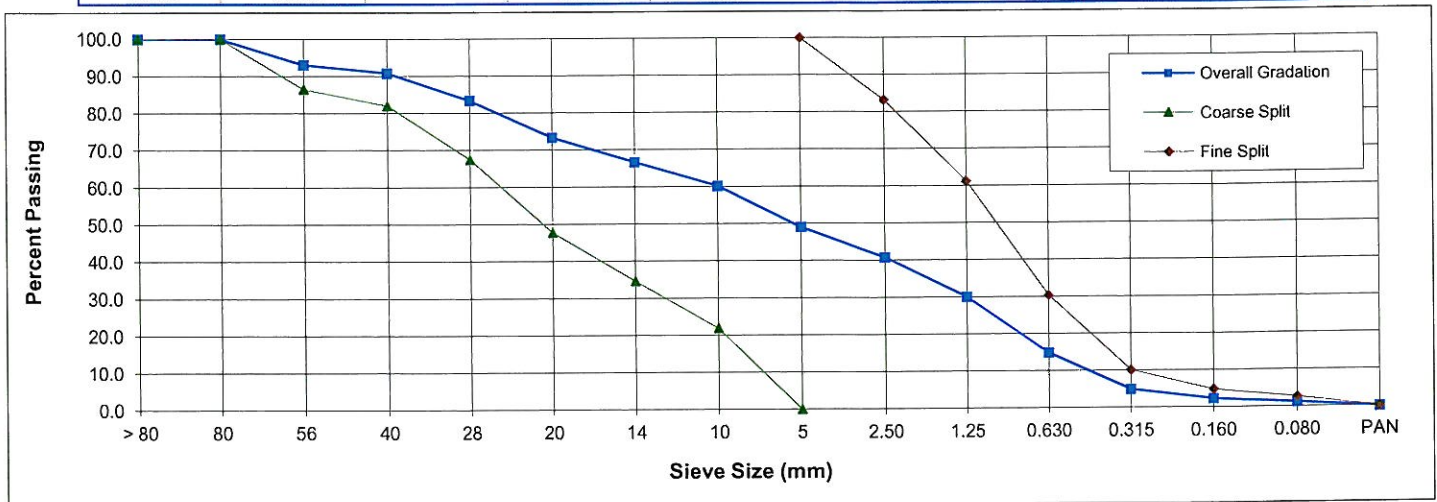
PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-10 Sa. 1, Depth: 0.5-1.0m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009
 DATE TESTED: June 10-15, 2009
 LOCATION (NAD-83 UTM 10N): 5490674N 471535E

SAMPLED BY: BH/AB/DH(Client)
 TESTED BY: DT
 ALTITUDE (NAD-83): 9 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	6.9	93.1	13.5		86.5		
40	2.3	90.8	4.5		82.0		
28	7.4	83.4	14.5		67.5		
20	10.0	73.4	19.7		47.8		
14	6.7	66.7	13.2		34.6		
10	6.5	60.2	12.7		21.9		
5	11.2	49.0	21.9		0.0	100.0	
2.50	8.2	40.8		16.8		83.2	
1.25	10.8	30.0		22.0		61.2	
0.630	15.1	14.9		30.9		30.4	
0.315	9.9	5.0		20.3		10.1	
0.160	2.6	2.3		5.3		4.8	
0.080	1.1	1.3		2.2		2.6	
PAN	1.3	0.0		2.6		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.10
 % finer than 80 µm of the +5 mm portion: 0.05

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 16, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-10 Sa. 2, Depth: 4.3m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

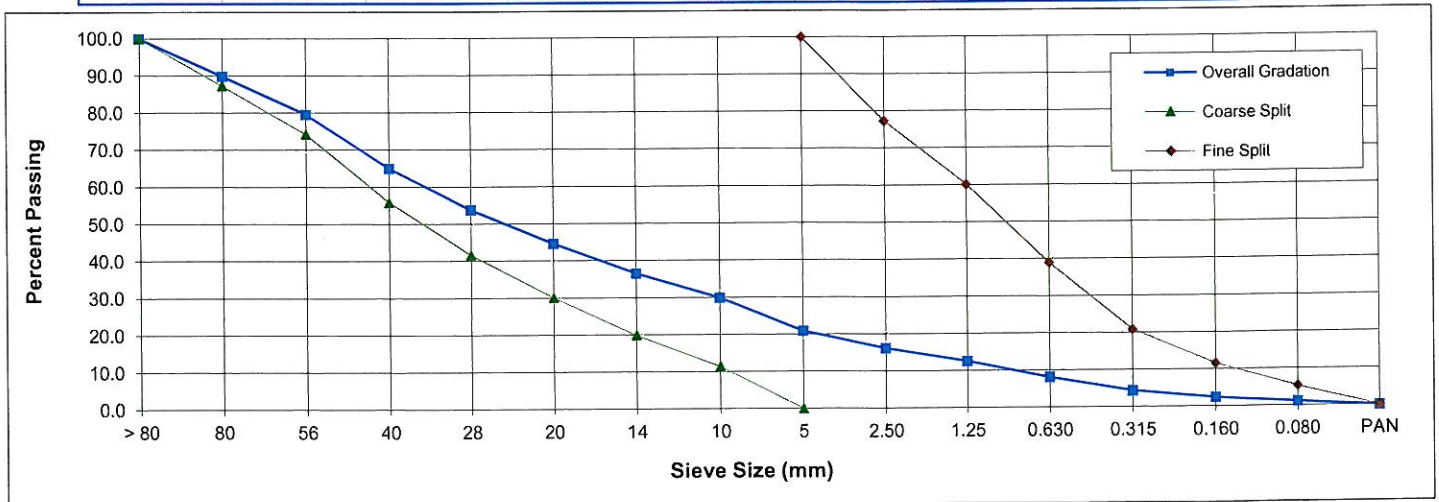
DATE TESTED: June 10-15, 2009

TESTED BY: DT

LOCATION (NAD-83 UTM 10N): 5490674N 471535E

ALTITUDE (NAD-83): 9 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	10.1	89.9	12.7		87.3		
56	10.3	79.6	13.1		74.2		
40	14.5	65.1	18.4		55.8		
28	11.2	53.8	14.2		41.6		
20	9.1	44.7	11.6		30.0		
14	8.1	36.6	10.2		19.8		
10	6.7	29.9	8.4		11.4		
5	9.0	20.9	11.4		0.0	100.0	
2.50	4.7	16.2		22.7		77.3	
1.25	3.6	12.6		17.2		60.1	
0.630	4.4	8.2		21.2		38.9	
0.315	3.8	4.4		18.1		20.8	
0.160	1.9	2.5		9.3		11.6	
0.080	1.3	1.1		6.3		5.3	
PAN	1.1	0.0		5.3		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.91
 % finer than 80 µm of the +5 mm portion: 0.04

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 16, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting - Geomaterials Testing

Sample:	TP09-11 Sa. 1, Depth: 4.2m
Source:	McNab Creek, Alluvial Fan

DATE SAMPLED: May 29, 2009

SAMPLED BY: BH/AB/DH(Client)

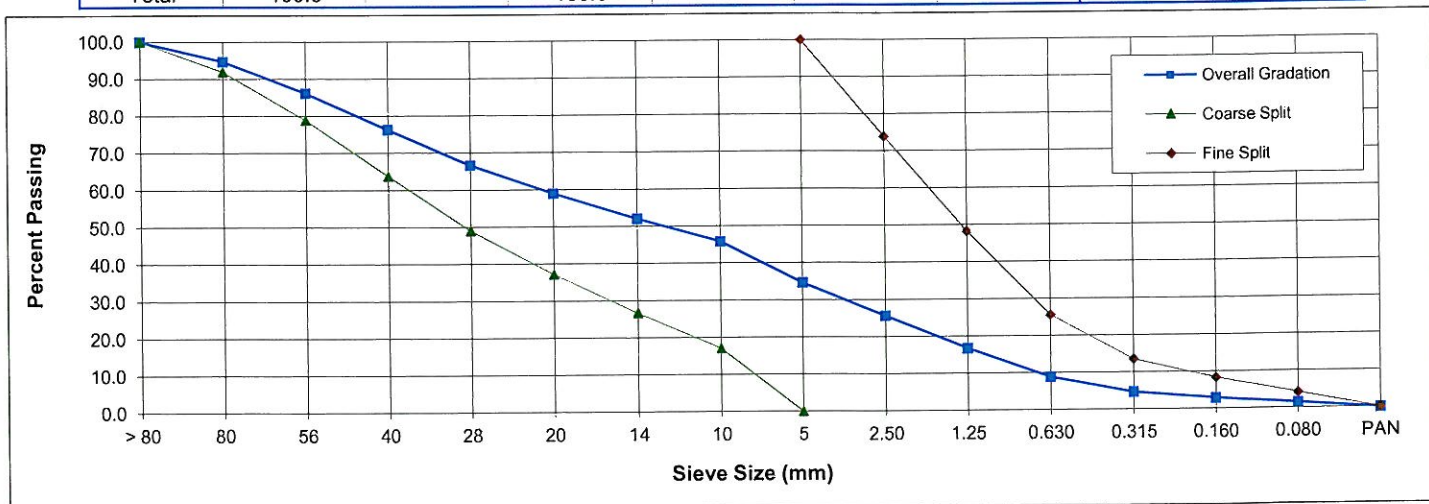
DATE TESTED: June 10-15, 2009

TESTED BY: DT

LOCATION (NAD-83 UTM 10N): 5490605N 471632E

ALTITUDE (NAD-83): 18 m

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	5.3	94.7	8.1		91.9		
56	8.5	86.2	13.0		78.9		
40	9.9	76.3	15.1		63.8		
28	9.6	66.7	14.8		49.0		
20	7.7	59.0	11.8		37.2		
14	6.9	52.1	10.6		26.6		
10	6.3	45.8	9.6		17.0		
5	11.1	34.7	17.0		0.0	100.0	
2.50	9.0	25.7		26.1		73.9	
1.25	8.9	16.8		25.7		48.2	
0.630	7.9	8.9		22.6		25.6	
0.315	4.2	4.7		12.1		13.5	
0.160	1.8	2.9		5.2		8.3	
0.080	1.5	1.5		4.2		4.1	
PAN	1.4	0.0		4.1		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.30
 % finer than 80 µm of the +5 mm portion: 0.04

Reported by: B. Hudson

Reviewed by: 
 P. F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

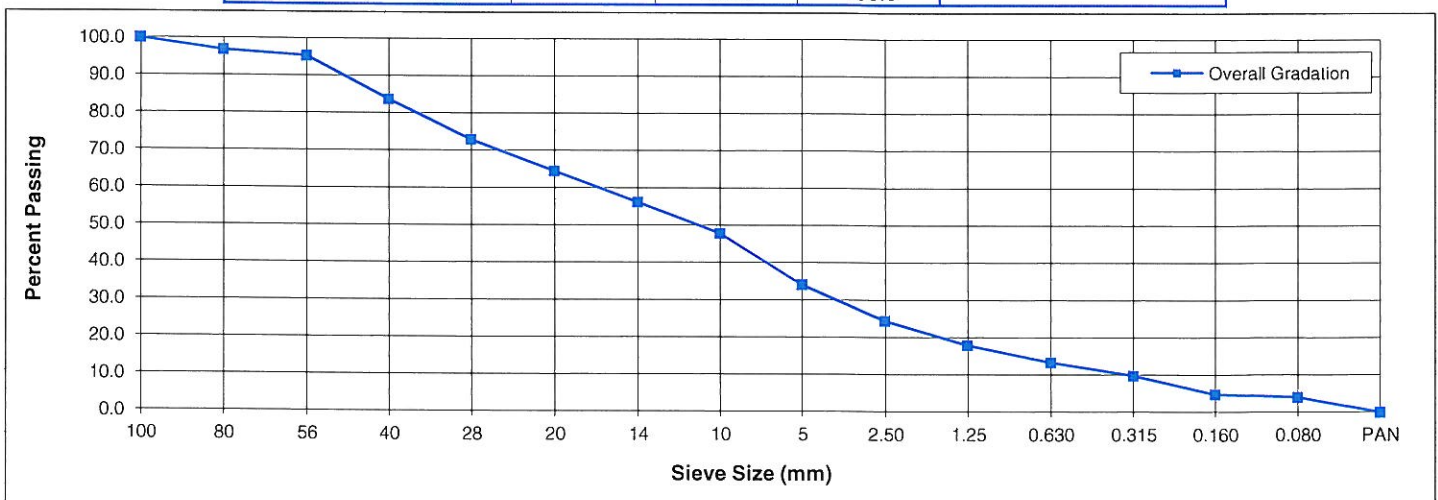
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	3.0 - 6.1 m (10 - 20 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	3.2	96.8	4.8		
56	1.5	95.3	2.3		
40	11.5	83.7	17.5		
28	10.8	73.0	16.3		
20	8.5	64.5	12.9		
14	8.3	56.2	12.6		
10	8.3	47.9	12.7		
5	13.7	34.1	20.9		
2.50	9.7	24.4		28.4	
1.25	6.5	17.9		19.1	
0.630	4.6	13.4		13.4	
0.315	3.5	9.8		10.3	
0.160	5.0	4.8		14.7	
0.080	0.8	4.0		2.3	
PAN	4.0	0		11.8	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.94

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 16, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

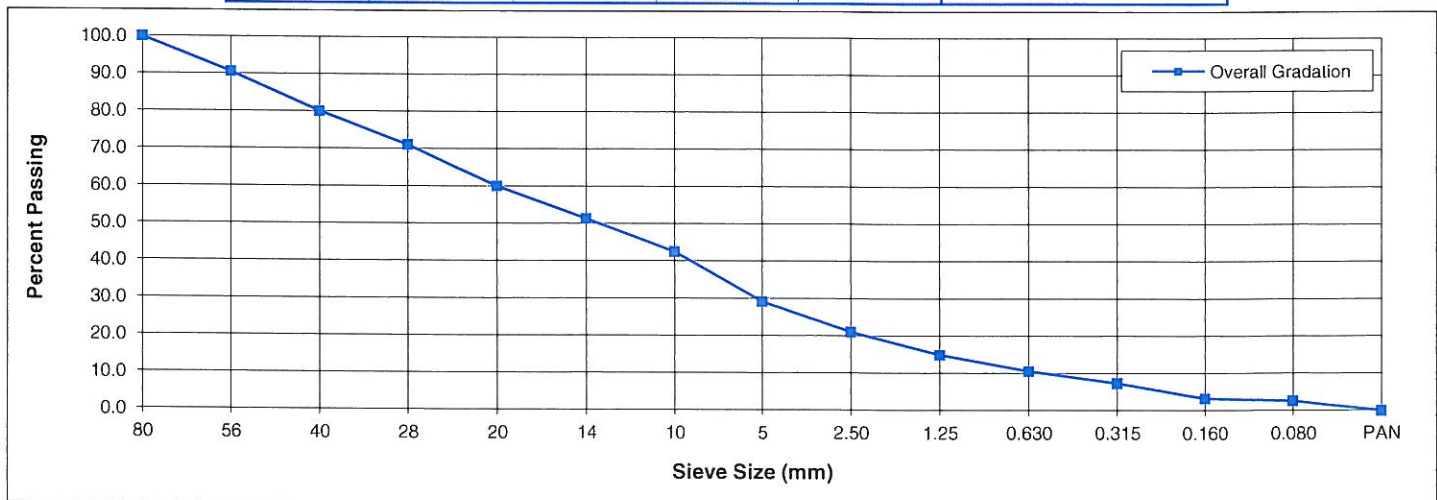
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	6.1 - 7.6 m (20 - 25 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	9.4	90.6	13.3		
40	10.5	80.1	14.9		
28	9.0	71.1	12.6		
20	11.1	60.1	15.6		
14	8.7	51.4	12.3		
10	8.8	42.6	12.4		
5	13.4	29.2	18.9		
2.50	8.1	21.1		27.9	
1.25	6.1	15.0		20.8	
0.630	4.3	10.6		14.9	
0.315	3.3	7.4		11.2	
0.160	4.1	3.3		14.0	
0.080	0.6	2.6		2.1	
PAN	2.6	0		9.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.04

Reported by: I. Chung

Reviewed by: 
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

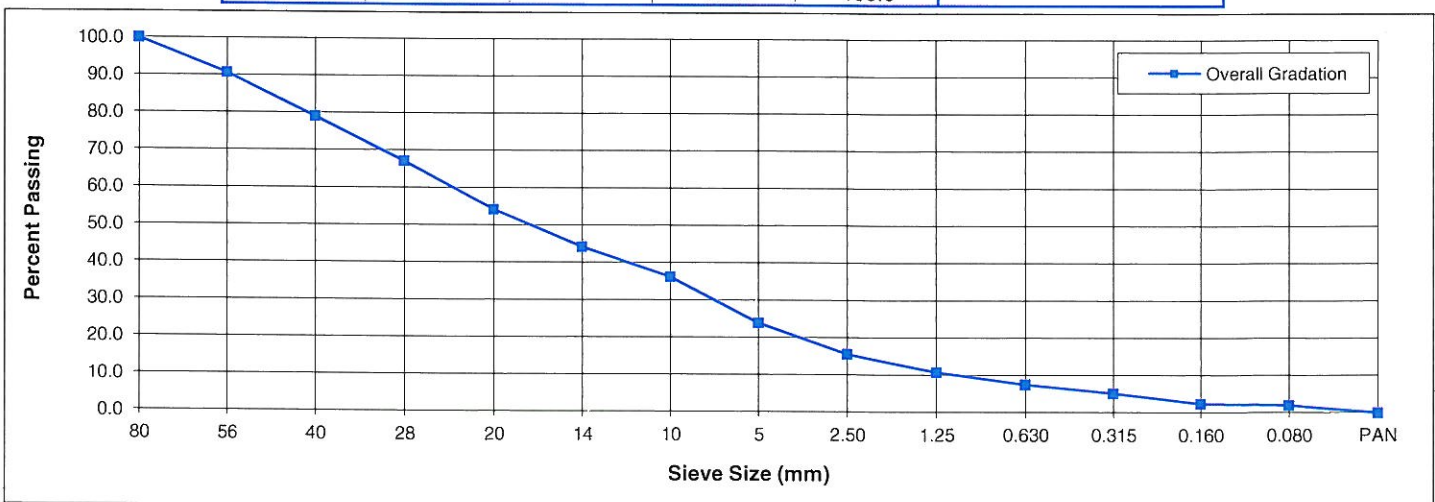
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	7.6 - 9.1 m (25 - 30 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	9.3	90.7	12.3		
40	11.6	79.1	15.2		
28	12.0	67.1	15.8		
20	12.9	54.2	16.9		
14	9.9	44.3	13.1		
10	8.0	36.2	10.6		
5	12.3	23.9	16.2		
2.50	8.3	15.6		34.7	
1.25	4.8	10.8		20.2	
0.630	3.3	7.5		13.6	
0.315	2.4	5.2		9.8	
0.160	2.8	2.4		11.6	
0.080	0.4	2.0		1.7	
PAN	2.0	0		8.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.26

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

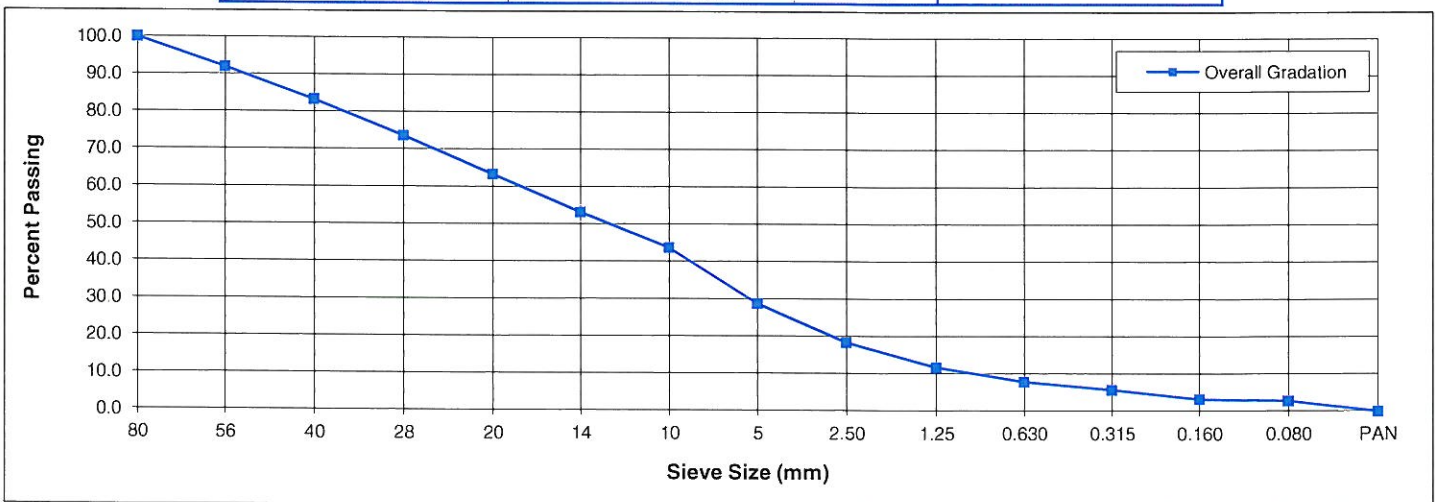
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	9.1 - 10.7 m (30 - 35 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	8.0	92.0	11.3		
40	8.6	83.3	12.1		
28	9.7	73.7	13.6		
20	10.3	63.3	14.5		
14	10.2	53.2	14.3		
10	9.4	43.7	13.3		
5	15.0	28.8	21.0		
2.50	10.4	18.3		36.2	
1.25	6.7	11.7		23.1	
0.630	3.8	7.9		13.2	
0.315	2.2	5.7		7.6	
0.160	2.5	3.2		8.5	
0.080	0.4	2.8		1.5	
PAN	2.8	0		9.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.37

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

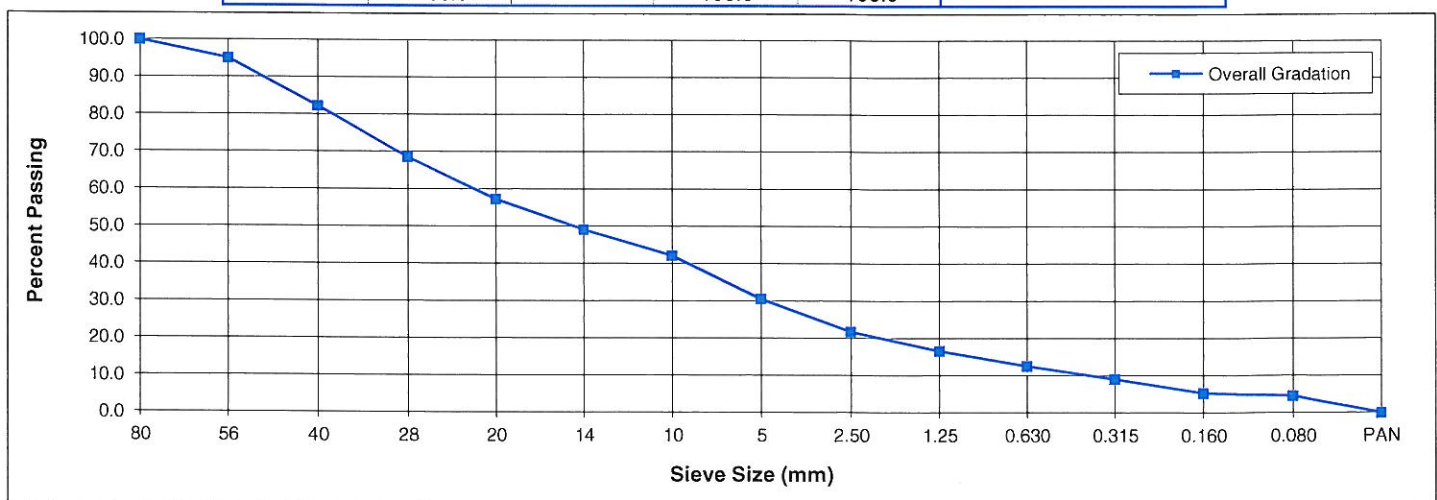
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	10.7 - 12.2 m (35 - 40 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.9	95.1	7.1		
40	12.9	82.2	18.5		
28	13.6	68.6	19.7		
20	11.2	57.3	16.2		
14	8.2	49.1	11.8		
10	7.0	42.1	10.1		
5	11.6	30.6	16.7		
2.50	8.8	21.8		28.7	
1.25	5.2	16.7		16.9	
0.630	4.1	12.6		13.4	
0.315	3.5	9.1		11.4	
0.160	3.8	5.3		12.3	
0.080	0.7	4.6		2.4	
PAN	4.6	0		15.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.86

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

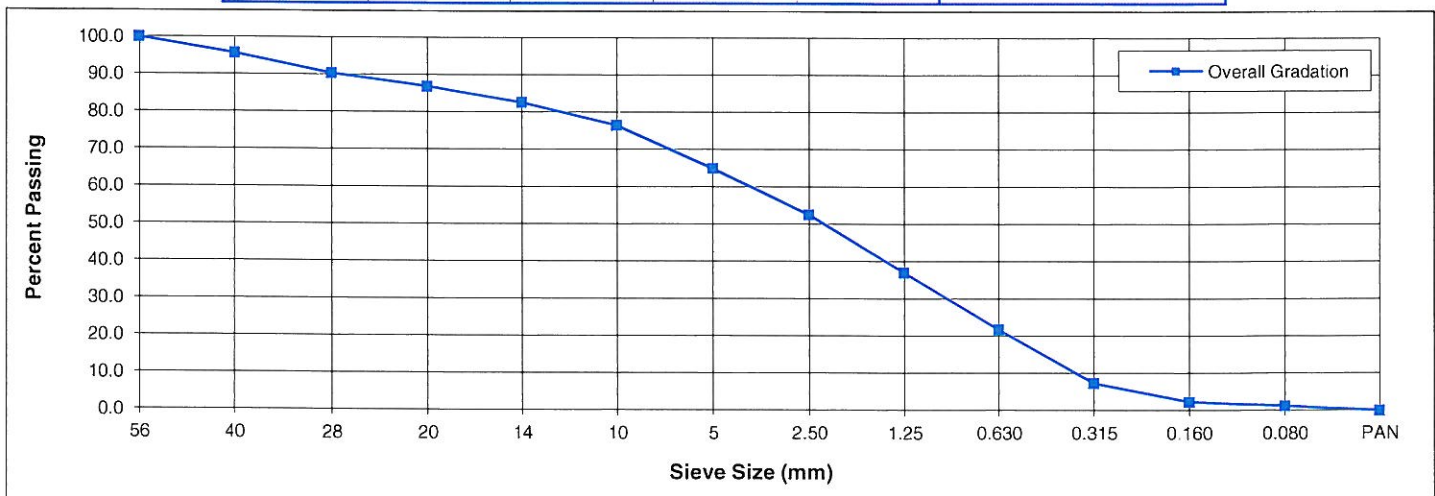
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	13.7 - 15.2 m (45 - 50 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	4.3	95.7	12.3		
28	5.3	90.4	15.2		
20	3.5	86.9	10.0		
14	4.2	82.6	12.0		
10	6.1	76.5	17.4		
5	11.6	64.9	33.0		
2.50	12.4	52.6		19.1	
1.25	15.5	37.1		23.9	
0.630	15.2	21.8		23.5	
0.315	14.5	7.4		22.3	
0.160	5.1	2.3		7.8	
0.080	1.1	1.2		1.7	
PAN	1.2	0		1.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.13

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

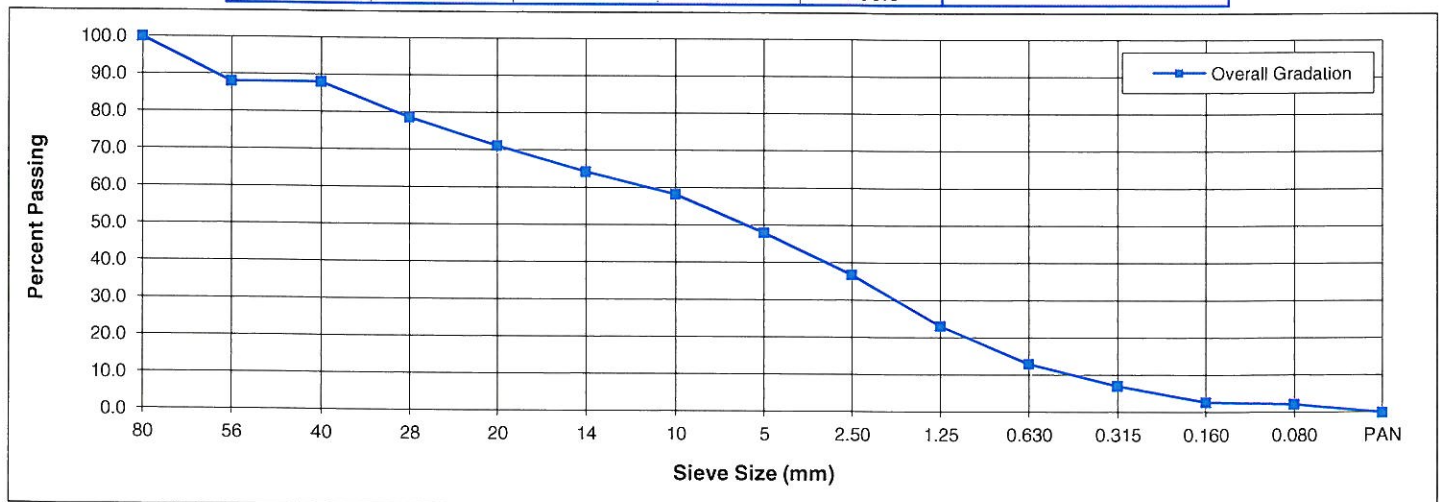
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	15.2 - 16.8 m (50 - 55 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	12.0	88.0	23.0		
40	0.0	88.0	0.0		
28	9.4	78.7	18.0		
20	7.5	71.2	14.4		
14	6.9	64.2	13.3		
10	6.0	58.3	11.5		
5	10.3	48.0	19.7		
2.50	11.2	36.8		23.3	
1.25	13.7	23.2		28.4	
0.630	10.2	13.0		21.2	
0.315	5.9	7.1		12.3	
0.160	4.4	2.8		9.1	
0.080	0.5	2.2		1.1	
PAN	2.2	0		4.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.27

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

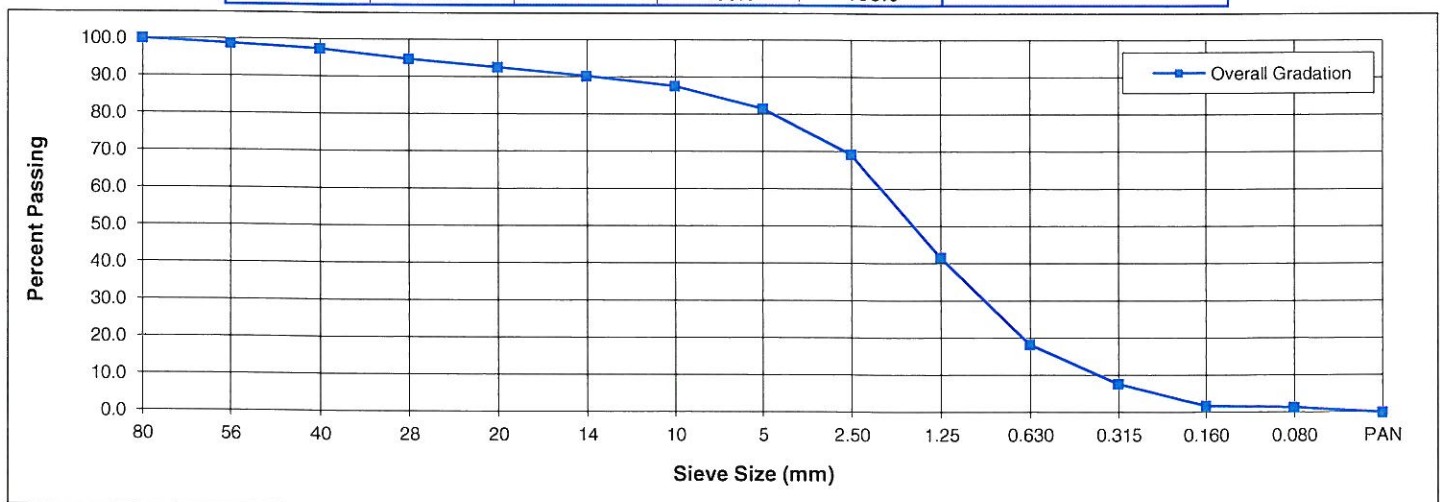
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	16.8 - 18.3 m (55 - 60 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	1.3	98.7	7.2		
40	1.3	97.4	7.1		
28	2.6	94.7	14.3		
20	2.1	92.6	11.5		
14	2.4	90.2	12.9		
10	2.7	87.6	14.4		
5	6.0	81.5	32.6		
2.50	12.3	69.2		15.1	
1.25	27.6	41.7		33.8	
0.630	23.4	18.3		28.7	
0.315	10.6	7.7		13.0	
0.160	5.9	1.9		7.2	
0.080	0.5	1.4		0.6	
PAN	1.4	0		1.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.30

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

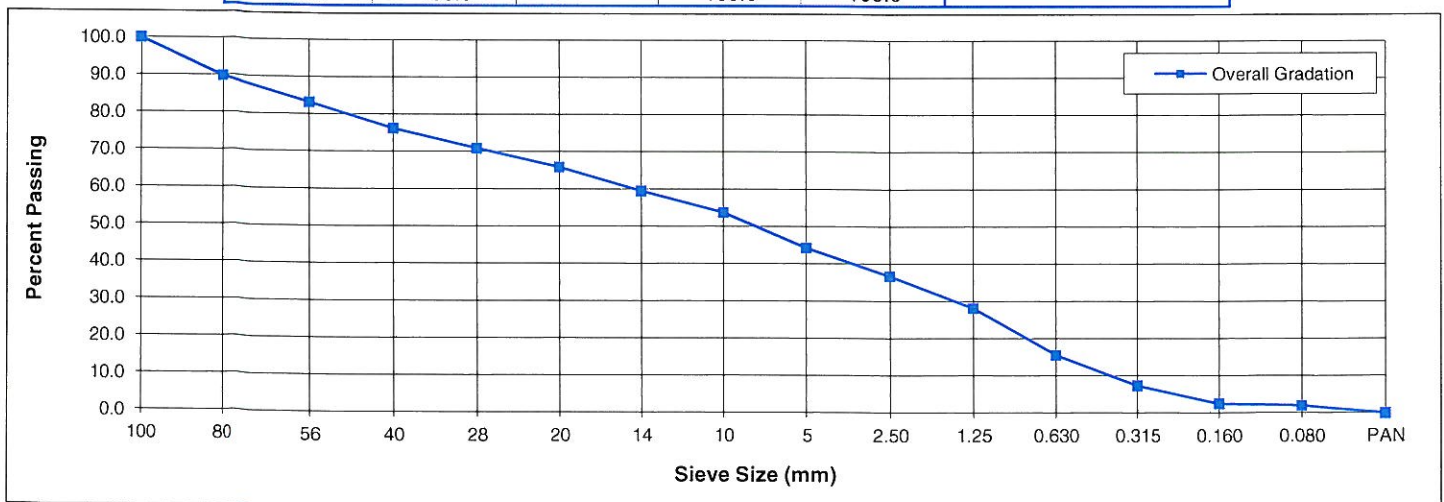
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	18.3 - 19.8 m (60 - 65 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	10.2	89.8	18.2		
56	6.6	83.2	11.9		
40	6.9	76.3	12.4		
28	5.3	70.9	9.5		
20	5.1	65.9	9.1		
14	6.4	59.5	11.5		
10	5.7	53.8	10.3		
5	9.5	44.3	17.0		
2.50	7.5	36.8		17.0	
1.25	8.6	28.2		19.4	
0.630	12.6	15.6		28.3	
0.315	8.2	7.4		18.6	
0.160	4.8	2.6		10.9	
0.080	0.5	2.0		1.2	
PAN	2.0	0		4.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.96

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

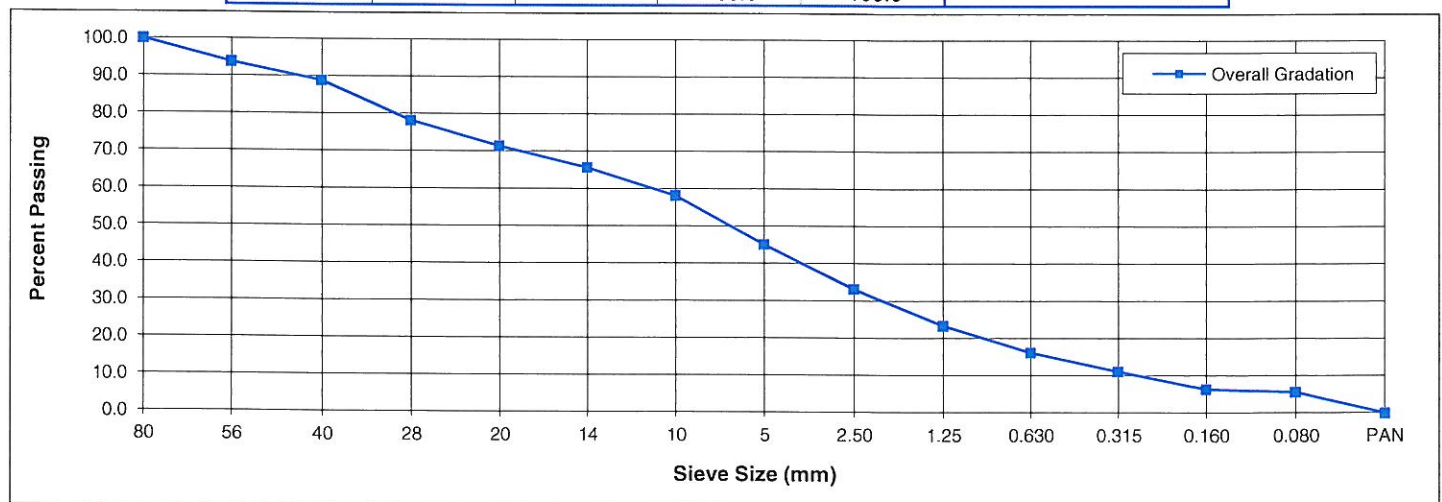
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	19.8 - 21.3 m (65 - 70 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010


SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.2	93.8	11.3		
40	5.0	88.9	9.0		
28	10.6	78.2	19.4		
20	6.8	71.4	12.4		
14	5.8	65.7	10.5		
10	7.5	58.2	13.6		
5	13.1	45.1	23.9		
2.50	12.0	33.1		26.6	
1.25	9.7	23.4		21.6	
0.630	7.2	16.2		15.9	
0.315	5.1	11.2		11.2	
0.160	4.8	6.4		10.5	
0.080	0.8	5.6		1.7	
PAN	5.6	0		12.4	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.00

Reported by: I. Chung

Reviewed by: 

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

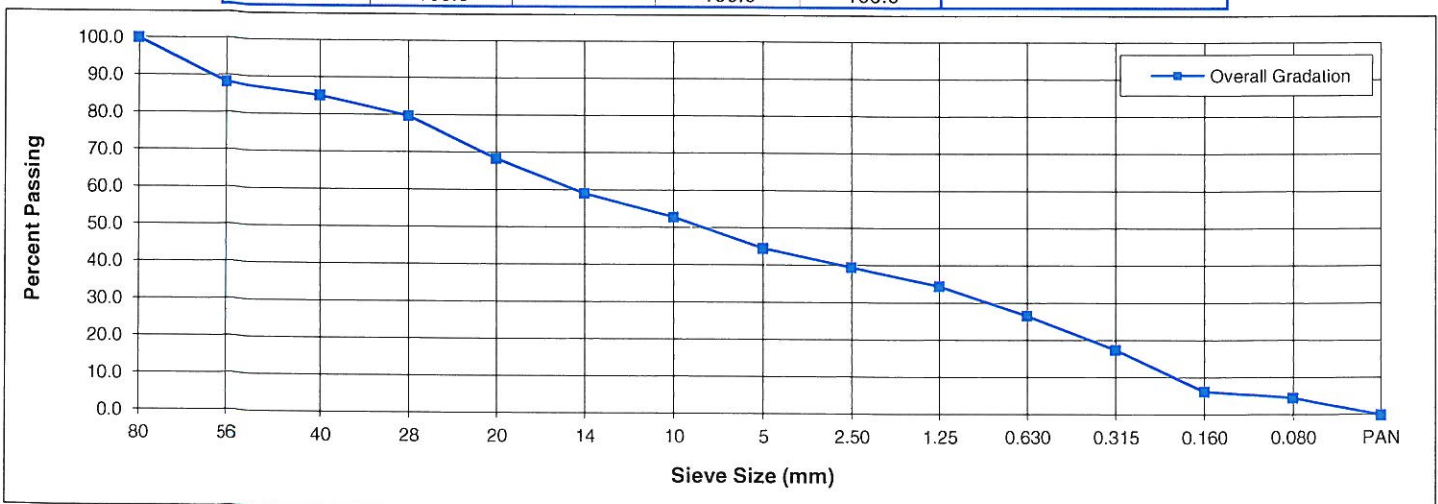
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	21.3 - 22.9 m (70 - 75 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	11.8	88.2	21.2		
40	3.1	85.1	5.6		
28	5.4	79.7	9.7		
20	11.4	68.4	20.5		
14	9.2	59.1	16.7		
10	6.3	52.8	11.3		
5	8.3	44.5	15.0		
2.50	5.0	39.5		11.3	
1.25	5.0	34.5		11.2	
0.630	7.9	26.6		17.7	
0.315	9.2	17.5		20.6	
0.160	11.1	6.3		25.0	
0.080	1.7	4.6		3.9	
PAN	4.6	0		10.4	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.21

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

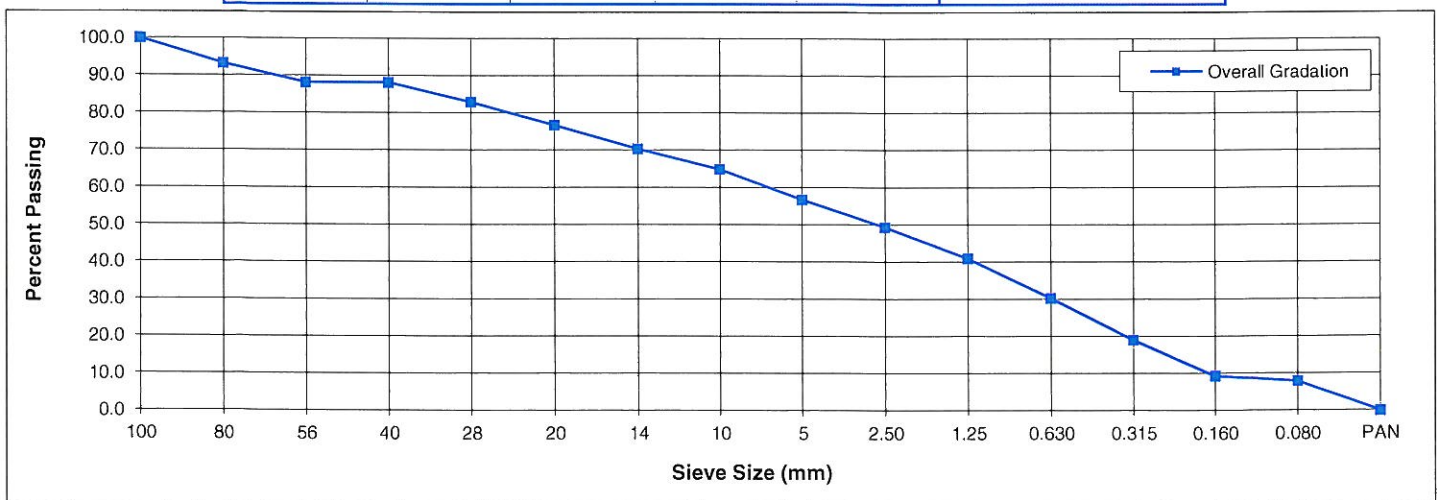
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	22.9 - 24.4 m (75 - 80 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	6.8	93.2	15.7		
56	5.1	88.1	11.8		
40	0.0	88.1	0.0		
28	5.2	82.9	12.1		
20	6.2	76.8	14.3		
14	6.4	70.4	14.7		
10	5.5	64.9	12.7		
5	8.1	56.8	18.8		
2.50	7.3	49.4		12.9	
1.25	8.4	41.0		14.8	
0.630	10.7	30.3		18.9	
0.315	11.3	19.0		19.8	
0.160	9.7	9.4		17.0	
0.080	1.4	8.0		2.4	
PAN	8.0	0		14.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.37

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

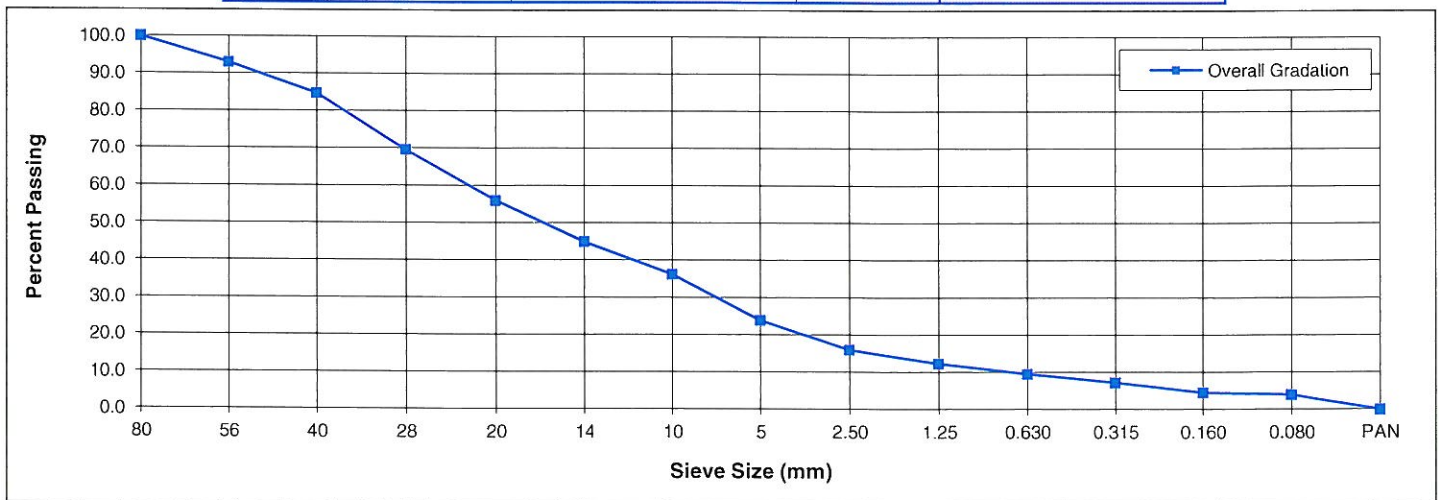
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	24.4 - 27.4 m (80 - 90 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	7.0	93.0	9.2		
40	8.2	84.8	10.8		
28	15.2	69.6	20.0		
20	13.6	56.0	17.9		
14	11.0	45.0	14.5		
10	8.7	36.2	11.5		
5	12.3	24.0	16.1		
2.50	7.9	16.0		33.1	
1.25	3.7	12.3		15.5	
0.630	2.7	9.6		11.4	
0.315	2.3	7.3		9.6	
0.160	2.7	4.6		11.3	
0.080	0.6	4.0		2.3	
PAN	4.0	0		16.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.92

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

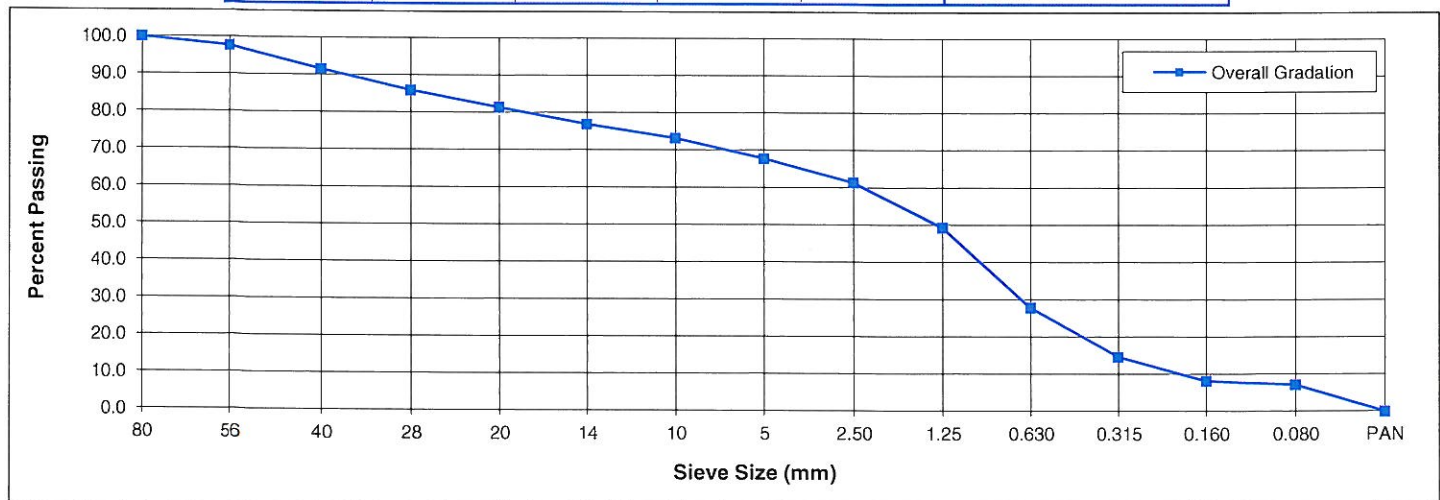
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	27.4 - 29.0 m (90 - 95 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	2.4	97.6	7.3		
40	6.1	91.5	19.0		
28	5.6	85.9	17.4		
20	4.5	81.4	13.9		
14	4.5	76.9	14.0		
10	3.7	73.2	11.5		
5	5.4	67.8	16.9		
2.50	6.4	61.4		9.4	
1.25	12.0	49.3		17.8	
0.630	21.5	27.8		31.7	
0.315	13.2	14.6		19.5	
0.160	6.4	8.2		9.5	
0.080	1.0	7.2		1.5	
PAN	7.2	0		10.6	
Total	100.0	100.0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.62

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

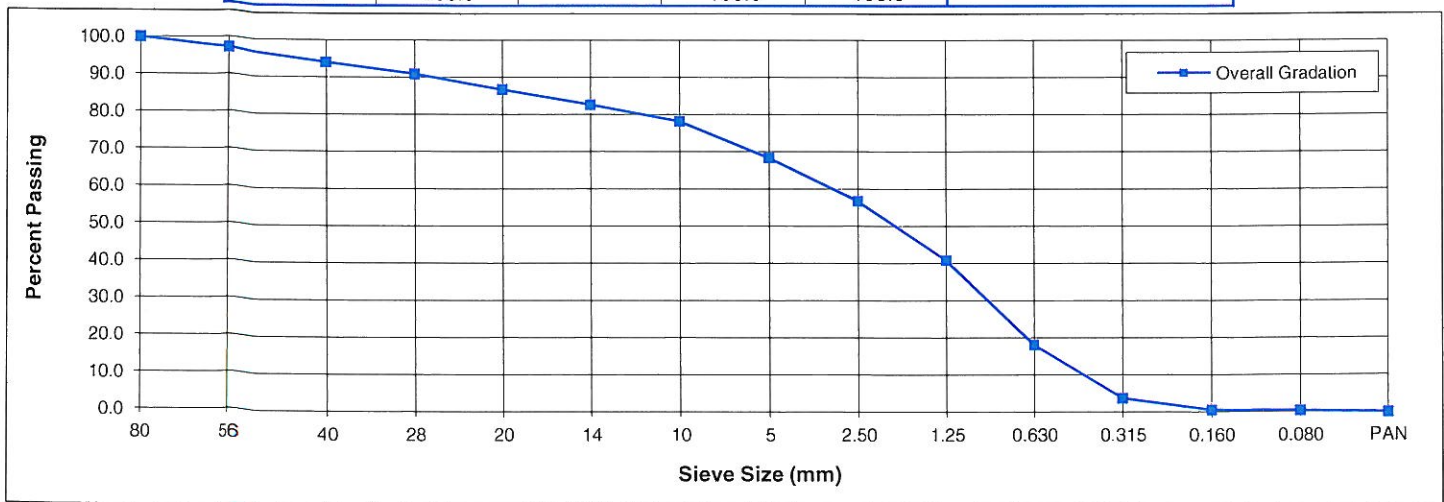
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	29.0 - 30.5 m (95 - 100 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	2.7	97.3	8.7		
40	3.2	94.0	10.2		
28	3.1	90.9	9.9		
20	4.1	86.8	13.1		
14	4.1	82.7	12.8		
10	4.5	78.2	14.1		
5	9.8	68.4	31.1		
2.50	11.6	56.8		17.0	
1.25	15.9	40.9		23.3	
0.630	22.7	18.2		33.2	
0.315	14.4	3.8		21.0	
0.160	3.2	0.6		4.7	
0.080	0.1	0.5		0.2	
PAN	0.5	0		0.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.24

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

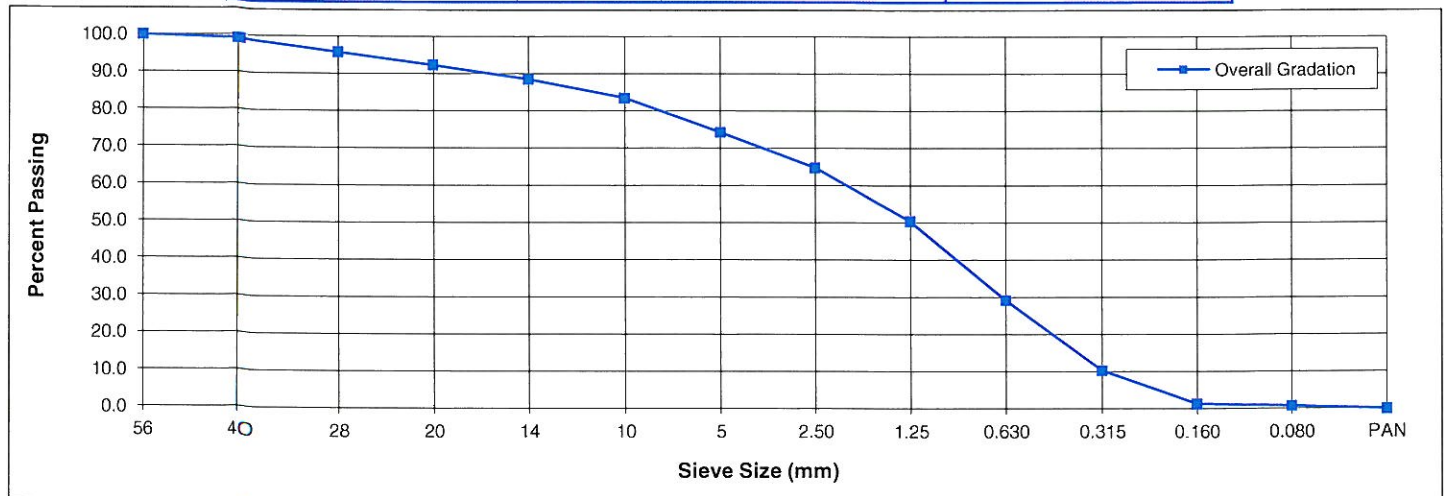
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	30.5 - 32.0 m (100 - 105 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	0.9	99.1	3.5		
28	3.3	95.8	12.9		
20	3.5	92.3	13.5		
14	3.8	88.5	14.9		
10	5.0	83.5	19.6		
5	9.1	74.4	35.6		
2.50	9.5	64.8		12.8	
1.25	14.4	50.5		19.3	
0.630	21.2	29.3		28.5	
0.315	18.9	10.4		25.4	
0.160	9.0	1.4		12.1	
0.080	0.6	0.8		0.7	
PAN	0.8	0		1.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.90

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

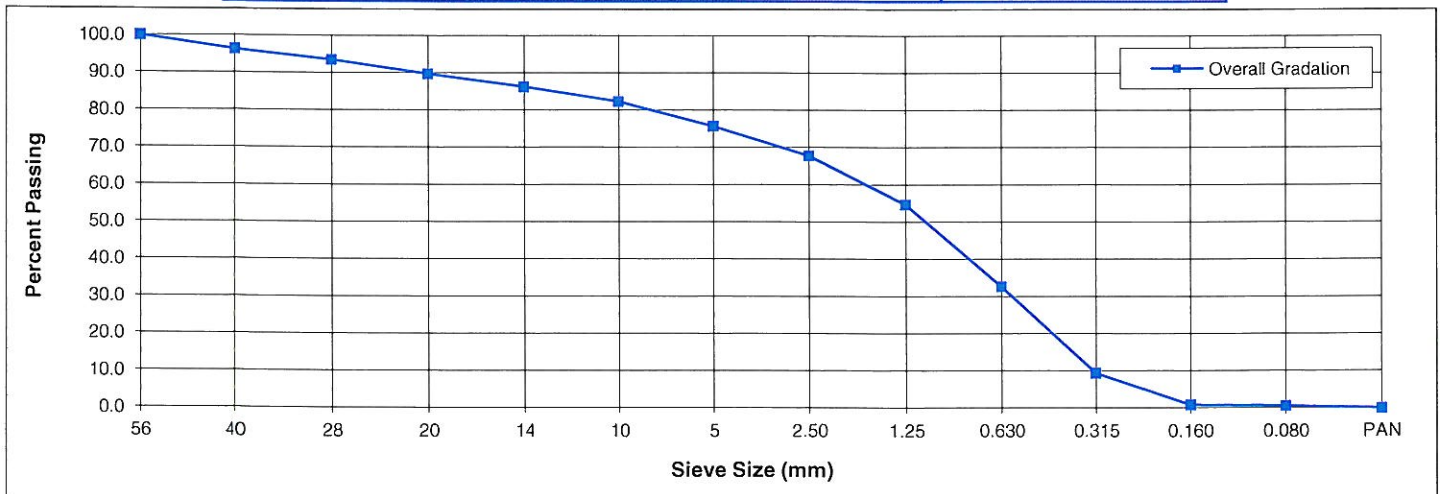
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	32.0 - 33.5 m (105 - 110 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	3.7	96.3	15.3		
28	2.8	93.5	11.6		
20	3.8	89.7	15.6		
14	3.5	86.2	14.3		
10	3.9	82.3	16.2		
5	6.6	75.7	27.1		
2.50	7.9	67.8		10.5	
1.25	13.1	54.7		17.3	
0.630	22.0	32.7		29.0	
0.315	23.3	9.4		30.8	
0.160	8.5	0.9		11.2	
0.080	0.3	0.6		0.4	
PAN	0.6	0		0.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.81

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

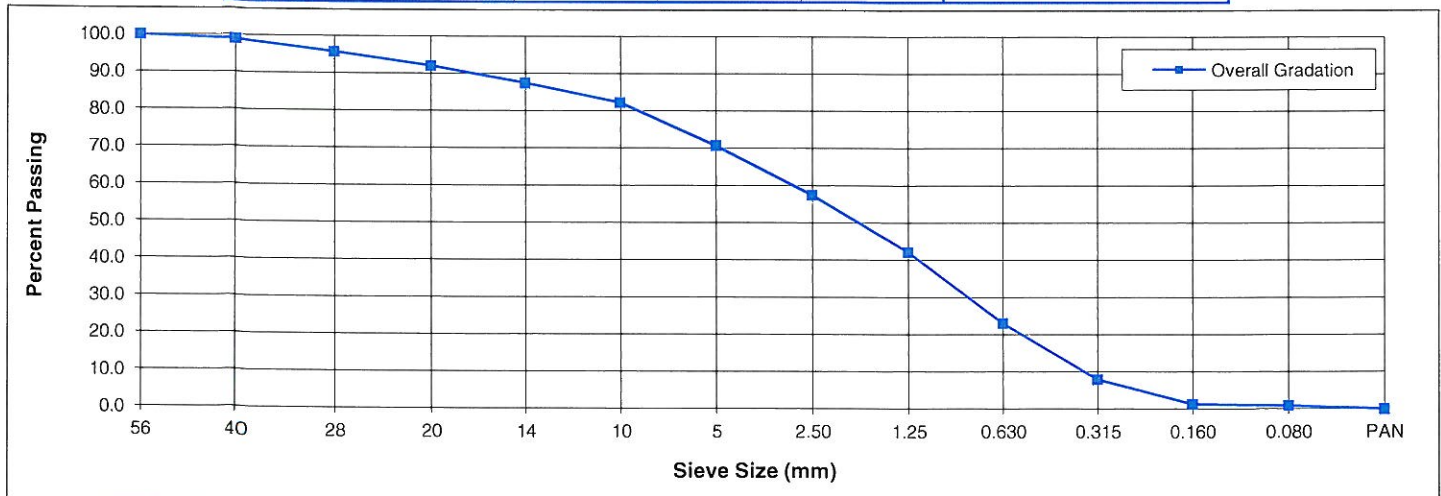
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	33.5 - 35.1 m (110 - 115 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	1.1	98.9	3.7		
28	3.2	95.7	10.9		
20	3.7	92.0	12.7		
14	4.6	87.5	15.6		
10	5.2	82.3	17.8		
5	11.5	70.8	39.3		
2.50	13.2	57.5		18.7	
1.25	15.3	42.2		21.6	
0.630	19.1	23.1		27.0	
0.315	15.1	7.9		21.4	
0.160	6.6	1.3		9.4	
0.080	0.4	0.9		0.5	
PAN	0.9	0		1.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.13

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

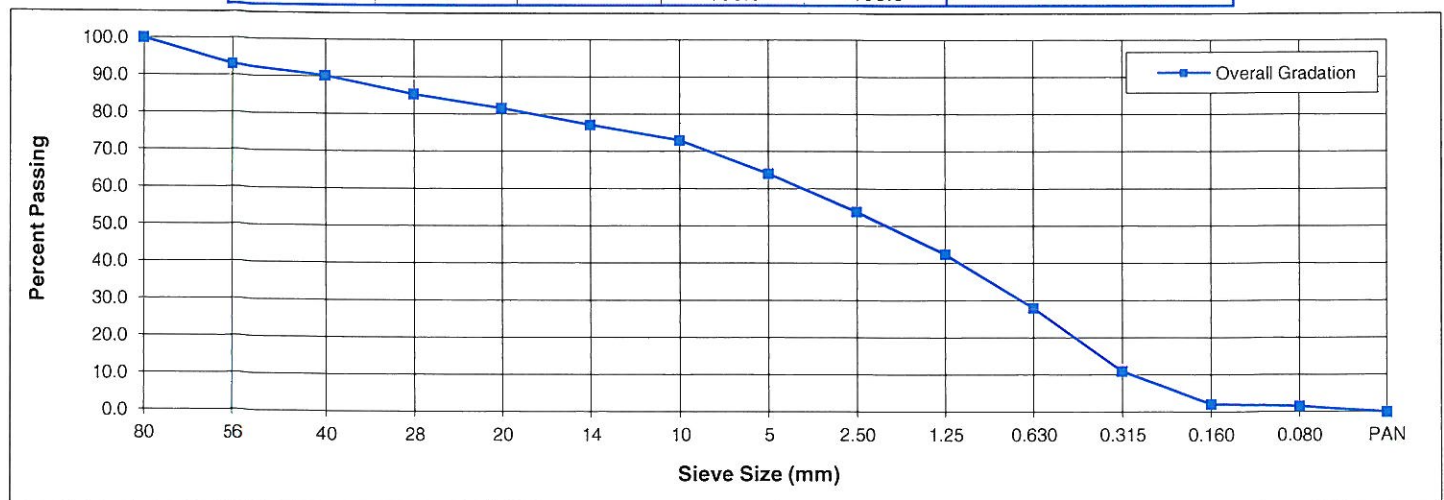
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	35.1 - 36.6 m (115 - 120 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	7.0	93.0	19.4		
40	2.8	90.2	7.8		
28	4.8	85.4	13.5		
20	3.8	81.6	10.5		
14	4.4	77.2	12.4		
10	4.2	73.0	11.6		
5	8.9	64.1	24.9		
2.50	10.2	53.9		15.9	
1.25	11.4	42.5		17.7	
0.630	14.4	28.1		22.5	
0.315	17.0	11.0		26.6	
0.160	8.9	2.2		13.8	
0.080	0.6	1.6		0.9	
PAN	1.6	0		2.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.85

Reported by: I. Chung

Reviewed by: 

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

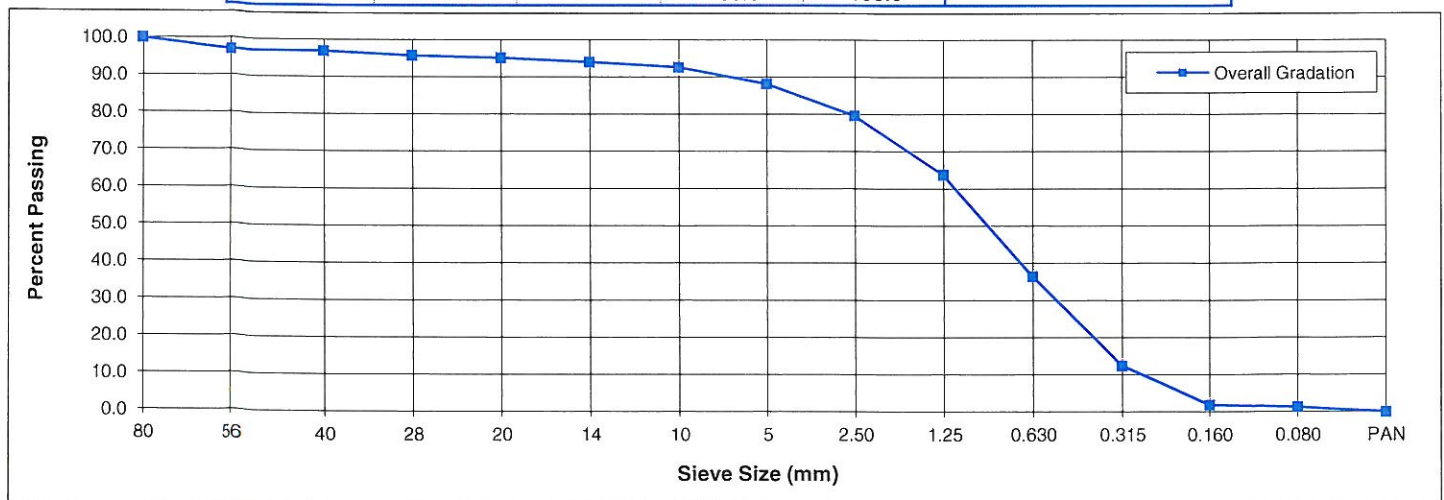
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	36.6 - 38.1 m (120 - 125 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	3.1	96.9	25.9		
40	0.0	96.9	0.0		
28	1.2	95.8	9.8		
20	0.6	95.2	5.1		
14	1.1	94.0	9.7		
10	1.4	92.6	11.8		
5	4.5	88.2	37.7		
2.50	8.5	79.6		9.7	
1.25	15.8	63.8		18.0	
0.630	27.3	36.5		30.9	
0.315	24.0	12.5		27.3	
0.160	10.5	1.9		11.9	
0.080	0.6	1.3		0.7	
PAN	1.3	0		1.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.80

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

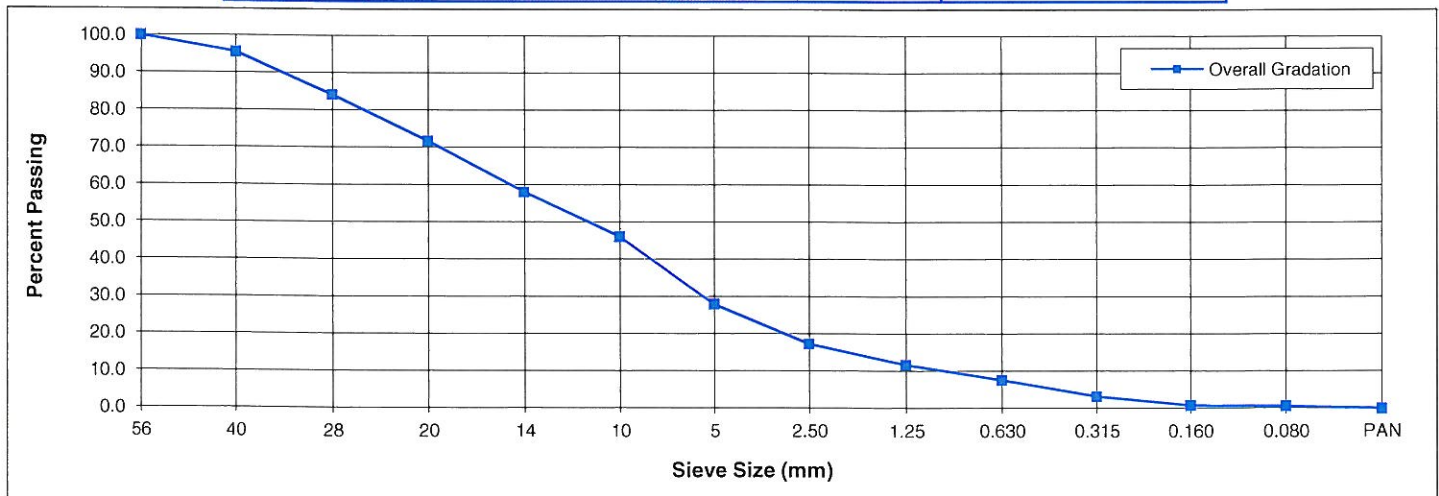
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	38.1 - 39.6 m (125 - 130 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	4.5	95.5	6.2		
28	11.4	84.1	15.9		
20	12.4	71.7	17.2		
14	13.6	58.1	18.9		
10	12.0	46.1	16.7		
5	18.1	28.0	25.1		
2.50	10.7	17.3		38.1	
1.25	5.6	11.8		20.0	
0.630	4.1	7.6		14.7	
0.315	4.4	3.2		15.8	
0.160	2.4	0.8		8.5	
0.080	0.2	0.7		0.6	
PAN	0.7	0		2.4	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.54

Reported by: I. Chung

Reviewed by: 

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

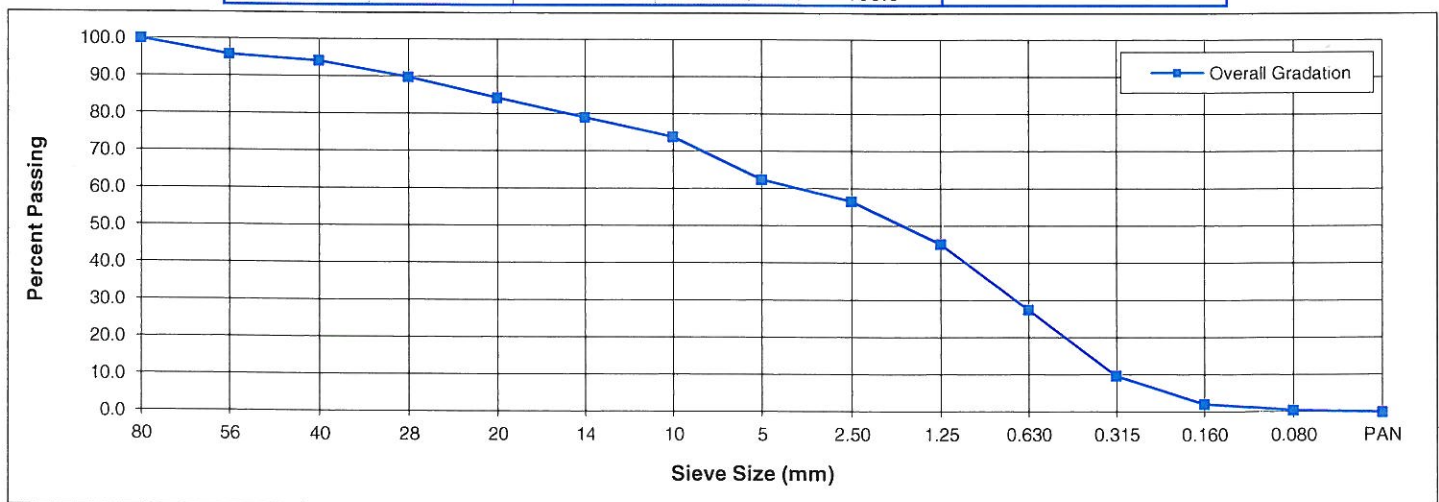
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	39.6 - 42.7 m (130 - 140 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.2	95.8	11.3		
40	1.6	94.2	4.3		
28	4.4	89.8	11.6		
20	5.5	84.3	14.7		
14	5.2	79.0	13.9		
10	5.2	73.9	13.8		
5	11.4	62.4	30.5		
2.50	5.8	56.6		9.4	
1.25	11.4	45.2		18.3	
0.630	17.6	27.5		28.2	
0.315	17.7	9.8		28.4	
0.160	7.6	2.1		12.2	
0.080	1.6	0.6		2.5	
PAN	0.6	0		0.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.74

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

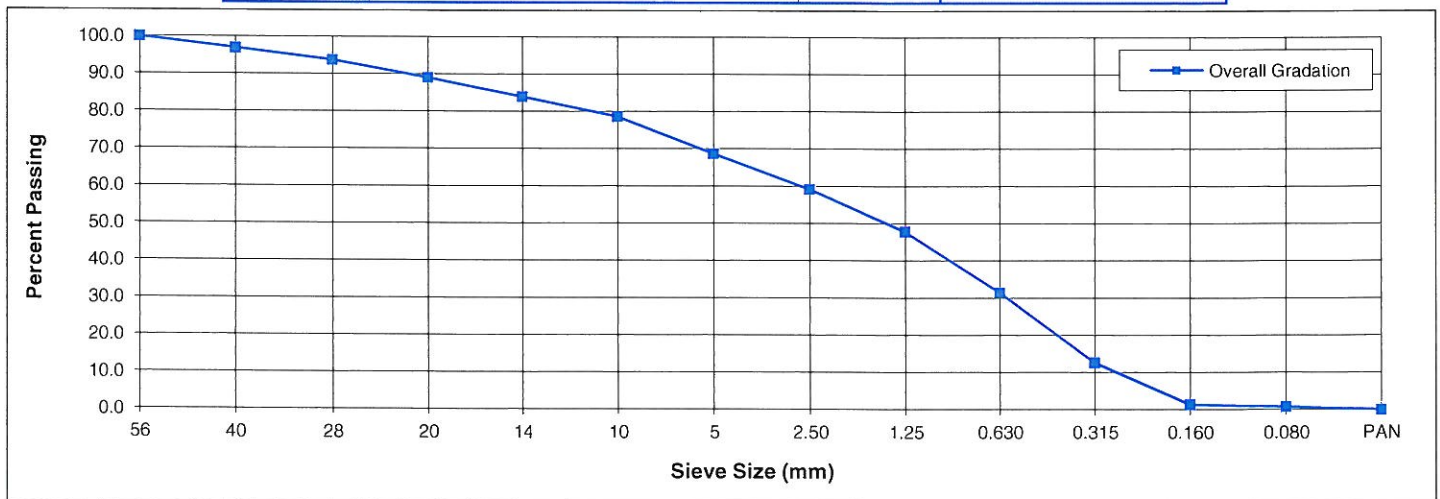
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	42.7 - 44.2 m (140 - 145 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	3.1	96.9	9.8		
28	3.2	93.8	10.1		
20	4.7	89.1	15.1		
14	5.1	84.0	16.3		
10	5.4	78.6	17.1		
5	9.9	68.7	31.6		
2.50	9.6	59.2		13.9	
1.25	11.3	47.9		16.4	
0.630	16.4	31.5		23.8	
0.315	18.8	12.7		27.3	
0.160	11.3	1.4		16.4	
0.080	0.6	0.8		0.9	
PAN	0.8	0		1.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.78

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

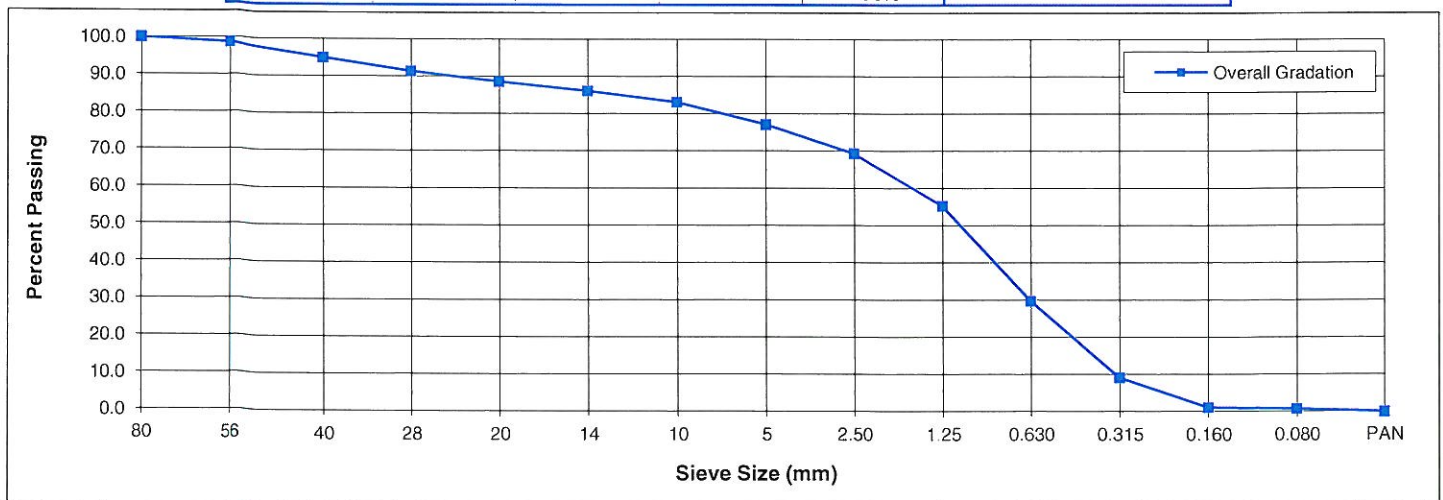
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	44.2 - 45.7 m (145 - 150 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	1.4	98.6	5.9		
40	3.7	95.0	16.1		
28	3.6	91.4	15.8		
20	2.7	88.6	12.0		
14	2.5	86.1	10.9		
10	3.0	83.1	13.3		
5	6.0	77.1	26.0		
2.50	7.8	69.4		10.0	
1.25	14.0	55.3		18.2	
0.630	25.6	29.8		33.1	
0.315	20.6	9.2		26.7	
0.160	8.0	1.1		10.4	
0.080	0.3	0.8		0.4	
PAN	0.8	0		1.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.86

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

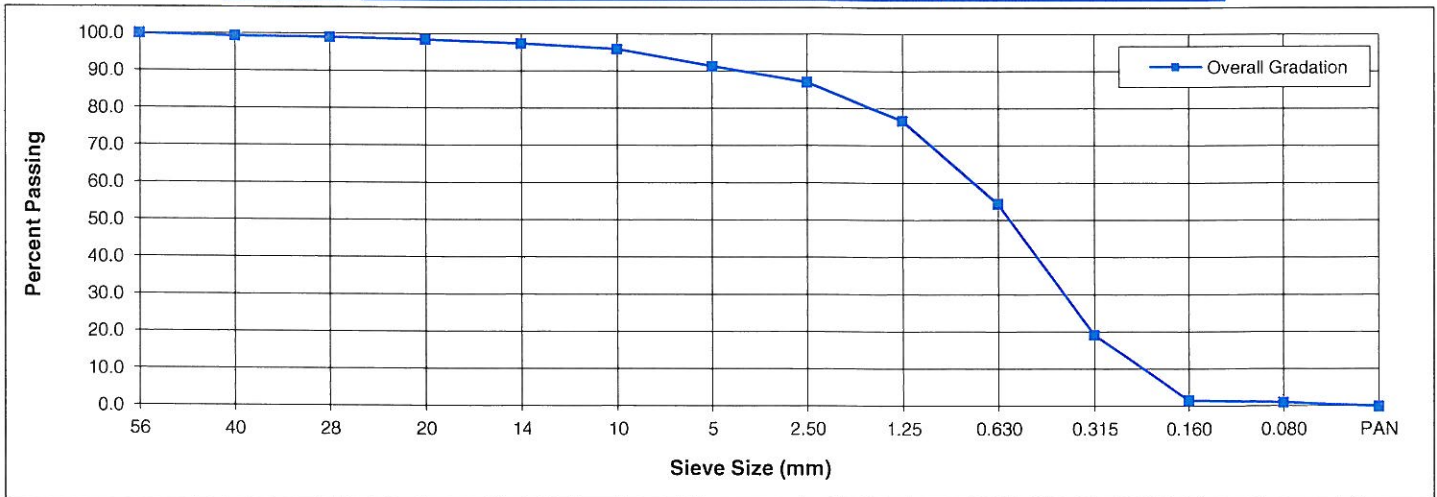
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	45.7 - 47.2 m (150 - 155 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	0.7	99.3	7.9		
28	0.3	99.0	3.3		
20	0.6	98.4	7.4		
14	1.0	97.4	11.6		
10	1.5	95.9	16.8		
5	4.6	91.4	52.9		
2.50	4.3	87.1		4.7	
1.25	10.4	76.7		11.4	
0.630	22.3	54.4		24.4	
0.315	35.2	19.2		38.5	
0.160	17.6	1.6		19.3	
0.080	0.6	1.0		0.6	
PAN	1.0	0		1.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.38

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

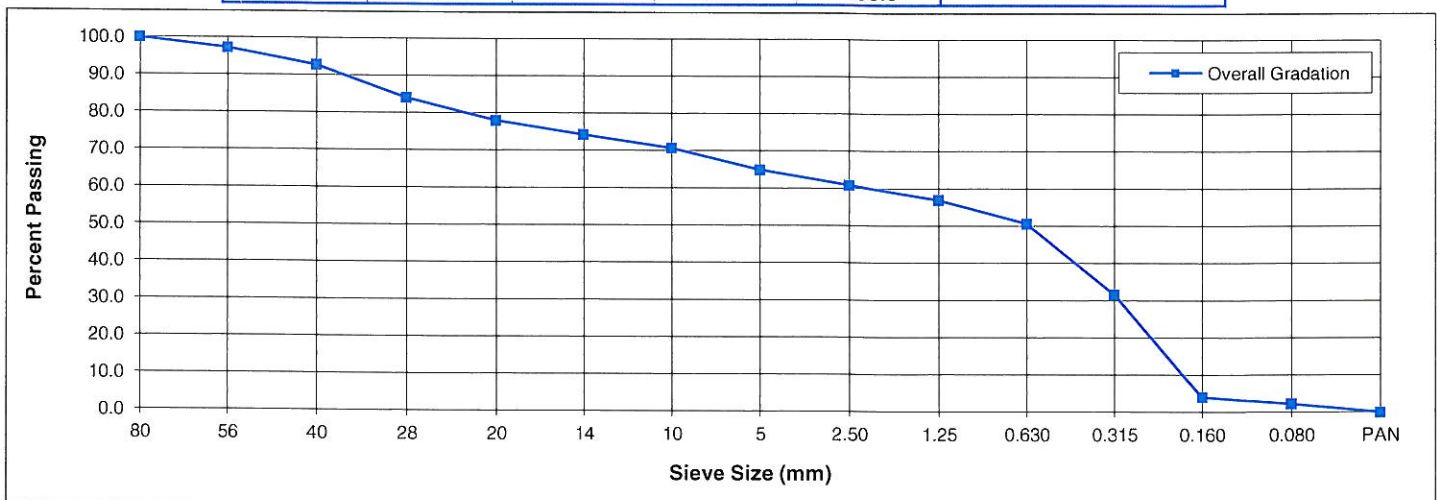
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	47.2 - 48.8 m (155 - 160 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	2.8	97.2	8.0		
40	4.4	92.8	12.6		
28	8.7	84.1	24.7		
20	6.1	78.0	17.4		
14	3.7	74.3	10.6		
10	3.6	70.7	10.1		
5	5.8	64.9	16.5		
2.50	4.0	60.9		6.2	
1.25	3.9	57.0		6.0	
0.630	6.4	50.6		9.8	
0.315	19.0	31.7		29.2	
0.160	27.6	4.1		42.5	
0.080	1.8	2.3		2.8	
PAN	2.3	0		3.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 1.85

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

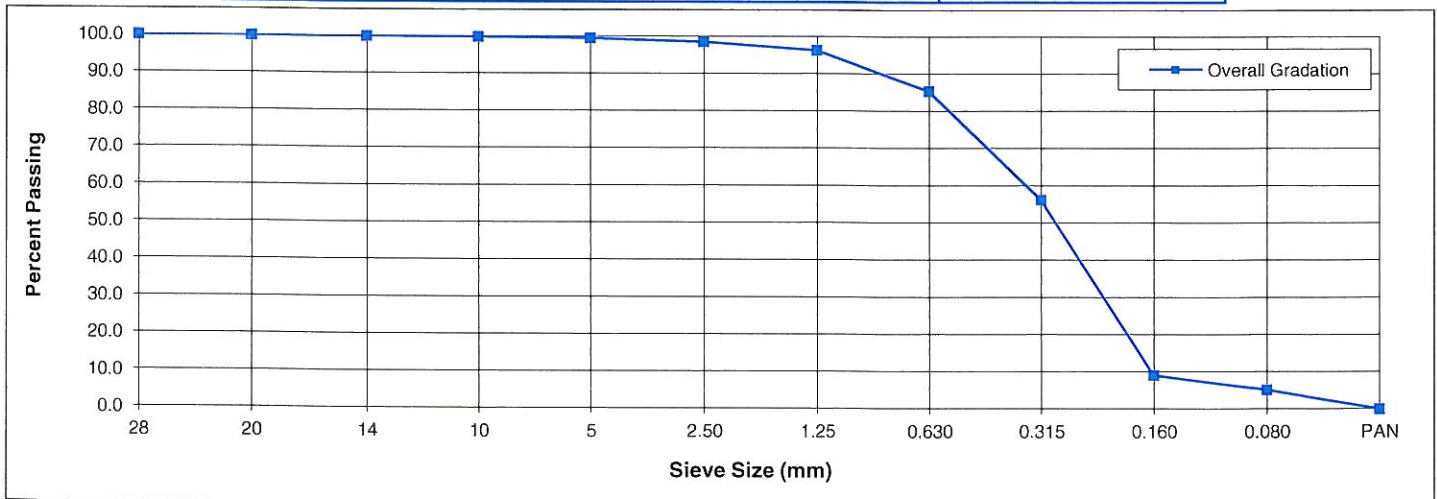
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 01
Depth Range	49.4 m - EOH (162 ft - EOH)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 12, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
28	0.0	100.0	0.0		
20	0.1	99.9	14.2		
14	0.1	99.9	11.3		
10	0.1	99.8	10.4		
5	0.3	99.5	64.2		
2.50	1.0	98.5		1.0	
1.25	2.2	96.3		2.2	
0.630	10.9	85.4		11.0	
0.315	29.2	56.2		29.3	
0.160	47.1	9.1		47.3	
0.080	3.9	5.2		3.9	
PAN	5.2	0		5.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 1.53

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 17, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

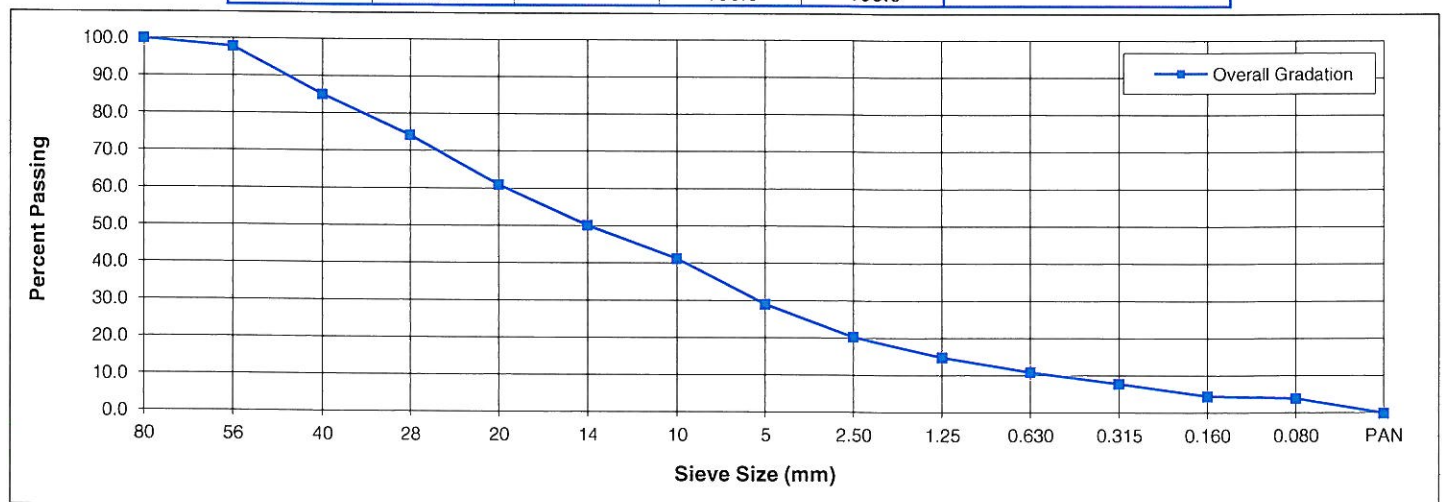
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	3.0 - 4.6 m (10 - 15 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 15, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	2.2	97.8	3.1		
40	12.8	85.1	18.0		
28	10.8	74.2	15.3		
20	13.3	61.0	18.7		
14	10.8	50.1	15.3		
10	8.9	41.3	12.5		
5	12.2	29.1	17.2		
2.50	8.7	20.4		30.0	
1.25	5.4	14.9		18.6	
0.630	4.0	11.0		13.6	
0.315	3.1	7.9		10.7	
0.160	3.3	4.6		11.5	
0.080	0.6	4.0		2.0	
PAN	4.0	0		13.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.98

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

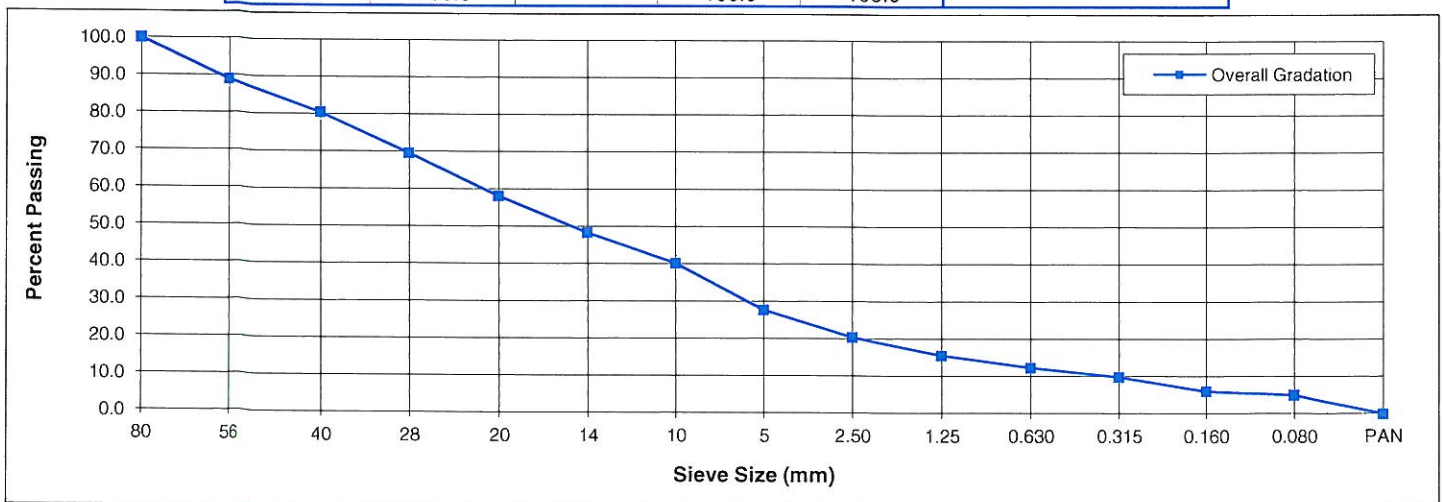
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	4.6 - 6.1 m (15 - 20 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010


SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	11.0	89.0	15.2		
40	8.5	80.5	11.8		
28	10.9	69.6	15.1		
20	11.4	58.2	15.8		
14	9.8	48.4	13.6		
10	8.1	40.2	11.3		
5	12.5	27.7	17.2		
2.50	7.3	20.4		26.4	
1.25	4.8	15.6		17.3	
0.630	3.3	12.3		11.9	
0.315	2.5	9.8		9.0	
0.160	3.7	6.1		13.5	
0.080	1.0	5.1		3.6	
PAN	5.1	0		18.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.69

Reported by: I. Chung

Reviewed by: 

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

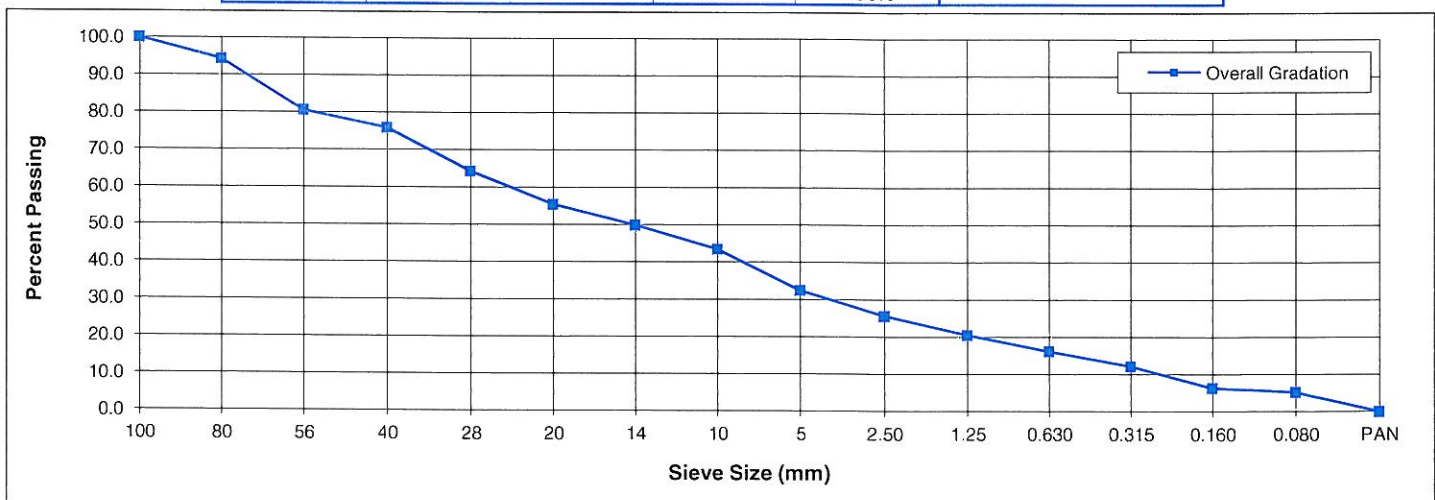
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	6.1 - 7.6 m (20 - 25 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	5.7	94.3	8.5		
56	13.7	80.6	20.3		
40	4.7	75.9	7.0		
28	11.6	64.3	17.2		
20	8.9	55.4	13.1		
14	5.5	49.9	8.1		
10	6.4	43.4	9.5		
5	11.0	32.4	16.3		
2.50	6.8	25.6		21.0	
1.25	5.1	20.5		15.9	
0.630	4.3	16.1		13.3	
0.315	4.0	12.2		12.2	
0.160	5.8	6.3		18.0	
0.080	1.1	5.2		3.4	
PAN	5.2	0		16.1	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.51

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

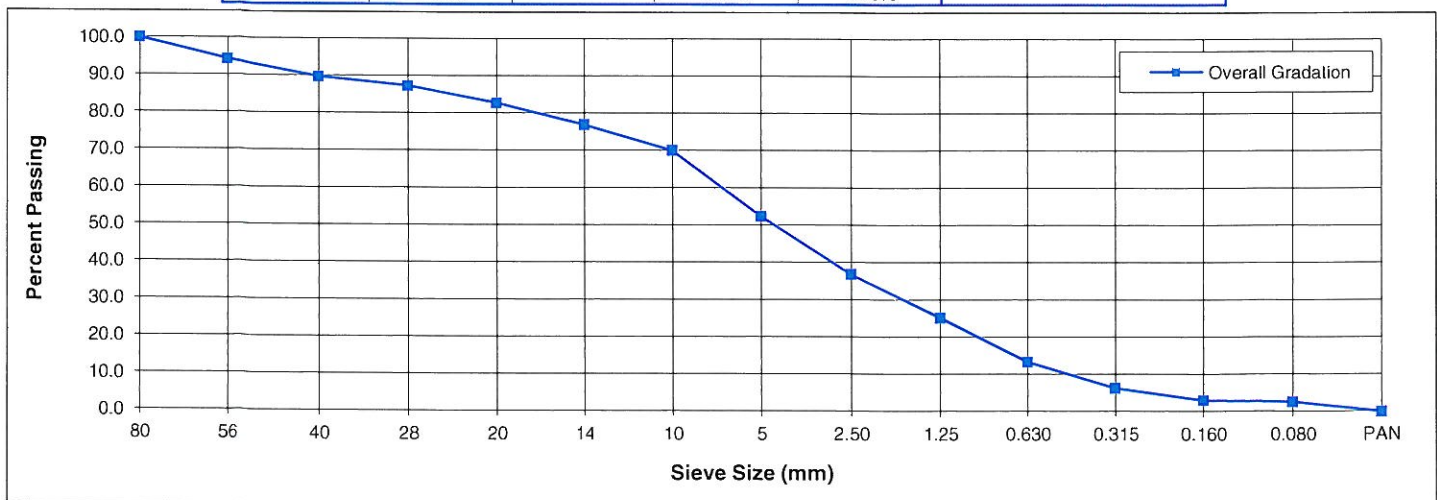
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	7.6 - 9.1 m (25 - 30 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.7	94.3	12.0		
40	4.5	89.7	9.5		
28	2.4	87.3	5.1		
20	4.5	82.8	9.6		
14	5.8	77.0	12.2		
10	6.9	70.1	14.5		
5	17.7	52.4	37.1		
2.50	15.5	36.9		29.6	
1.25	11.7	25.2		22.3	
0.630	11.9	13.3		22.6	
0.315	7.0	6.3		13.4	
0.160	3.3	3.1		6.3	
0.080	0.5	2.6		0.9	
PAN	2.6	0		4.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.38

Reported by: I. Chung

Reviewed by: *B. Hudson*

B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

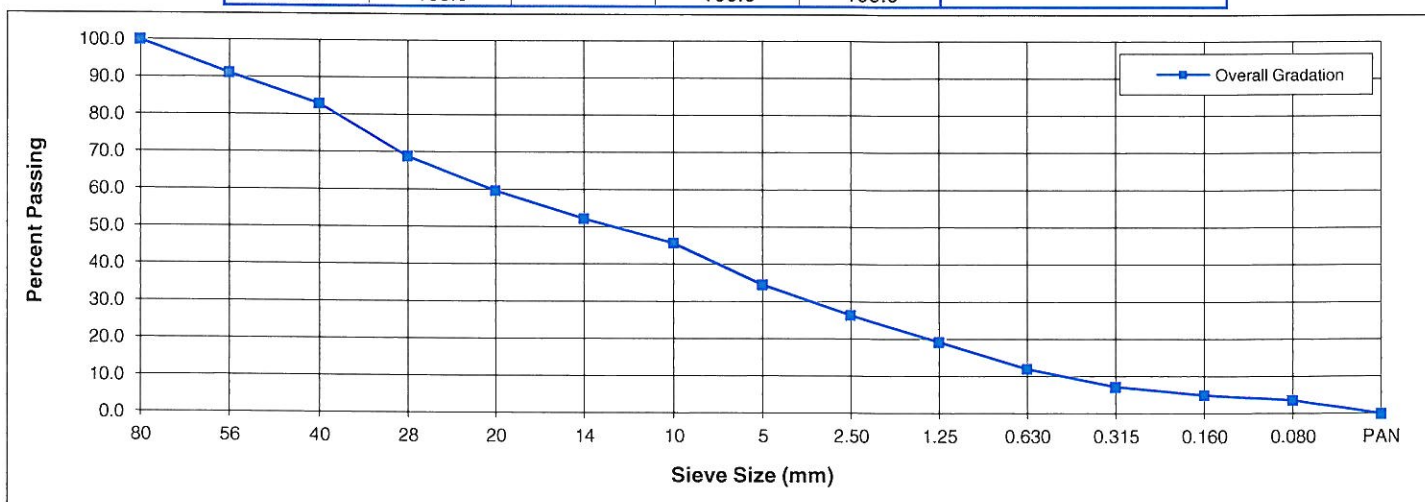
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	9.1 - 12.2 m (30 - 40 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010


SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	8.9	91.1	13.5		
40	8.2	83.0	12.5		
28	14.1	68.9	21.6		
20	9.2	59.7	14.0		
14	7.5	52.2	11.4		
10	6.5	45.7	10.0		
5	11.2	34.6	17.1		
2.50	8.1	26.5		23.5	
1.25	7.2	19.3		20.8	
0.630	7.2	12.1		20.8	
0.315	4.9	7.2		14.0	
0.160	2.2	5.0		6.3	
0.080	1.4	3.6		4.1	
PAN	3.6	0		10.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.97

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

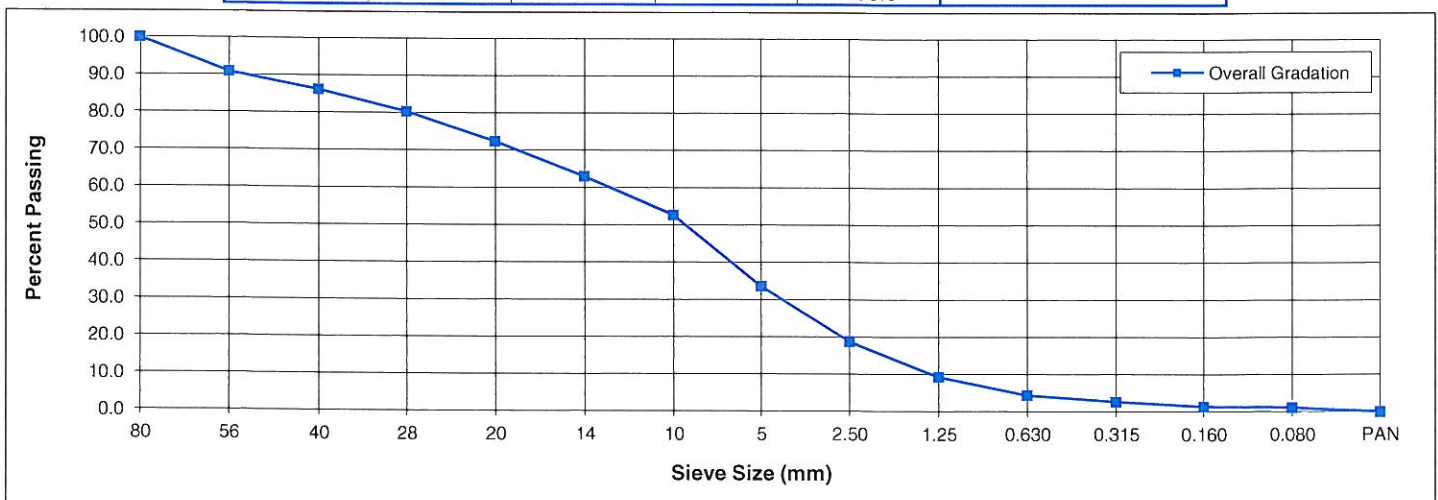
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	12.2 - 13.7 m (40 - 45 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	9.1	90.9	13.8		
40	4.6	86.2	7.0		
28	5.9	80.3	8.9		
20	7.9	72.4	11.9		
14	9.4	63.1	14.1		
10	10.3	52.8	15.5		
5	19.1	33.7	28.8		
2.50	14.8	18.8		44.1	
1.25	9.5	9.3		28.2	
0.630	4.9	4.5		14.5	
0.315	1.8	2.7		5.3	
0.160	1.3	1.4		3.8	
0.080	0.3	1.1		0.8	
PAN	1.1	0		3.4	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.91

Reported by: I. Chung

Reviewed by: B. Hudson

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 18, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

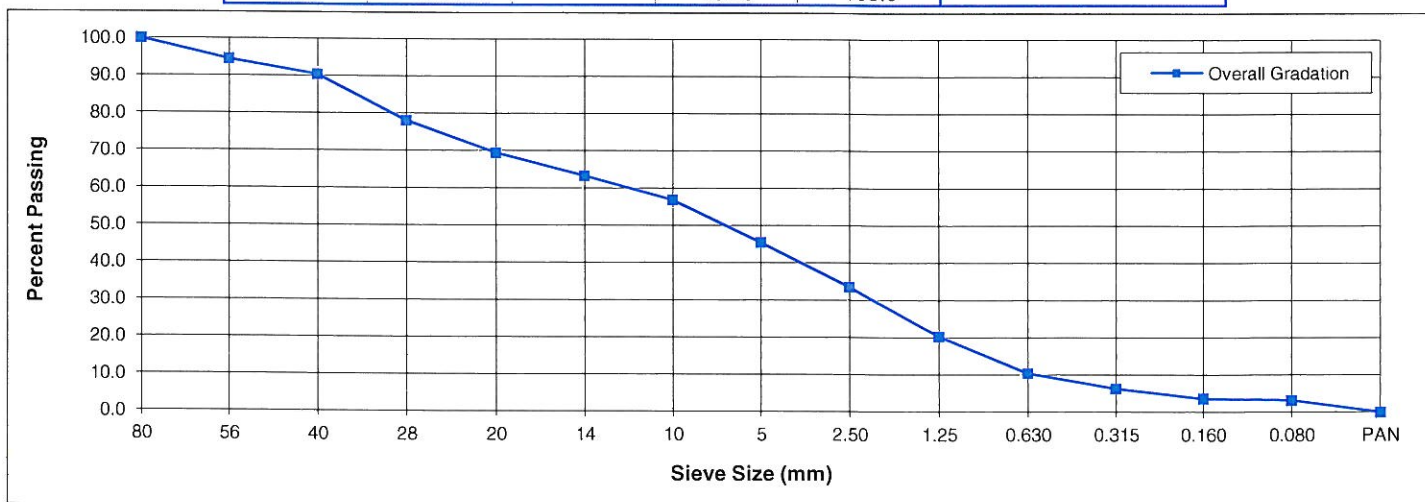
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	13.7 - 15.2 m (45 - 50 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 16, 2010


SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.5	94.5	10.1		
40	4.1	90.4	7.5		
28	12.3	78.1	22.6		
20	8.6	69.5	15.8		
14	6.2	63.3	11.3		
10	6.4	56.9	11.8		
5	11.4	45.5	20.9		
2.50	12.0	33.5		26.4	
1.25	13.2	20.3		29.0	
0.630	9.9	10.4		21.7	
0.315	4.1	6.3		9.1	
0.160	2.6	3.7		5.7	
0.080	0.5	3.2		1.1	
PAN	3.2	0		7.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.37

Reported by: I. Chung

Reviewed by: 
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

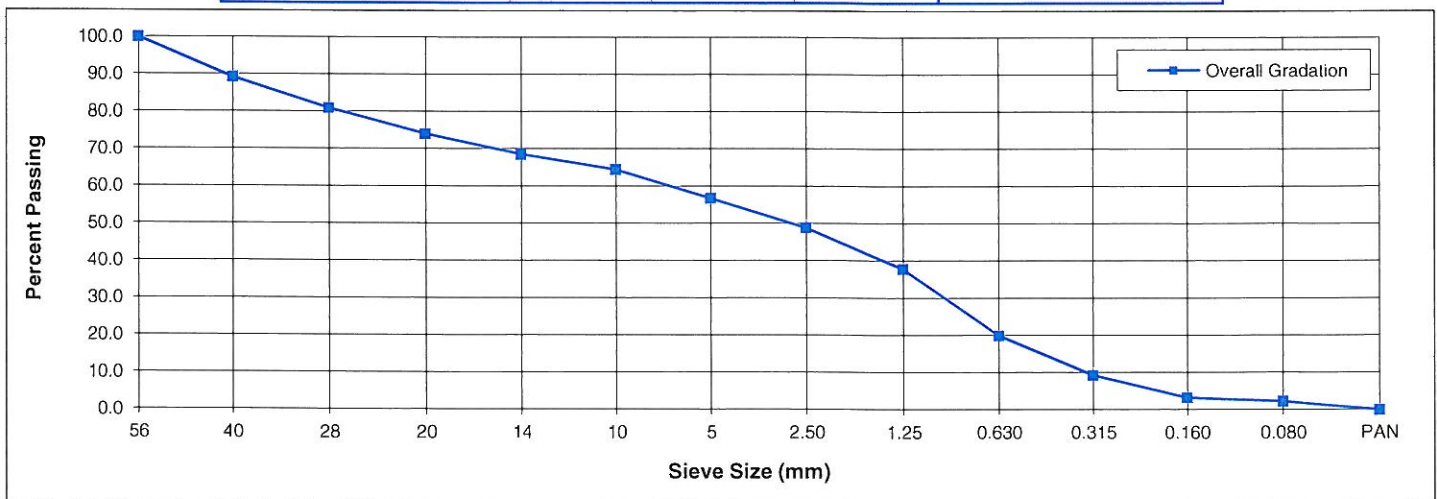
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	15.2 - 16.8 m (50 - 55 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	10.8	89.2	24.9		
28	8.3	80.9	19.2		
20	6.9	74.0	16.0		
14	5.5	68.5	12.8		
10	4.0	64.5	9.4		
5	7.7	56.8	17.8		
2.50	7.9	48.9		13.9	
1.25	11.1	37.9		19.5	
0.630	17.8	20.0		31.4	
0.315	10.7	9.3		18.8	
0.160	6.1	3.3		10.7	
0.080	1.0	2.3		1.7	
PAN	2.3	0		4.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.90

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

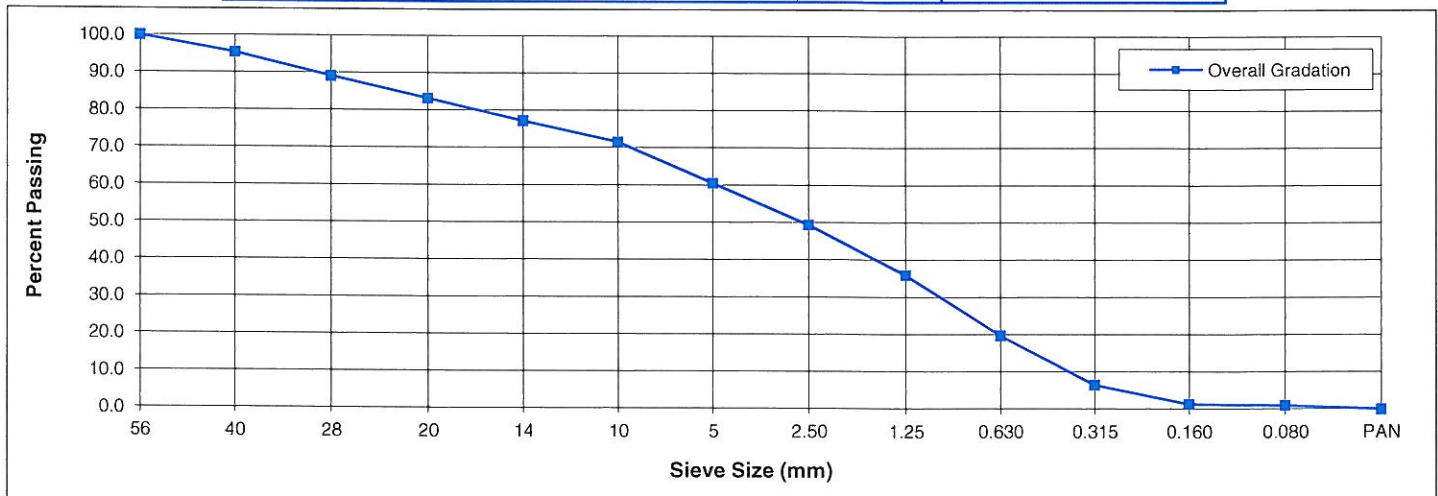
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	16.8 - 18.3 m (55 - 60 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	4.6	95.4	11.7		
28	6.3	89.1	16.0		
20	5.9	83.2	14.9		
14	6.0	77.2	15.2		
10	5.6	71.6	14.3		
5	11.0	60.5	27.9		
2.50	11.1	49.4		18.4	
1.25	13.4	36.0		22.2	
0.630	16.2	19.8		26.8	
0.315	13.3	6.5		21.9	
0.160	5.2	1.4		8.5	
0.080	0.3	1.0		0.6	
PAN	1.0	0		1.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.13

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

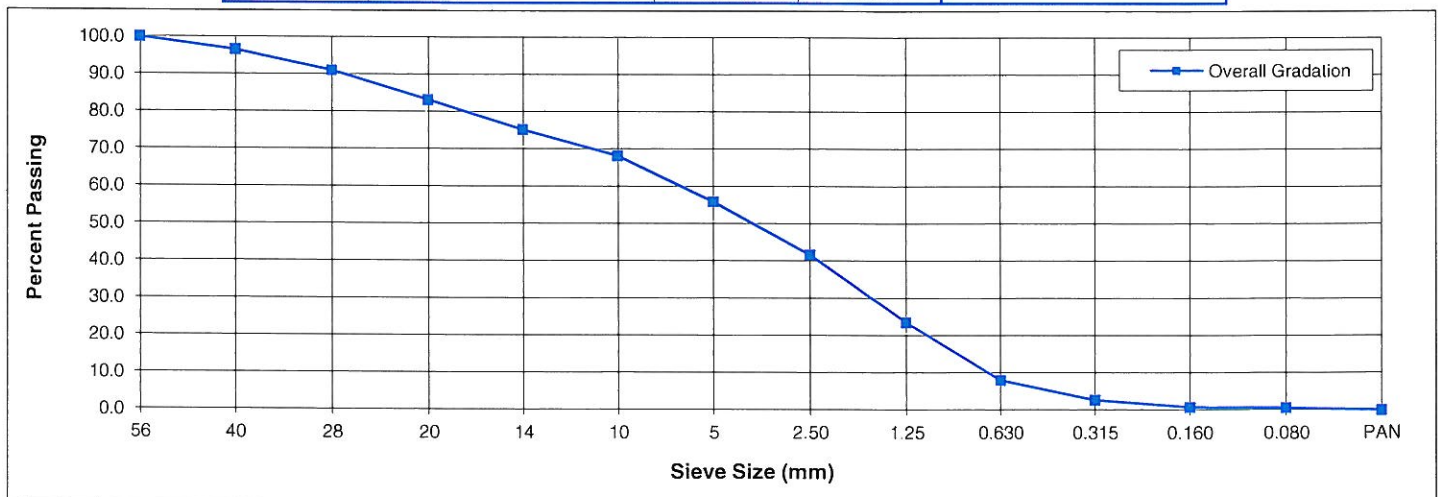
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	18.3 - 19.8 m (60 - 65 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	3.4	96.6	7.8		
28	5.5	91.0	12.5		
20	7.9	83.2	17.9		
14	7.9	75.2	18.0		
10	7.0	68.2	16.0		
5	12.2	56.0	27.8		
2.50	14.3	41.7		25.5	
1.25	18.1	23.6		32.4	
0.630	15.6	8.0		27.8	
0.315	5.3	2.7		9.4	
0.160	1.9	0.8		3.4	
0.080	0.2	0.6		0.3	
PAN	0.6	0		1.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.63

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

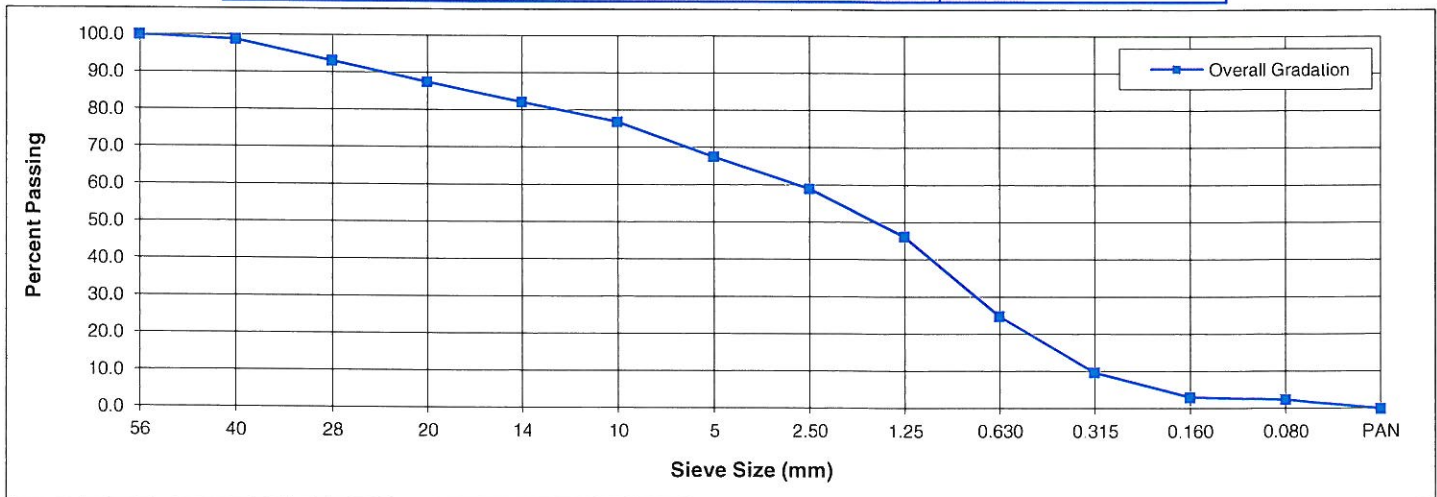
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	19.8 - 21.3 m (65 - 70 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	1.2	98.8	3.7		
28	5.7	93.1	17.5		
20	5.6	87.5	17.3		
14	5.3	82.2	16.5		
10	5.2	76.9	16.2		
5	9.4	67.6	28.9		
2.50	8.6	59.0		12.7	
1.25	12.8	46.3		18.9	
0.630	21.4	24.8		31.7	
0.315	15.1	9.7		22.4	
0.160	6.7	3.1		9.8	
0.080	0.7	2.4		1.0	
PAN	2.4	0		3.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.88

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 19, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

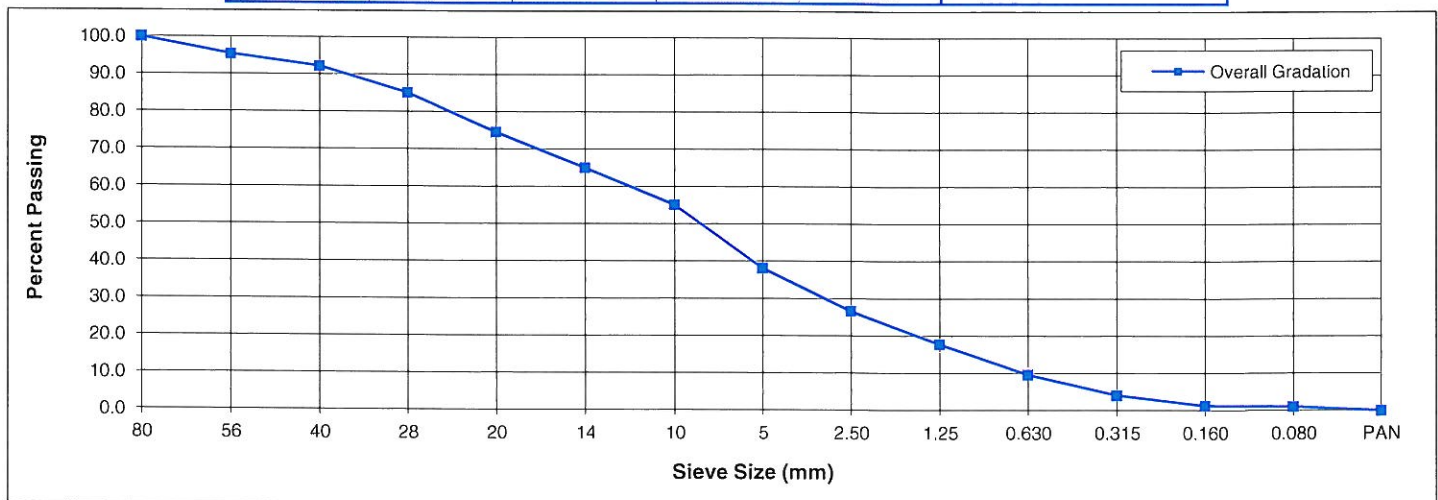
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	21.3 - 22.9 m (70 - 75 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.6	95.4	7.5		
40	3.1	92.2	5.1		
28	7.1	85.2	11.5		
20	10.6	74.6	17.1		
14	9.6	65.0	15.5		
10	9.9	55.1	16.0		
5	17.0	38.2	27.4		
2.50	11.5	26.7		30.0	
1.25	8.9	17.9		23.2	
0.630	8.2	9.7		21.4	
0.315	5.6	4.1		14.5	
0.160	2.8	1.3		7.3	
0.080	0.3	1.1		0.7	
PAN	1.1	0		2.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.44

Reported by: I. Chung

Reviewed by: *B. Hudson*
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 18, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

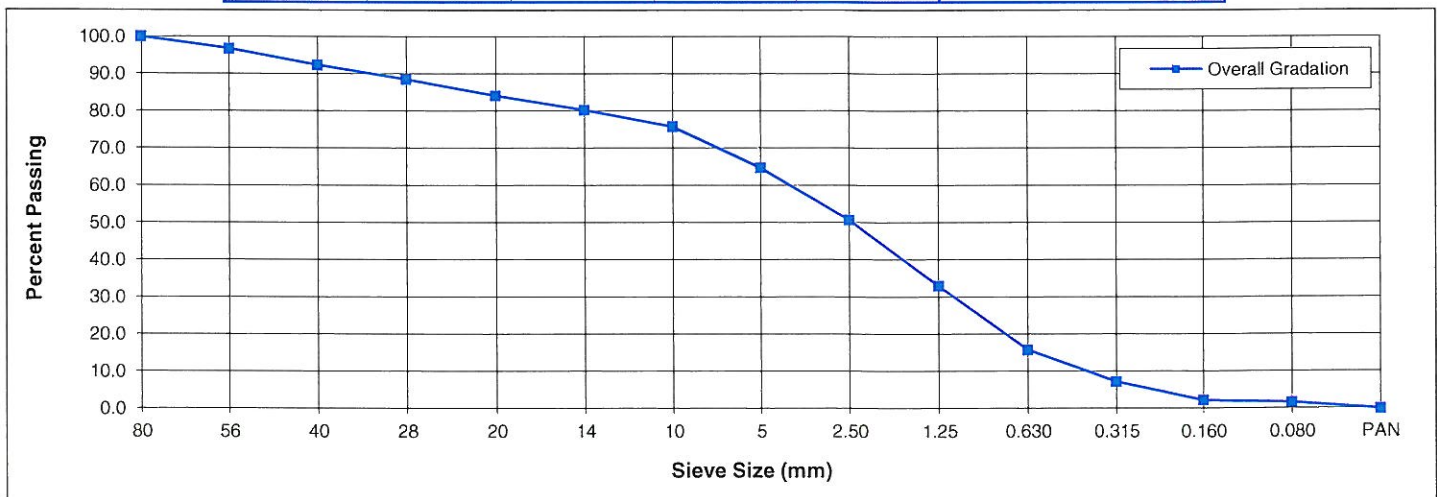
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	22.9 - 24.4 m (75 - 80 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 16, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	3.3	96.7	9.3		
40	4.4	92.4	12.5		
28	3.8	88.5	10.9		
20	4.4	84.2	12.4		
14	3.9	80.3	11.1		
10	4.4	75.8	12.6		
5	11.0	64.8	31.3		
2.50	14.0	50.8		21.6	
1.25	17.7	33.1		27.3	
0.630	17.3	15.8		26.6	
0.315	8.5	7.3		13.2	
0.160	5.0	2.2		7.8	
0.080	0.6	1.7		0.9	
PAN	1.7	0		2.6	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.32

Reported by: I. Chung

Reviewed by: B. Hudson
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

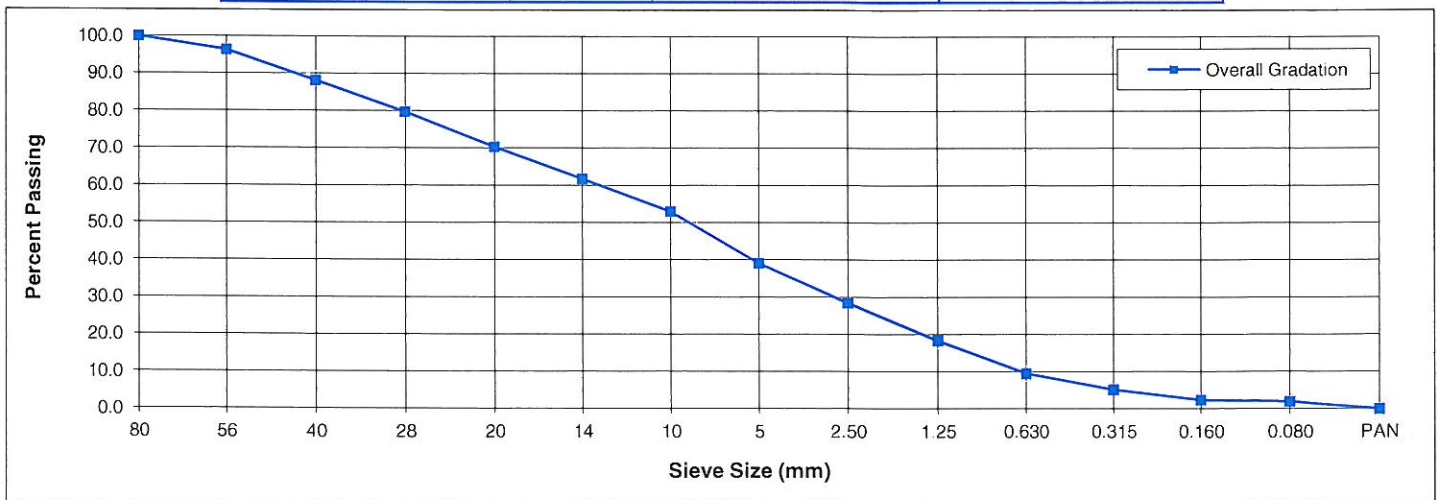
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	24.4 - 25.9 m (80 - 85 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	3.6	96.4	6.0		
40	8.2	88.2	13.5		
28	8.4	79.8	13.8		
20	9.4	70.4	15.4		
14	8.6	61.8	14.1		
10	8.8	53.0	14.4		
5	13.8	39.2	22.7		
2.50	10.6	28.5		27.2	
1.25	10.1	18.4		25.9	
0.630	8.8	9.5		22.6	
0.315	4.3	5.2		11.0	
0.160	2.8	2.4		7.1	
0.080	0.4	2.0		1.1	
PAN	2.0	0		5.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.36

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

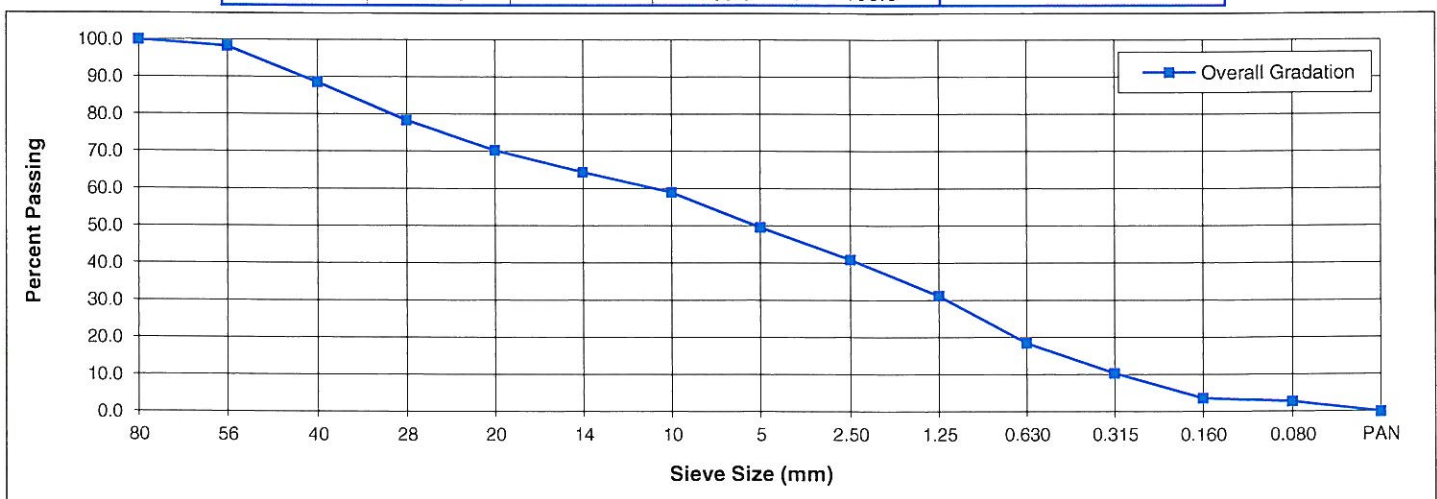
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	25.9 - 27.4 m (85 - 90 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	1.7	98.3	3.4		
40	9.7	88.6	19.2		
28	10.3	78.4	20.4		
20	8.0	70.3	15.9		
14	5.9	64.4	11.7		
10	5.4	59.1	10.7		
5	9.4	49.7	18.7		
2.50	8.7	41.0		17.5	
1.25	9.7	31.2		19.6	
0.630	12.7	18.5		25.7	
0.315	8.1	10.4		16.3	
0.160	6.7	3.7		13.6	
0.080	0.9	2.8		1.8	
PAN	2.8	0		5.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.89

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 19, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

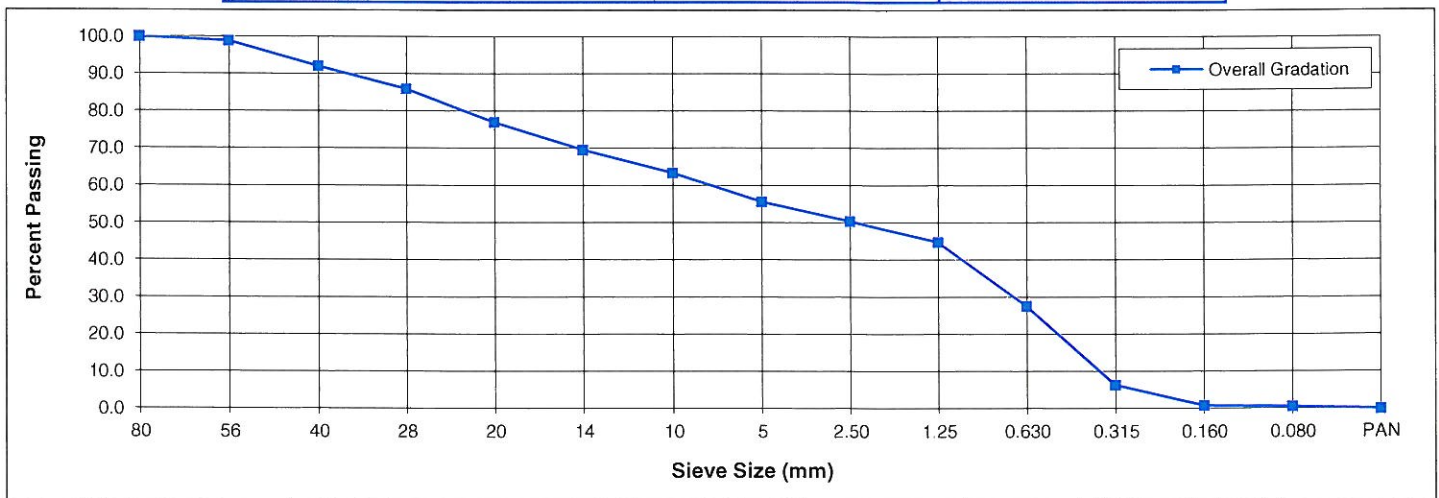
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	27.4 - 29.0 m (90 - 95 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	1.1	98.9	2.6		
40	6.8	92.0	15.4		
28	6.1	85.9	13.8		
20	9.0	77.0	20.2		
14	7.4	69.6	16.7		
10	6.2	63.4	13.9		
5	7.7	55.7	17.4		
2.50	5.3	50.4		9.4	
1.25	5.6	44.8		10.1	
0.630	17.2	27.6		30.9	
0.315	21.2	6.4		38.1	
0.160	5.5	0.9		9.8	
0.080	0.3	0.6		0.5	
PAN	0.6	0		1.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.66

Reported by: I. Chung

Reviewed by: 
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

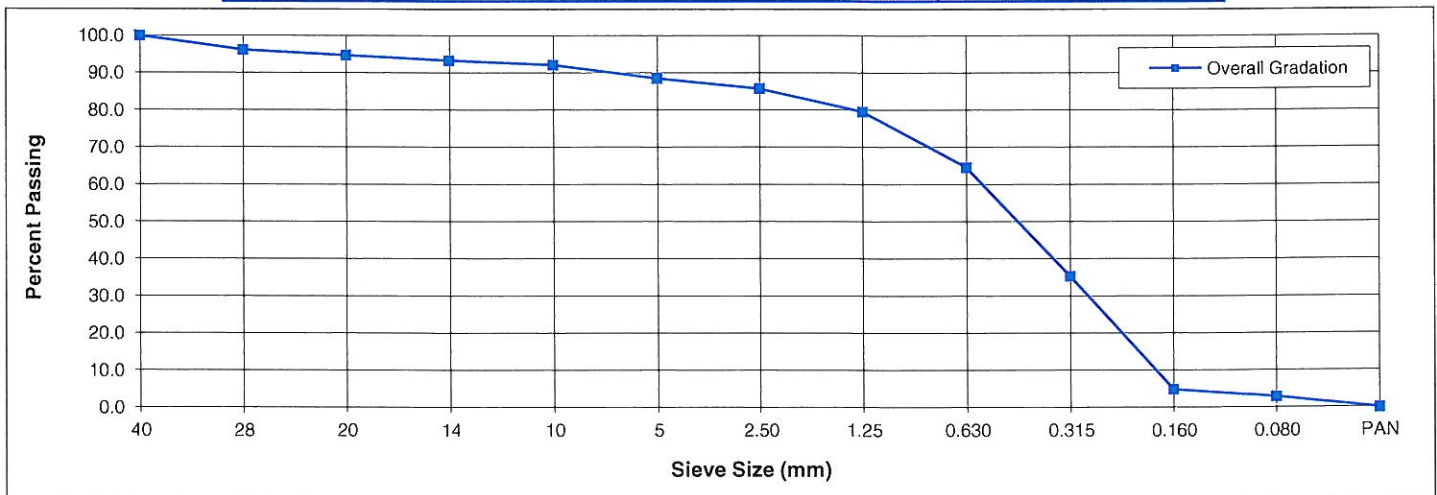
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	29.0 - 30.5 m (95 - 100 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010

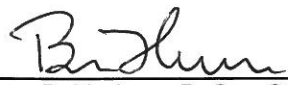
SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
40	0.0	100.0	0.0		
28	3.8	96.2	33.5		
20	1.4	94.7	12.4		
14	1.4	93.3	12.5		
10	1.2	92.2	10.1		
5	3.6	88.6	31.4		
2.50	2.8	85.8		3.1	
1.25	6.2	79.6		7.0	
0.630	14.9	64.6		16.9	
0.315	29.2	35.4		33.0	
0.160	30.5	4.9		34.4	
0.080	2.0	2.9		2.3	
PAN	2.9	0		3.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 1.95

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 18, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

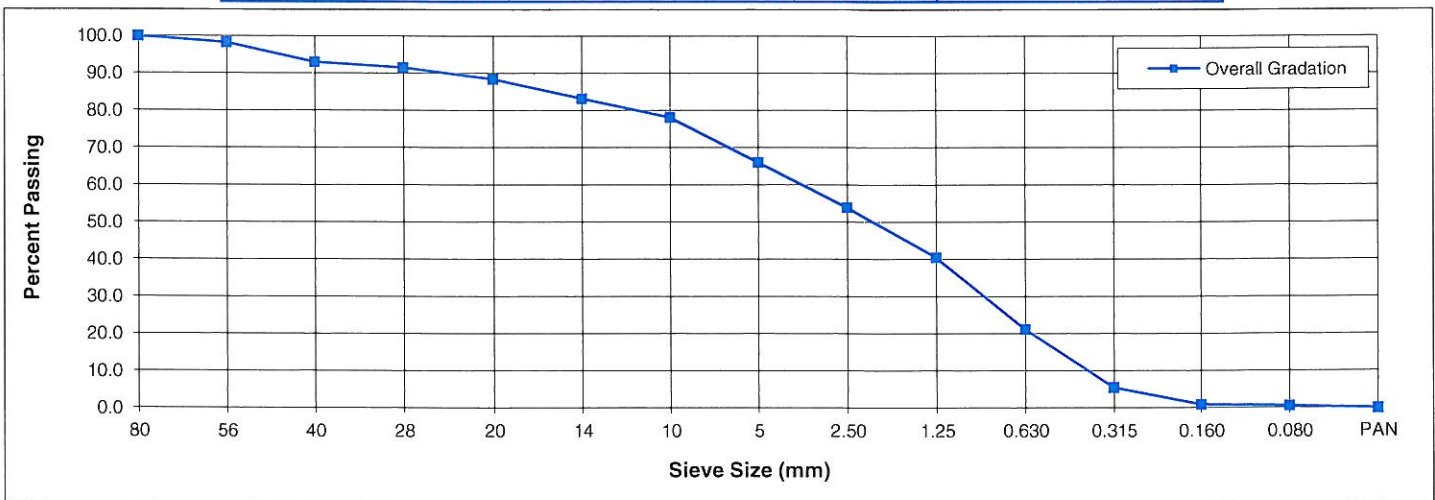
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	32.0 - 33.5 m (105 - 110 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	1.7	98.3	5.1		
40	5.3	93.0	15.6		
28	1.4	91.6	4.3		
20	3.1	88.5	9.1		
14	5.3	83.2	15.6		
10	5.0	78.2	14.9		
5	12.0	66.1	35.5		
2.50	12.1	54.0		18.4	
1.25	13.5	40.5		20.4	
0.630	19.3	21.2		29.3	
0.315	15.6	5.6		23.6	
0.160	4.6	0.9		7.0	
0.080	0.3	0.6		0.5	
PAN	0.6	0		1.0	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.15

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

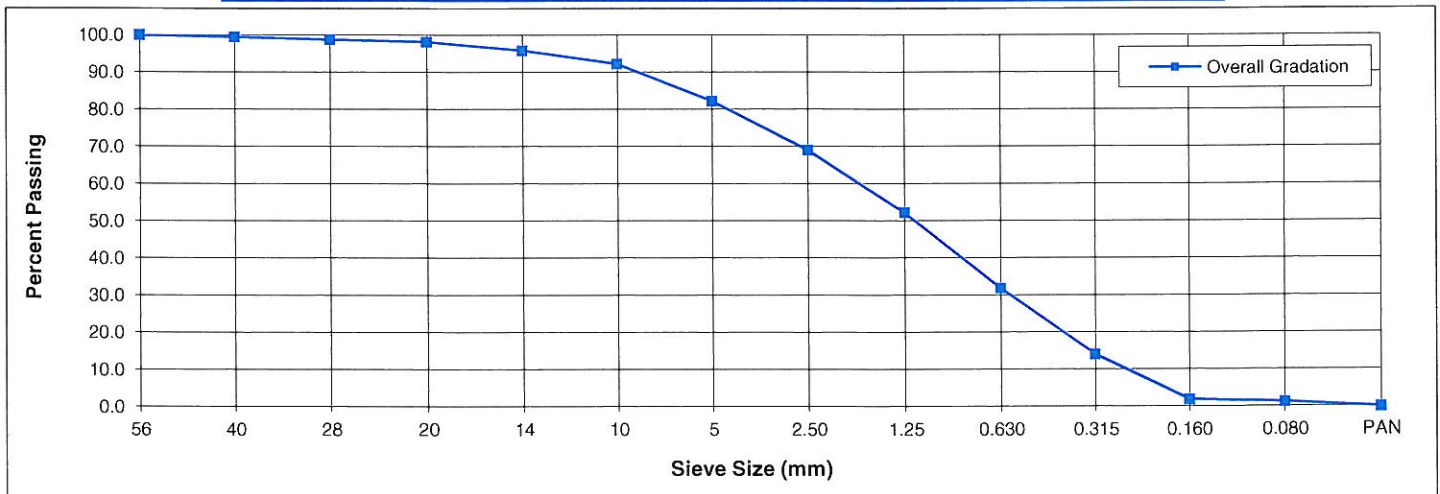
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	33.5 - 35.1 m (110 - 115 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	0.6	99.4	3.1		
28	0.7	98.7	4.0		
20	0.6	98.2	3.3		
14	2.3	95.8	13.0		
10	3.6	92.2	20.3		
5	10.0	82.2	56.3		
2.50	13.2	69.1		16.0	
1.25	16.8	52.3		20.4	
0.630	20.3	31.9		24.7	
0.315	17.8	14.1		21.7	
0.160	12.1	2.0		14.7	
0.080	0.7	1.3		0.8	
PAN	1.3	0		1.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.94

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

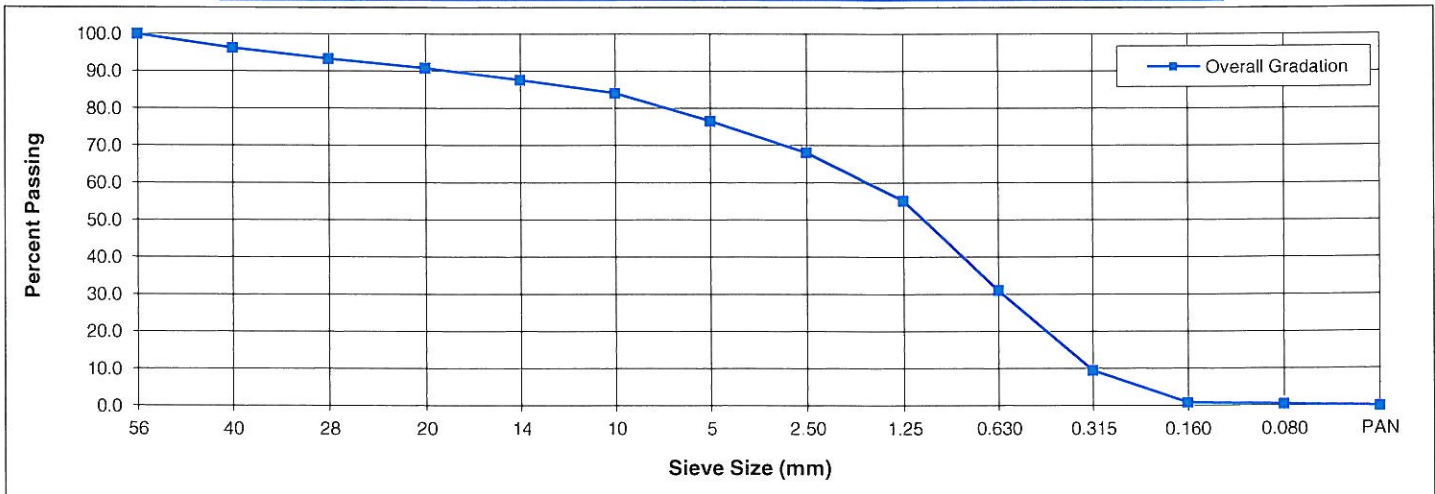
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	35.1 - 36.6 m (115 - 120 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	3.8	96.2	16.1		
28	2.9	93.4	12.2		
20	2.5	90.9	10.7		
14	3.2	87.6	13.9		
10	3.5	84.1	15.0		
5	7.5	76.6	32.1		
2.50	8.5	68.2		11.0	
1.25	13.0	55.2		16.9	
0.630	24.1	31.1		31.4	
0.315	21.5	9.6		28.1	
0.160	8.6	1.0		11.2	
0.080	0.4	0.6		0.5	
PAN	0.6	0		0.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.85

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

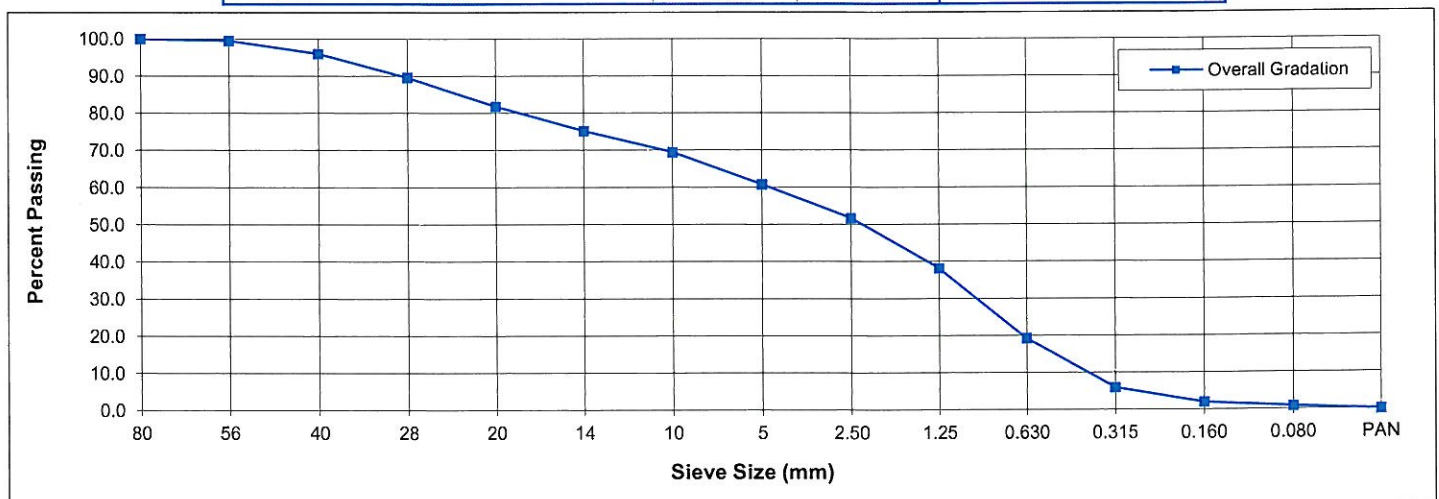
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	36.6 - 39.6 m (120 - 130 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	0.5	99.5	1.3		
40	3.5	96.0	8.9		
28	6.4	89.6	16.3		
20	7.8	81.8	19.8		
14	6.7	75.2	17.0		
10	5.7	69.5	14.5		
5	8.7	60.8	22.1		
2.50	9.1	51.7		15.0	
1.25	13.5	38.2		22.2	
0.630	19.0	19.2		31.2	
0.315	13.3	6.0		21.9	
0.160	4.0	2.0		6.5	
0.080	1.2	0.8		2.0	
PAN	0.8	0		1.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.07

Reported by: I. Chung

Reviewed by: *[Signature]*
for B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

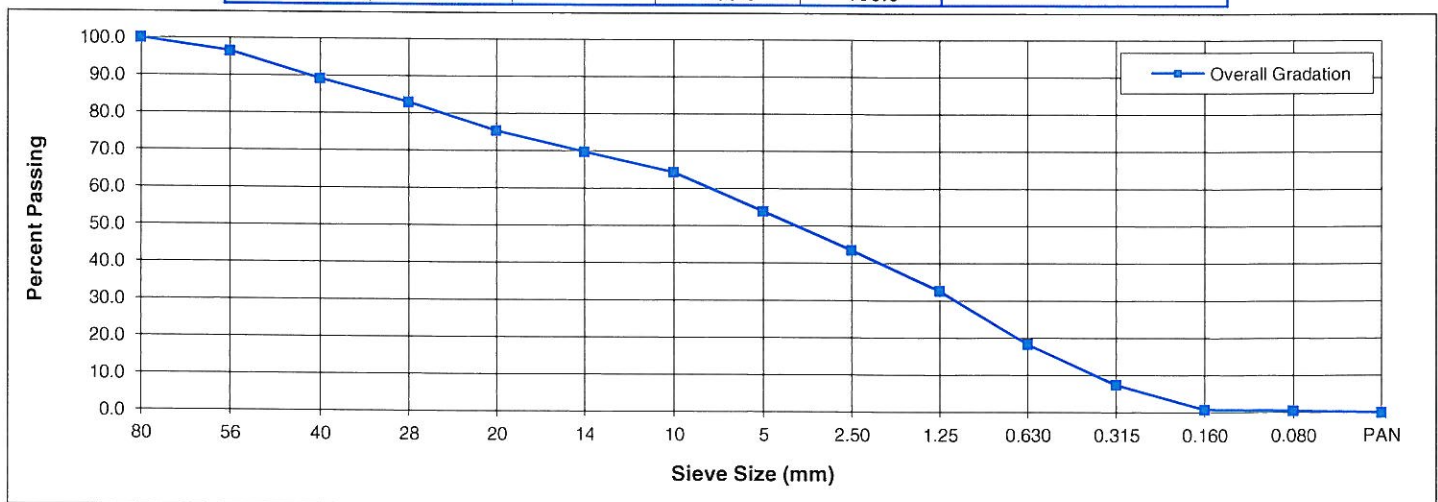
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	39.6 - 41.1 m (130 - 135 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	3.5	96.5	7.6		
40	7.3	89.2	15.8		
28	6.3	82.9	13.7		
20	7.5	75.4	16.4		
14	5.6	69.8	12.1		
10	5.5	64.3	11.9		
5	10.4	54.0	22.5		
2.50	10.4	43.5		19.4	
1.25	10.9	32.7		20.1	
0.630	14.3	18.4		26.4	
0.315	10.9	7.5		20.3	
0.160	6.6	0.8		12.3	
0.080	0.3	0.5		0.5	
PAN	0.5	0		1.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.09

Reported by: I. Chung

Reviewed by: B. Hudson

B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

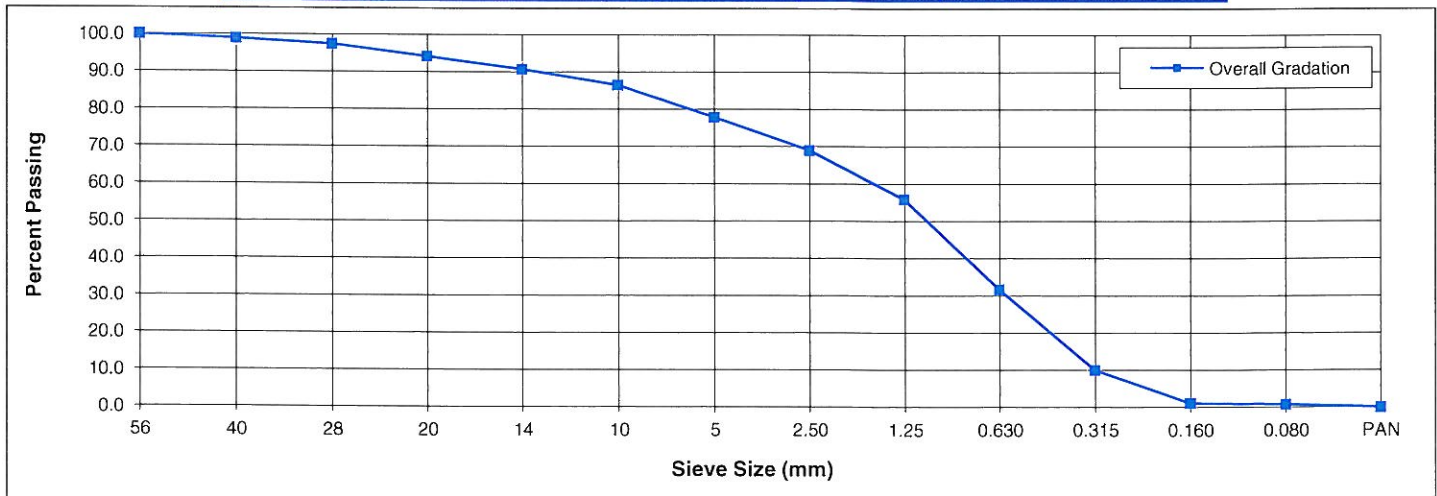
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	41.1 - 42.7 m (135 - 140 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	1.2	98.8	5.2		
28	1.4	97.4	6.5		
20	3.3	94.1	15.1		
14	3.4	90.6	15.5		
10	4.2	86.5	19.0		
5	8.6	77.9	38.8		
2.50	8.9	69.0		11.4	
1.25	13.1	55.9		16.8	
0.630	24.2	31.7		31.1	
0.315	21.7	10.0		27.8	
0.160	8.9	1.1		11.4	
0.080	0.3	0.8		0.4	
PAN	0.8	0		1.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.85

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 19, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

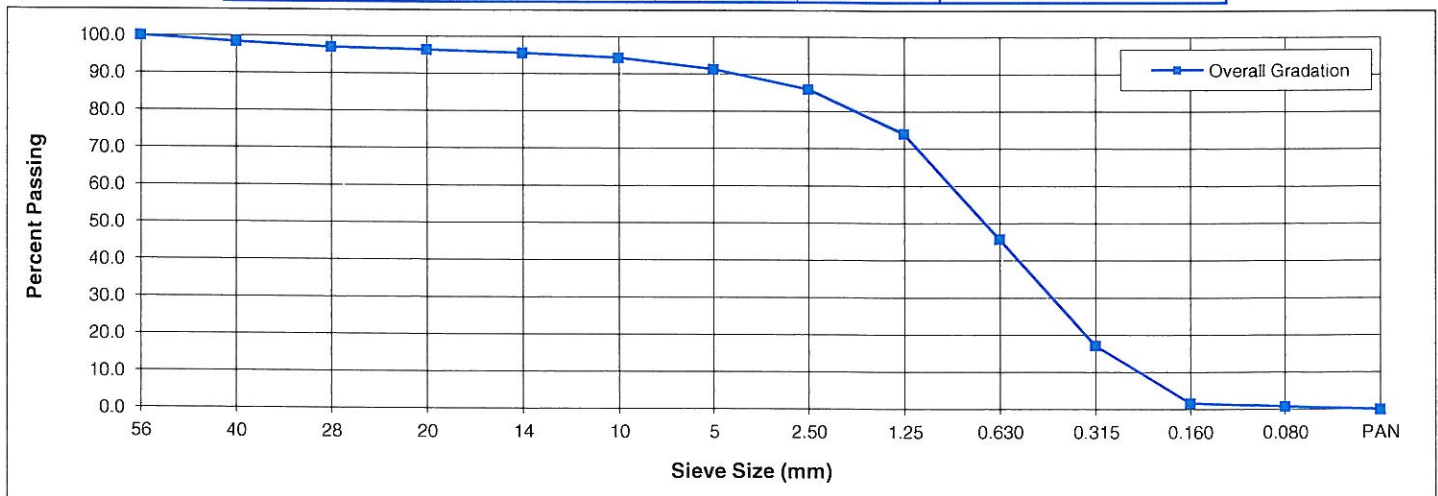
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 02
Depth Range	42.7 - 44.2 m (140 - 145 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	1.6	98.4	18.7		
28	1.4	97.0	15.6		
20	0.6	96.4	7.0		
14	0.9	95.5	9.7		
10	1.2	94.3	14.0		
5	3.1	91.3	35.0		
2.50	5.3	85.9		5.8	
1.25	11.8	74.1		13.0	
0.630	28.3	45.8		31.0	
0.315	28.6	17.2		31.4	
0.160	15.5	1.6		17.0	
0.080	0.8	0.8		0.9	
PAN	0.8	0		0.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.54

Reported by: I. Chung

Reviewed by: 

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

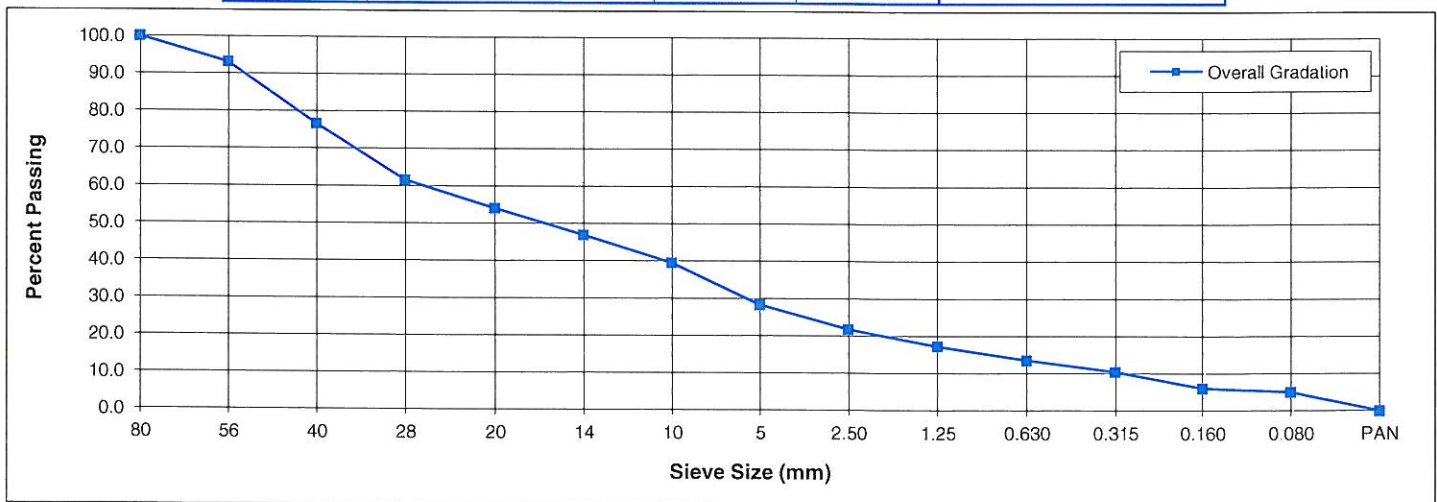
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	1.5 - 3.0 m (5 - 10 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.9	93.1	9.6		
40	16.5	76.6	23.0		
28	15.0	61.6	21.0		
20	7.6	54.0	10.6		
14	7.1	46.9	9.9		
10	7.4	39.5	10.3		
5	11.2	28.3	15.6		
2.50	6.5	21.8		23.0	
1.25	4.5	17.3		16.0	
0.630	3.8	13.5		13.3	
0.315	3.1	10.4		10.8	
0.160	4.4	6.0		15.7	
0.080	1.0	5.0		3.5	
PAN	5.0	0		17.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.56

Reported by: I.Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

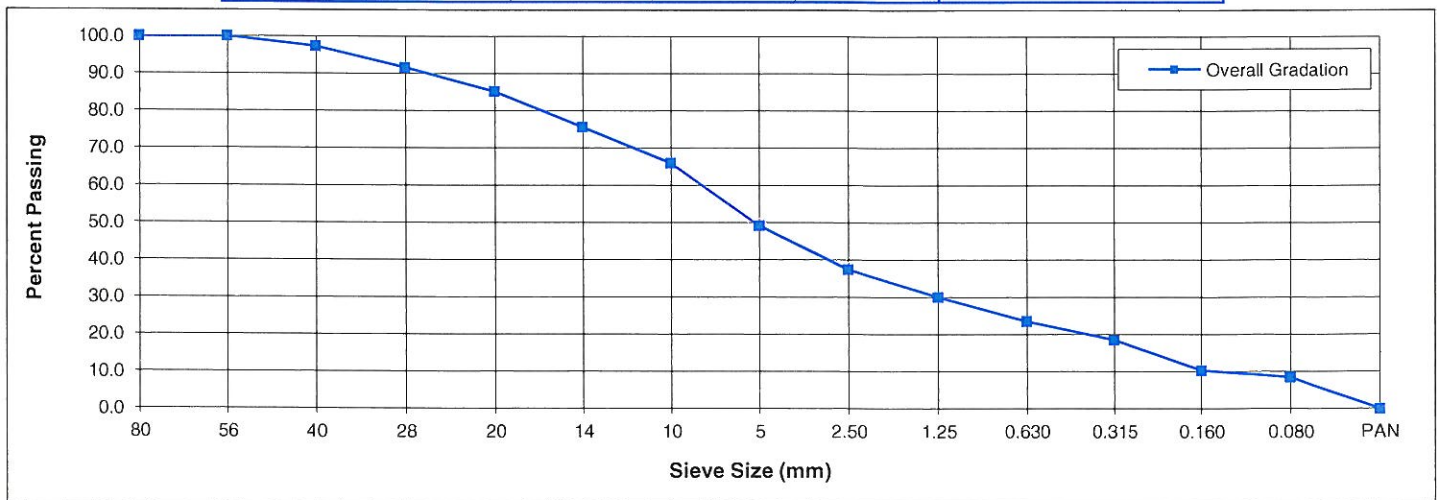
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	3.0 - 4.6 m (10 - 15 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	0.0	100.0	0.0		
40	2.7	97.3	5.3		
28	5.7	91.6	11.3		
20	6.4	85.2	12.6		
14	9.6	75.6	18.9		
10	9.6	66.0	19.0		
5	16.7	49.2	33.0		
2.50	11.8	37.5		23.9	
1.25	7.4	30.0		15.1	
0.630	6.5	23.5		13.2	
0.315	5.0	18.5		10.2	
0.160	8.2	10.3		16.6	
0.080	1.8	8.5		3.8	
PAN	8.5	0		17.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.57

Reported by: I.Chung

Reviewed by: B. Hudson

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

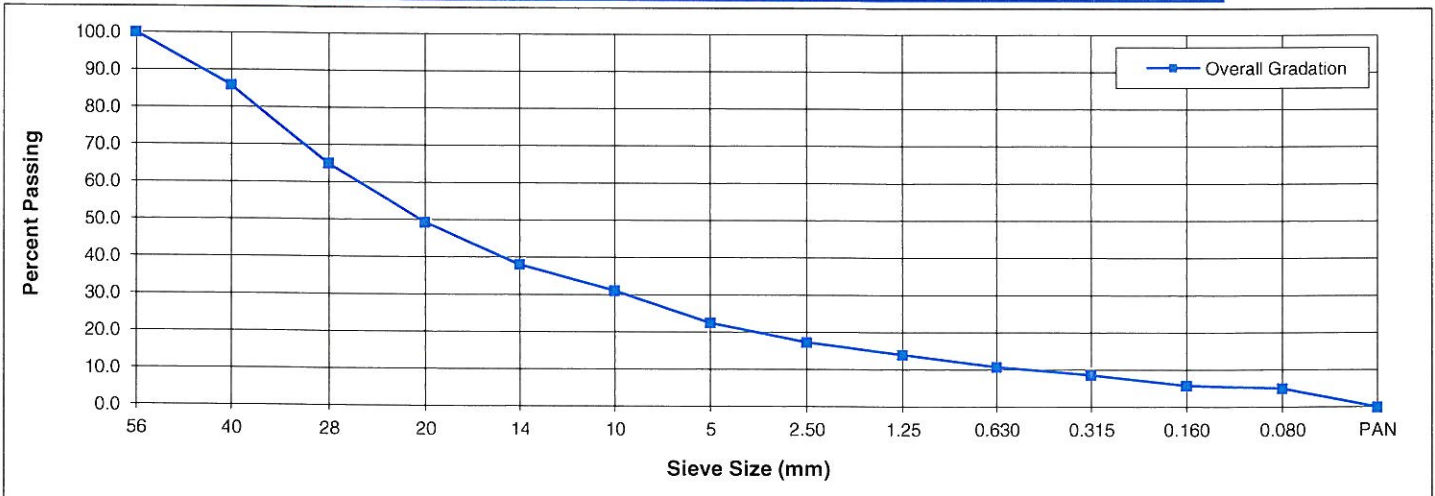
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	4.6 - 6.1 m (15 - 20 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	14.1	85.9	18.2		
28	20.9	65.0	26.9		
20	15.7	49.3	20.3		
14	11.2	38.0	14.5		
10	7.0	31.0	9.0		
5	8.6	22.4	11.1		
2.50	5.1	17.3		22.8	
1.25	3.3	14.0		14.7	
0.630	3.2	10.8		14.4	
0.315	2.2	8.6		9.7	
0.160	2.9	5.8		12.7	
0.080	0.8	5.0		3.5	
PAN	5.0	0		22.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.48

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	6.1 - 9.1 m (20 - 30 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	8.2	91.8	12.1		
40	10.6	81.2	15.6		
28	9.0	72.2	13.3		
20	10.2	62.0	15.0		
14	9.1	53.0	13.4		
10	8.1	44.9	11.9		
5	12.7	32.2	18.8		
2.50	9.2	22.9		28.7	
1.25	6.7	16.2		20.9	
0.630	5.2	11.0		16.1	
0.315	3.7	7.3		11.6	
0.160	2.3	5.0		7.1	
0.080	1.5	3.5		4.8	
PAN	3.5	0		10.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.06

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

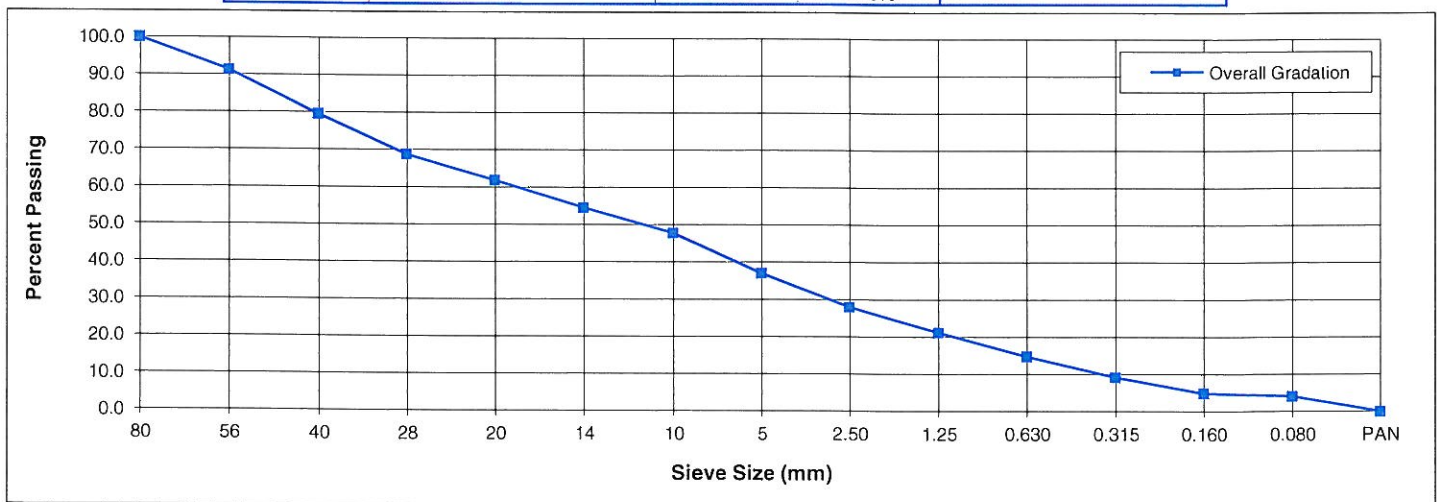
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	9.1 - 10.7 m (30 - 35 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	8.7	91.3	13.9		
40	11.7	79.5	18.6		
28	10.7	68.8	17.1		
20	6.9	61.8	11.0		
14	7.3	54.5	11.6		
10	6.8	47.8	10.7		
5	10.7	37.0	17.1		
2.50	9.0	28.0		24.4	
1.25	6.8	21.2		18.3	
0.630	6.4	14.8		17.4	
0.315	5.6	9.1		15.2	
0.160	4.3	4.9		11.5	
0.080	0.8	4.1		2.2	
PAN	4.1	0		11.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.89

Reported by: I. Chung

Reviewed by: B. Hudson

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

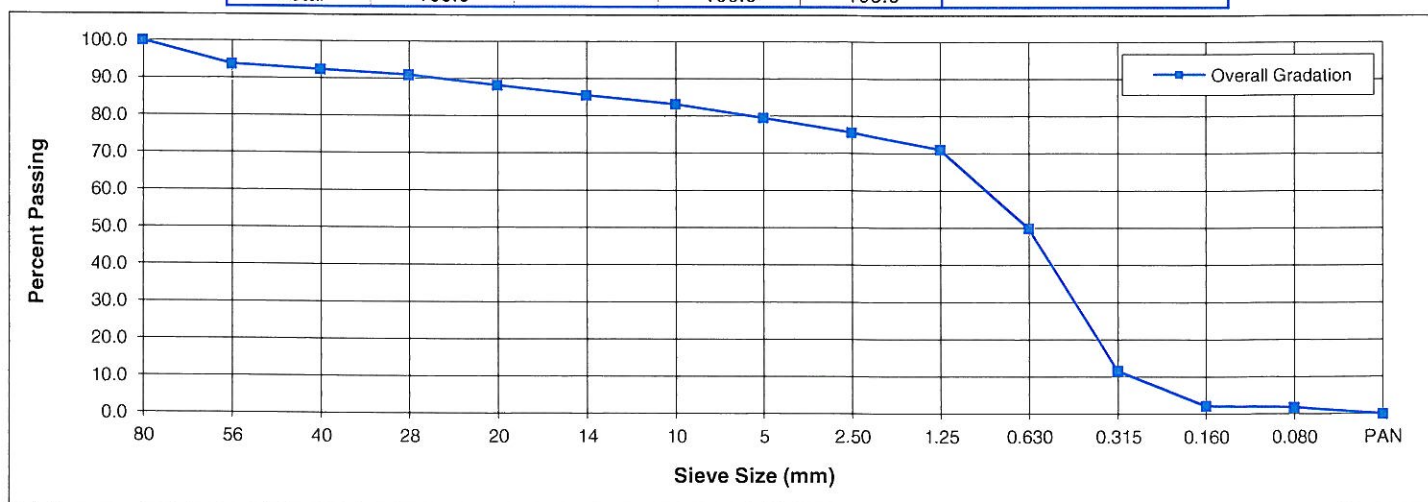
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	10.7 - 12.2 m (35 - 40 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.4	93.6	30.9		
40	1.4	92.3	6.6		
28	1.4	90.9	6.8		
20	2.7	88.2	13.3		
14	2.7	85.5	13.0		
10	2.4	83.1	11.6		
5	3.7	79.5	17.8		
2.50	3.8	75.6		4.8	
1.25	4.6	71.1		5.8	
0.630	21.1	49.9		26.6	
0.315	38.3	11.6		48.2	
0.160	9.4	2.2		11.8	
0.080	0.4	1.8		0.5	
PAN	1.8	0		2.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.35

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 22, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

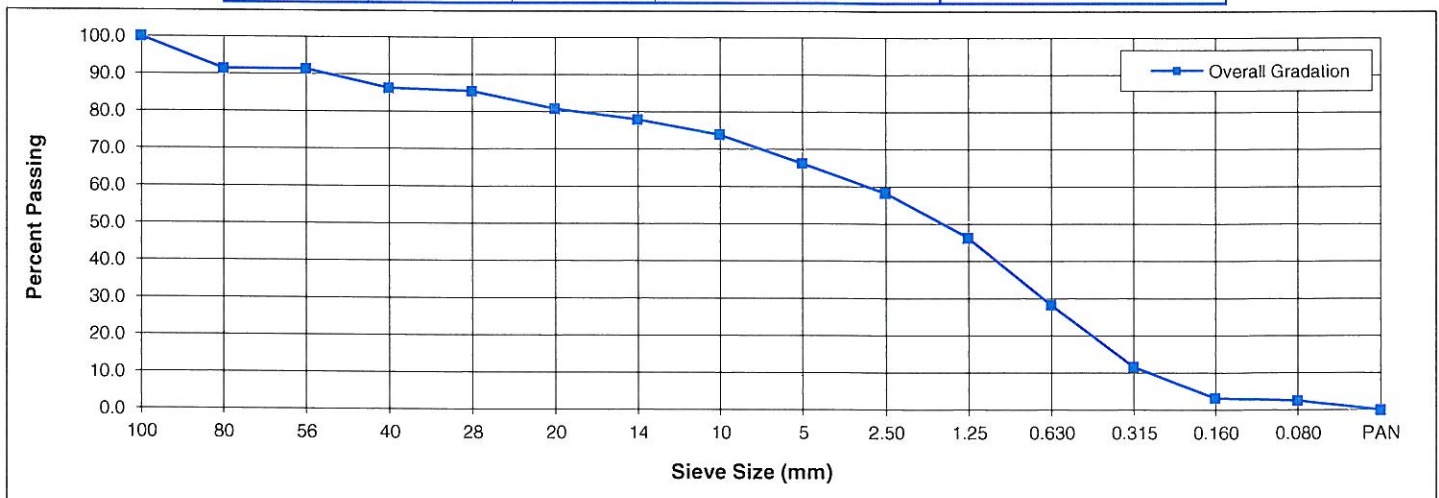
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	12.2 - 13.7 m (40 - 45 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	8.6	91.4	25.6		
56	0.0	91.4	0.0		
40	5.1	86.3	15.2		
28	0.8	85.5	2.3		
20	4.7	80.8	13.9		
14	2.9	77.9	8.5		
10	4.0	73.9	11.9		
5	7.7	66.3	22.8		
2.50	7.9	58.4		11.9	
1.25	12.0	46.3		18.2	
0.630	18.0	28.3		27.2	
0.315	16.7	11.6		25.2	
0.160	8.4	3.2		12.7	
0.080	0.7	2.5		1.0	
PAN	2.5	0		3.8	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.77

Reported by: I. Chung

Reviewed by: 
 B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

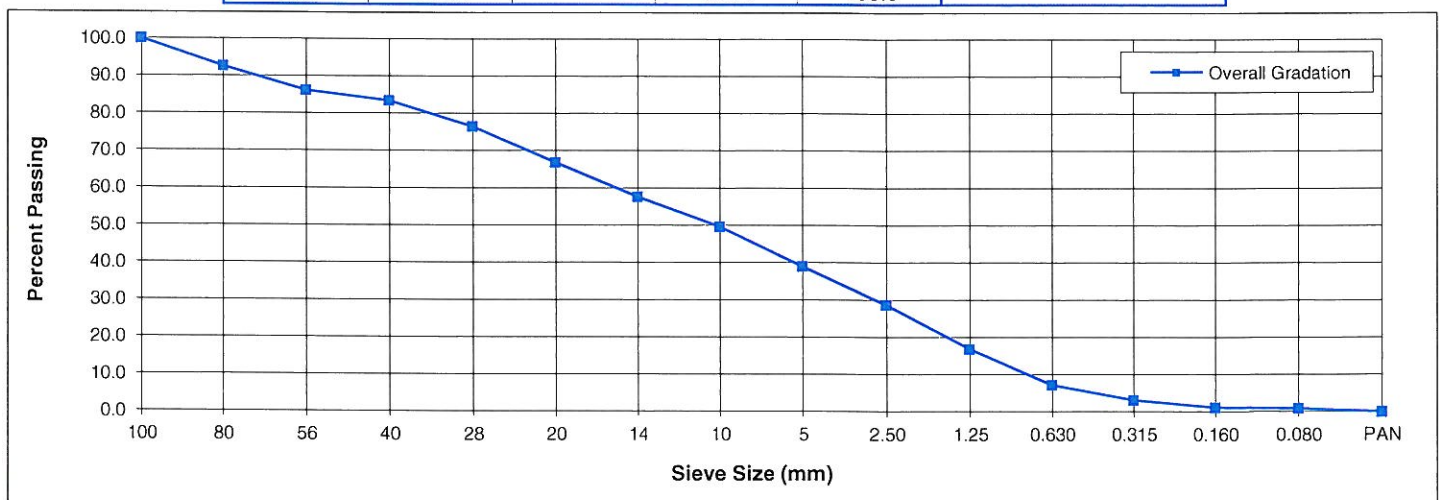
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	13.7 - 15.2 m (45 - 50 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	7.4	92.6	12.2		
56	6.4	86.1	10.5		
40	2.7	83.4	4.5		
28	6.9	76.5	11.4		
20	9.6	66.9	15.7		
14	9.2	57.6	15.1		
10	8.0	49.6	13.1		
5	10.6	39.0	17.4		
2.50	10.4	28.6		26.6	
1.25	11.8	16.8		30.3	
0.630	9.6	7.2		24.7	
0.315	4.0	3.1		10.3	
0.160	2.0	1.2		5.1	
0.080	0.3	0.9		0.7	
PAN	0.9	0		2.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.54

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

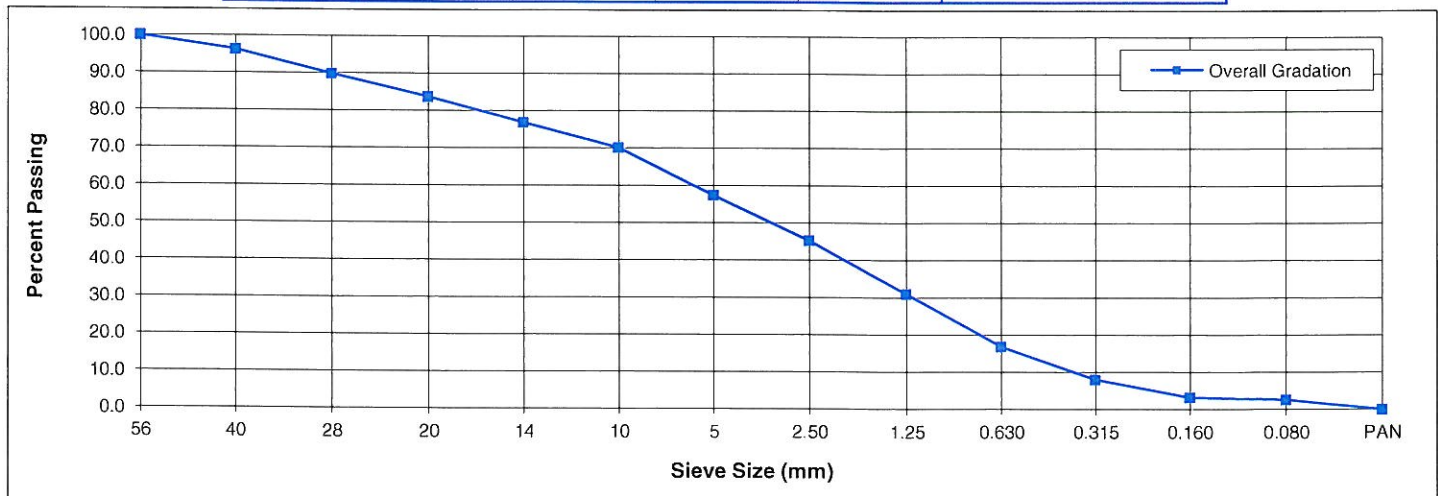
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	15.2 - 16.8 m (50 - 55 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
56	0.0	100.0	0.0		
40	3.8	96.2	8.9		
28	6.4	89.8	15.1		
20	6.1	83.7	14.4		
14	6.8	76.8	16.0		
10	6.7	70.1	15.8		
5	12.7	57.4	29.8		
2.50	12.1	45.3		21.2	
1.25	14.3	31.0		24.8	
0.630	14.1	16.9		24.6	
0.315	8.8	8.0		15.4	
0.160	4.8	3.2		8.3	
0.080	0.6	2.6		1.1	
PAN	2.6	0		4.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.18

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

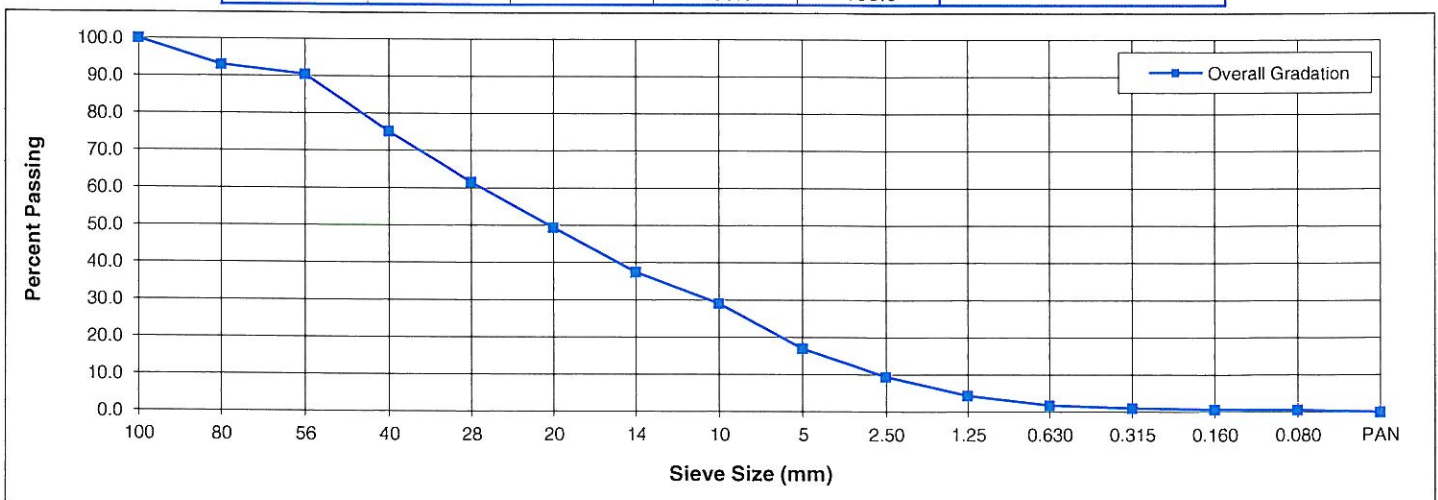
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	16.8 - 18.3 m (55 - 60 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	7.0	93.0	8.5		
56	2.5	90.4	3.1		
40	15.3	75.1	18.4		
28	13.5	61.6	16.3		
20	12.2	49.4	14.7		
14	11.9	37.5	14.4		
10	8.4	29.1	10.1		
5	12.1	17.0	14.6		
2.50	7.5	9.5		44.1	
1.25	5.1	4.4		29.9	
0.630	2.6	1.8		15.3	
0.315	0.7	1.1		4.4	
0.160	0.3	0.7		2.0	
0.080	0.1	0.6		0.4	
PAN	0.6	0		3.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.97

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

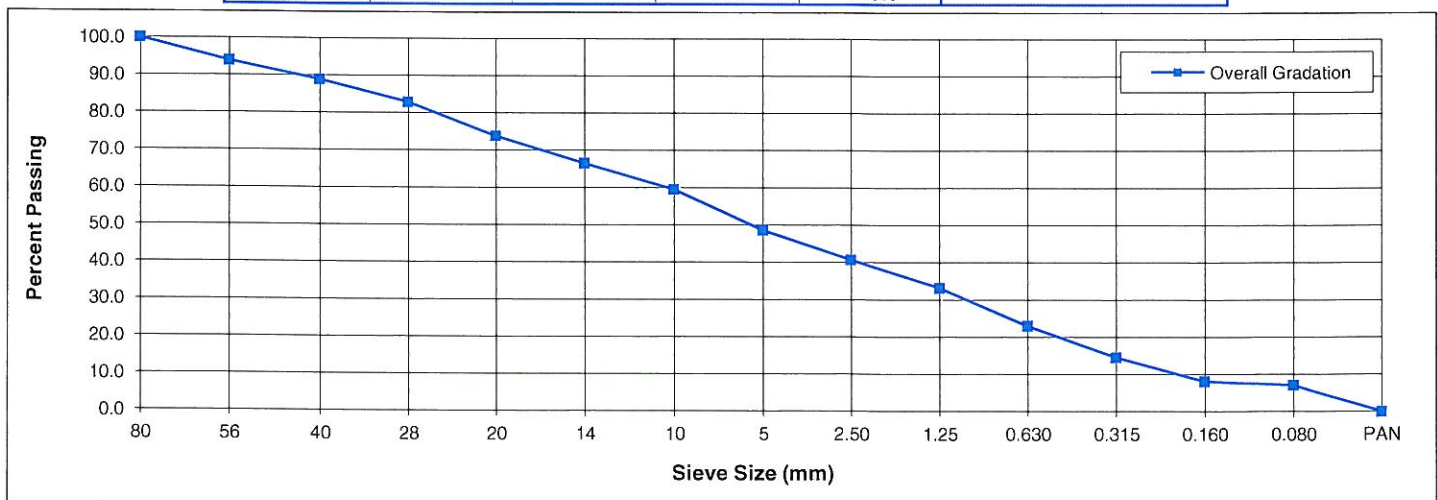
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	18.3 - 19.8 m (60 - 65 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.1	93.9	11.9		
40	5.0	88.9	9.8		
28	6.0	82.8	11.7		
20	9.0	73.8	17.6		
14	7.3	66.6	14.1		
10	7.0	59.5	13.7		
5	10.9	48.6	21.2		
2.50	7.9	40.7		16.3	
1.25	7.5	33.2		15.4	
0.630	10.2	23.0		20.9	
0.315	8.5	14.5		17.4	
0.160	6.4	8.2		13.1	
0.080	1.0	7.1		2.2	
PAN	7.1	0		14.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.54

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

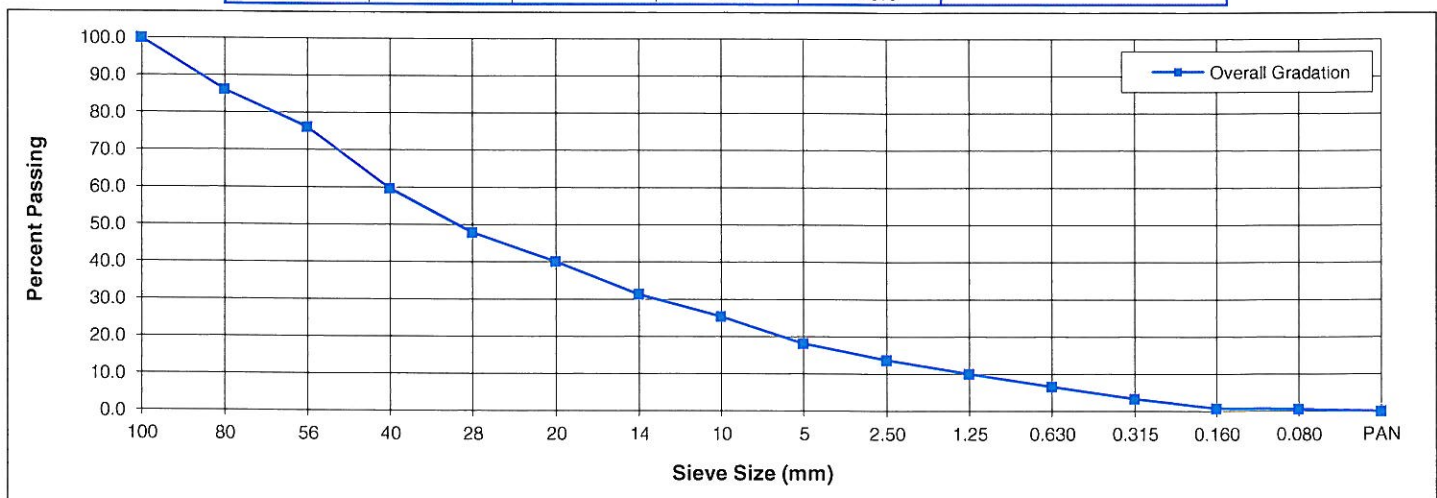
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	19.8 - 21.3 m (65 - 70 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	13.9	86.1	16.9		
56	10.0	76.2	12.2		
40	16.4	59.7	20.1		
28	11.8	47.9	14.4		
20	7.8	40.1	9.5		
14	8.7	31.4	10.7		
10	6.0	25.4	7.3		
5	7.2	18.2	8.9		
2.50	4.4	13.8		24.3	
1.25	3.7	10.1		20.1	
0.630	3.4	6.7		18.9	
0.315	3.3	3.4		18.1	
0.160	2.6	0.8		14.1	
0.080	0.2	0.6		1.1	
PAN	0.6	0		3.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.09

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

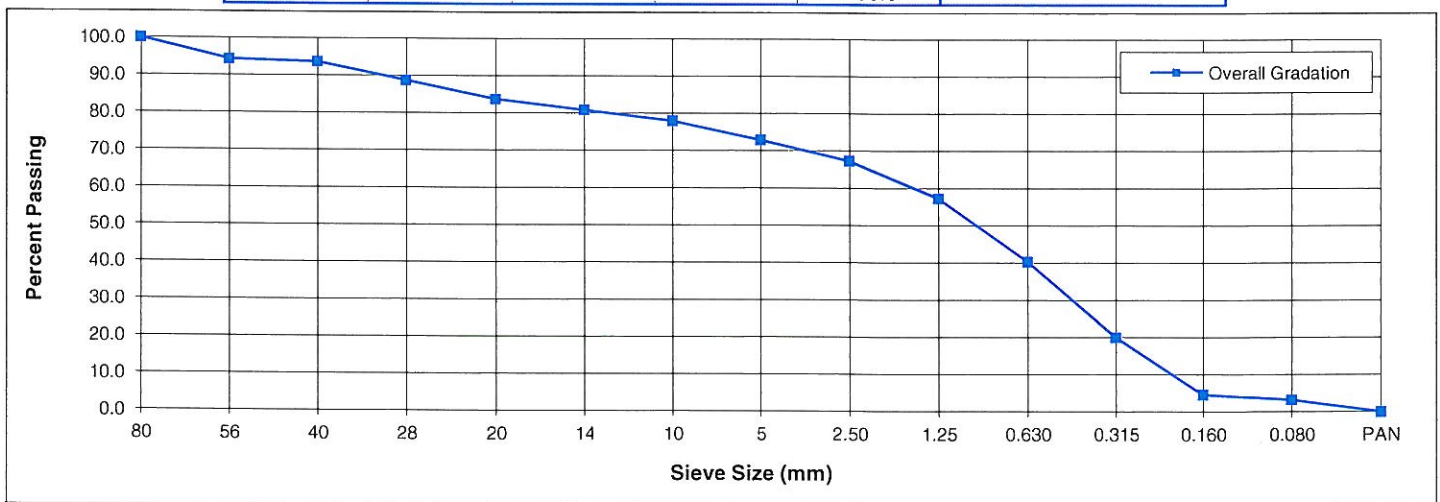
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	22.9 - 24.4 m (75 - 80 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.7	94.3	21.0		
40	0.7	93.6	2.7		
28	4.9	88.7	18.1		
20	5.0	83.7	18.3		
14	2.9	80.8	10.7		
10	2.8	78.0	10.5		
5	5.1	72.9	18.8		
2.50	5.6	67.3		7.7	
1.25	10.0	57.3		13.7	
0.630	17.0	40.3		23.3	
0.315	20.4	20.0		27.9	
0.160	15.3	4.6		21.1	
0.080	1.4	3.2		2.0	
PAN	3.2	0		4.4	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.40

Reported by: I. Chung

Reviewed by: 

B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

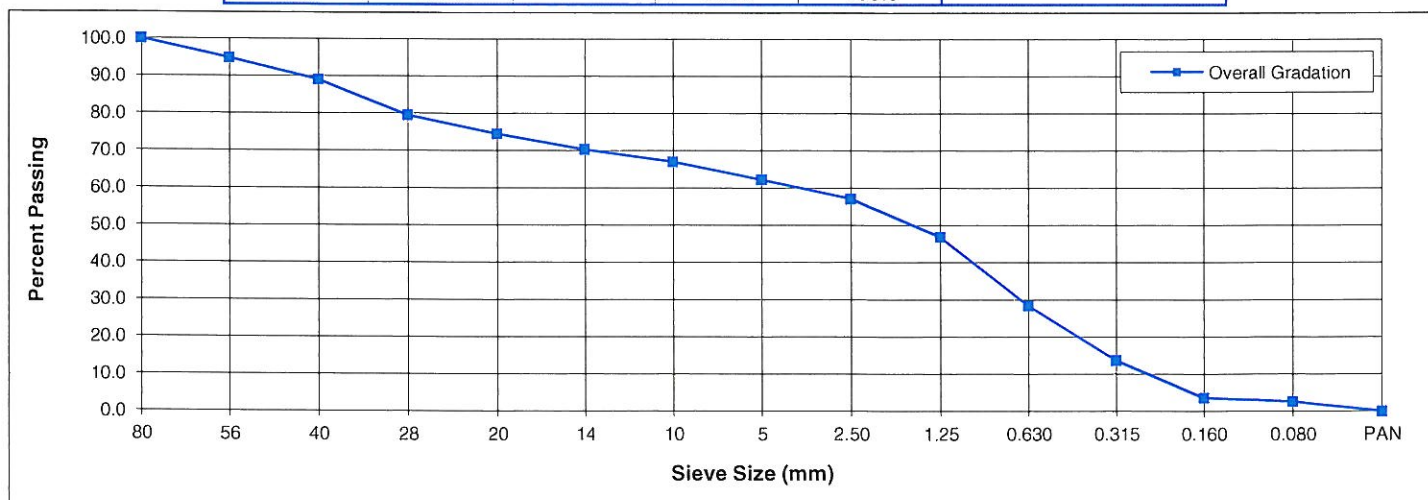
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	24.4 - 25.9 m (80 - 85 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.2	94.8	13.8		
40	5.8	89.0	15.2		
28	9.5	79.5	25.2		
20	5.0	74.5	13.3		
14	4.2	70.3	11.1		
10	3.3	67.0	8.8		
5	4.8	62.2	12.6		
2.50	5.1	57.1		8.3	
1.25	10.2	46.9		16.4	
0.630	18.5	28.4		29.7	
0.315	14.7	13.7		23.6	
0.160	10.1	3.7		16.2	
0.080	1.1	2.6		1.7	
PAN	2.6	0		4.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.59

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 22, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

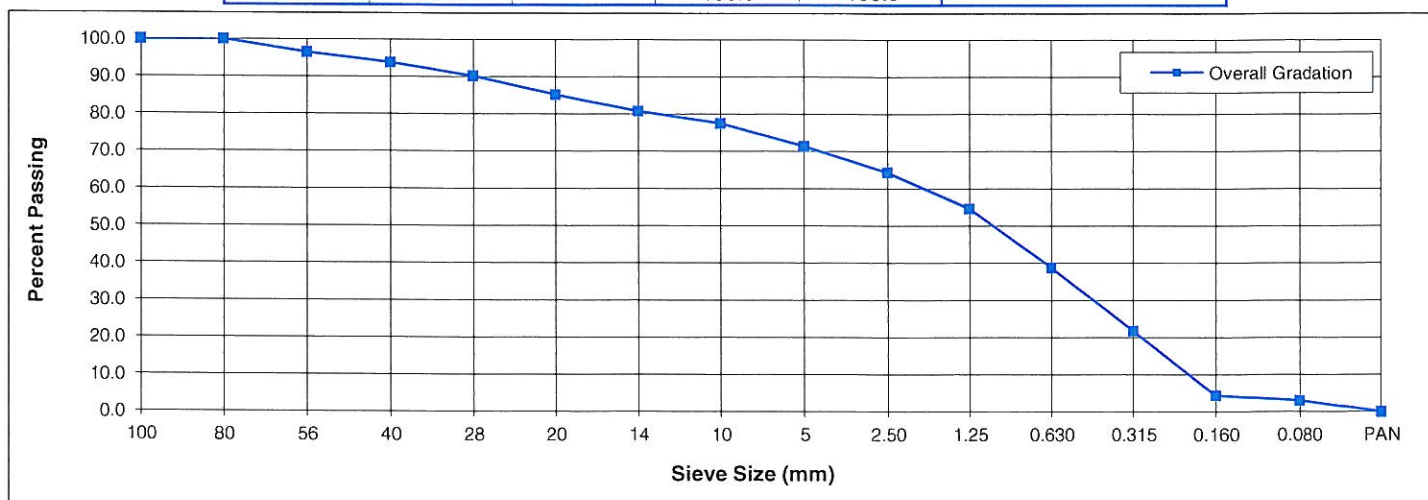
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	25.9 - 27.4 m (85 - 90 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	0.0	100.0	0.0		
56	3.5	96.5	12.3		
40	2.7	93.8	9.5		
28	3.6	90.2	12.4		
20	5.0	85.2	17.6		
14	4.4	80.8	15.3		
10	3.3	77.5	11.4		
5	6.1	71.4	21.4		
2.50	7.0	64.4		9.8	
1.25	9.8	54.6		13.7	
0.630	15.8	38.8		22.2	
0.315	17.0	21.8		23.8	
0.160	17.4	4.4		24.3	
0.080	1.4	3.0		1.9	
PAN	3.0	0		4.2	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.42

Reported by: I. Chung

Reviewed by: B. Hudson
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 22, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

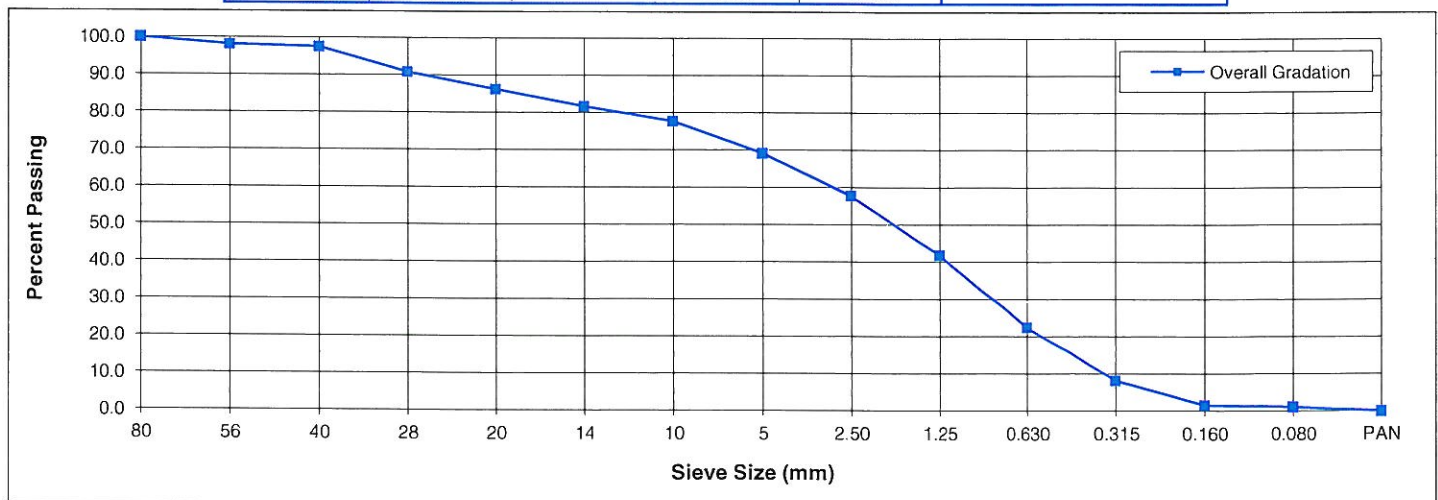
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	27.4 - 29.0 m (90 - 95 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	2.0	98.0	6.3		
40	0.6	97.5	1.9		
28	6.7	90.7	21.8		
20	4.5	86.2	14.6		
14	4.6	81.7	14.8		
10	4.0	77.7	13.0		
5	8.5	69.1	27.6		
2.50	11.4	57.8		16.4	
1.25	15.9	41.8		23.0	
0.630	19.4	22.5		28.0	
0.315	14.3	8.2		20.6	
0.160	6.6	1.6		9.6	
0.080	0.5	1.1		0.7	
PAN	1.1	0		1.6	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.09

Reported by: I. Chung

Reviewed by: B. Hudson
 B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 22, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

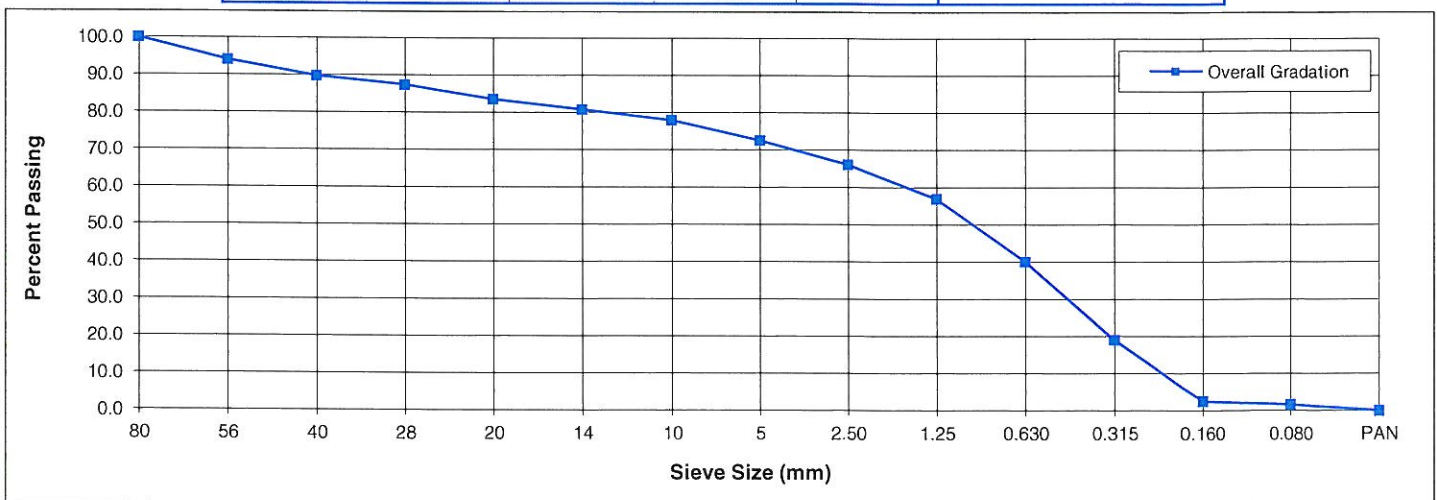
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	29.0 - 30.5 m (95 - 100 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 18, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.0	94.0	21.8		
40	4.3	89.7	15.6		
28	2.4	87.4	8.6		
20	3.8	83.6	13.9		
14	2.8	80.8	10.0		
10	2.8	78.0	10.3		
5	5.5	72.5	19.9		
2.50	6.4	66.1		8.8	
1.25	9.1	57.0		12.6	
0.630	16.9	40.1		23.3	
0.315	21.0	19.1		29.0	
0.160	16.5	2.6		22.8	
0.080	0.9	1.7		1.2	
PAN	1.7	0		2.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.45

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

July 16, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

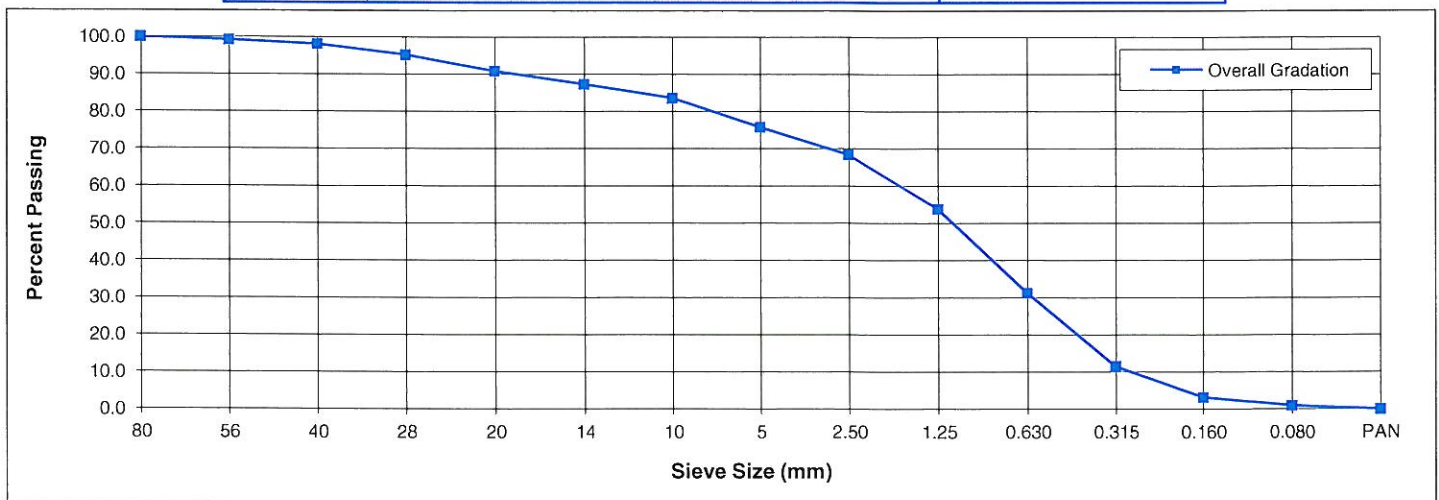
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 05
Depth Range	30.5 - 33.5 m (100 - 110 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	0.8	99.2	3.4		
40	1.1	98.1	4.5		
28	2.9	95.2	11.9		
20	4.4	90.8	18.0		
14	3.5	87.3	14.6		
10	3.7	83.6	15.3		
5	7.8	75.8	32.2		
2.50	7.4	68.4		9.7	
1.25	14.5	53.9		19.2	
0.630	22.6	31.2		29.9	
0.315	19.7	11.5		26.0	
0.160	8.3	3.2		10.9	
0.080	2.3	1.0		3.0	
PAN	1.0	0		1.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.78

Reported by: I. Chung

Reviewed by: *B. Hudson*
 B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

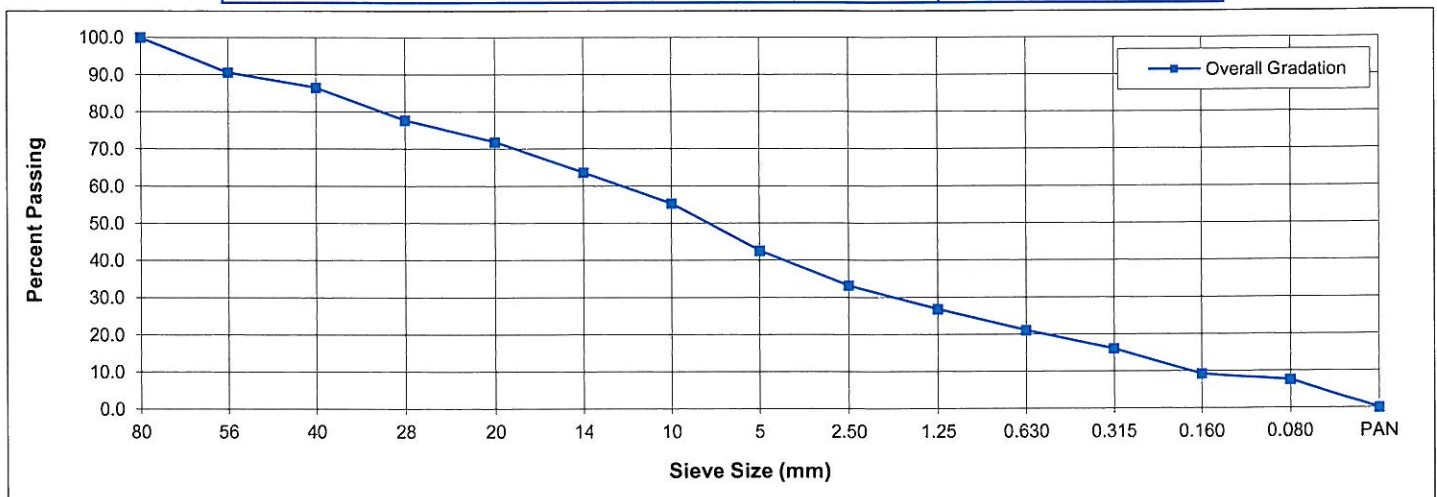
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	1.5 - 3.0 m (5 - 10 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	9.4	90.6	16.4		
40	4.1	86.5	7.1		
28	8.8	77.7	15.3		
20	5.9	71.9	10.2		
14	8.2	63.7	14.3		
10	8.3	55.3	14.5		
5	12.8	42.6	22.2		
2.50	9.4	33.2		22.0	
1.25	6.4	26.8		15.0	
0.630	5.8	21.1		13.6	
0.315	5.0	16.1		11.7	
0.160	6.9	9.2		16.1	
0.080	1.6	7.6		3.8	
PAN	7.6	0		17.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.50

Reported by: I. Chung

Reviewed by: B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

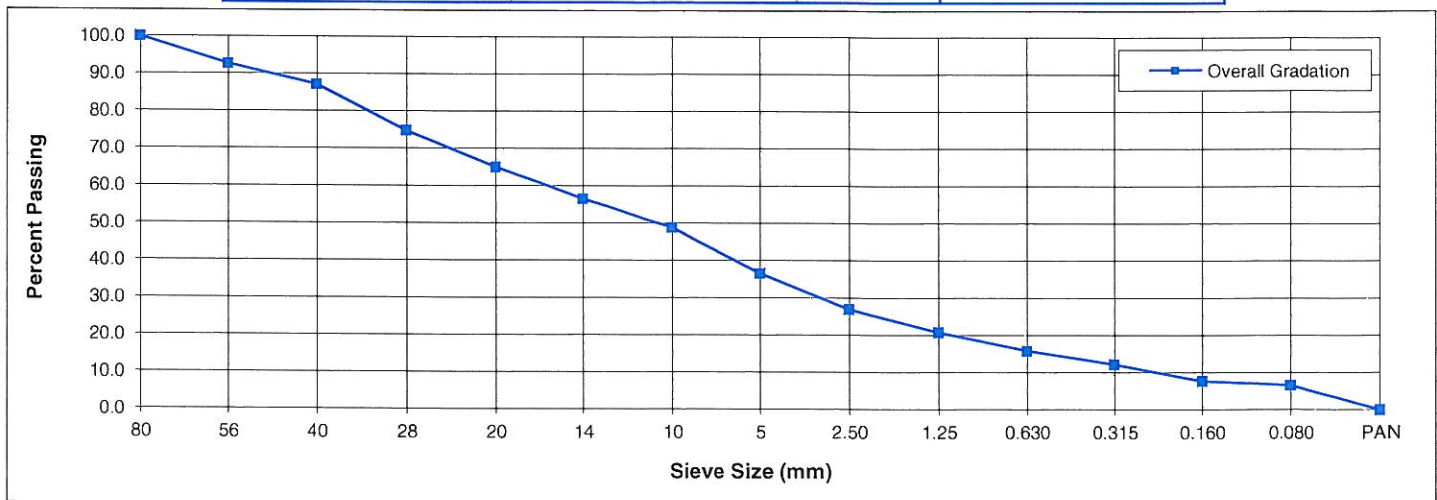
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	3.0 - 4.6 m (10 - 15 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	7.4	92.6	11.6		
40	5.5	87.1	8.7		
28	12.3	74.8	19.4		
20	9.8	65.0	15.4		
14	8.5	56.5	13.3		
10	7.7	48.9	12.1		
5	12.3	36.6	19.4		
2.50	9.6	27.0		26.2	
1.25	6.2	20.8		17.0	
0.630	5.0	15.8		13.6	
0.315	3.6	12.2		9.9	
0.160	4.5	7.7		12.2	
0.080	1.1	6.6		3.1	
PAN	6.6	0		18.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.72

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

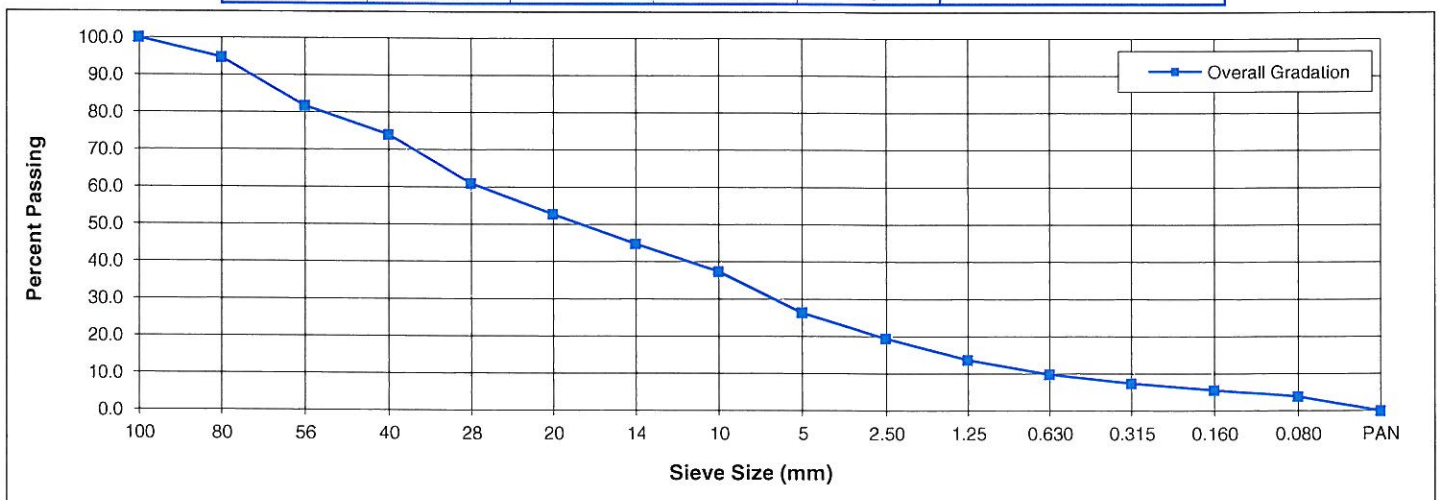
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	4.6 - 6.1 m (15 - 20 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	5.3	94.7	7.2		
56	13.0	81.7	17.6		
40	7.7	74.0	10.4		
28	13.1	61.0	17.8		
20	8.2	52.7	11.2		
14	7.9	44.8	10.7		
10	7.4	37.4	10.1		
5	11.0	26.4	15.0		
2.50	6.9	19.5		26.3	
1.25	5.7	13.7		21.7	
0.630	3.9	9.8		14.9	
0.315	2.4	7.4		8.9	
0.160	1.8	5.6		6.9	
0.080	1.7	3.9		6.6	
PAN	3.9	0		14.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.88

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

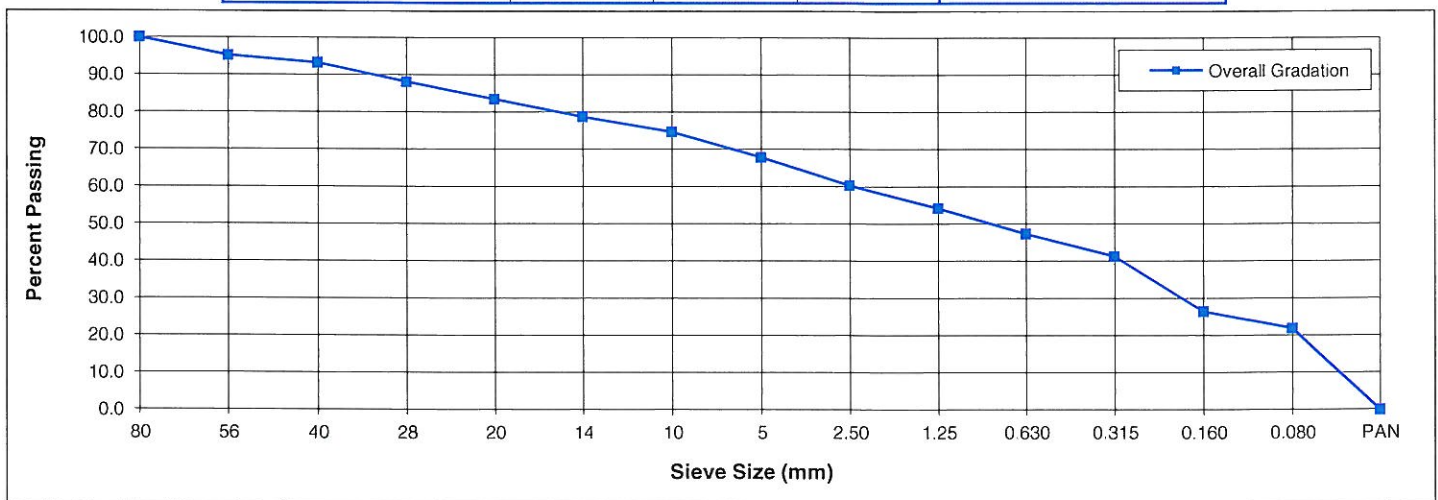
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	6.1 - 7.6 m (20 - 25 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.8	95.2	15.1		
40	1.9	93.2	6.1		
28	5.1	88.1	16.0		
20	4.6	83.5	14.3		
14	4.7	78.8	14.7		
10	4.1	74.7	12.6		
5	6.8	67.9	21.2		
2.50	7.6	60.3		11.2	
1.25	6.1	54.2		9.0	
0.630	6.8	47.4		10.0	
0.315	6.1	41.3		8.9	
0.160	14.8	26.5		21.9	
0.080	4.6	21.9		6.8	
PAN	21.9	0		32.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 1.62

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

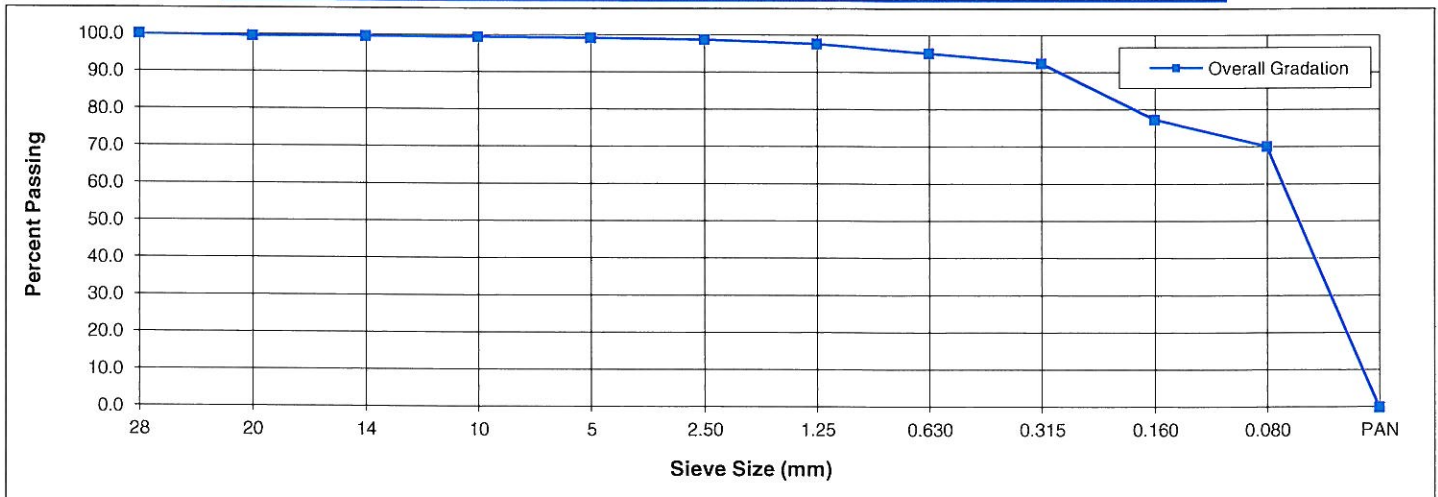
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	7.6 - 9.1 m (25 - 30 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
28	0.0	100.0	0.0		
20	0.5	99.5	56.4		
14	0.0	99.5	0.0		
10	0.2	99.3	17.3		
5	0.2	99.1	26.4		
2.50	0.4	98.7		0.4	
1.25	1.1	97.6		1.1	
0.630	2.5	95.1		2.5	
0.315	2.7	92.4		2.7	
0.160	15.1	77.3		15.2	
0.080	7.2	70.1		7.2	
PAN	70.1	0		70.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 0.35

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

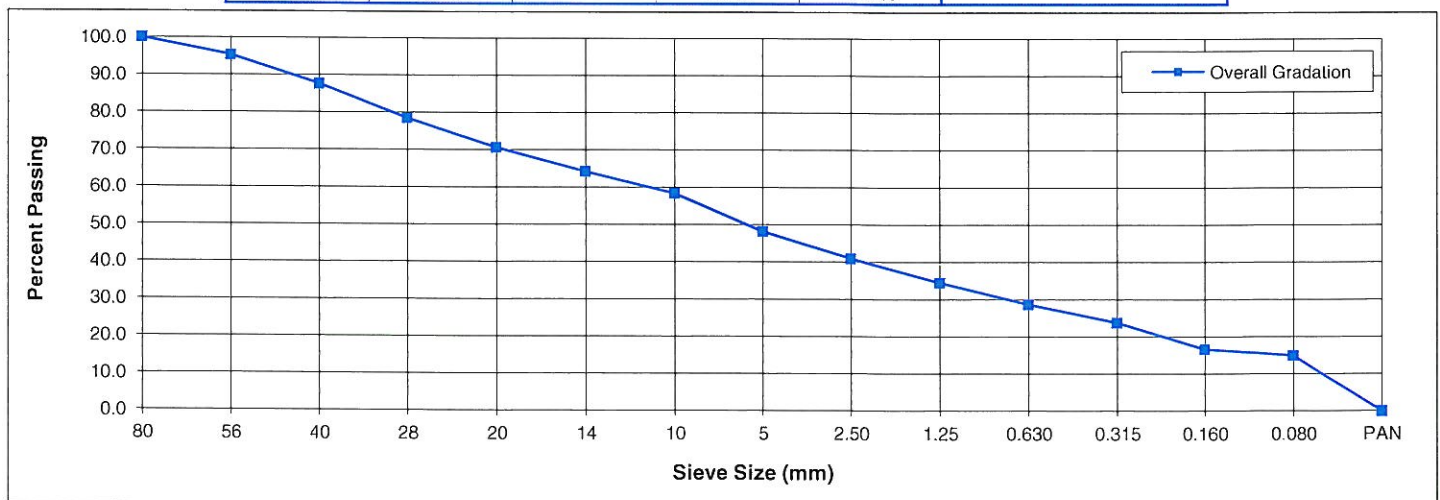
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	9.1 - 10.7 m (30 - 35 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.7	95.3	9.0		
40	7.7	87.6	14.9		
28	9.2	78.5	17.7		
20	7.8	70.6	15.1		
14	6.4	64.2	12.4		
10	5.8	58.4	11.3		
5	10.2	48.2	19.6		
2.50	7.3	40.9		15.1	
1.25	6.4	34.5		13.3	
0.630	5.9	28.7		12.2	
0.315	4.9	23.8		10.1	
0.160	7.1	16.7		14.8	
0.080	1.7	14.9		3.6	
PAN	14.9	0		30.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.00

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

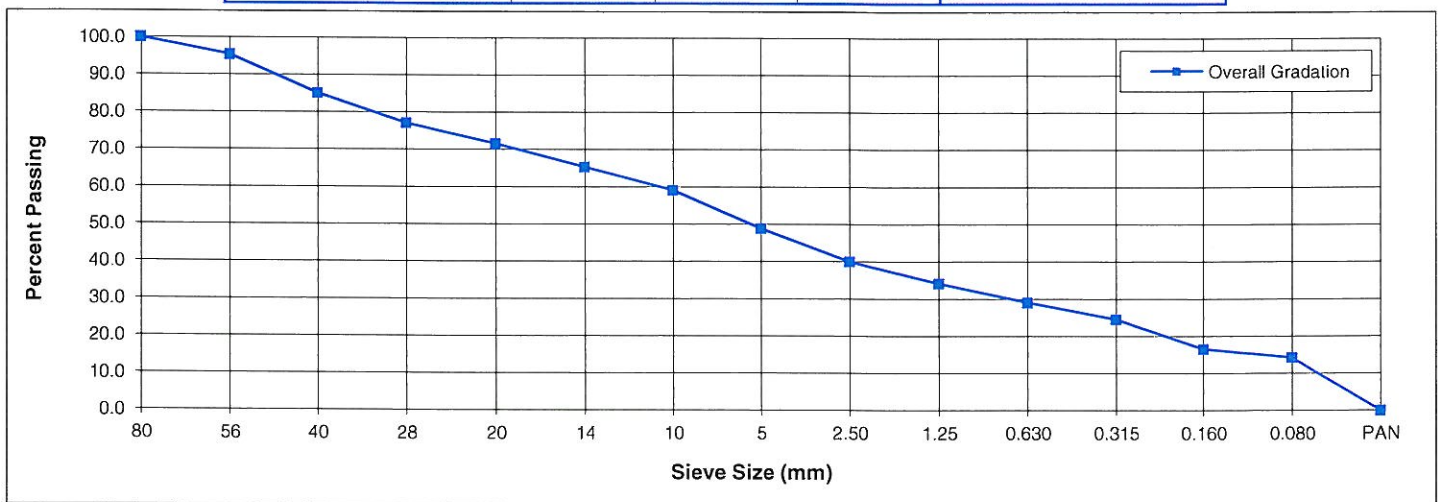
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	15.2 - 16.8 m (50 - 55 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.6	95.4	9.1		
40	10.3	85.1	20.1		
28	8.0	77.1	15.7		
20	5.5	71.5	10.8		
14	6.3	65.3	12.3		
10	6.2	59.1	12.1		
5	10.2	48.9	20.0		
2.50	8.9	40.0		18.2	
1.25	5.8	34.2		12.0	
0.630	5.1	29.1		10.4	
0.315	4.6	24.5		9.3	
0.160	8.0	16.6		16.3	
0.080	2.3	14.2		4.8	
PAN	14.2	0		29.1	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.05

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 29, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

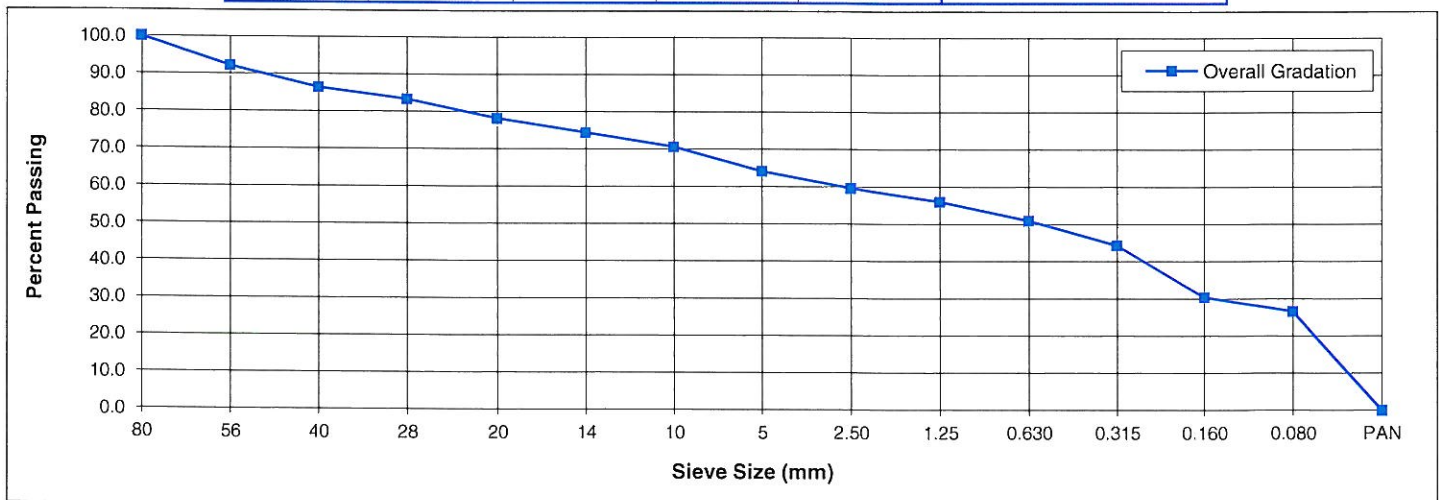
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 06
Depth Range	No Depth

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	7.8	92.2	21.8		
40	5.8	86.4	16.1		
28	3.1	83.3	8.6		
20	5.1	78.2	14.2		
14	3.8	74.4	10.5		
10	3.8	70.6	10.5		
5	6.5	64.1	18.2		
2.50	4.5	59.6		7.1	
1.25	3.6	56.0		5.6	
0.630	5.1	50.9		7.9	
0.315	6.6	44.4		10.3	
0.160	14.0	30.4		21.8	
0.080	3.7	26.6		5.8	
PAN	26.6	0		41.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 1.24

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 23, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

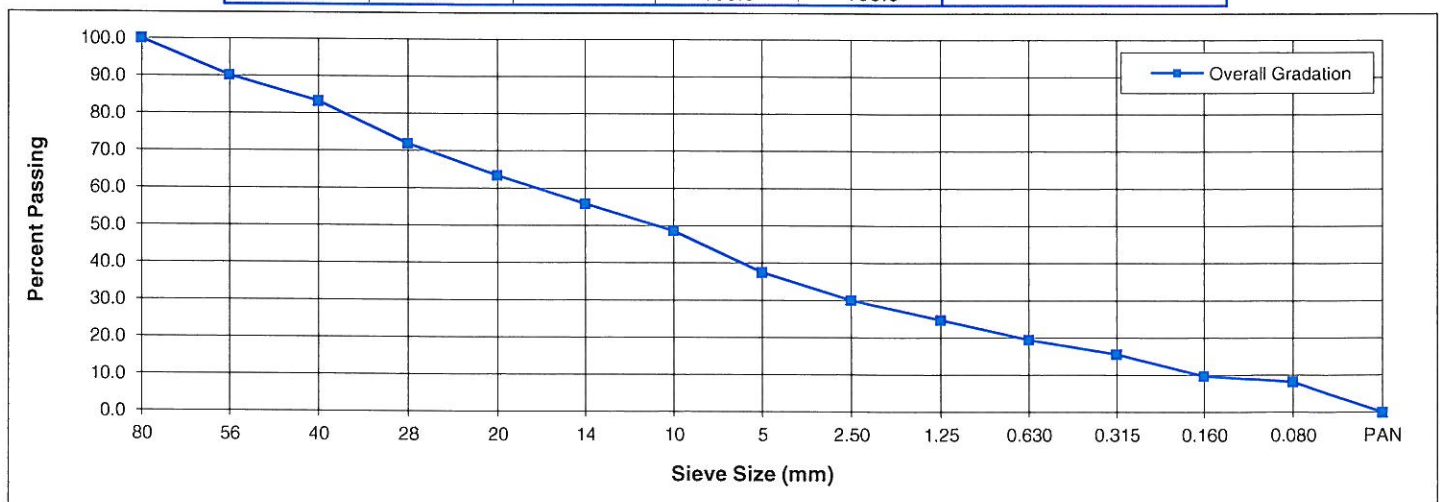
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	3.0 - 4.6 m (10 - 15 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
 TESTED BY: IC/DC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	9.9	90.1	15.8		
40	6.9	83.2	11.0		
28	11.3	71.9	18.1		
20	8.5	63.4	13.6		
14	7.6	55.8	12.2		
10	7.2	48.6	11.5		
5	11.1	37.5	17.8		
2.50	7.4	30.1		19.8	
1.25	5.3	24.8		14.0	
0.630	5.3	19.5		14.2	
0.315	3.9	15.6		10.4	
0.160	5.9	9.7		15.6	
0.080	1.5	8.2		3.9	
PAN	8.2	0		22.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.34

Reported by: D.Clemente

Reviewed by: 
 B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

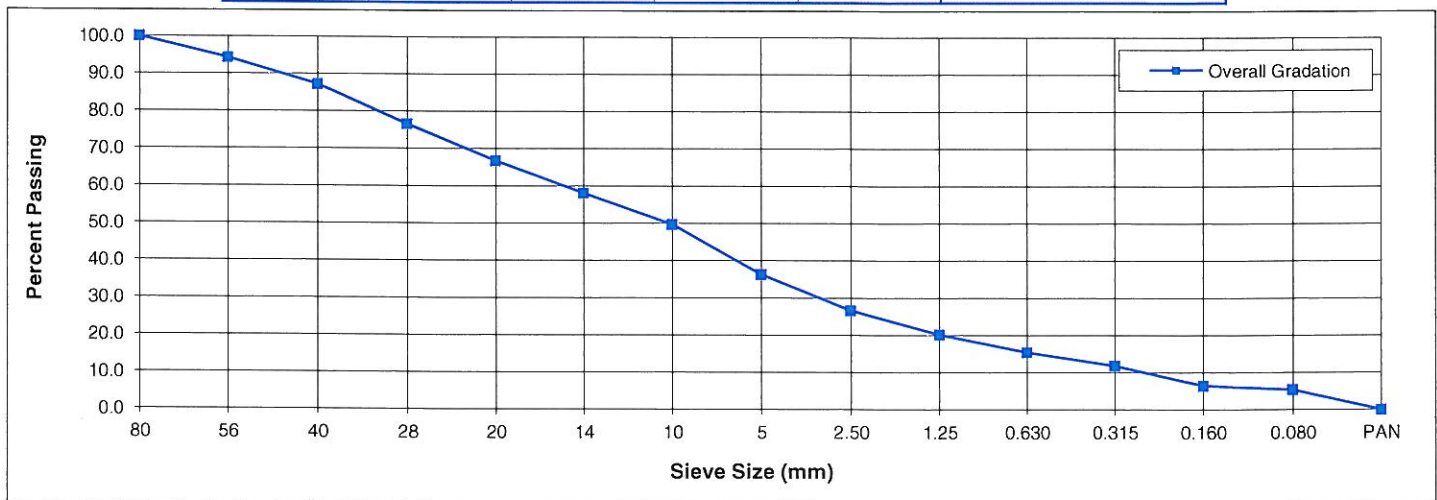
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	4.6 - 6.1 m (15 - 20 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.7	94.3	9.0		
40	7.1	87.2	11.1		
28	10.6	76.6	16.7		
20	9.8	66.7	15.4		
14	8.7	58.1	13.6		
10	8.4	49.7	13.1		
5	13.4	36.3	21.1		
2.50	9.6	26.7		26.5	
1.25	6.5	20.2		17.8	
0.630	4.7	15.4		13.1	
0.315	3.6	11.8		10.0	
0.160	5.4	6.4		14.8	
0.080	1.1	5.4		2.9	
PAN	5.4	0		14.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.78

Reported by: D.Clemente

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

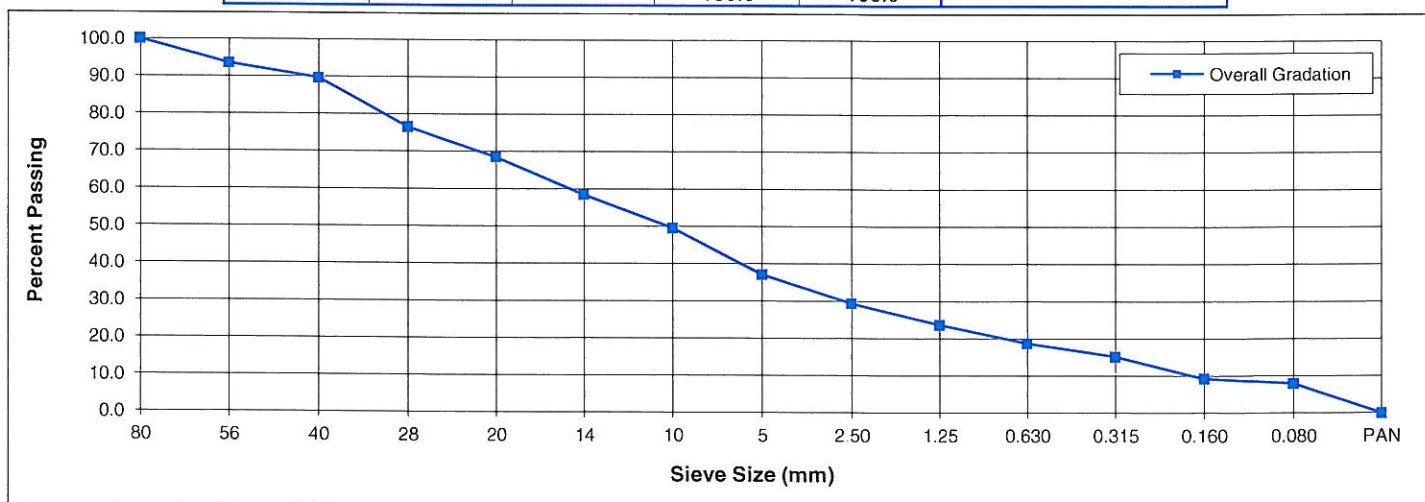
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	6.1 - 7.6 m (20 - 25 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.5	93.5	10.3		
40	3.9	89.6	6.2		
28	13.1	76.5	20.8		
20	8.0	68.5	12.7		
14	10.1	58.4	16.0		
10	8.9	49.5	14.1		
5	12.4	37.1	19.8		
2.50	7.7	29.4		20.8	
1.25	5.7	23.6		15.4	
0.630	4.9	18.7		13.3	
0.315	3.6	15.1		9.7	
0.160	5.9	9.3		15.9	
0.080	1.4	7.9		3.7	
PAN	7.9	0		21.2	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.41

Reported by: D.Clemente

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

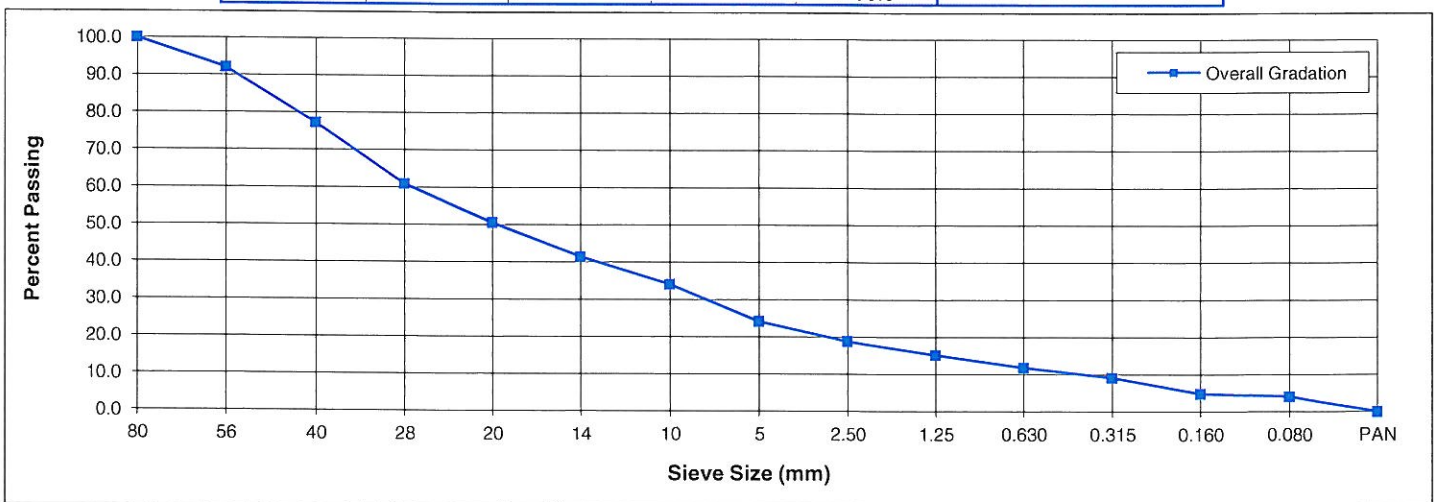
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	7.6 - 9.1 m (25 - 30 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	7.9	92.1	10.5		
40	14.8	77.3	19.5		
28	16.4	60.9	21.6		
20	10.4	50.5	13.7		
14	9.1	41.5	11.9		
10	7.4	34.1	9.8		
5	9.9	24.1	13.1		
2.50	5.3	18.8		22.1	
1.25	3.6	15.2		15.1	
0.630	3.3	11.8		13.8	
0.315	2.7	9.1		11.2	
0.160	4.3	4.8		17.9	
0.080	0.7	4.1		3.1	
PAN	4.1	0		16.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.53

Reported by: D.Clemente

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

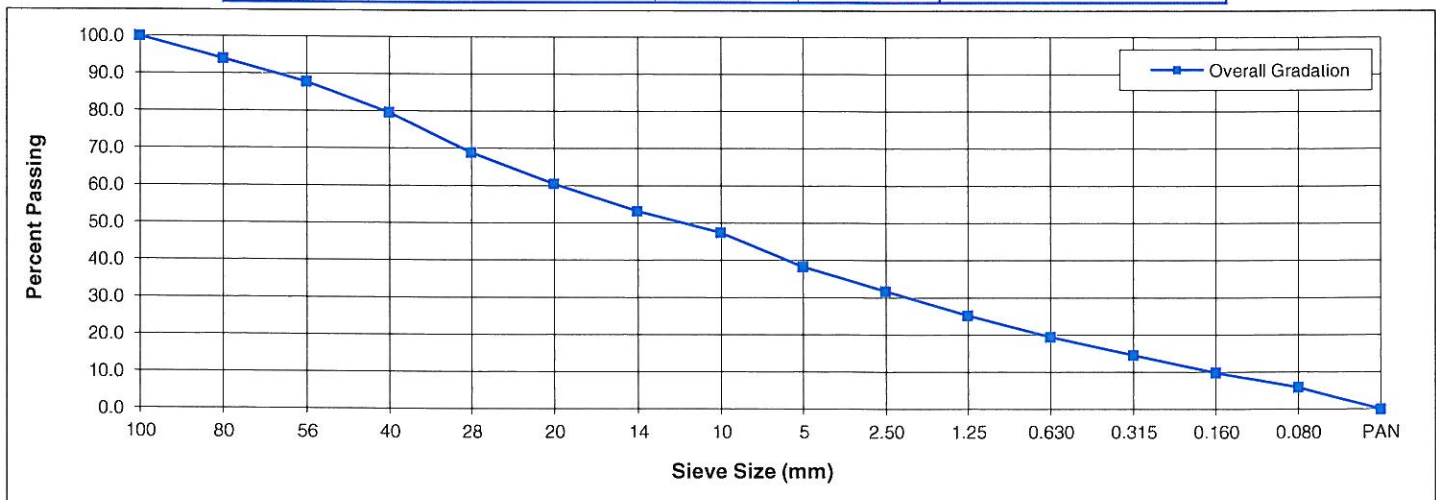
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	9.1 - 12.2 m (30 - 40 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 16, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	6.0	94.0	9.8		
56	6.2	87.8	10.0		
40	8.2	79.6	13.3		
28	10.7	68.9	17.3		
20	8.4	60.5	13.7		
14	7.3	53.2	11.8		
10	5.8	47.4	9.4		
5	9.2	38.3	14.8		
2.50	6.5	31.7		17.1	
1.25	6.5	25.2		17.0	
0.630	5.8	19.4		15.1	
0.315	4.9	14.5		12.8	
0.160	4.7	9.9		12.2	
0.080	4.0	5.9		10.4	
PAN	5.9	0		15.5	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.36

Reported by: I. Chung

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



Note: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

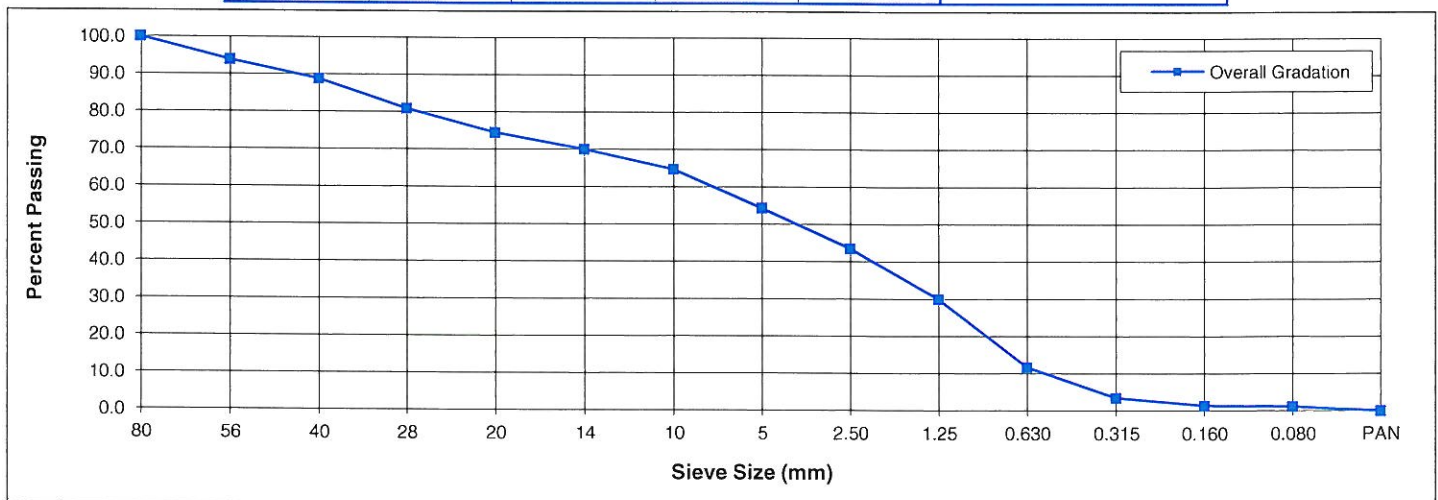
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	12.2 - 13.7 m (40 - 45 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 22, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.1	93.9	13.4		
40	5.1	88.8	11.2		
28	7.9	80.9	17.3		
20	6.4	74.5	14.1		
14	4.4	70.1	9.7		
10	5.3	64.7	11.7		
5	10.4	54.3	22.7		
2.50	10.8	43.5		19.9	
1.25	13.6	29.9		25.0	
0.630	18.2	11.7		33.5	
0.315	8.2	3.5		15.2	
0.160	2.1	1.4		3.9	
0.080	0.2	1.1		0.5	
PAN	1.1	0		2.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.34

Reported by: D.Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., V2T 3J6

November 23, 2010
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

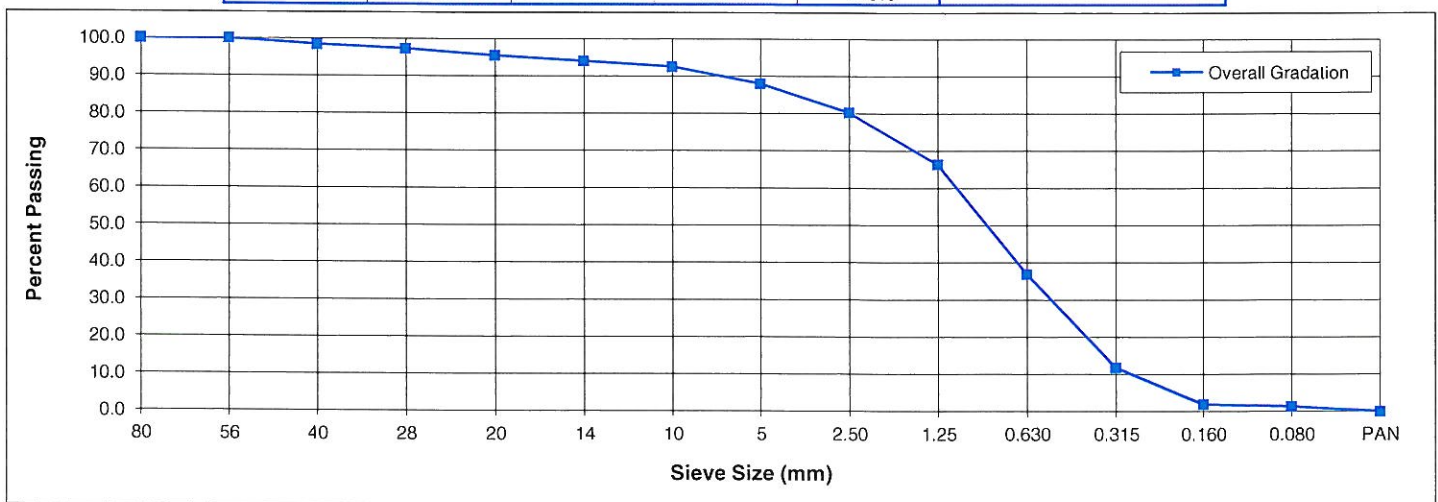
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	13.7 - 15.2 m (45 - 50 ft)

DATE SAMPLED: June 15 - 20, 2010
 DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
 TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	0.0	100.0	0.0		
40	1.6	98.4	13.5		
28	1.1	97.3	9.2		
20	1.8	95.5	15.1		
14	1.4	94.0	12.0		
10	1.5	92.5	12.5		
5	4.5	88.0	37.8		
2.50	7.7	80.3		8.8	
1.25	13.8	66.4		15.7	
0.630	29.5	36.9		33.5	
0.315	25.1	11.8		28.6	
0.160	9.9	1.9		11.2	
0.080	0.6	1.3		0.7	
PAN	1.3	0		1.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.76

Reported by: D.Clemente

Reviewed by: B. Hudson
 B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

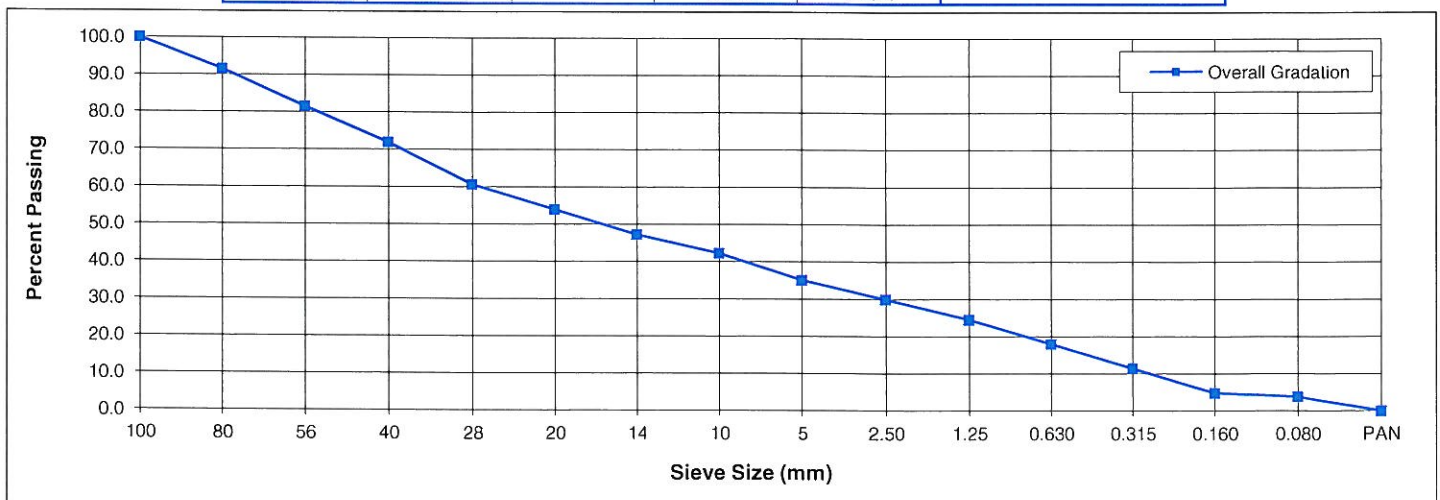
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	15.2 - 18.3 m (50 - 60 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010


SAMPLED BY: BH/AB
TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
100	0.0	100.0	0.0		
80	8.5	91.5	13.1		
56	10.0	81.5	15.4		
40	9.6	71.9	14.8		
28	11.3	60.7	17.4		
20	6.7	53.9	10.3		
14	6.7	47.3	10.3		
10	5.0	42.3	7.7		
5	7.2	35.1	11.1		
2.50	5.1	30.0		14.5	
1.25	5.5	24.5		15.6	
0.630	6.5	18.0		18.6	
0.315	6.5	11.5		18.5	
0.160	6.6	4.9		18.9	
0.080	1.0	3.8		3.0	
PAN	3.8	0		10.9	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.47

Reported by: D.Clemente

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

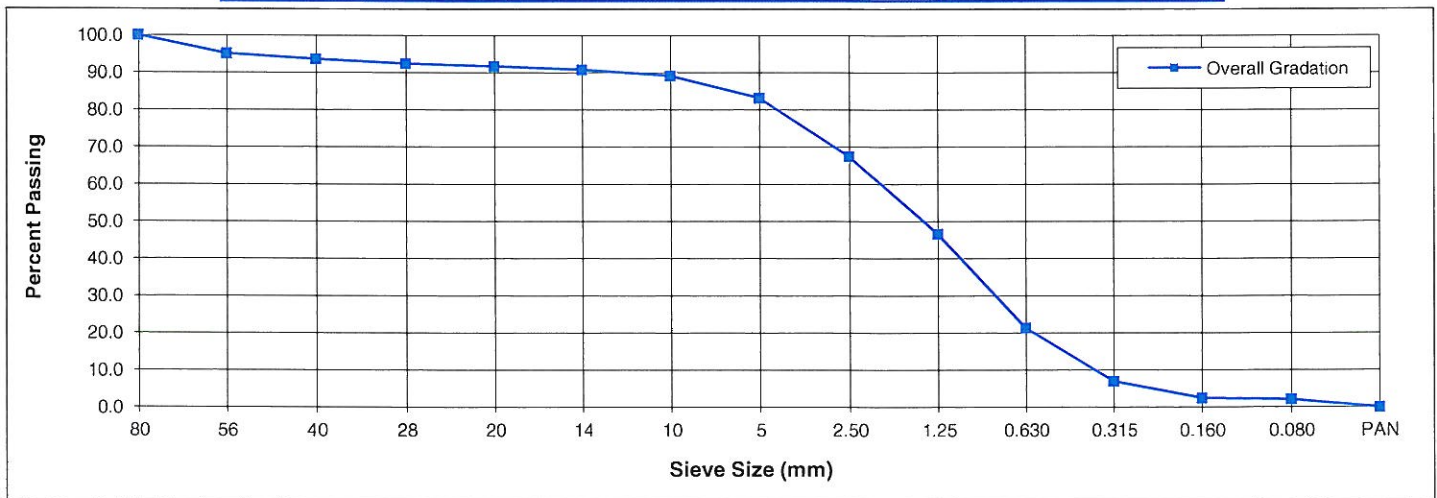
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	18.3 - 19.8 m (60 - 65 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	4.9	95.1	29.1		
40	1.5	93.6	8.8		
28	1.2	92.4	7.4		
20	0.7	91.7	3.9		
14	1.0	90.8	5.7		
10	1.7	89.1	9.8		
5	5.9	83.2	35.3		
2.50	15.7	67.4		18.9	
1.25	20.8	46.7		25.0	
0.630	25.3	21.4		30.4	
0.315	14.4	7.0		17.3	
0.160	4.5	2.5		5.4	
0.080	0.4	2.1		0.4	
PAN	2.1	0		2.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.26

Reported by: D.Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

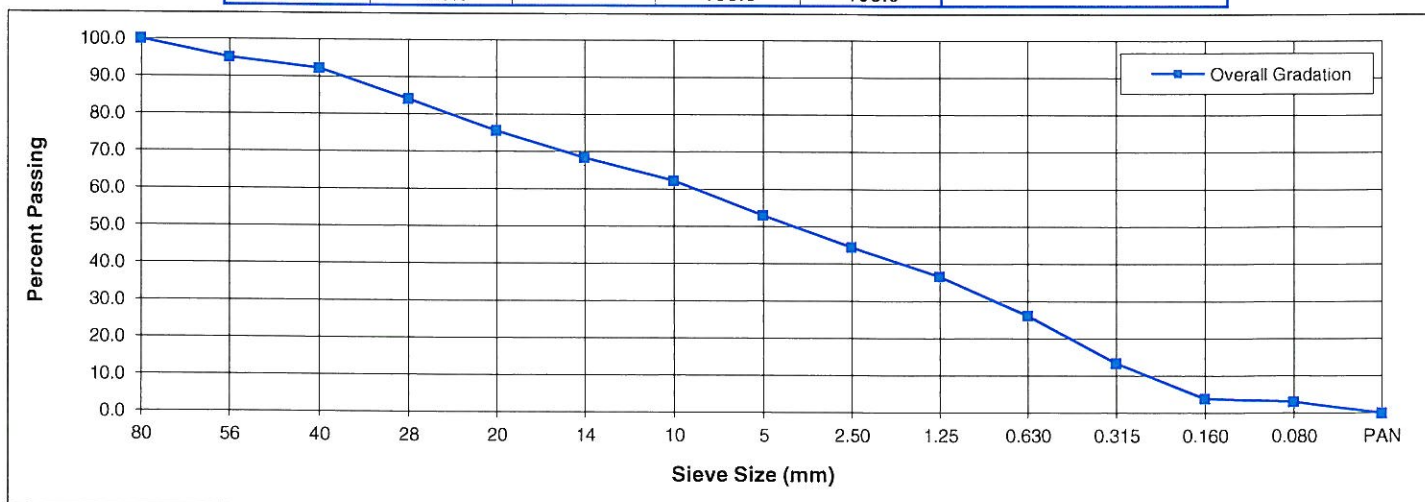
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	21.3 - 22.9 m (70 - 75 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.0	95.0	10.6		
40	2.8	92.2	6.0		
28	8.1	84.1	17.3		
20	8.4	75.7	18.0		
14	7.3	68.4	15.4		
10	6.1	62.3	13.1		
5	9.2	53.0	19.6		
2.50	8.6	44.5		16.2	
1.25	7.8	36.7		14.7	
0.630	10.5	26.1		19.8	
0.315	12.8	13.4		24.0	
0.160	9.5	3.9		17.9	
0.080	0.9	3.1		1.6	
PAN	3.1	0		5.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.65

Reported by: D.Clemente

Reviewed by: 
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

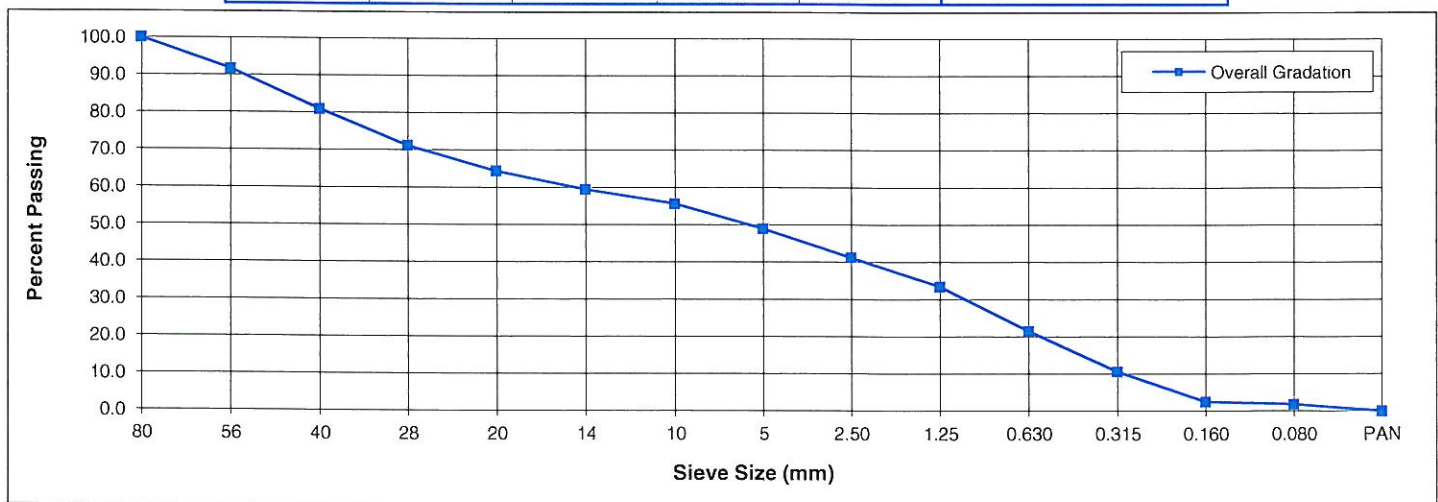
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	22.9 - 24.4 m (75 - 80 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 22, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	8.3	91.7	16.3		
40	10.8	80.9	21.1		
28	9.7	71.2	19.1		
20	6.8	64.4	13.3		
14	4.9	59.5	9.6		
10	3.9	55.6	7.6		
5	6.6	49.0	13.0		
2.50	7.7	41.3		15.8	
1.25	7.8	33.5		15.9	
0.630	11.9	21.5		24.4	
0.315	10.9	10.6		22.2	
0.160	8.1	2.5		16.5	
0.080	0.7	1.9		1.3	
PAN	1.8	0		3.7	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.77

Reported by: D.Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

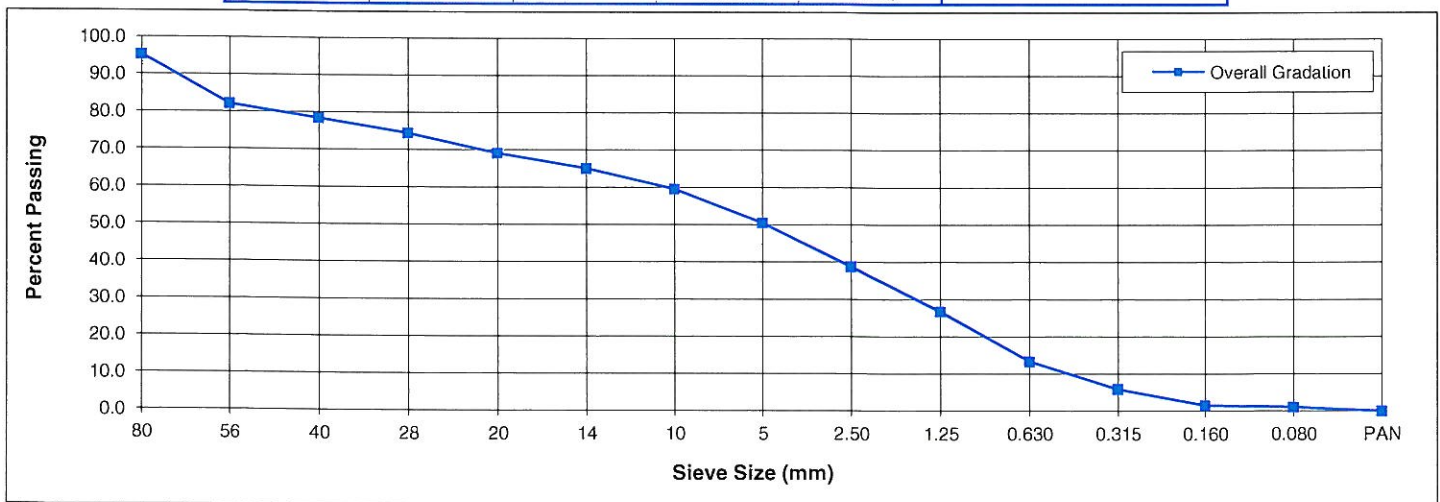
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	24.4 - 25.9 m (80 - 85 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	4.8	95.2	9.6		
56	13.1	82.1	26.5		
40	3.7	78.4	7.5		
28	4.0	74.4	8.1		
20	5.3	69.1	10.8		
14	4.1	65.0	8.2		
10	5.5	59.5	11.0		
5	9.0	50.5	18.2		
2.50	11.7	38.8		23.2	
1.25	12.0	26.8		23.7	
0.630	13.5	13.3		26.7	
0.315	7.4	5.9		14.7	
0.160	4.3	1.6		8.6	
0.080	0.5	1.1		1.0	
PAN	1.1	0		2.1	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.29

Reported by: D.Clemente

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

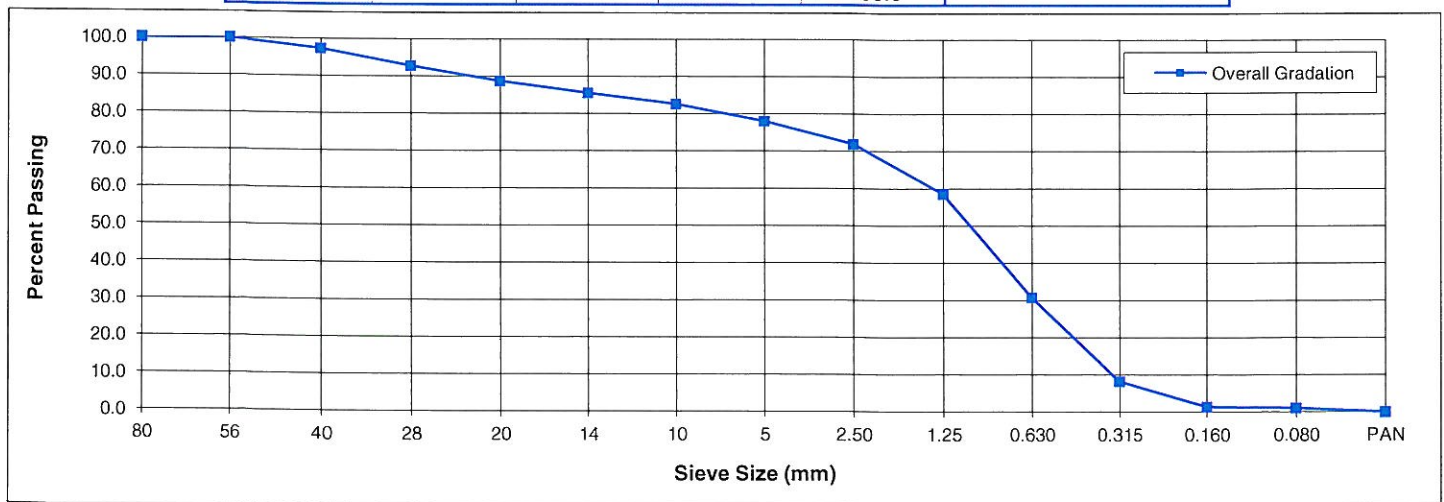
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	25.9 - 27.4 m (85 - 90 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	0.0	100.0	0.0		
40	2.7	97.3	12.3		
28	4.6	92.7	20.9		
20	4.0	88.7	18.3		
14	3.2	85.5	14.6		
10	2.9	82.6	13.3		
5	4.6	78.0	20.7		
2.50	6.1	71.9		7.9	
1.25	13.4	58.5		17.1	
0.630	27.8	30.7		35.7	
0.315	22.5	8.2		28.9	
0.160	6.8	1.4		8.8	
0.080	0.3	1.0		0.4	
PAN	1.0	0		1.3	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.81

Reported by: D.Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

July 16, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

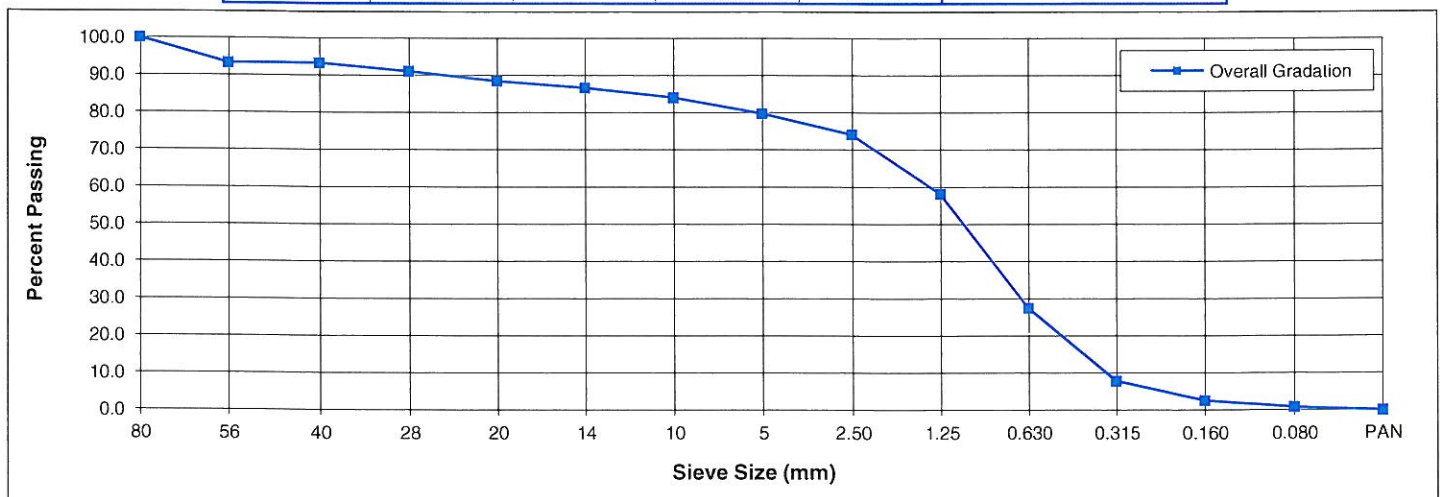
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	27.4 - 29.0 m (90 - 95 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: July 25, 2010

SAMPLED BY: BH/AB
TESTED BY: IC/DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	6.8	93.2	33.5		
40	0.0	93.2	0.0		
28	2.2	91.1	10.7		
20	2.6	88.5	12.8		
14	1.9	86.6	9.2		
10	2.6	84.0	12.8		
5	4.2	79.8	21.0		
2.50	5.7	74.1		7.1	
1.25	16.0	58.1		20.1	
0.630	30.6	27.5		38.4	
0.315	19.7	7.8		24.6	
0.160	5.2	2.6		6.5	
0.080	1.8	0.8		2.2	
PAN	0.8	0		1.0	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.87

Reported by: I. Chung

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

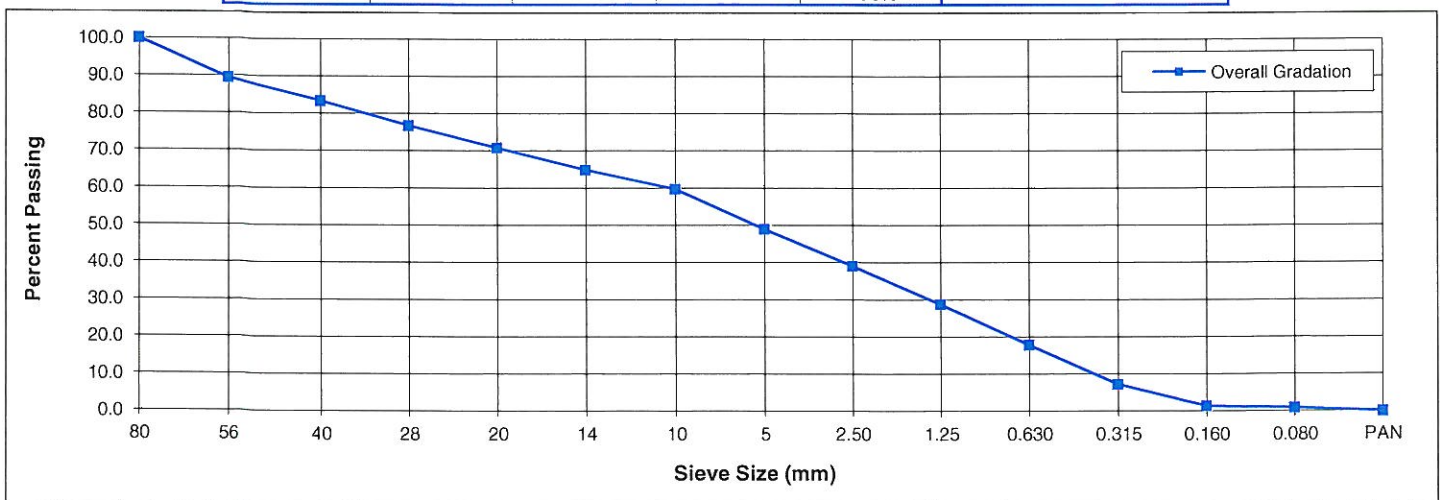
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	29.0 - 30.5 m (95 - 100 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 17, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	10.6	89.4	20.7		
40	6.1	83.3	11.9		
28	6.6	76.7	13.0		
20	5.9	70.8	11.6		
14	5.9	64.9	11.6		
10	5.2	59.7	10.1		
5	10.7	49.0	21.1		
2.50	9.9	39.1		20.2	
1.25	10.4	28.8		21.1	
0.630	10.9	17.9		22.2	
0.315	10.6	7.3		21.6	
0.160	5.9	1.4		12.0	
0.080	0.5	0.9		1.0	
PAN	0.9	0		1.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.07

Reported by: D. Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

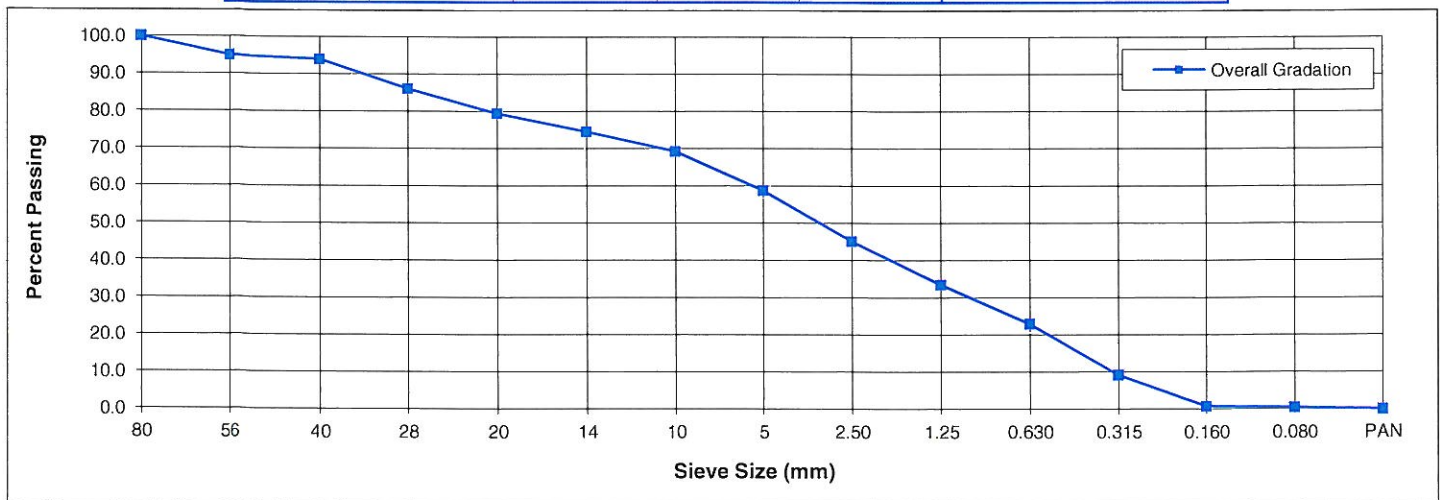
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	30.5 - 31.1 m (100 - 102 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	5.1	94.9	12.3		
40	1.0	93.9	2.4		
28	7.9	86.0	19.2		
20	6.6	79.4	16.0		
14	4.9	74.5	11.9		
10	5.3	69.2	12.7		
5	10.5	58.8	25.4		
2.50	13.7	45.1		23.3	
1.25	11.6	33.5		19.7	
0.630	10.6	22.9		18.0	
0.315	13.8	9.2		23.4	
0.160	8.4	0.8		14.2	
0.080	0.3	0.5		0.5	
PAN	0.5	0		0.8	
Total	100.0	0	100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 3.10

Reported by: D.Clemente

Reviewed by: B. Hudson
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

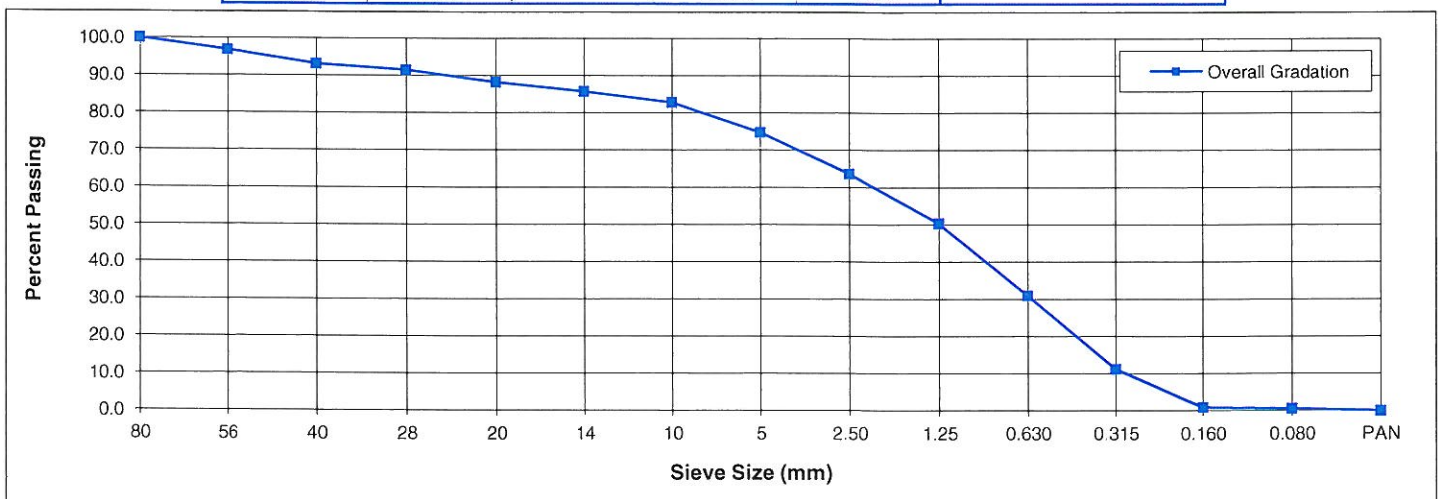
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	30.5 - 32.0 m (100 - 105 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 19, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	3.2	96.8	12.7		
40	3.7	93.1	14.7		
28	1.6	91.5	6.4		
20	3.2	88.2	12.8		
14	2.5	85.7	9.9		
10	2.9	82.8	11.5		
5	8.1	74.7	31.9		
2.50	11.1	63.6		14.8	
1.25	13.3	50.4		17.7	
0.630	19.4	31.0		25.9	
0.315	19.8	11.2		26.5	
0.160	10.3	0.9		13.8	
0.080	0.4	0.6		0.5	
PAN	0.6	0		0.8	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.90

Reported by: D.Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

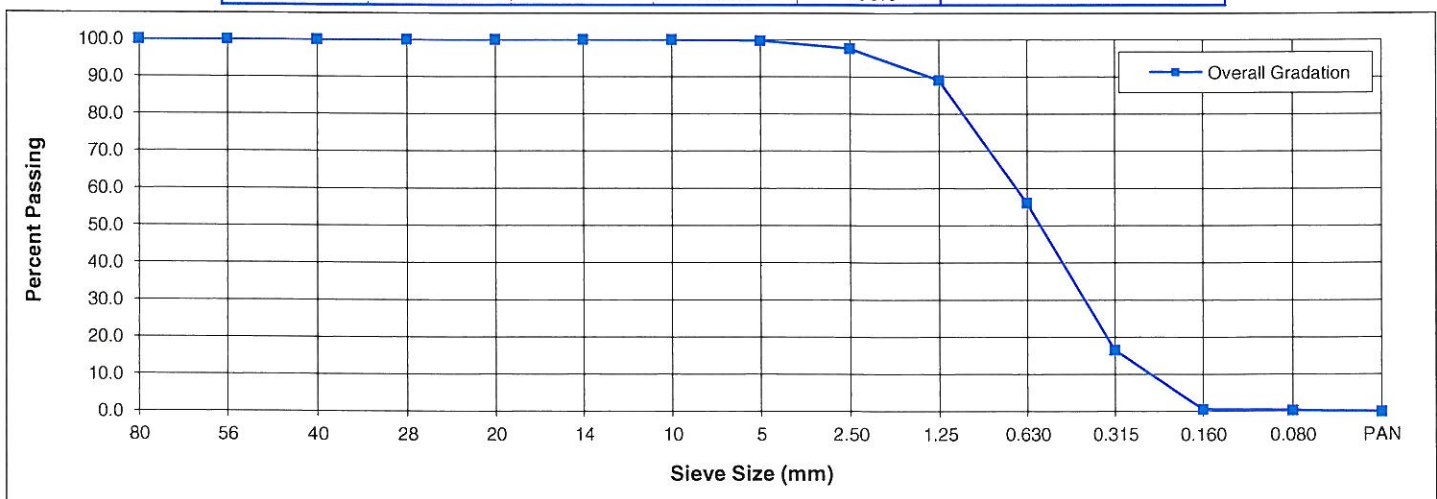
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth	30.5 m (100 ft) (Sand Heave)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 22, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/VN

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	0.0	100.0	0.0		
40	0.0	100.0	0.0		
28	0.0	100.0	0.0		
20	0.0	100.0	0.0		
14	0.0	100.0	0.0		
10	0.0	100.0	0.0		
5	0.3	99.7	100.0		
2.50	2.1	97.6		2.2	
1.25	8.4	89.1		8.5	
0.630	33.0	56.1		33.1	
0.315	39.6	16.5		39.7	
0.160	15.9	0.6		15.9	
0.080	0.3	0.4		0.3	
PAN	0.4	0		0.4	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.39

Reported by: D.Clemente

Reviewed by: 
B. Hudson, B. Sc., GIT



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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE

CSA A23.2-2A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., V2T 3J6

November 23, 2010
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

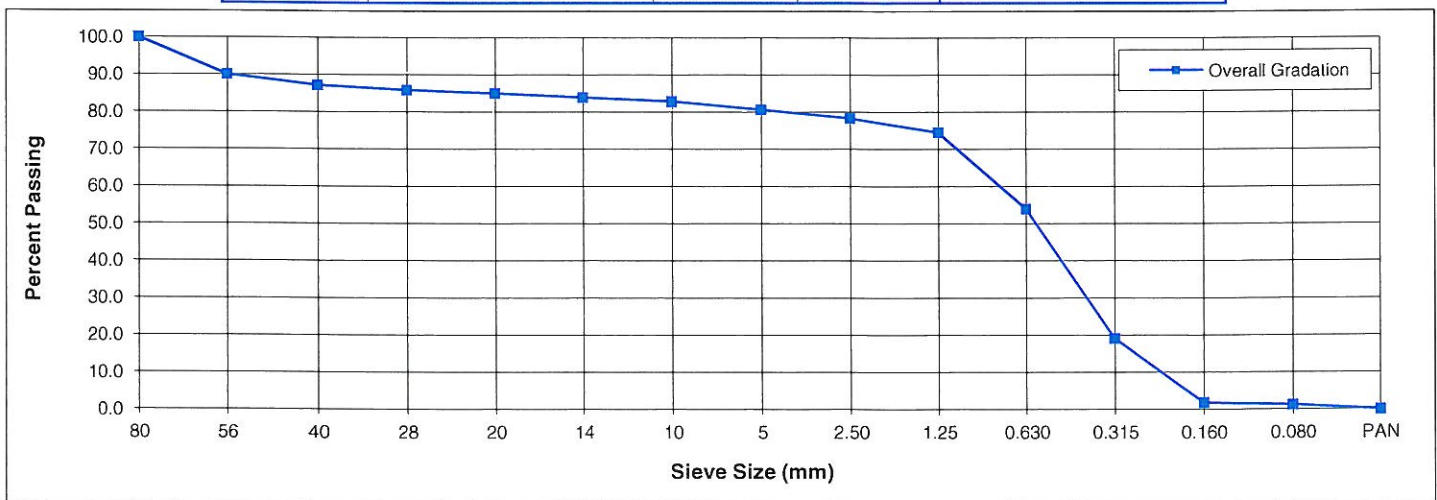
PROJECT: McNab Creek - Becker Drilling

Drill Hole	DH10 - 07
Depth Range	32.0 - 33.5 m (105 - 110 ft)

DATE SAMPLED: June 15 - 20, 2010
DATE TESTED: November 22, 2010

SAMPLED BY: BH/AB
TESTED BY: DC/IC

SIEVE ANALYSIS					MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		
			+ 5	- 5	
80	0.0	100.0	0.0		
56	10.0	90.0	51.7		
40	2.9	87.1	14.7		
28	1.3	85.8	6.7		
20	0.8	85.0	4.4		
14	1.1	83.9	5.6		
10	1.1	82.8	5.6		
5	2.2	80.6	11.3		
2.50	2.4	78.3		2.9	
1.25	3.8	74.5		4.7	
0.630	20.6	53.9		25.5	
0.315	34.8	19.1		43.2	
0.160	17.2	1.9		21.4	
0.080	0.6	1.3		0.8	
PAN	1.2	0		1.5	
Total	100.0		100.0	100.0	



Remarks: Fineness Modulus of - 5 mm portion: 2.18

Reported by: D.Clemente

Reviewed by: *B. Hudson*
B. Hudson, B. Sc., GIT



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

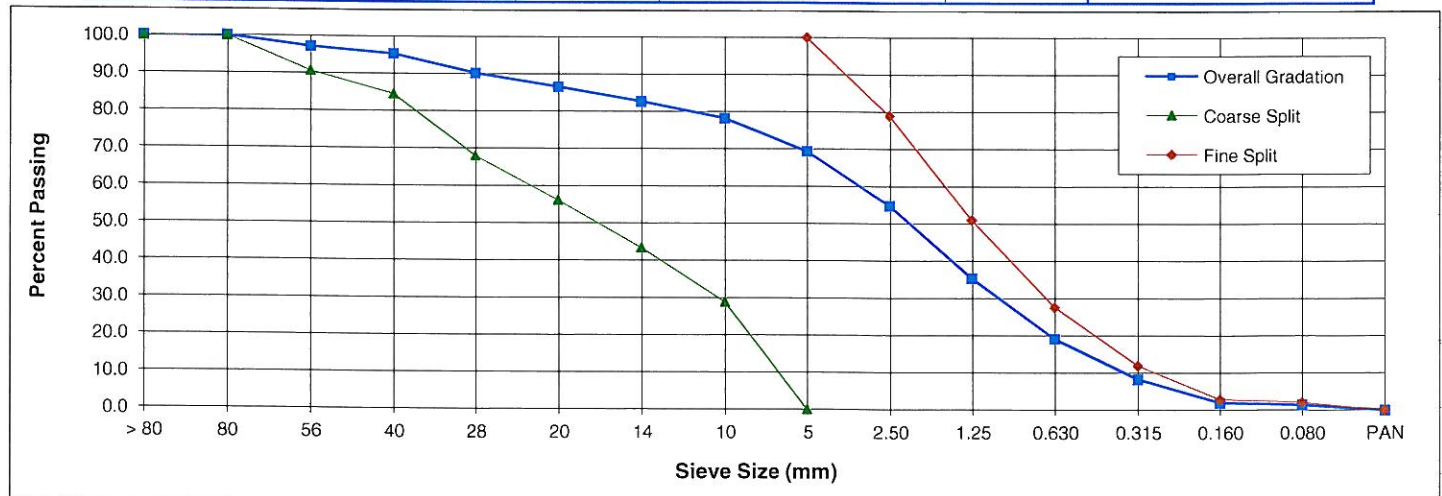
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 13.7 - 18.3 m (45 - 60 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	2.9	97.1	9.4		90.6		
40	1.9	95.2	6.1		84.5		
28	5.1	90.2	16.5		68.0		
20	3.6	86.6	11.8		56.1		
14	3.9	82.6	12.8		43.3		
10	4.4	78.2	14.5		28.8		
5	8.8	69.4	28.8		0.0	100.0	
2.50	14.6	54.8		21.0		79.0	
1.25	19.4	35.4		28.0		51.0	
0.630	16.2	19.1		23.4		27.6	
0.315	10.9	8.3		15.7		11.9	
0.160	6.3	2.0		9.1		2.8	
0.080	0.5	1.4		0.8		2.1	
PAN	1.4	0.0		2.1		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.28

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

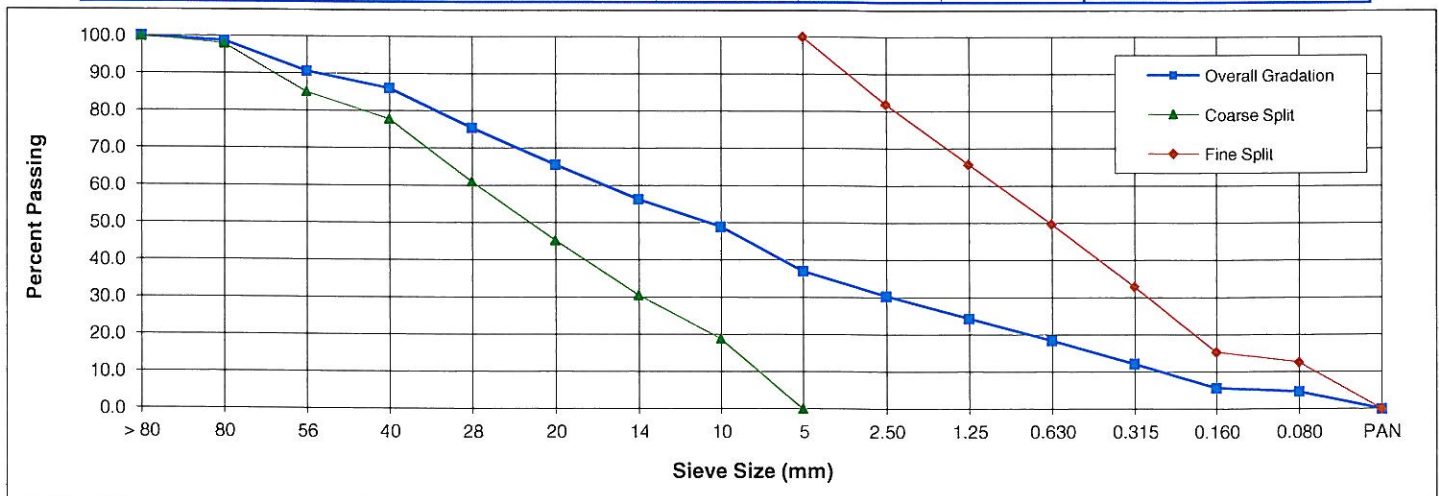
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 19.8 - 27.4 m (65 - 90 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	1.3	98.7	2.1		97.9		
56	8.1	90.6	12.8		85.0		
40	4.5	86.0	7.2		77.8		
28	10.6	75.5	16.8		61.0		
20	9.9	65.5	15.8		45.2		
14	9.3	56.3	14.7		30.5		
10	7.3	48.9	11.7		18.9		
5	11.9	37.1	18.9		0.0	100.0	
2.50	6.7	30.4		18.1		81.9	
1.25	6.0	24.4		16.1		65.8	
0.630	6.0	18.4		16.1		49.7	
0.315	6.2	12.2		16.8		32.9	
0.160	6.5	5.7		17.6		15.3	
0.080	1.0	4.7		2.8		12.6	
PAN	4.7	0.0		12.6		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.54

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

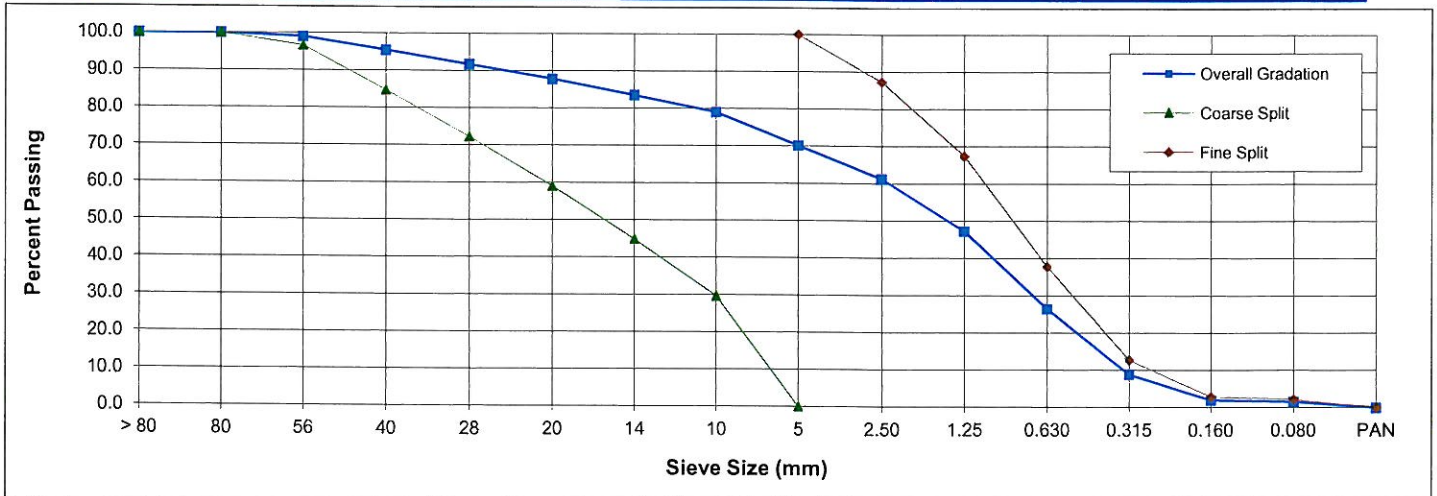
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 27.4 - 35.1 m (90 - 115 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	1.0	99.0	3.4		96.6		
40	3.5	95.5	11.9		84.7		
28	3.7	91.7	12.5		72.3		
20	3.9	87.8	13.2		59.0		
14	4.2	83.6	14.2		44.8		
10	4.5	79.1	15.2		29.7		
5	8.8	70.2	29.7		0.0	100.0	
2.50	8.9	61.3		12.7		87.3	
1.25	14.0	47.4		19.9		67.4	
0.630	20.8	26.5		29.7		37.8	
0.315	17.6	8.9		25.0		12.7	
0.160	6.9	2.0		9.9		2.8	
0.080	0.5	1.5		0.7		2.2	
PAN	1.5	0.0		2.2		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.92

Reported by: I. Chung

Reviewed by: 
 A. Briggs, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

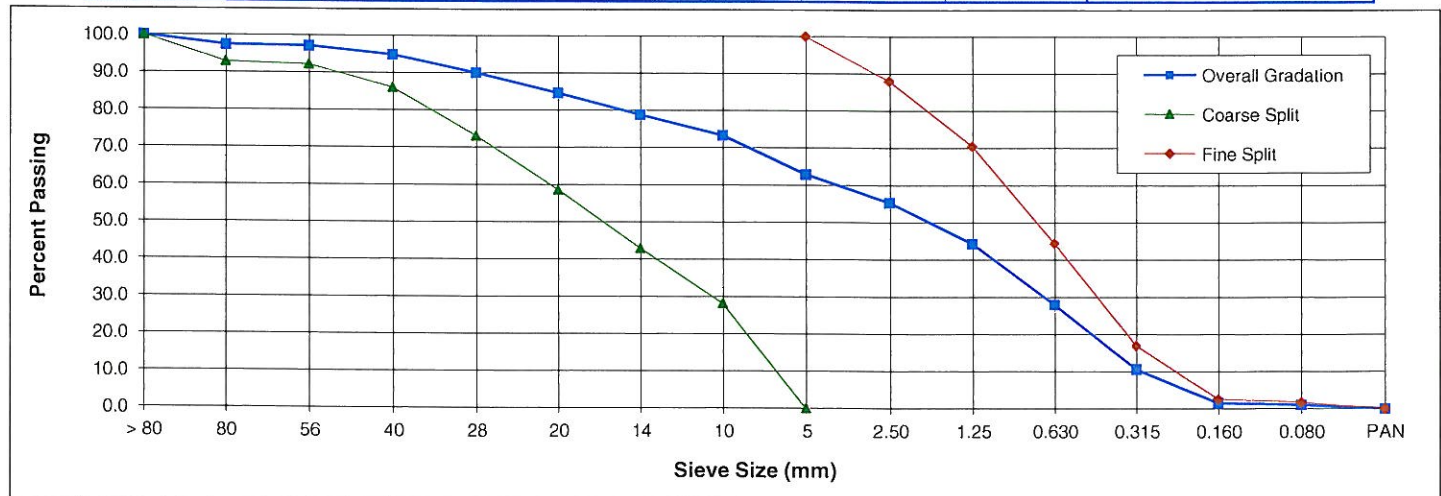
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 35.1 - 44.2 m (115 - 145 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	2.7	97.3	7.1		92.9		
56	0.3	97.1	0.7		92.2		
40	2.3	94.8	6.1		86.1		
28	4.8	90.0	13.0		73.1		
20	5.4	84.6	14.5		58.6		
14	5.8	78.8	15.6		42.9		
10	5.5	73.3	14.8		28.2		
5	10.5	62.9	28.2		0.0	100.0	
2.50	7.5	55.3		12.0		88.0	
1.25	11.0	44.3		17.5		70.5	
0.630	16.4	28.0		26.0		44.5	
0.315	17.3	10.6		27.6		16.9	
0.160	9.0	1.6		14.4		2.6	
0.080	0.5	1.1		0.9		1.7	
PAN	1.1	0.0		1.7		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.77

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

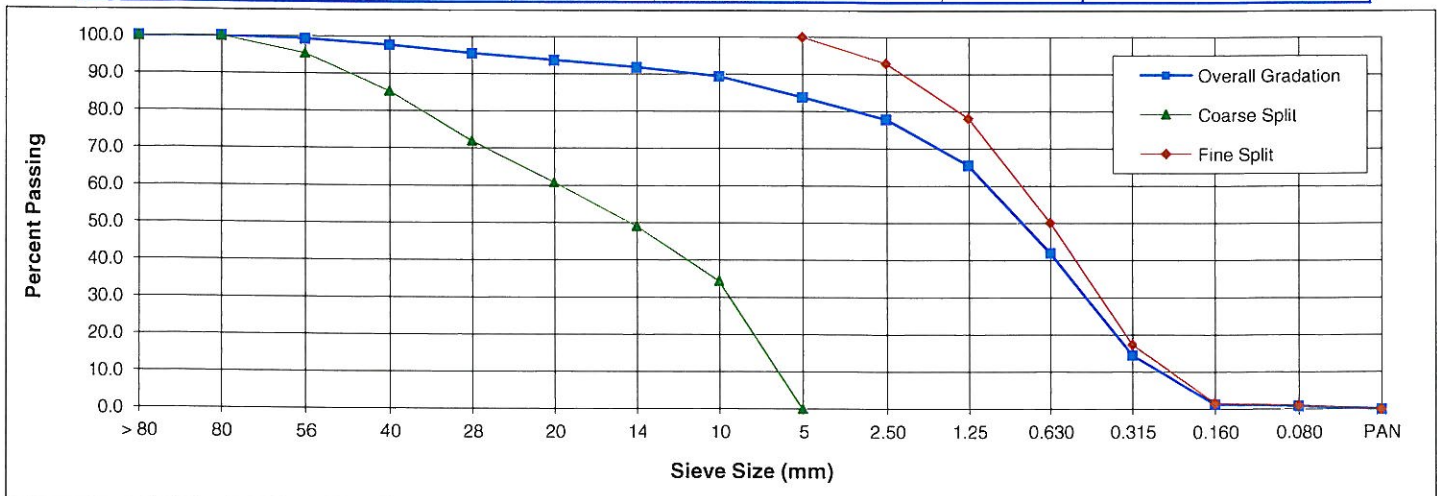
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 44.2 - 47.2 m (145 - 155 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	0.8	99.2	4.7		95.3		
40	1.6	97.6	10.0		85.3		
28	2.2	95.5	13.3		72.0		
20	1.8	93.7	11.1		60.8		
14	1.9	91.8	11.7		49.1		
10	2.4	89.4	14.7		34.4		
5	5.6	83.8	34.4		0.0	100.0	
2.50	5.9	77.9		7.1		92.9	
1.25	12.4	65.5		14.8		78.2	
0.630	23.5	42.0		28.0		50.1	
0.315	27.5	14.6		32.8		17.4	
0.160	13.2	1.4		15.7		1.6	
0.080	0.5	0.9		0.6		1.0	
PAN	0.9	0.0		1.0		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.60

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

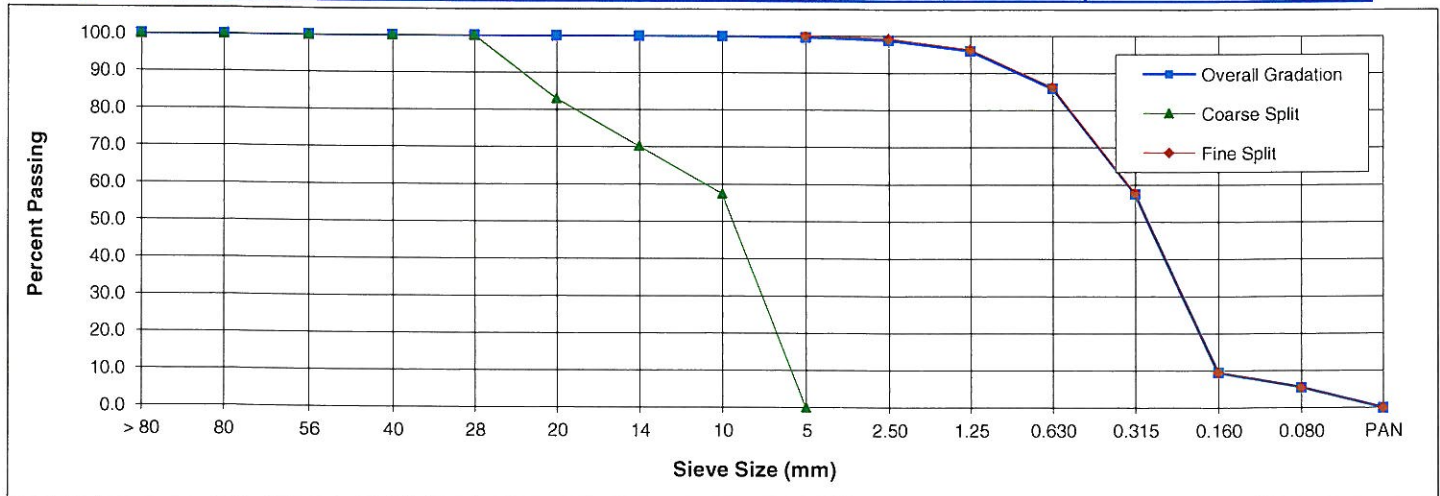
PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 49.4 m - EOH (162 ft - EOH)
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	0.0	100.0	0.0		100.0		
40	0.0	100.0	0.0		100.0		
28	0.0	100.0	0.0		100.0		
20	0.1	99.9	17.0		83.0		
14	0.1	99.9	12.8		70.2		
10	0.1	99.8	12.8		57.4		
5	0.3	99.5	57.4		0.0	100.0	
2.50	0.8	98.8		0.8		99.2	
1.25	2.8	95.9		2.9		96.4	
0.630	10.0	85.9		10.1		86.3	
0.315	28.3	57.6		28.5		57.8	
0.160	48.0	9.5		48.3		9.6	
0.080	4.0	5.5		4.0		5.5	
PAN	5.5	0.0		5.5		0.0	
Total	100.0	100.0	100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 1.51

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

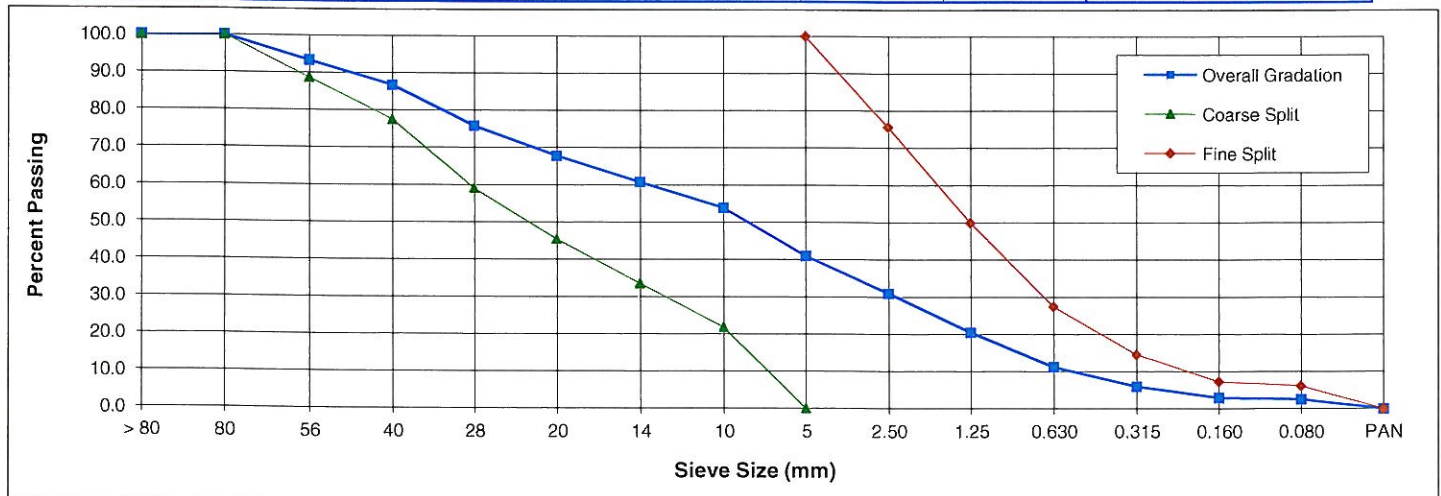
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-02 7.6 - 16.8 m (25 - 55 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	6.7	93.3	11.4		88.6		
40	6.6	86.7	11.1		77.5		
28	10.9	75.8	18.5		59.0		
20	8.0	67.8	13.6		45.4		
14	7.0	60.8	11.9		33.5		
10	6.9	53.9	11.7		21.8		
5	12.9	41.0	21.8		0.0	100.0	
2.50	10.0	31.0		24.4		75.6	
1.25	10.5	20.5		25.7		50.0	
0.630	9.2	11.2		22.5		27.4	
0.315	5.3	6.0		12.9		14.5	
0.160	3.0	3.0		7.2		7.3	
0.080	0.5	2.5		1.2		6.1	
PAN	2.5	0.0		6.1		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.25

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

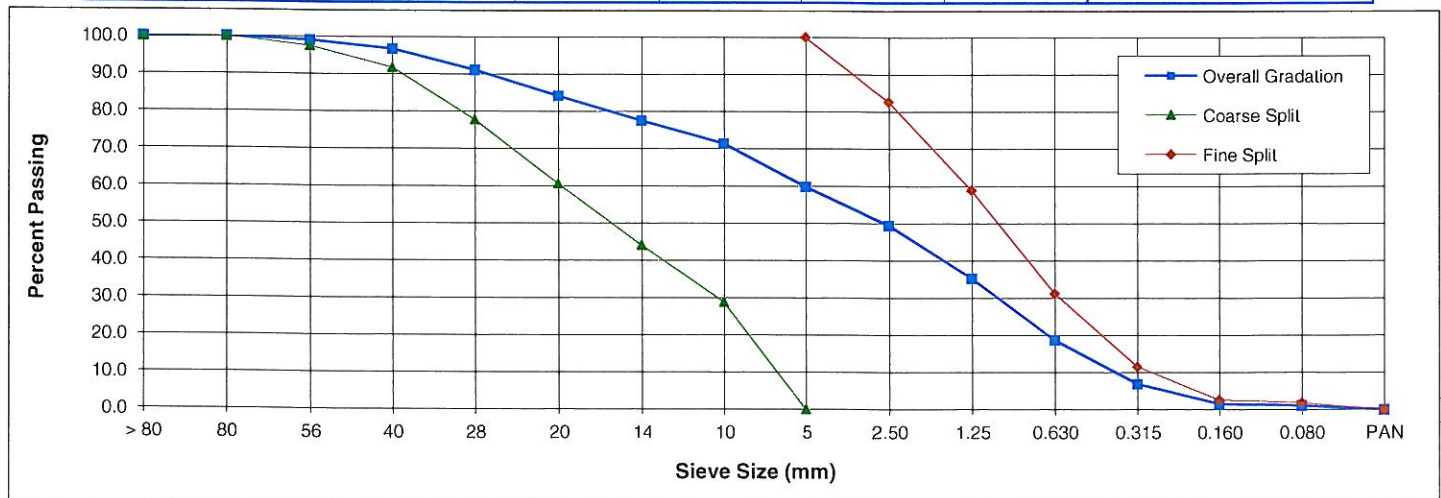
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-02 16.8 - 21.3 m (55 - 70 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	1.0	99.0	2.5		97.5		
40	2.3	96.7	5.8		91.7		
28	5.6	91.1	13.9		77.8		
20	6.9	84.2	17.2		60.6		
14	6.6	77.5	16.5		44.1		
10	6.1	71.4	15.3		28.8		
5	11.6	59.8	28.8		0.0	100.0	
2.50	10.3	49.5		17.3		82.7	
1.25	14.2	35.3		23.8		58.9	
0.630	16.6	18.7		27.7		31.2	
0.315	11.8	6.9		19.7		11.5	
0.160	5.3	1.6		8.9		2.6	
0.080	0.5	1.1		0.8		1.8	
PAN	1.1	0.0		1.8		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.13

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

June 7, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

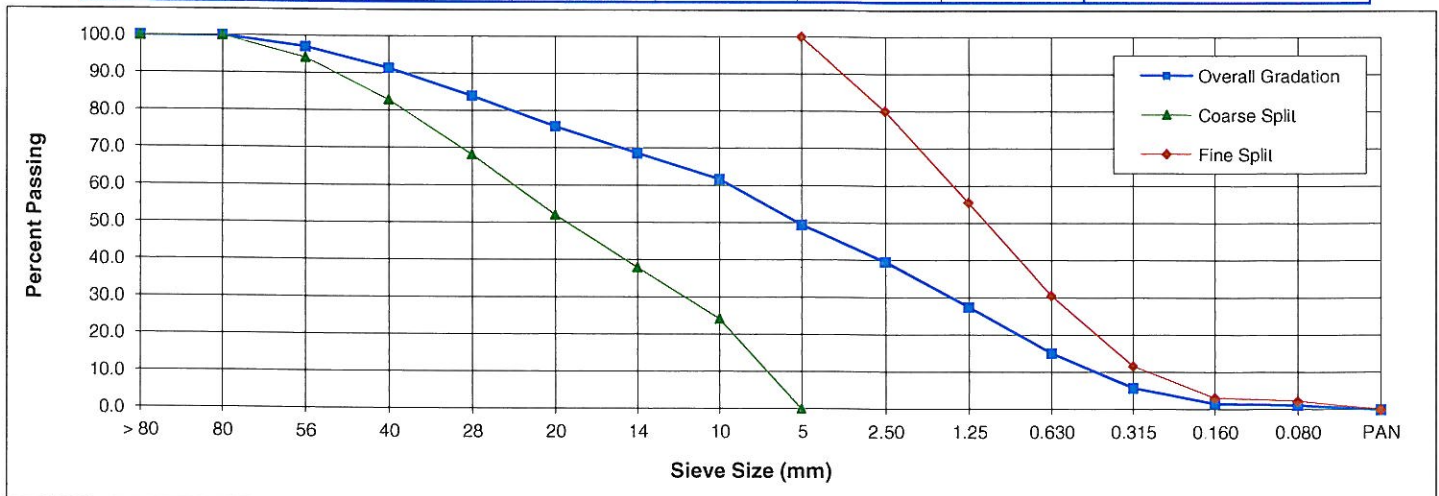
PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-02 21.3 - 29.0 m (70 - 95 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	3.0	97.0	5.9		94.1		
40	5.7	91.3	11.3		82.9		
28	7.4	84.0	14.6		68.3		
20	8.2	75.8	16.2		52.1		
14	7.2	68.6	14.1		37.9		
10	6.9	61.7	13.7		24.2		
5	12.2	49.4	24.2		0.0	100.0	
2.50	9.9	39.6		20.0		80.0	
1.25	12.1	27.5		24.5		55.5	
0.630	12.4	15.1		25.0		30.5	
0.315	9.3	5.8		18.9		11.6	
0.160	4.2	1.6		8.5		3.1	
0.080	0.4	1.1		0.9		2.3	
PAN	1.1	0.0		2.3		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.19

Reported by: I. Chung

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

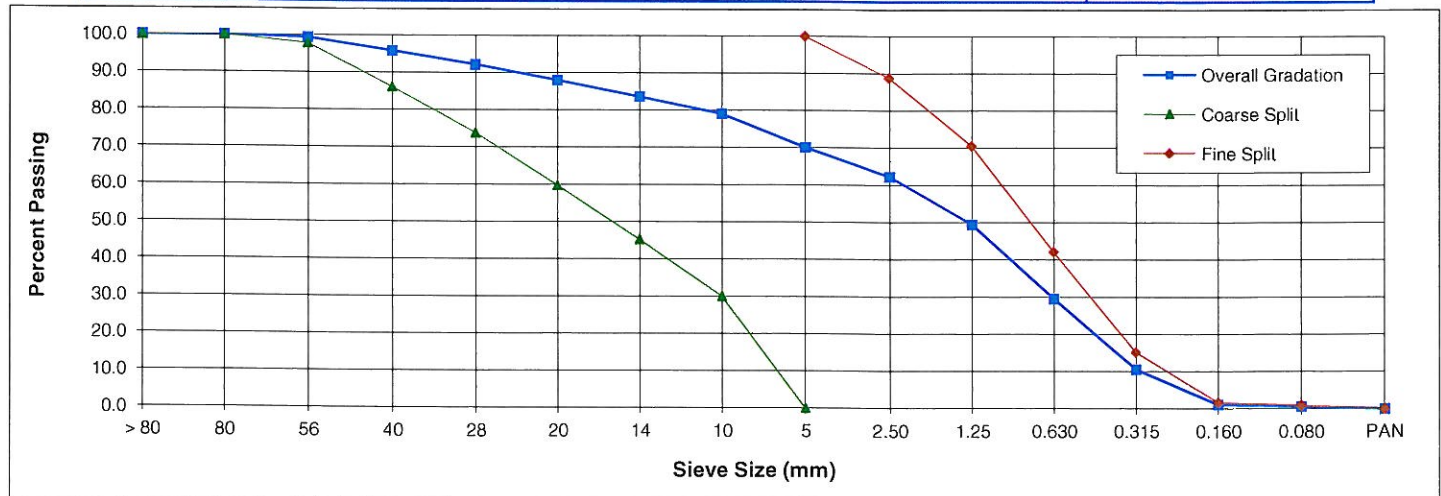
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-02 32.0 - 44.2 m (105 - 145 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	0.6	99.4	2.2		97.8		
40	3.5	95.9	11.7		86.1		
28	3.7	92.2	12.3		73.9		
20	4.2	88.0	14.1		59.8		
14	4.3	83.6	14.5		45.3		
10	4.5	79.1	15.2		30.1		
5	9.0	70.1	30.1		0.0	100.0	
2.50	7.8	62.3		11.2		88.8	
1.25	12.8	49.5		18.2		70.6	
0.630	19.9	29.6		28.4		42.2	
0.315	18.9	10.6		27.0		15.2	
0.160	9.5	1.2		13.5		1.7	
0.080	0.5	0.7		0.7		0.9	
PAN	0.7	0.0		0.9		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.82

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

June 7, 2011
Project number: 09-1416-0004/4000

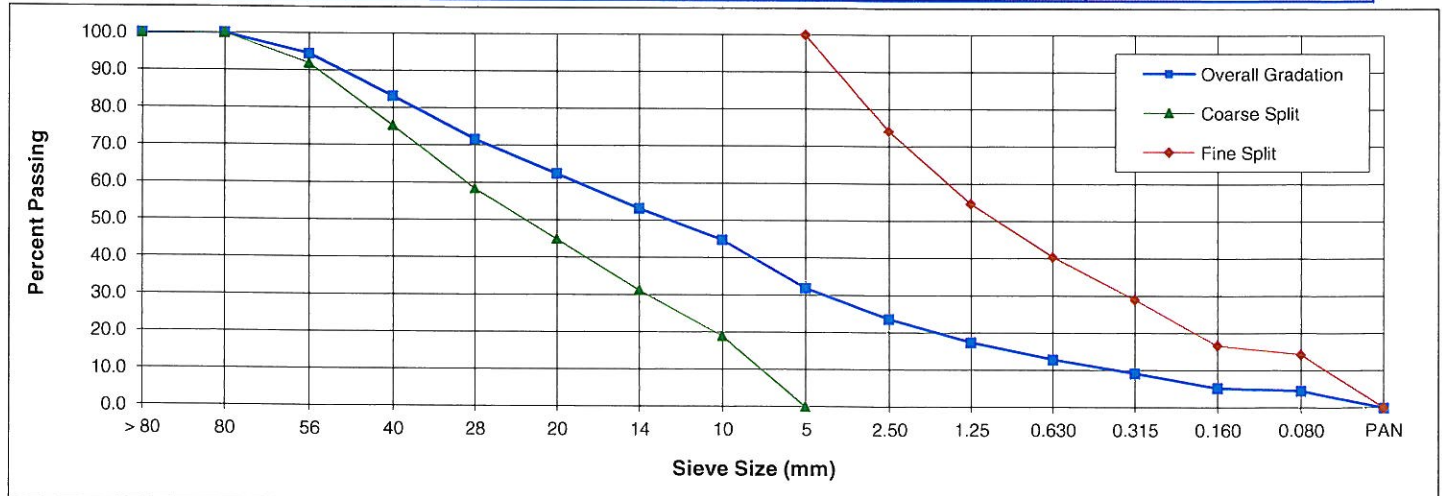
ATTENTION: Mr. Derek Holmes, Operations Manager
PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-05 1.5 - 10.7 m (5 - 35 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
DATE TESTED: June 3, 2011

SAMPLED BY: BH/FHS/AB
TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	5.5	94.5	8.1		91.9		
40	11.3	83.2	16.6		75.3		
28	11.5	71.7	16.9		58.4		
20	9.2	62.5	13.5		44.9		
14	9.3	53.2	13.7		31.3		
10	8.4	44.9	12.3		19.0		
5	12.9	31.9	19.0		0.0	100.0	
2.50	8.3	23.7		25.9		74.1	
1.25	6.2	17.5		19.5		54.7	
0.630	4.6	12.9		14.3		40.4	
0.315	3.6	9.3		11.4		29.0	
0.160	3.9	5.3		12.4		16.7	
0.080	0.8	4.6		2.4		14.3	
PAN	4.6	0.0		14.3		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.85

Reported by: I. Chung

Reviewed by: 
F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

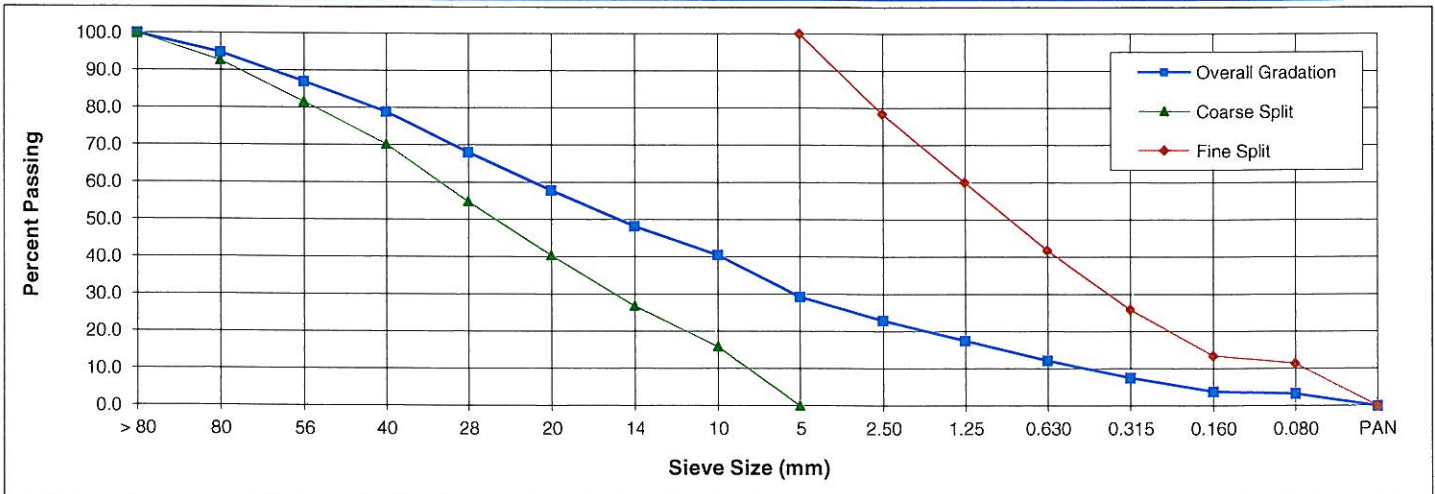
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-05 16.8 - 21.3 m (55 - 70 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: June 6, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	5.2	94.8	7.4		92.6		
56	7.8	87.0	11.0		81.7		
40	8.0	79.0	11.4		70.3		
28	10.9	68.1	15.4		54.9		
20	10.2	57.9	14.5		40.4		
14	9.6	48.3	13.6		26.9		
10	7.7	40.6	10.9		16.0		
5	11.3	29.3	16.0		0.0	100.0	
2.50	6.3	23.0		21.5		78.5	
1.25	5.4	17.6		18.4		60.1	
0.630	5.3	12.2		18.3		41.8	
0.315	4.7	7.6		16.0		25.9	
0.160	3.6	3.9		12.5		13.4	
0.080	0.6	3.3		2.0		11.4	
PAN	3.3	0.0		11.4		0.0	
Total	100.0	100.0	100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.80

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

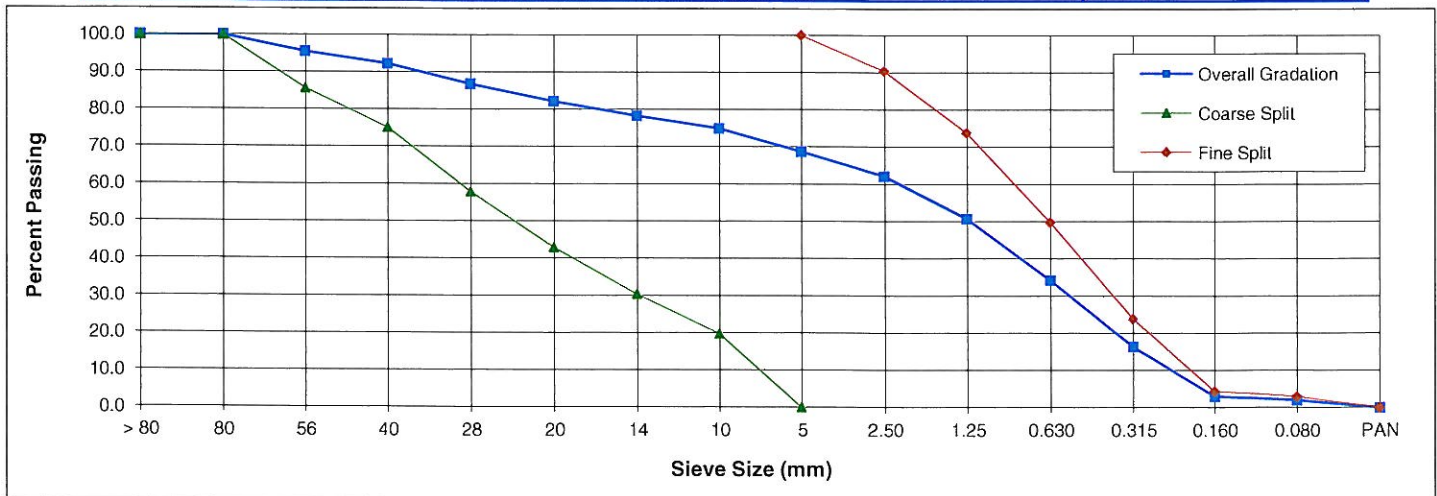
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-05 22.9 - 30.5 m (75 - 100 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: June 6, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	4.5	95.5	14.3		85.7		
40	3.3	92.2	10.5		75.1		
28	5.4	86.9	17.2		57.9		
20	4.7	82.2	15.0		42.9		
14	3.9	78.3	12.5		30.4		
10	3.3	75.0	10.6		19.8		
5	6.2	68.8	19.8		0.0	100.0	
2.50	6.6	62.2		9.6		90.4	
1.25	11.4	50.8		16.6		73.8	
0.630	16.5	34.3		24.0		49.8	
0.315	17.9	16.4		26.0		23.8	
0.160	13.4	3.0		19.4		4.4	
0.080	1.0	2.0		1.5		2.9	
PAN	2.0	0.0		2.9		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.58

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

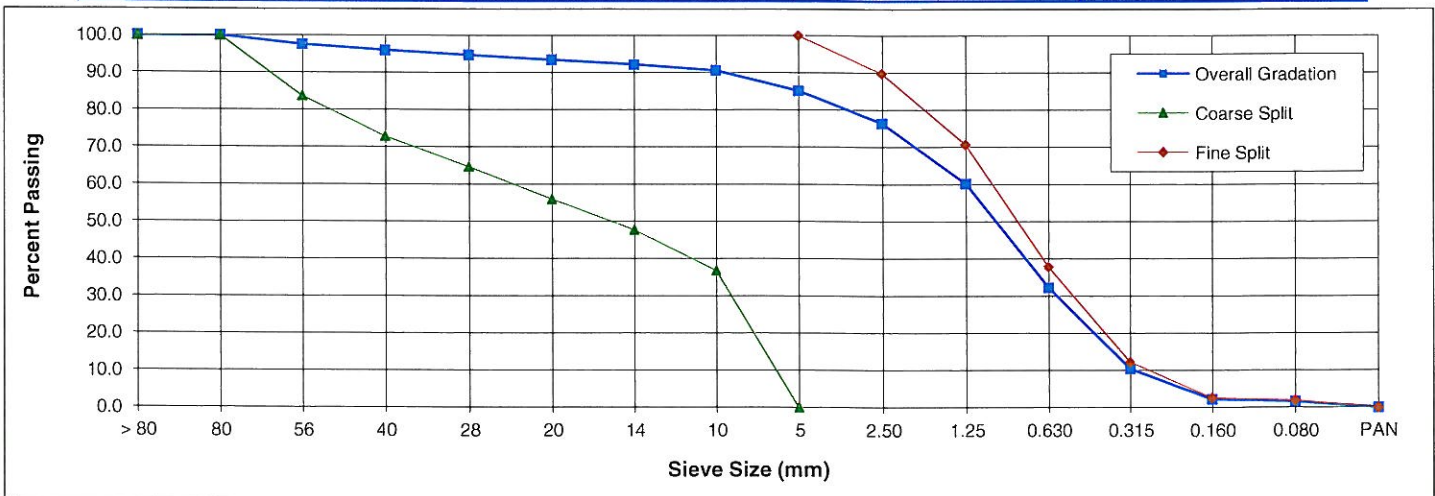
PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 13.7 - 15.2 m (45 - 50 ft), 18.3 - 19.8 m (60 - 65 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: June 6, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	2.4	97.6	16.3		83.7		
40	1.6	96.0	10.8		72.9		
28	1.2	94.8	8.2		64.7		
20	1.3	93.5	8.7		56.0		
14	1.2	92.2	8.2		47.7		
10	1.6	90.6	10.9		36.8		
5	5.5	85.2	36.8		0.0	100.0	
2.50	8.7	76.5		10.2		89.8	
1.25	16.2	60.2		19.1		70.7	
0.630	28.0	32.3		32.8		37.9	
0.315	21.8	10.4		25.6		12.3	
0.160	8.2	2.2		9.6		2.6	
0.080	0.6	1.7		0.7		2.0	
PAN	1.7	0.0		2.0		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.87

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 8, 2011
 Project number: 09-1416-0004/4000

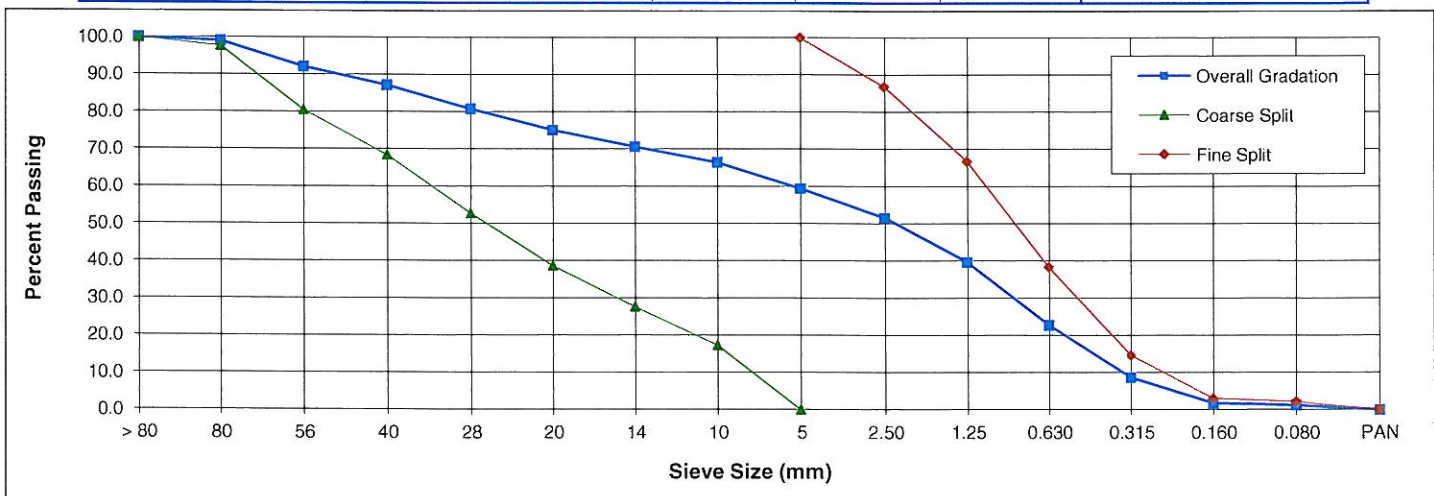
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 21.3 - 29.0 m (70 - 95 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: June 7, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.9	99.1	2.3		97.7		
56	7.0	92.1	17.2		80.5		
40	4.9	87.2	12.1		68.4		
28	6.4	80.8	15.7		52.7		
20	5.7	75.1	14.1		38.7		
14	4.5	70.7	11.0		27.7		
10	4.2	66.5	10.4		17.3		
5	7.0	59.4	17.3		0.0	100.0	
2.50	7.8	51.6		13.2		86.8	
1.25	11.9	39.7		20.1		66.7	
0.630	16.9	22.8		28.4		38.3	
0.315	14.1	8.7		23.7		14.6	
0.160	6.9	1.8		11.6		3.1	
0.080	0.5	1.3		0.9		2.1	
PAN	1.3	0.0		2.1		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.90

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 8, 2011
 Project number: 09-1416-0004/4000

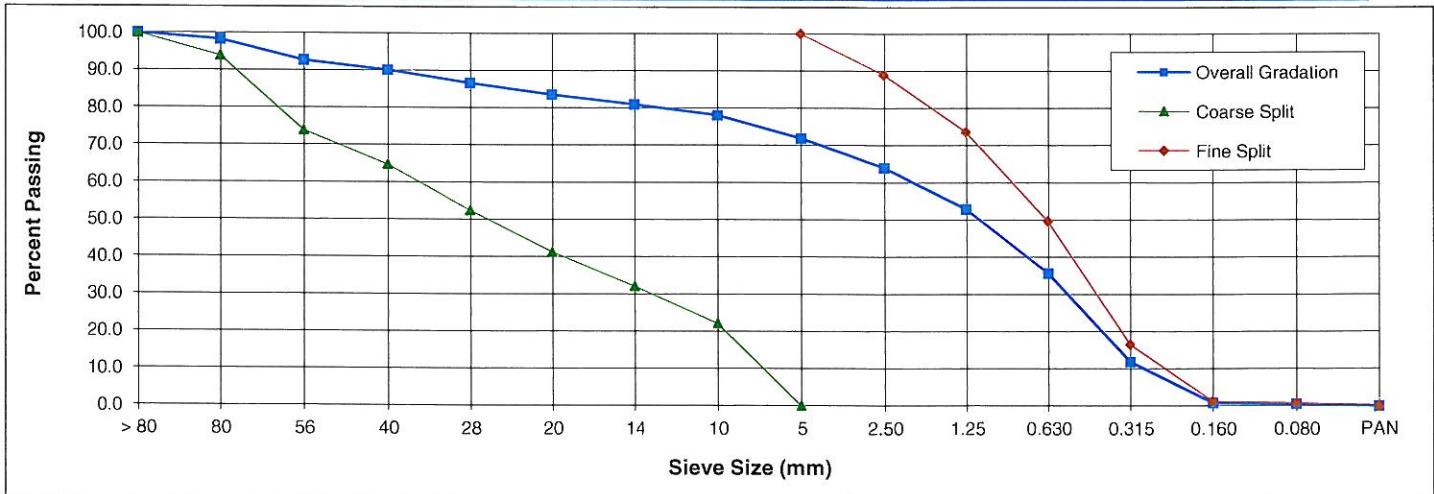
ATTENTION: Mr. Derek Holmes, Operations Manager
 PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 30.5 - 33.5 m (100 - 110 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: June 7, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	1.7	98.3	6.1		93.9		
56	5.6	92.7	19.9		73.9		
40	2.6	90.1	9.2		64.7		
28	3.5	86.6	12.3		52.4		
20	3.1	83.5	11.1		41.3		
14	2.6	80.9	9.2		32.1		
10	2.8	78.1	9.9		22.2		
5	6.2	71.9	22.2		0.0	100.0	
2.50	7.9	64.0		11.0		89.0	
1.25	11.0	53.0		15.3		73.6	
0.630	17.2	35.7		23.9		49.7	
0.315	23.9	11.9		33.2		16.5	
0.160	11.0	0.9		15.3		1.3	
0.080	0.4	0.6		0.5		0.8	
PAN	0.6	0.0		0.8		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.70

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

June 7, 2011
 Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

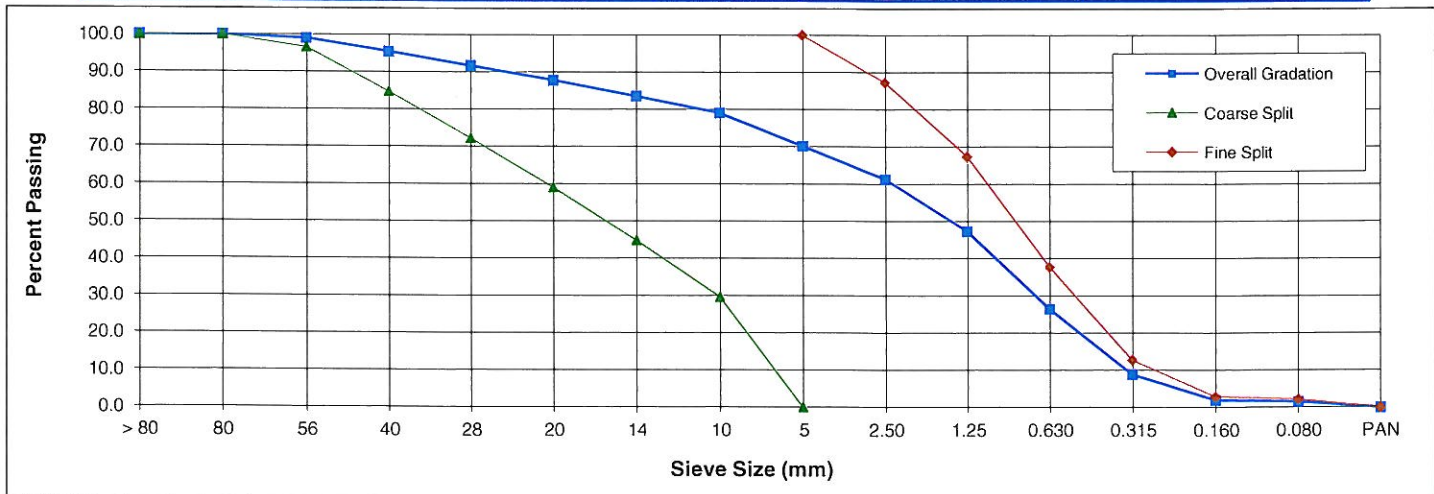
PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-01 27.4 - 35.1 m (90 - 115 ft) Combined
Source:	Becker Drilling

DATE SAMPLED: June 15-20, 2010
 DATE TESTED: May 30, 2011

SAMPLED BY: BH/FHS/AB
 TESTED BY: VN/DC

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	0.0	100.0	0.0		100.0		
56	1.0	99.0	3.4		96.6		
40	3.5	95.5	11.9		84.7		
28	3.7	91.7	12.5		72.3		
20	3.9	87.8	13.2		59.0		
14	4.2	83.6	14.2		44.8		
10	4.5	79.1	15.2		29.7		
5	8.8	70.2	29.7		0.0	100.0	
2.50	8.9	61.3		12.7		87.3	
1.25	14.0	47.4		19.9		67.4	
0.630	20.8	26.5		29.7		37.8	
0.315	17.6	8.9		25.0		12.7	
0.160	6.9	2.0		9.9		2.8	
0.080	0.5	1.5		0.7		2.2	
PAN	1.5	0.0		2.2		0.0	
Total	100.0		100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 2.92

Reported by: I. Chung

Reviewed by: 
 F. Shrimmer, P. Geo.



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BURNCO Rock Products Ltd.
 1A, 2760 Emerson Street
 Abbotsford, B.C., Canada
 V2T 3J6

August 28, 2009
 Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

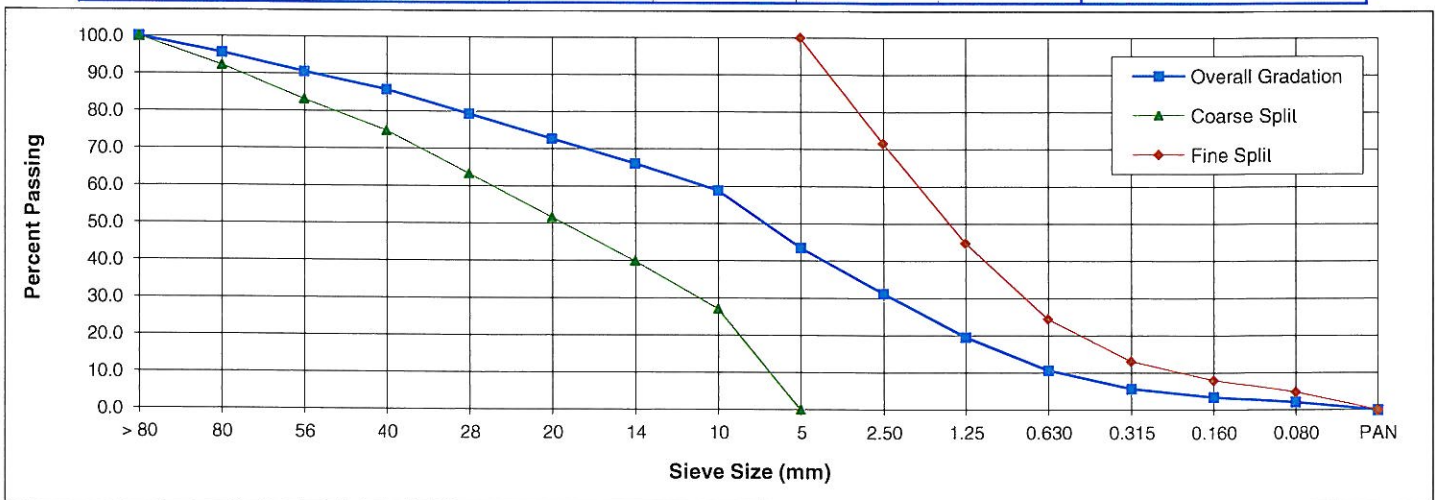
PROJECT: McNab Creek, Alluvial Fan Preliminary Site Visit - Geomaterials Testing

Sample:	S001
Source:	North-East Bank - "Spawning channel"

DATE SAMPLED: April 6, 2009
 DATE TESTED: August 25, 2009
 LOCATION (NAD-83 UTM 10N): -

SAMPLED BY: BH
 TESTED BY: IC/DC
 ALTITUDE (NAD-83): -

SIEVE ANALYSIS							MATERIAL SPECIFICATION :
Sieve Size (mm)	% Retained	% Passing	Individual % Retained (Split values)		Individual % Passing (Split values)		
			+ 5	- 5	+ 5	- 5	
> 80	0.0	100.0	0.0		100.0		
80	4.4	95.6	7.8		92.2		
56	5.1	90.5	9.1		83.1		
40	4.7	85.8	8.4		74.8		
28	6.4	79.3	11.4		63.3		
20	6.6	72.7	11.7		51.6		
14	6.6	66.1	11.7		39.9		
10	7.2	58.9	12.8		27.1		
5	15.3	43.6	27.1		0.0	100.0	
2.50	12.3	31.2		28.3		71.7	
1.25	11.7	19.5		26.8		44.8	
0.630	8.9	10.7		20.4		24.5	
0.315	4.9	5.7		11.4		13.1	
0.160	2.2	3.5		5.1		8.0	
0.080	1.4	2.1		3.1		4.8	
PAN	2.1	0.0		4.8		0.0	
Total	100.0	100.0	100.0	100.0			



Remarks: Fineness Modulus of -5 mm portion: 3.38
 % finer than 80 µm of the +5 mm portion: -

Reported by: B. Hudson

Reviewed by: 
 F. Shrimmer, P. Geo.



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APPENDIX D

Reports from Petrographic Examination



PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6
ATTENTION: Mr. Derek Holmes, Operations Manager

September 6, 2011
Project number: 09-1416-0004

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-02: 16.8 – 21.3 m (55 – 70 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010

Sampled by: GAL (BH/AB)

	PETROGRAPHIC DESCRIPTION/ PHYSICAL QUALITY	PERCENT BY MASS	MULTI- PLIER	PN CONTRI- BUTION
GOOD	Volcanic rock – felsic-intermediate, dense, hard, strong	1.2	1	1.2
	Diabase – dense, strong	0.1	1	0.1
	Granite - Granodiorite – dense, strong	17.9	1	17.9
	Diorite – dense, strong	18.9	1	18.9
	Amphibolite – dense, hard, strong	8.6	1	8.6
	Metasediment: Siltstone and Sandstone – dense, strong	33.6	1	33.6
	Phyllite – dense, strong	<u>2.4</u>	1	<u>2.4</u>
	<i>Subtotal</i>	82.7		82.7
	Granite - Granodiorite - medium strength	7.9	3	23.7
	Diorite – medium strength	3.2	3	9.6
	Amphibolite – medium strength	1.9	3	5.7
	Meta- siltstone and sandstone – medium strength	2.7	3	8.1
	Phyllite – medium strength, flat/elongated, splintery	0.2	3	0.6
	Quartz - brittle	<u>0.2</u>	3	<u>0.6</u>
	<i>Subtotal</i>	16.1		48.3
POOR	Granite - Granodiorite – deeply weathered, friable	0.6	6	3.6
	Diorite – deeply weathered, friable	0.5	6	3.0
	Amphibolite - weak	<u>0.1</u>	6	<u>0.6</u>
	<i>Subtotal</i>	1.2		7.2
TOTAL		100.0		138.2

Note: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be separately assessed.

PETROGRAPHER: _____
A. Briggs, P. Geo.



Notice: The data given in this report pertain to the sample provided, and may not be applicable to samples from earlier or subsequent production. This report comprises a testing service only. Interpretation may be provided upon written request.

DH10-02: 16.8 – 21.3 m (55 – 70 ft) Combined Coarse**General**

The sample consisted of natural gravel that was screened from a larger Becker drilling sample. The particles were generally free of silt or clay coatings.

Particles were subrounded to subangular with some particles trending towards flat and elongated morphologies as a result of their lithology.

Lithologic Composition

The sample was composed of a mix of crystalline igneous and metamorphic rock types with minor volcanic rocks.

Volcanic rock types ranged in composition from felsic to mafic and very fine grained to aphanitic, sometimes porphyritic. 1.2% of the sample was composed of volcanic rocks, most of these rocks particles were dense and of good strength.

Nearly half of the sample consisted of plutonic igneous rocks. They were further subdivided into granite/granodiorite and diorite.

Granodiorite consisted of plagioclase and potassium feldspar, quartz, biotite and amphibole, with some of the mafic minerals altered to chlorite. These rocks were typically white and black/green/brown; many exhibited oxidation staining, rendering the feldspar pinkish in appearance. Granite/granodiorite accounted for about 26% of the sample, many of which were weathered, oxidized, brittle and of medium to low strength only.

Diorite was dark green/black and white and similar in composition to granodiorite, except for the absence of quartz. Approximately 19% of the sample particles were diorite, most of which were of good strength.

A metamorphic rock that was largely mafic in composition was termed amphibolite. It was a generally dark green rock type, which exhibited preferential orientation, locally schistosity, some white banding and variable grain size. Dominant minerals were amphibole, chlorite and some biotite and plagioclase feldspar. This rock type was typically of good strength and accounted for 11% of the sample.

Metasedimentary rocks consisted of phyllite and metasiltstone/metasandstone. These sometimes exhibited lamination and phyllite often contained some silty layering and some metasiltstone and metasandstone contained more fine grained laminae. Therefore, the two rock type categories overlapped one another. The coarser grained metasiltstone and metasandstone accounted for 36% of the sample, most of which was of good strength.

Almost 3% of the sample consisted of phyllite. Many of these particles were elongated and flatter in shape, and possessed a sheen owing to the presence of mica minerals in the rock. These rocks ranged in strength from strong to medium strength.

One particle that consisted of pure quartz was brittle.



Engineering Characteristics

In addition to the geologic classification of the aggregate, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, particle shape, presence or absence of vugs, voids, fissures, cracks, coatings and impurities were considered in the assignment of individual particles into various quality classifications.

On the basis of this sorting of the sample, the relative amounts of "Good", "Fair" and "Poor" quality material were determined. This enabled the calculation of a Petrographic Number (or "PN"), which is an index of a coarse aggregate's overall physical-mechanical quality. The PN for this sample was "138".

For reference, the PN scale given in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Comparison of the PN of 138 for the DH10-02: 55 - 70' Combined, Coarse sample with the CSA table given above suggests that the sample would be considered to be of unacceptable quality, in its as-is condition, for use as concrete coarse aggregate in some applications. This is due primarily to the relative amounts of moderately to deeply weathered granitic rock and phyllite particles that exhibited less than desirable particle morphology. This is illustrated in Figure 1.

Alkali-Aggregate Reaction Potential

Most of the rocks comprising this sample have been identified as "potentially alkali-reactive", meaning that they may contribute under certain circumstances to a deleterious expansive reaction in concrete termed "Alkali-Aggregate Reaction" (AAR). These rock types include granodiorite, amphibolite and metasedimentary rocks.

In order to evaluate this potential, assessment of the aggregate's AAR characteristics has been undertaken using the accelerated mortar bar test (CSA A23.2-25A). The results indicate that the material would be considered to be potentially reactive with respect to AAR. Concrete prism testing (CSA A23.2-14A) is currently underway to further evaluate the AAR potential of a sample of similar composition obtained in the Becker drilling program.

Summary

The sample had a PN of 143, and was composed of a mix of igneous and metamorphic rock types. On the basis of the Petrographic Examination, the DH10-02: 55 - 70' Combined, coarse sample is considered to be unsuitable for use as concrete coarse aggregate. Some beneficiation of the gravel may be possible, given that this is "pit run" (unprocessed) gravel. Screening, crushing and blending of

PETROGRAPHIC EXAMINATION

Burnco, McNab Ck., DH 10-02: 55-70' combined, coarse
September 6, 2011

Page 4



crushed oversize materials may serve to improve the quality of the processed product.

Acceptance of the material for any uses (drainage rock, various types of fill, concrete aggregate, etc.) should be based upon review of all applicable durability testing results, including those given in Table 12 of CSA A23.1-09.

Reviewed by:

A handwritten signature in black ink, appearing to read "A. Briggs".

A. Briggs, M.Sc., P. Geo.

A handwritten signature in black ink, appearing to read "F. Shrimmer".

F. Shrimmer, P. Geo



Figure 1. Photo of the passing 10 mm, retained on 5 mm sieve fraction, showing the oxidation staining on many of the granitic particles and flat and/or elongated particle shapes of some of the metamorphic rock types. Water was applied to the sample to make colour and texture more visible.



PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

September 24, 2011
Project number: 09-1416-0004

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05: 22.9 – 30.5 m (75 – 100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010

Sampled by: GAL (BH/AB)

	PETROGRAPHIC DESCRIPTION/ PHYSICAL QUALITY	PERCENT BY MASS	MULTI- PLIER	PN CONTRI- BUTION
GOOD	Volcanic rock – felsic-intermediate, dense, hard, strong	0.3	1	0.3
	Granite - Granodiorite – dense, strong	24.2	1	24.2
	Diorite – dense, strong	30.4	1	30.4
	Amphibolite – dense, hard, strong	3.2	1	3.2
	Quartzite	0.3	1	0.3
	Metasediment: Siltstone and Sandstone – dense, strong	29.7	1	29.7
	Phyllite – dense, strong	<u>0.3</u>	1	<u>0.3</u>
	<i>Subtotal</i>	88.4		88.4
	Granite - Granodiorite - medium strength	7.2	3	21.6
	Diorite – medium strength	2.2	3	6.6
Metasiltstone and metasandstone – medium strength	1.4	3	4.2	
<i>Subtotal</i>	10.8		32.4	
POOR	Granite - Granodiorite – deeply weathered, friable	0.6	6	3.6
	Diorite – deeply weathered, friable	0.1	6	0.6
	Amphibolite - weak	<u>0.1</u>	6	<u>0.6</u>
	<i>Subtotal</i>	0.8		4.8
TOTAL		100.0		125.6

Note: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be separately assessed.

PETROGRAPHER: _____
A. Briggs, P. Geo.



Notice: The data given in this report pertain to the sample provided, and may not be applicable to samples from earlier or subsequent production. This report comprises a testing service only. Interpretation may be provided upon written request.

DH10-05: 22.9 – 30.5 m (75 – 100 ft) Combined Coarse**General**

The sample consisted of natural gravel from a larger Becker drilling sample that was split, quartered and screened on a 5 mm sieve. The particles were generally free of silt or clay coatings.

Particles were subrounded to subangular with some particles trending towards flat and elongated morphologies as a result of their lithology. Some particles consisted of crushed material originating from oversize material.

Lithologic Composition

The sample was composed of a mix of crystalline igneous and metamorphic rock types.

Volcanic rock types ranged in composition from felsic to intermediate and were typically porphyritic. Less than one percent of the sample was composed of volcanic rocks, these rocks particles were dense and of good strength.

Nearly one third of the sample consisted of plutonic igneous rocks. They were further subdivided into granite/granodiorite and diorite.

Granodiorite and granite consisted of plagioclase and potassium feldspar, quartz, biotite and amphibole, with some of the mafic minerals altered to chlorite. These rocks were typically medium grained, white and black/green/brown; many exhibited oxidation staining, as illustrated in Figure 1. Some of the granitic particles contained very little mafic minerals and some exhibited slight preferential orientation. Granite and granodiorite accounted for 32% of the sample, many of which were weathered, oxidized, brittle and of medium to low strength only.

Diorite was dark green/black and white or pink and similar in composition to granodiorite, except for the absence of quartz and potassium feldspar. Many of these particles exhibited oxidation staining, but this appeared to have less of an influence on the strength of the diorite compared to the more felsic plutonic rocks. Approximately 33% of the sample particles were diorite, most of which were of good strength.

A metamorphic rock that was largely mafic in composition was termed amphibolite. It was a generally dark green rock type, which exhibited preferential orientation, local schistosity, some white banding and variable grain size. Dominant minerals were amphibole, plagioclase feldspar and locally quartz. The amphibolite was typically of good strength and accounted for about 3% of the sample.

Metasedimentary rocks consisted of phyllite and metasiltstone/metasandstone.

The metasiltstone and metasandstone accounted for 31%, the finer grained metasiltstone dominated in abundance over the metasandstone. Degree of metamorphism ranged from almost none to intense, such that grain boundaries were almost obliterated. Mineralogically, quartz, muscovite and biotite were the main components in variable proportions; some particles trended in composition towards quartzite. Lamination of finer grained clay material was sometimes present. Most of the metasiltstones and metasandstones were of good strength. Material classified as quartzite comprised less than one percent of the sample and was of good strength.

Less than one percent of the sample consisted of phyllite. Many of these particles were elongated



and flat in shape, and possessed a sheen owing to the presence of mica minerals in the rock. They were of good strength.

Engineering Characteristics

In addition to the geologic classification of the aggregate, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, particle shape, presence or absence of vugs, voids, fissures, cracks, coatings and impurities were considered in the assignment of individual particles into various quality classifications.

On the basis of this sorting of the sample, the relative amounts of "Good", "Fair" and "Poor" quality material were determined. This enabled the calculation of a Petrographic Number (or "PN"), which is an index of a coarse aggregate's overall physical-mechanical quality. The PN for this sample was "126".

For reference, the PN scale given in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Comparison of the PN of 126 for the sample tested with the CSA table given above suggests that the DH10-05: 75 - 100' Combined, Coarse sample would be considered to be of marginally acceptable quality for use as concrete coarse aggregate, subject to compliance with applicable materials quality specifications.

Alkali-Aggregate Reaction Potential

Most of the rocks comprising this sample have been identified as "potentially alkali-reactive", meaning that they may contribute under certain circumstances to a deleterious expansive reaction in concrete termed "Alkali-Aggregate Reaction" (AAR). These rock types include granite, amphibolite, metasedimentary and volcanic rocks.

In order to evaluate this potential, assessment of the aggregate's AAR characteristics has been undertaken using the accelerated mortar bar test method (CSA A23.2-25A). The result indicates that the material can be classified as potentially alkali reactive. It is recommended that the potential for alkali reactivity is further evaluated using the concrete prism test method (CSA A23.2-14A). This is a one year test, the result for which overrides the accelerated mortar bar test result in determining the potential for alkali-aggregate reactivity for a specific material. This test is underway on material from the same test pitting program that is considered to have similar composition to the DH10-05: 22.9 – 30.5 ft (75 – 100 m) Combined, Coarse sample.

PETROGRAPHIC EXAMINATION

Burnco, McNab Ck., DH 10-05: 75-100' combined, coarse
September 24, 2011

Summary

The sample had a PN of 126, and was composed of a mix of igneous and metamorphic rock types. On the basis of the Petrographic Examination, the DH10-05: 22.9 – 30.5 m (75 – 100 ft) Combined, coarse sample is considered to be marginally suitable for use as concrete coarse aggregate. Some beneficiation of the gravel may be possible, given that this is a “pit run” (unprocessed) gravel. Screening, crushing and blending of crushed oversize materials may serve to improve the quality of the processed product.

Acceptance of the material for any uses (drainage rock, various types of fill, concrete aggregate, etc.) should be based upon review of all applicable durability testing results, including those given in Table 12 of CSA A23.1-09.

Reviewed by:



A. Briggs, P. Geo.



F. Shrimmer, P. Geo



Figure 1. Granite/granodiorite and diorite particles in the retained on 10 mm portion of the sample. Water was applied to the sample to make colour and texture more visible.



PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6
ATTENTION: Mr. Derek Holmes, Operations Manager

September 25, 2011
Project number: 09-1416-0004

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07: 21.3 – 29.0 m (70 – 95 ft) Combined Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010

Sampled by: GAL (BH/AB)

	PETROGRAPHIC DESCRIPTION/ PHYSICAL QUALITY	PERCENT BY MASS	MULTI- PLIER	PN CONTRI- BUTION	
GOOD	Volcanic rock – felsic-intermediate, dense, hard, strong	0.4	1	0.4	
	Granite - Granodiorite – dense, strong	29.7	1	29.7	
	Diorite – dense, strong	20.2	1	20.2	
	Amphibolite – dense, hard, strong	7.4	1	7.4	
	Metasediment: Siltstone and Sandstone – dense, strong	21.8	1	21.8	
	Phyllite, argillite – dense, strong	6.6	1	6.6	
	Quartzite – dense, strong	<u>1.3</u>	1	1.3	
	<i>Subtotal</i>	87.4		87.4	
	Granite - Granodiorite - medium strength	9.1	3	27.3	
	Diorite – medium strength	2.0	3	6.0	
	Amphibolite– medium strength	0.5	3	1.5	
	Meta- siltstone and sandstone – medium strength	0.8	3	2.4	
	Phyllite – medium strength, flat/elongated, splintery	0.1	3	0.3	
	Quartzite – medium strength	<u>0.1</u>	3	0.3	
	<i>Subtotal</i>	12.6		37.8	
	TOTAL		100.0		125.2

Note: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be separately assessed.

PETROGRAPHER: _____
A. Briggs, P. Geo.



DH10-07: 21.3 – 29.0 m (70 – 95 ft) Combined Coarse**General**

The sample consisted of natural gravel that was screened from a larger Becker drilling sample. The particles were generally free of silt or clay coatings.

Particles were subrounded to angular, and some particles were crushed with one or more fractured surface. Some crushed particles exhibited flat and elongated morphologies as a result of the laboratory crushing. Some uncrushed particles trended towards these morphologies as a result of their lithology.

Lithologic Composition

The sample was composed of a mixture of crystalline igneous and metamorphic rock types.

Volcanic rock types ranged in composition from felsic to intermediate and typically exhibited porphyritic textures. Less than one percent of the sample was composed volcanic rocks; these rock particles were dense and of good strength.

Plutonic rock types were the dominant component in the sample, contributing about 60% of the particles. They were further subdivided into granodiorite/granite and diorite.

Granodiorite and granite consisted of plagioclase feldspar, alkali feldspar, quartz, biotite and amphibole, with some of the mafic components altered to chlorite. These rocks were typically white and black/green/brown; many exhibited oxidation staining. These plutonic rocks were typically medium grained. Granitic rocks accounted for nearly 39% of the sample particles, many of which were weathered, oxidized, brittle and of medium strength only. Diorite was dark green/black and white and pink, and similar in composition to granodiorite, except for the absence of quartz and alkali feldspar. Diorite accounted for 22% of the sample particles, most of which were of good strength.

Amphibolite was a generally dark green, fine to medium grained rock type, which exhibited preferential orientation, schistosity and some banding. Dominant minerals were amphibole, plagioclase feldspar, biotite, quartz and ilmenite. This rock type was typically of good strength and accounted for about 8% of the sample.

Metasedimentary rocks consisted of phyllite and metasiltstone with some metasandstone.

Almost 23% of the sample particles were metasiltstone and metasandstone, most of which was of good strength. The intensity of metamorphism ranged from almost none to quite intense, such that grain boundaries were not discernible. Quartz, muscovite and biotite were the main constituents, which varied considerably in proportion between individual particles. Lamination was absent in many particles, but some exhibited interlaminating phyllite.

Phyllite was very fine grained, dark grey and consisted largely of mica minerals that gave the particles a sheen on the particle surfaces. Many of the phyllite particles were elongated and flatter in shape due to pronounced lamination. However, in this sample, some very fine grained, dark grey sedimentary rocks did not exhibit typical lamination, but were rather massive. These were likely argillite, which is of a lower metamorphic grade than phyllite. Phyllite and argillite contributed nearly 7% of the sample particles.



A small amount of the metasedimentary rocks were quartzite, contributing 1.4% of the sample. Some of the quartzite contained speckles of pyrite. Most of the quartzite was strong and dense.

Engineering Characteristics

In addition to the geologic classification of the aggregate, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, particle shape, presence or absence of vugs, voids, fissures, cracks, coatings and impurities were considered in the assignment of individual particles into various quality classifications.

On the basis of this sorting of the sample, the relative amounts of “Good” and “Fair” quality material were determined. This enabled the calculation of a Petrographic Number (or “PN”), which is an index of a coarse aggregate’s overall physical-mechanical quality. The PN for this sample was “125”.

For reference, the PN scale given in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Comparison of the PN of 125 for the sample tested with the CSA table given above suggests that the DH10-07: 75- -90’ Combined, Coarse sample would be considered to be of marginally acceptable quality, in its as-is condition, for use as concrete coarse aggregate. This is due primarily to the relative amounts of moderately to deeply weathered granitic rock and phyllite particles that exhibited less than desirable particle morphology.

Alkali-Aggregate Reaction Potential

Most of the rocks comprising this sample have been identified as “potentially alkali-reactive”, meaning that they may contribute under certain circumstances to a deleterious expansive reaction in concrete termed “Alkali-Aggregate Reaction” (AAR). These rock types include granite, amphibolite, metasedimentary and volcanic rocks.

In order to evaluate this potential, assessment of the aggregate’s AAR characteristics has been undertaken using the accelerated mortar bar test (AMBT) in accordance with the procedure in CSA A23.2-25A. The result indicates that the material can be classified as potentially reactive with respect to AAR. It is recommended that the concrete prism test (CSA A23.2-14A) be carried out to further characterize the properties of the material with respect to the potential for AAR. Currently a concrete prism test is underway on a sample obtained from the drilling project. Final results are expected to be available in August 2012, and will be reported under separate cover.

PETROGRAPHIC EXAMINATION

DH 10-07: 21.3 – 29.0 m combined, coarse
September 25, 2011



Summary

The sample had a PN of 125, and was composed of a mix of igneous and metamorphic rock types. On the basis of the Petrographic Examination, the DH10-07: 21.3 – 29.0 m (70 – 95 ft) Combined, coarse sample is considered to be marginally suitable for use as concrete coarse aggregate. Some beneficiation of the gravel may be possible, given that this is a “pit run” (unprocessed) gravel. Screening, crushing and blending of crushed oversize materials may serve to improve the quality of the processed product.

Acceptance of the material for any uses (drainage rock, various types of fill, concrete aggregate, etc.) should be based upon review of all applicable durability testing results, including those given in Table 12 of CSA A23.1-09.

Reviewed by:

A handwritten signature in black ink, appearing to read "A. Briggs", written over a horizontal line.

A. Briggs, M.Sc., P. Geo.

A handwritten signature in black ink, appearing to read "F. Shrimmer", written over a horizontal line.

F. Shrimmer, P. Geo.

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PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6
ATTENTION: Mr. Derek Holmes, Operations Manager

October 13, 2011
Project number: 09-1416-0004

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07: 30.5 – 33.5 m (100 – 110 ft) Combined Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010

Sampled by: GAL (BH/AB)

	PETROGRAPHIC DESCRIPTION/ PHYSICAL QUALITY	PERCENT BY MASS	MULTI- PLIER	PN CONTRI- BUTION
GOOD	Volcanic rock – felsic-intermediate, dense, hard, strong	2.6	1	2.6
	Tuff – dense, strong	1.2	1	1.2
	Granite - Granodiorite – dense, strong	20.4	1	20.4
	Diorite – dense, strong	26.0	1	26.0
	Amphibolite – dense, hard, strong	27.3	1	27.3
	Metasediment: Siltstone and Sandstone – dense, strong	8.7	1	8.7
	Phyllite – dense, strong	1.4	1	1.4
	Quartz – dense, strong	<u>Trace</u>	1	<u>Trace</u>
	<i>Subtotal</i>	87.6		87.6
FAIR	Volcanic rock – medium strength	0.1	3	0.3
	Tuff – medium strength	0.1	3	0.3
	Granite - Granodiorite - medium strength	4.8	3	14.4
	Diorite – medium strength	2.0	3	6.0
	Amphibolite – medium strength	1.0	3	3.0
	Meta- siltstone and sandstone – medium strength	0.8	3	2.4
	Phyllite – medium strength, flat/elongated, splintery	<u>3.4</u>	3	<u>10.2</u>
	<i>Subtotal</i>	12.2		36.6
POOR	Granite - Granodiorite – intensely weathered, friable	<u>0.2</u>	6	<u>1.2</u>
		<i>Subtotal</i>	0.2	1.2
TOTAL		100.0		125.4

Note: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be separately assessed.

PETROGRAPHER: _____
A. Briggs, P. Geo.



Notice: The data given in this report pertain to the sample provided, and may not be applicable to samples from earlier or subsequent production. This report comprises a testing service only. Interpretation may be provided upon written request.

DH10-07: 30.5 – 33.5 m (100 – 110 ft) Combined, Coarse**General**

The sample consisted of natural gravel that was screened from a larger Becker drilling sample and blended with crushed oversize material. The particles were generally free of silt or clay coatings.

Particles were subrounded to angular, and some particles were crushed with one or more fractured surface. Some crushed particles exhibited flat and elongated morphologies as a result of the laboratory crushing. Some uncrushed particles trended towards these morphologies as a result of their lithology.

Lithologic Composition

The sample was composed of a mix of crystalline igneous and metamorphic rock types.

Volcanic rock types ranged in composition from felsic to mafic and very fine grained to aphanitic, sometimes porphyritic. Some were identified as tuff and classified separately. Almost three percent of the sample was composed volcanic rocks, while little more than one percent of the sample consisted of tuff, most of these rocks particles were dense and of good strength.

Almost half of the sample consisted of plutonic igneous rocks. They were further subdivided into granite/granodiorite and diorite. Granodiorite consisted of plagioclase feldspar, quartz, biotite and amphibole, with some of the mafic components altered to chlorite. These rocks were typically white and black/green/brown; many exhibited oxidation staining, rendering the feldspar pinkish in appearance. Granite and granodiorite accounted for a quarter of the sample, many of which were weathered, oxidized, brittle and of medium to low strength only. Diorite was dark green/black and white and similar in composition to granodiorite, except for the absence of quartz. Diorite accounted for 28% of the sample particles, most of which were of good strength.

The largest lithological group was a generally dark green rock type, which exhibited preferential orientation, schistosity, some white banding and variable grain size. Some portions were similar in appearance to a fine grained diorite, others were very fine grained to aphanitic and a third category was fine grained and banded. This rock was termed "amphibolite". Dominant minerals were amphibole, chlorite and some biotite and plagioclase feldspar. Some portions may also be quartz rich, in particular some aphanitic particles. This rock type was typically of good strength and accounted for about 28% of the sample.

Metasedimentary rocks consisted of phyllite and metasilstone with some metasandstone. These typically exhibited lamination and phyllite often contained some silty layering and some metasilstone and metasandstone contained more sine grained laminae. Therefore, the two rock type categories overlapped one another. The coarser grained metasilstone and metasandstone accounted for nearly 10%, most of which was of good strength. Almost 5% of the sample consisted of phyllite. Many of these particles were typically elongated and flatter in shape, and possessed a sheen owing to the presence of mica minerals in the rock. These rocks ranged in strength from strong to medium strength.

One particle that consisted of pure quartz was dense and of good strength.



Engineering Characteristics

In addition to the geologic classification of the aggregate, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, particle shape, presence or absence of vugs, voids, fissures, cracks, coatings and impurities were considered in the assignment of individual particles into various quality classifications.

On the basis of this sorting of the sample, the relative amounts of “Good”, “Fair” and “Poor” quality material were determined. This enabled the calculation of a Petrographic Number (or “PN”), which is an index of a coarse aggregate’s overall physical-mechanical quality. The PN for this sample was “125”.

For reference, the PN scale given in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Comparison of the PN of 125 for the sample tested with the CSA table given above suggests that the DH10-07: 100 – 110’ Combined, Coarse sample would be considered to be of marginally acceptable quality, in its as-is condition, for use as concrete coarse aggregate. This is due primarily to the relative amounts of moderately to deeply weathered granitic rock and phyllite particles that exhibited less than desirable particle morphology.

Alkali-Aggregate Reaction Potential

Most of the rocks comprising this sample have been identified as “potentially alkali-reactive”, meaning that they may contribute under certain circumstances to a deleterious expansive reaction in concrete termed “Alkali-Aggregate Reaction” (AAR). These rock types include granodiorite, gneiss, metasedimentary and volcanic rocks.

In order to evaluate this potential, assessment of the aggregate’s AAR characteristics using the procedures given in CSA A23.1/.2-09 is recommended.

Material obtained in this drilling program which is considered to be lithologically similar to the DH10-07: 30.5 – 33.5 m (100 – 110 ft) Combined, Coarse sample has been tested in accordance with CSA A.23.2-25A, accelerated mortar bar test and been identified as potentially reactive with respect to AAR. Concrete prism testing (CSA A23.2-14A) is underway to assess further the potential for AAR and will be reported separately upon co completion of the test, which is scheduled for August 2012.

PETROGRAPHIC EXAMINATION

DH 10-07: 100-110' combined, coarse
October 13, 2011

Page 4



Summary

The sample had a PN of 125, and was composed of a mix of igneous and metamorphic rock types. On the basis of the Petrographic Examination, the DH10-07: 30.5 – 33.5 m (100 – 110 ft) Combined, coarse sample is considered to be marginally suitable for use as concrete coarse aggregate. Some beneficiation of the gravel may be possible, given that this is a "pit run" (unprocessed) gravel. Screening, crushing and blending of crushed oversize materials may serve to improve the quality of the processed product.

Acceptance of the material for any uses (drainage rock, various types of fill, concrete aggregate, etc.) should be based upon review of all applicable durability testing results, including those given in Table 12 of CSA A23.1-09.

Reviewed by:

A handwritten signature in black ink, appearing to read "A. Briggs", written over a horizontal line.

A. Briggs, M.Sc., P. Geo.

A handwritten signature in black ink, appearing to read "F. Shrimmer", written over a horizontal line.

F. Shrimmer, P. Geo.



**PETROGRAPHIC EXAMINATION
OF FINE AGGREGATE
CSA A23.2-15A / ASTM C 295**

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

October 13, 2011
Project number: 09-1416-0004

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH 10-5: 22.9 – 30.5 m (75 – 100 ft) Combined Fines
Source:	Mc Nab Creek Becker drilling

Date sampled: June 15 - 20, 2010

Sampled by: GAL (BH/AB)

ROCK/MINERAL TYPE	PERCENT BY COUNT BY SIEVE SIZE (mm)					WEIGHTED TOTAL
	2.50	1.25	0.630	0.315	0.160	
Volcanic	2.8	0.6	0.6	0.0	0.0	0.5
Granite/Granodiorite	36.0	32.0	20.9	9.2	1.6	16.5
Diorite	25.0	27.5	21.9	2.3	1.6	13.1
Altered granite - diorite	2.5	0.6	1.0	0.0	0.0	0.6
Amphibolite	1.3	1.6	0.6	0.3	0.0	0.6
Metasandstone/metasiltstone	25.9	21.8	9.6	5.6	2.0	10.3
*Phyllite	1.3	0.3	0.0	1.6	0.0	0.6
Metamorphic, undifferentiated	0.6	0.3	1.3	1.0	0.0	0.7
Quartz	0.3	3.5	19.0	45.1	70.7	33.7
Feldspar	2.5	11.2	23.5	28.0	15.3	18.8
Amphibole/pyroxene	0.0	0.6	0.6	4.0	3.2	2.1
Magnetite	0.0	0.0	0.0	0.3	0.0	0.1
*Mica, chlorite	0.9	0.0	1.0	1.6	4.9	1.9
Oxidized particles	0.0	0.0	0.0	0.3	0.7	0.2
*Weathered, weak particles	<u>0.9</u>	<u>0.0</u>	<u>0.0</u>	<u>0.7</u>	<u>0.0</u>	<u>0.3</u>
TOTALS	100.0	100.0	100.0	100.0	100.0	100.0

Note: 1. All identification done using a binocular microscope, and standard physical index tests.
“*” denotes weak and/or friable constituents.

PETROGRAPHER: 
A. Briggs, M.Sc., P.Geo.



Note: The data given in this report pertain to the sample provided, and may not be applicable to samples from earlier or subsequent production. This report comprises a testing service only. Interpretation may be provided upon written request.

DH 10 – 05: 22.9 – 30.5 m (75 - 100 ft) Combined Fines

The sample consisted of the fraction passing a 5 mm sieve from a combined sample obtained from a Becker drilling exploration program. A representative portion was split and quartered from the larger sample and sieved into individual sieve fractions in preparation for the examination.

The particle shape of the sample ranged from angular to rounded, with sub-angular shapes dominating. Particle surface texture was moderately rough.

Geology/Mineralogy

Detailed information on the mineralogic and lithologic composition of the various grain size fractions is presented in the table above and summarized below. Identification of rock types and minerals was done using a stereomicroscope with magnifications from 8x to 50x, supplemented by basic geologic diagnostic methods. Thin section and chemical analyses to assist in rock type and mineralogical identifications were undertaken.

The sample was a mixture of crystalline plutonic rocks, with some metamorphic and minor volcanic rock types and the minerals which comprise these rocks. Resistant minerals, such as quartz, made up most of the finer sand size fractions.

Plutonic rocks accounted for about 30% of the sample and consisted of granite, granodiorite and diorite. Mineral constituents included quartz, plagioclase feldspar, alkali feldspar, biotite and amphibole. Grain size ranged widely from fine to coarse grained. Many of the granite particles were coarse grained, while other types of plutonic rocks were typically medium grained. Some plutonic rocks exhibited alteration to chlorite and epidote and were separately classified. Oxidation was observed in some particles and in particular affected the coarse grained granites, and biotite single mineral grains originating from these.

Volcanic rocks accounted for only half a percent of the sample. These were intermediate to felsic and generally of good quality.

Approximately 12% of the sample consisted of metamorphic rock fragments, which varied in composition and origin.

The dominant metamorphic rock types were metasedimentary - phyllite and metasandstone/siltstone similar to that found in an abandoned quarry face on site. The metasandstone/siltstone was typically dark brown or grey in colour and of good physical quality. This rock type made up approximately 10% of the sample. Less than one percent of the sample particles were composed of phyllite, which was very fine grained, grey and exhibited a sheen on the particle surfaces, indicative of the presence of mica in the rock. In particular in the finer size fractions, this rock type was weak.

Amphibolite, a dark green metamorphic rock composed of amphibole, plagioclase and minor quartz, was fine to medium grained and exhibited foliation that was often only visible in the larger particles of the sample. Therefore, with mineralogy similar to diorite, the amphibolite was not always distinguishable from diorite in the finest size fractions. The particles were typically competent and strong; amphibolite accounted for about 1% of the sample.

An additional 0.7% of the sample comprised metamorphic rocks that were not further differentiated, due to lack of distinguishing texture.

Quartz was the most dominant single mineral particle type, in particular in the finest size fractions, making up approximately 34% of the sample. Feldspar was more abundant than quartz in the coarser size fractions and accounted for about 19% of the sample. The quartz and feldspar grains were of good physical strength.

Amphibole single mineral grains were identified in the sample, amounting to 2% in total. These mineral grains were generally competent. However, many amphibole particles in the smallest size fraction were somewhat weaker and broke apart in a splintery manner, when moderate pressure was applied.

Magnetite, a common mineral constituent in diorite and amphibolite, was present in the finest size fraction, accounting for 0.1% only of the sample. These particles were strong and competent.

Together with chlorite, the mica minerals biotite and muscovite made up about 2% of the sample. Biotite and chlorite particles were dark brown or green, flat, and often oxidized. The mica minerals and chlorite tended to be fissile and of poor strength.

Some particles exhibited weathering, and as a result were weak. This group was separately classified, amounting to less than 1% of the sample, and consisted of weak particles representing a mixture of all rock types mentioned above.

Particles that were oxidized and not possible to identify accounted for 0.2% of the sample particles. Oxidation was typically only surficial and did not significantly weaken the particles.

Physical-Mechanical Quality

Overall, the fine fraction of the sample was composed mostly of grains which were of good inferred strength and acceptable engineering characteristics. Porous, weak or friable particles made up less than 3% of the sample.

Alkali-Aggregate Reaction Potential

Some of the rock types comprising the sample would be considered as “potentially alkali-reactive”, with respect to the use of the material in Portland cement concrete. It would thus be recommended that appropriate evaluations as given in the current version of CSA A23.1 and A23.2 be undertaken to assess this potential further, for its use in concrete.

An accelerated mortar bar test, CSA A23.2-25A, has been completed for this sample. The results indicate that the material can be classified as reactive with respect to AAR. A concrete prism test, CSA A23.2-14A, has been initiated to further evaluate the AAR properties of similar material obtained from a different drillhole during the same drilling project. The test is scheduled to be completed in August 2012 and will be reported separately, when results are available.

PETROGRAPHIC EXAMINATION

Burnco McNab – DH 10-05: 75 - 100 ft combined fines
October 13, 2011

Page 4



Summary

The Burnco McNab Creek DH 10-07: 45 - 65' Combine Fines sample, as examined, was primarily composed of plutonic and metamorphic rocks with a small amount of volcanic rock types. Single mineral grains that are constituents of these rocks were significant components of the sample.

On the basis of the Petrographic Examination, the aggregate is judged suitable for use as concrete fine aggregate, subject to satisfactory compliance with applicable specifications as given in the current version of CSA A23.1/A23.2.

Reviewed by:

A handwritten signature in black ink, appearing to read "A. Brigg", written over a horizontal line.

A. Brigg, M.Sc., P. Geo.

A handwritten signature in black ink, appearing to read "F. Shrimmer", written over a horizontal line.

F. Shrimmer, P. Geo.



**PETROGRAPHIC EXAMINATION
OF FINE AGGREGATE
CSA A23.2-15A / ASTM C 295**

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6
ATTENTION: Mr. Derek Holmes, Operations Manager

October 12, 2011
Project number: 09-1416-0004

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH 10-7: 13.7 – 19.8 m (45 – 65 ft) Combined Fines
Source:	McNab Creek Becker drilling

Date sampled: June 15 - 20, 2010

Sampled by: GAL (BH/AB)

ROCK/MINERAL TYPE	PERCENT BY COUNT BY SIEVE SIZE (mm)					WEIGHTED TOTAL
	2.50	1.25	0.630	0.315	0.160	
Volcanic	5.2	2.0	2.0	1.3	0.3	2.0
Granite/Granodiorite	27.8	26.7	19.4	12.9	1.2	18.3
Diorite	29.0	24.8	14.8	5.8	2.2	14.9
Altered granite - diorite	1.9	4.9	6.3	2.9	0.0	4.0
Amphibolite	9.0	5.2	2.3	2.6	0.6	3.6
Metasandstone/metasilstone	20.3	16.9	6.9	6.8	2.5	10.0
*Phyllite	3.6	2.6	2.6	0.6	0.3	2.0
Metamorphic, undifferentiated	0.0	2.9	2.3	0.3	2.5	1.7
Quartz	0.0	3.9	20.1	38.2	60.1	23.1
Feldspar	1.6	10.1	21.0	22.8	20.1	17.0
Amphibole/pyroxene	0.0	0.0	0.3	2.9	6.2	1.5
Magnetite	0.0	0.0	0.0	0.0	0.9	0.1
*Mica, chlorite	0.3	0.0	0.7	1.0	2.5	0.7
*Weak particles, some oxidized	0.3	0.0	1.0	1.9	0.6	0.9
*Clay lumps	<u>1.0</u>	<u>0.0</u>	<u>0.3</u>	<u>0.0</u>	<u>0.0</u>	<u>0.2</u>
TOTALS	100.0	100.0	100.0	100.0	100.0	100.0

Note: 1. All identification done using a binocular microscope, and standard physical index tests.
 “*” denotes weak and/or friable constituents.

PETROGRAPHER: 
 A. Briggs, M.Sc., P.Geo.



Notice: The data given in this report pertain to the sample provided, and may not be applicable to samples from earlier or subsequent production. This report comprises a testing service only. Interpretation may be provided upon written request.

DH 10 – 07: 13.7 – 19.8 m (45 - 65 ft) Combined Fines

The sample consisted of the fraction passing a 5 mm sieve from a combined sample obtained from a Becker drilling exploration program. A representative portion was split and quartered from the larger sample and sieved into individual sieve fractions in preparation for the examination.

The particle shape of the sample ranged from angular to rounded, with sub-angular shapes dominating. Particle surface texture was moderately rough.

Geology/Mineralogy

Detailed information on the mineralogic and lithologic composition of the various grain size fractions is presented in the table above and summarized below. Identification of rock types and minerals was done using a stereomicroscope with magnifications from 8x to 50x, supplemented by basic geologic diagnostic methods. Thin section and chemical analyses to assist in rock type and mineralogical identifications were undertaken.

The sample was a mixture of crystalline plutonic rocks, with some metamorphic and minor volcanic rock types and the minerals which comprise these rocks. Resistant minerals, such as quartz, made up most of the finer sand size fractions.

Plutonic rocks accounted for about 37% of the sample and consisted of granite, granodiorite and diorite. Mineral constituents included quartz, plagioclase feldspar, alkali feldspar, biotite and amphibole. Grain size ranged widely from fine to coarse grained. Many of the granite particles were coarse grained, while other types of plutonic rocks were typically medium grained. Some plutonic rocks exhibited alteration to chlorite and epidote and were separately classified. Oxidation was observed in some particles and in particular affected the coarse grained granites, and biotite single mineral grains originating from these.

Volcanic rocks accounted for two percent of the sample. These were intermediate to felsic and generally of good quality.

Approximately 17% of the sample consisted of metamorphic rock fragments, which varied in composition and origin.

The dominant metamorphic rock types were metasedimentary - phyllite and metasandstone/siltstone similar to that found in an abandoned quarry face on site. The metasandstone/siltstone was typically dark brown or grey in colour and of good physical quality. This rock type made up 10% of the sample. Another 2% of the sample particles were composed of phyllite, which was very fine grained, grey and exhibited a sheen on the particle surfaces, indicative of the presence of mica in the rock. In particular in the finer size fractions, this rock type was weak.

Amphibolite, dark greenish metamorphic rock composed of amphibole, plagioclase and minor quartz, was fine to medium grained and exhibited foliation that was often only visible in the larger particles of the sample. Therefore, with mineralogy similar to diorite, the amphibolite was not always distinguishable from diorite in the finest size fractions. The particles were typically competent and strong; amphibolite accounted for about 4% of the sample.

An additional 1.7% of the sample comprised metamorphic rocks that were not further differentiated, due to lack of distinguishing texture.

Quartz was the most dominant single mineral particle type, in particular in the finest size fractions, making up approximately 23% of the sample. Feldspar was more abundant than quartz in the coarser size fractions and accounted for about 17% of the sample. The quartz and feldspar grains were of good physical strength.

Amphibole and pyroxene single mineral grains were identified in the sample, amounting to 1.5% in total. These mineral grains were generally competent. However, many amphibole particles in the smallest size fraction were somewhat weaker and broke apart in a splintery manner, when moderate pressure was applied.

Magnetite, a common mineral constituent in diorite and amphibolite, was present in the finest size fraction, accounting for 0.1% only of the sample. These particles were strong and competent.

Together with chlorite, the mica minerals biotite and muscovite made up about 2% of the sample. Biotite and chlorite particles were dark brown or green, flat, and often oxidized. The micas and chlorite tended to be fissile and of poor strength.

Some particles exhibited weathering and oxidation, and as a result were weak. This group was separately classified, amounting to almost 1% of the sample, and consisted of weak particles representing a mixture of all rock types mentioned above.

Particles identified as clay lumps were very weak aggregations of clay and silt, which disintegrated readily when minimal pressure was applied. They accounted for only 0.2% of the sample.

Physical-Mechanical Quality

Overall, the fine fraction of the sample was composed mostly of grains which were of good inferred strength and acceptable engineering characteristics. However, almost 4% of the sample, by particle count, was identified as porous, weak or friable in the examination of the sand sample.

Alkali-Aggregate Reaction Potential

Some of the rock types comprising the sample would be considered as “potentially alkali-reactive”, with respect to the use of the material in Portland cement concrete. It would thus be recommended that appropriate evaluations as given in the current version of CSA A23.1 and A23.2 be undertaken to assess this potential further, for its use in concrete.

An accelerated mortar bar test, CSA A23.2-25A, has been completed for this sample. The results indicate that the material can be classified as reactive with respect to AAR. A concrete prism test, CSA A23.2-14A, has been initiated to further evaluate the AAR properties of similar material obtained from a different drillhole in the same drilling project. The test is scheduled to be completed in August 2012 and will be reported separately, when results are available.

PETROGRAPHIC EXAMINATION

Burnco McNab – DH 10-07: 45 - 65 ft combined fines
October 12, 2011

Page 4



Summary

The Burnco McNab Creek DH 10-07: 13.7 – 19.8 m (45 – 65 ft) Combined Fines sample, as examined, was primarily composed of plutonic and metamorphic rocks with a small amount of volcanic rock types. The petrographic examination identified nearly 4% of particles that were weak and of poor engineering quality due to weathering and oxidation. It is expected that the quality of the material could potentially be improved through processing.

Acceptance of the material for any use should be based on review of all applicable physical testing results, including those based on the current version of CSA A23.1 and A23.2.

Reviewed by:

A handwritten signature in black ink, appearing to read "A. Brigg", written over a horizontal line.

A. Brigg, M.Sc., P. Geo.

A handwritten signature in black ink, appearing to read "F. Shrimmer", written over a horizontal line.

F. Shrimmer, P. Geo.



**PETROGRAPHIC EXAMINATION
OF FINE AGGREGATE
CSA A23.2-15A / ASTM C 295**

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

September 6, 2011
Project number: 09-1416-0004

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH 10-7: 30.5 – 33.5 m (100 – 110 ft) Combined Fines
Source:	McNab Creek Becker drilling

Date sampled: June 15-20, 2010

Sampled by: GAL (BH/AB)

ROCK/MINERAL TYPE	PERCENT BY COUNT BY SIEVE SIZE (mm)					WEIGHTED TOTAL
	2.50	1.25	0.630	0.315	0.160	
Volcanic	1.6	0.6	0.0	0.0	0.0	0.2
Granite/Granodiorite	47.4	52.3	39.0	22.3	5.3	28.8
Diorite	18.3	12.4	11.2	3.6	1.6	7.3
Amphibolite	21.5	14.3	7.6	8.4	4.7	9.4
Metasandstone/metasilstone	3.5	1.1	2.2	1.3	0.3	1.5
*Phyllite	4.5	4.9	1.3	0.6	0.9	1.7
Metamorphic, undifferentiated	0.6	0.9	1.0	1.3	0.6	1.0
Quartz	0.0	6.1	19.8	41.6	60.2	32.1
Feldspar	1.3	4.0	14.1	14.8	12.3	11.6
Amphibole/pyroxene	0.0	0.3	0.0	1.9	4.7	1.6
*Biotite	1.0	1.4	0.6	2.3	4.4	2.1
*Weak particles, some oxidized	0.3	1.7	3.3	1.9	5.0	2.7
TOTALS	100.0	100.0	100.0	100.0	100.0	100.0

Note: 1. All identification done using a binocular microscope, and standard physical index tests.
 "*" denotes weak and/or friable constituents.

PETROGRAPHER: 
 A. Briggs, M.Sc., P.Geo.



Notice: The data given in this report pertain to the sample provided, and may not be applicable to samples from earlier or subsequent production. This report comprises a testing service only. Interpretation may be provided upon written request.

DH 10 – 07: 30.5 – 33.5 m (100 – 110 ft) Combined Fines

The sample consisted of the fraction passing a 5 mm sieve from a combined sample obtained from a Becker drilling exploration program. A representative portion was split and quartered from the larger sample and sieved into individual sieve fractions in preparation for the examination.

The particle shape of the sample ranged from angular to rounded, with sub-angular shapes dominating. Particle surface textures were moderately rough.

Geology/Mineralogy

Detailed information on the mineralogic and lithologic composition of the various grain size fractions is presented in the table above and summarized below. Identification of rock types and minerals was done using a stereomicroscope with magnifications from 8x to 50x, supplemented by basic geologic diagnostic methods. Thin section and chemical analyses to assist in rock type and mineralogical identifications were undertaken.

The sample was a mixture of crystalline plutonic rocks, with some metamorphic rock types and the minerals which comprise these rocks. More resistant minerals such as quartz made up most of the finer sand size fractions.

Plutonic rocks made up about 36% of the sample and consisted of granite, granodiorite and diorite. Mineral constituents included quartz, plagioclase feldspar, potassium feldspar, biotite and amphibole. Grain size ranged widely from fine to coarse grained. Many of the granite particles were coarse grained, while other types of plutonic rocks were typically medium grained. Some plutonic rocks exhibited alteration to chlorite and epidote; slightly gneissic texture was also observed in some particles. Oxidation was observed in some particles and in particular affected the coarse grained granites, and biotite single mineral grains originating from these were typically oxidized.

Volcanic rocks accounted for less than one percent of the sample. These were intermediate to felsic and generally of good quality.

Approximately 14% of the sample consisted of metamorphic rock fragments, which varied in composition and origin.

The dominant metamorphic rock type was mafic in composition and exhibited variable grain size from aphanitic to fine grained, rarely medium grained. It was typically dark greenish grey in colour and exhibited banding, often only visible only in larger particles than those encountered in this fine grained portion of the sample. The particles were typically competent, exhibited little alteration and accounted for about 9% of the sample.

Phyllite and metasandstone/siltstone similar to that found in an abandoned quarry face on site were present in the sample. The metasandstone/siltstone was typically dark brown or grey in colour and of good physical quality. The main mineral constituents were quartz and mica. This rock type made up 1.5% of the sample. Another 1.7% of the sample particles were composed of phyllite, which was very fine grained, grey and exhibited a sheen on the particle surfaces, indicative of the presence of mica in the rock. In particular in the finer size fractions, this rock type was weak.

An additional percent of the sample was metamorphic rocks that were not further differentiated, due to lack of distinguishing texture.

Quartz was the most dominant single mineral particle type, making up almost 32% of the sample. Feldspar accounted for about 12% of the sample. The quartz and feldspar grains were of good physical strength.

Amphibole and pyroxene single mineral grains were identified in the sample, amounting to 1.6% in total. These mineral grains were generally competent. However, many amphibole particles in the smallest size fraction were somewhat weaker and broke apart in a splintery manner, when moderate pressure was applied.

The mica mineral biotite made up about 2% of the sample. These particles were dark brown, flat, and often oxidized. They tended to be fissile and of poor strength.

Some particles exhibited weathering and oxidation, and as a result were weak. This group was separately classified, amounting to 2.7% of the sample, and consisted of weak particles representing a mixture of all rock types mentioned above

Physical-Mechanical Quality

Overall, the fine fraction of the sample was composed mostly of grains which were of good inferred strength and acceptable engineering characteristics. However over 6% of the sample, by particle count, was identified as porous, weak or friable in the examination of the sand sample.

Alkali-Aggregate Reaction Potential

Some of the rock types comprising the sample would be considered as “potentially alkali-reactive”, with respect to the use of the material in Portland cement concrete. It would thus be recommended that appropriate evaluations as given in the current version of CSA A23.1 and A23.2 be undertaken to assess this potential further, for its use in concrete.

An accelerated mortar bar test, CSA A23.2-25A, has been completed for this sample. The results indicate that the material can be classified as reactive with respect to AAR. A concrete prism test, CSA A23.2-14A, has been initiated to further evaluate the AAR properties of similar material obtained from a different drillhole in the same drilling project. The test is scheduled to be completed in August 2012 and will be reported separately, when results are available.

Summary

The Burnco McNab Creek DH 10-07: 30.5 – 33.5 m (100 – 110 ft) Combined Fines sample, as examined, was primarily composed of plutonic and metamorphic rocks. The petrographic examination identified over 6% of particles that were weak and of poor engineering quality due to weathering and oxidation. It is expected that the quality of the material could potentially be improved through processing.

Acceptance of the material for any use should be based on review of all applicable physical testing results, including those based on the current version of CSA A23.1 and A23.2.

Reviewed by:



A. Brigg, M.Sc., P. Geo.



F. Shrimmer, P. Geo.



APPENDIX E

Specific Gravity and Absorption Test Reports



RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

July 4, 2011

Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 m (35-55 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010

Sampled by: Client

Date tested: June 30, 2011

Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	5275.6	2.695	2.712	2.741	0.62
2	5607.4	2.687	2.705	2.735	0.65
AVERAGE		2.691	2.709	2.738	0.64

Reported by: I. Chung

Reviewed by: _____

A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

July 4, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 16.8 – 21.3 m (55 – 70 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 30, 2011

Sampled by: Client
Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	5160.4	2.719	2.734	2.759	0.54
2	5652.1	2.708	2.724	2.751	0.59
AVERAGE		2.714	2.729	2.755	0.57

Reported by: I. Chung

Reviewed by: _____
A. Briggs, P. Geo.



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GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Sample:	DH10-05 22.9 – 30.5 m (75-100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	7002.5	2.733	2.748	2.775	0.55
2	6915.6	2.722	2.737	2.764	0.56
AVERAGE		2.728	2.743	2.770	0.56

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

July 4, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 30.5 – 33.5 m (100-110 ft), Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 30, 2011

Sampled by: Client
Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	4143.9	2.701	2.717	2.746	0.61
2	4137.1	2.685	2.702	2.730	0.62
AVERAGE		2.693	2.710	2.738	0.62

Reported by: I. Chung

Reviewed by:
A. Briggs, P. Geo.





RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 13.7 – 15.2 m (45-50 ft), 18.3 – 19.8 m (60-65 ft) Combined Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	3022.8	2.718	2.737	2.769	0.68
2	3378.2	2.711	2.728	2.759	0.64
AVERAGE		2.715	2.732	2.764	0.66

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



**RELATIVE DENSITY AND ABSORPTION
OF COARSE AGGREGATE
CSA A23.2-12A**

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Sample:	DH10-07 21.3 – 29.0 m (70 – 95 ft) Combined Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	5526.3	2.743	2.757	2.782	0.51
2	5559.2	2.731	2.746	2.774	0.58
AVERAGE		2.737	2.752	2.778	0.55

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 30.5 – 33.5 m (100 - 110 ft) Combined Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	6306.6	2.707	2.721	2.747	0.55
2	6261.9	2.705	2.721	2.748	0.59
AVERAGE		2.706	2.721	2.748	0.57

Reported by: I. Chung

Reviewed by:
A. Briggs, P. Geo.





RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 5, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: DC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	4537.0	2.749	2.762	2.784	0.45
2	4485.9	2.744	2.760	2.790	0.60
AVERAGE		2.747	2.761	2.787	0.53

Reported by: B. Hudson

Reviewed by:
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 18, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	3470.6	2.740	2.759	2.793	0.70
2	3364.2	2.734	2.752	2.784	0.66
AVERAGE		2.737	2.756	2.789	0.68

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE CSA A23.2-12A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-9 and 11 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 11, 2009

Sampled by: BH/AB/DH(Client)
Tested by: IC/DC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	3044.2	2.727	2.746	2.778	0.67
2	3127.7	2.724	2.742	2.775	0.68
AVERAGE		2.726	2.744	2.777	0.68

Reported by: B. Hudson

Reviewed by: _____
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

July 4, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 ft (35-55 m) Combined, Fine
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 30, 2011

Sampled by: Client
Tested by: DC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.5	2.595	2.640	2.717	1.73
2	500.6	2.596	2.640	2.716	1.71
AVERAGE		2.596	2.640	2.717	1.72

Reported by: I. Chung

Reviewed by: _____

A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



**RELATIVE DENSITY AND ABSORPTION
OF FINE AGGREGATE
CSA A23.2-6A**

July 4, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Sample:	DH10-05 16.8 – 21.3 m (55-70 ft) Combined Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 30, 2011

Sampled by: Client
Tested by: DC/IC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.7	2.530	2.598	2.716	2.71
2	500.3	2.537	2.604	2.721	2.67
AVERAGE		2.534	2.601	2.719	2.69

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 – 100 ft) Combined Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.0	2.638	2.662	2.703	0.91
2	500.0	2.644	2.668	2.709	0.91
AVERAGE		2.641	2.665	2.706	0.91

Reported by: I. Chung

Reviewed by: _____
A. Briggs, P. Geo.



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**RELATIVE DENSITY AND ABSORPTION
OF FINE AGGREGATE
CSA A23.2-6A**

July 4, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 30.5 – 33.5 m (100-110 ft) Combined Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 30, 2011

Sampled by: Client
Tested by: DC/IC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.5	2.641	2.668	2.714	1.01
2	500.7	2.646	2.672	2.716	0.97
AVERAGE		2.644	2.670	2.715	0.99

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 13.7 – 15.2 m (45 - 50 ft), 18.3 – 19.8 m (60 – 65 ft) Combined Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.0	2.629	2.662	2.719	1.26
2	500.0	2.626	2.658	2.714	1.24
AVERAGE		2.628	2.660	2.717	1.25

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 – 95 ft) Combined Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.0	2.630	2.664	2.722	1.28
2	500.0	2.636	2.668	2.723	1.21
AVERAGE		2.633	2.666	2.723	1.25

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



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GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



**RELATIVE DENSITY AND ABSORPTION
OF FINE AGGREGATE
CSA A23.2-6A**

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Sample:	DH10-07 30.5 – 33.5 m (100 - 110 ft) Combined Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.0	2.624	2.654	2.706	1.15
2	500.0	2.630	2.660	2.710	1.11
AVERAGE		2.627	2.657	2.708	1.13

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Fine)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 5, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: DC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	499.8	2.607	2.657	2.744	1.92
2	500.1	2.611	2.660	2.744	1.85
AVERAGE		2.609	2.659	2.744	1.89

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-5 Sa. 1 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: July 31, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.1	2.536	2.592	2.687	2.23
2	500.1	2.537	2.591	2.681	2.12
AVERAGE		2.537	2.592	2.684	2.18

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Fine)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 12, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	500.1	2.547	2.616	2.737	2.73
2	500.1	2.542	2.610	2.727	2.67
AVERAGE		2.545	2.613	2.732	2.70

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE CSA A23.2-6A

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-9 and 11 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 11, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Trial No.	Mass (g)	Relative Density (dry basis)	Relative Density (SSD basis)	Apparent Relative Density	Absorption (%)
1	499.8	2.578	2.641	2.752	2.46
2	500.1	2.581	2.643	2.751	2.40
AVERAGE		2.580	2.642	2.752	2.43

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



APPENDIX F

Clay Lumps Test Reports



CLAY LUMPS IN
NATURAL AGGREGATES
CSA A23.2-3A

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 1, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: DC

Size Fraction (mm)	Mass of Sample (g)	Clay Lumps (%)
5 x 1.25	100.0	0

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.





CLAY LUMPS IN
NATURAL AGGREGATES
CSA A23.2-3A

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Fine)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 11, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Size Fraction (mm)	Mass of Sample (g)	Clay Lumps (%)
5 x 1.25	100.0	0

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.





**CLAY LUMPS IN
NATURAL AGGREGATES
CSA A23.2-3A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

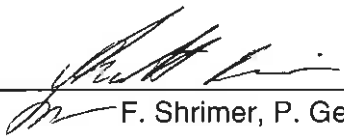
Sample:	TP09-9 and 11 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 10, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Size Fraction (mm)	Mass of Sample (g)	Clay Lumps (%)
5 x 1.25	100.0	0

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.





APPENDIX G

Organic Impurities Test Reports



**ORGANIC IMPURITIES IN FINE
AGGREGATES FOR CONCRETE
CSA A 23.2-7A**

June 17, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Becker Hole:	DH10-01
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 2-7, 2011

Sampled by: Client
Tested by: SJ

Depth Range (ft):	Colour Plate Value:
12.2 – 13.7 m, 15.2 – 18.3 m ((40 – 45ft, 50 – 60 ft)	4
19.8 – 27.4 m (65 - 90 ft)	3
27.4 – 35.1 m (90 – 115 ft)	2
35.1 – 44.2 m (115 – 145 ft)	1
44.2 – 47.2 m (145 - 155 ft)	2
49.4 m – EOH (162 ft – EOH)	2

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





ORGANIC IMPURITIES IN FINE AGGREGATES FOR CONCRETE CSA A 23.2-7A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Table with 2 columns: Becker Hole, Source. Values: DH10-02, Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 2-7, 2011

Sampled by: Client
Tested by: SJ

Table with 2 columns: Depth Range (ft), Colour Plate Value. Rows show depth ranges from 7.6-16.8m to 32.0-44.2m with corresponding values 5, 4, 5, 1.

Reported by: I. Chung

Reviewed by: [Signature]
A. Briggs, P. Geo.





ORGANIC IMPURITIES IN FINE AGGREGATES FOR CONCRETE CSA A 23.2-7A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Table with 2 columns: Becker Hole (DH10-05) and Source (Becker Drilling)

Date sampled: June 15-20, 2010
Date tested: June 2-7, 2011

Sampled by: Client
Tested by: SJ

Table with 2 columns: Depth Range (ft) and Colour Plate Value. Rows include depth ranges from 1.5-10.7m to 30.5-33.5m with corresponding values from 5 to lighter than 1.

Reported by: I. Chung

Reviewed by: [Signature]
A. Briggs, P. Geo.





**ORGANIC IMPURITIES IN FINE
AGGREGATES FOR CONCRETE
CSA A 23.2-7A**

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Becker Hole:	DH10-07
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 2-7, 2011

Sampled by: Client
Tested by: SJ

Depth Range (ft):	Colour Plate Value:
13.7 – 15.2, 18.3 – 19.8 m (45 – 50, 60 - 65 ft)	4
21.3 – 29.0 m (70 – 95 ft)	3
30.5 – 33.5 m (100 - 110 ft)	2

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



ORGANIC IMPURITIES IN FINE
AGGREGATES FOR CONCRETE
CSA A 23.2-7A

August 28, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Preliminary Site Visit – Geomaterials Testing

Date sampled: April 6, 2009
Date tested: August 26, 2009

Sampled by: BH
Tested by: IC/DC

SAMPLE ID	COLOUR PLATE VALUE
S001 – “Spawning Channel”	Darker than 5

Note: Obvious, low density organic matter was washed free from sample prior to testing.

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



**ORGANIC IMPURITIES IN FINE
AGGREGATES FOR CONCRETE
CSA A 23.2-7A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Date sampled: May 29, 2009
Date tested: August 12, 2009

Sampled by: BH/AB/FHS/DH(Client)
Tested by: IC

SAMPLE ID	COLOUR PLATE VALUE
TP09-2 Sa. 1 and 2	Darker than 5
TP09-9 and 11	5
TP09-4, 7, 8 and 6 Sa. 2	Darker than 5
TP09-1 Sa. 1	Darker than 4, Lighter than 5
TP09-3 Sa. 1	Darker than 4, Lighter than 5
TP09-5 Sa. 1	Darker than 4, Lighter than 5
TP09-5 Sa. 3	Darker than 4, Lighter than 5

Note: Obvious, low density organic matter was washed free from sample prior to testing.

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



APPENDIX H

Micro-Deval Test Reports



**RESISTANCE OF COARSE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-29A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 6, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: DC

Grading	Section 4.2
Loss at conclusion of test (%)	6.3

Control Aggregate Brechin stone (Validation) Test Data	
Test date	July 11, 2009
Percent loss	18.0%

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE OF COARSE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-29A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-9 and 11 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 11, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Grading	Section 4.2
Loss at conclusion of test (%)	7.4

Control Aggregate Brechin stone (Validation) Test Data	
Test date	July 11, 2009
Percent loss	18.0%

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE OF COARSE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-29A**

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 14, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Grading	Section 4.2
Loss at conclusion of test (%)	7.9

Control Aggregate Brechin stone (Validation) Test Data	
Test date	July 11, 2009
Percent loss	18.0%

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE OF COARSE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-29A**

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-01 19.8 - 27.4 m (65 - 90 ft) Combined
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 3, 2011

Sampled by: Client
Tested by: DC/VN

Grading	Section 5.2
Loss at conclusion of test (%)	6.5

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	May 25, 2011
Percent loss	12.5%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**RESISTANCE OF COARSE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-29A**

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-02 16.8 – 21.3 m (55 – 70 ft)
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: May 31, 2011

Sampled by: Client
Tested by: DC/VN

Grading	Section 5.2
Loss at conclusion of test (%)	6.0

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	May 25, 2011
Percent loss	12.5%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 m (35 - 55 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: VN

Grading	Section 5.2
Loss at conclusion of test (%)	5.6

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 16.8 – 21.3 m (55 - 70 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: VN/SJ

Grading	Section 5.2
Loss at conclusion of test (%)	6.1

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 - 100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Grading	Section 5.2
Loss at conclusion of test (%)	5.7

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: _____

A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 30.5 – 33.5 m (100 – 110 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: VN/SJ

Grading	Section 5.2
Loss at conclusion of test (%)	5.2

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 11, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 13.7 – 19.8 m (45 – 65 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 8, 2011

Sampled by: Client
Tested by: VN

Grading	Section 5.2
Loss at conclusion of test (%)	6.2

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 11, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 - 95 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 8, 2011

Sampled by: Client
Tested by: VN

Grading	Section 5.2
Loss at conclusion of test (%)	6.1

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF COARSE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-29A

July 11, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 30.5 – 33.5 m (100 - 110 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 8, 2011

Sampled by: Client
Tested by: VN

Grading	Section 5.2
Loss at conclusion of test (%)	5.3

Validation Test Data: Control Aggregate (Drain Brothers stone)	
Test date	June 23, 2011
Percent loss	14.3%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-01 19.8 - 27.4 m (65 - 90 ft) Combined
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 7, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	9.5

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	June 7, 2011
Percent loss	17.5%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-01 49.4 m – EOH (162 ft – EOH)
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 7, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	8.4

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	June 7, 2011
Percent loss	17.5%

Reported by: I. Chung

Reviewed by: 
F. Shrimmer, P. Geo.





RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-02 16.8 – 21.3 m (55 – 70 ft) Combined
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 7, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	8.7

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	June 7, 2011
Percent loss	17.5%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 m (35 - 55 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	9.8

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 6, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 16.8 – 21.3 m (55 - 70 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	9.1

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 6, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 - 100 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	8.1

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 6, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 30.5 – 33.5 m (100 - 110 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 5, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	8.3

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 6, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 13.7 – 19.8 m (45 – 65 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	8.9

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 6, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 - 95 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	8.3

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 6, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





RESISTANCE OF FINE AGGREGATE TO DEGRADATION BY ABRASION IN THE MICRO-DEVAL APPARATUS CSA A23.2-23A

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 30.5 – 33.5 m (100 - 110 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 7, 2011

Sampled by: Client
Tested by: SJ

Grading	Fines
Loss at conclusion of test (%)	9.7

Validation Test Data: Control Aggregate (Sutherland sand)	
Test date	July 7, 2011
Percent loss	17.4%

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 6, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: DC

Grading	Section 4.3
Loss at conclusion of test (%)	14.6

Control Aggregate James Dick Sand (Validation) Test Data	
Test date	July 10, 2009
Percent loss	19.7%

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4,7,8 and 6-2 (Fine)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 13, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Grading	Section 4.3
Loss at conclusion of test (%)	14.3

Control Aggregate James Dick Sand (Validation) Test Data	
Test date	July 10, 2009
Percent loss	19.7%

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-5 Sa. 1 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: July 31, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Grading	Section 4.3
Loss at conclusion of test (%)	16.9

Control Aggregate James Dick Sand (Validation) Test Data	
Test date	July 10, 2009
Percent loss	19.7%

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE OF FINE AGGREGATE
TO DEGRADATION BY ABRASION IN
THE MICRO-DEVAL APPARATUS
CSA A23.2-23A**

August 13, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-9 and 11 (Fines)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 12, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC

Grading	Section 4.3
Loss at conclusion of test (%)	14.4

Control Aggregate James Dick Sand (Validation) Test Data	
Test date	July 10, 2009
Percent loss	19.7%

Reported by: B. Hudson

Reviewed by: 
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



APPENDIX I

Magnesium Sulphate Soundness Test Reports



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-01 35.1 – 44.2 m (115 – 145 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 6, 2011

Sampled by: Client
Tested by: DC

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
80 × 56 56 × 40	13.9	2250.6	0.0	0.0
40 × 28 28 × 20	27.5	1505.8	0.6	0.2
20 × 14 14 × 10	30.4	1003.8	0.8	0.2
10 × 5	28.2	300.2	1.0	0.3
	100.0		TOTAL	0.7

Reported by: I. Chung

Reviewed by: _____
A. Briggs, P. Geo.





**SOUNDNESS OF AGGREGATE BY
USE OF MAGNESIUM SULPHATE
CSA A23.2-9A**

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-02 16.8 – 21.3 m (55 – 70 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 6, 2011

Sampled by: Client
Tested by: DC

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
80 × 56 56 × 40	8.3	--	0.1 ⁽¹⁾	0.0
40 × 28 28 × 20	31.1	1504.5	0.1	0.0
20 × 14 14 × 10	31.8	1001.7	0.3	0.1
10 × 5	28.8	500.6	1.0	0.3
	100.0		TOTAL	0.4

Note: (1) Not enough sample to test sieve fraction – assumed to have the same loss as the next fraction.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 15, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 m (35 – 55 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
> 80	3.4	--	0.0 ⁽¹⁾	0.0
80 × 56 56 × 40	18.9	3274.5	0.0	0.0
40 × 28 28 × 20	26.1	1507.3	0.1	0.0
20 × 14 14 × 10	28.0	1002.5	0.6	0.2
10 × 5	23.6	300.5	8.7	2.1
	100.0		TOTAL	2.3

Note: (1) Fractions larger than 80mm less than 5% are not tested and are assumed to have the same loss as the next smaller size.

Reported by: I. Chung

Reviewed by: _____
A. Briggs, P. Geo.





**SOUNDNESS OF AGGREGATE BY
USE OF MAGNESIUM SULPHATE
CSA A23.2-9A**

July 15, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 16.8 – 21.3 m (55 – 70 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
> 80	7.2	--	0.0 ⁽¹⁾	0.0
80 × 56 56 × 40	22.4	3180.4	0.0	0.0
40 × 28 28 × 20	29.9	1502.8	0.2	0.1
20 × 14 14 × 10	24.5	1002.0	0.5	0.1
10 × 5	16.0	300.0	1.5	0.2
	100.0		TOTAL	0.4

Note:(1)Fractions larger than 80mm are not tested due to Insufficient sample and are assumed to have the same loss as next smaller size.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 – 100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 7, 2011

Sampled by: Client
Tested by: VN/IC

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
80 × 56 56 × 40	24.9	3323.8	0.0	0.0
40 × 28 28 × 20	32.2	1511.4	0.0	0.0
20 × 14 14 × 10	23.1	1001.1	0.3	0.1
10 × 5	19.8	296.8	1.3	0.3
	100.0		TOTAL	0.4

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**SOUNDNESS OF AGGREGATE BY
USE OF MAGNESIUM SULPHATE
CSA A23.2-9A**

July 15, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 30.5 – 33.5 m (100-110 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
80 × 56 56 × 40	10.0	--	0.0 ⁽¹⁾	0.0
40 × 28 28 × 20	27.9	1501.7	0.0	0.0
20 × 14 14 × 10	30.4	906.0	0.6	0.2
10 × 5	31.7	300.4	1.2	0.4
	100.0		TOTAL	0.6

Note: (1) Insufficient sample mass to test; assumed to have the same loss as the next size fraction.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**SOUNDNESS OF AGGREGATE BY
USE OF MAGNESIUM SULPHATE
CSA A23.2-9A**

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 - 95 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 7, 2011

Sampled by: Client
Tested by: VN/IC

Sieve Fraction (mm)	Original Grading (%)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
> 80	2.2	--	0.0 ⁽¹⁾	0.0
80 × 56 56 × 40	29.3	3277.8	0.0	0.0
40 × 28 28 × 20	29.8	1510.9	0.0	0.0
20 × 14 14 × 10	21.4	1002.1	0.3	0.1
10 × 5	17.3	300.1	0.4	0.1
	100.0		TOTAL	0.2

Note: (1) Fractions larger than 80mm less than 5% are not tested and are assumed to have the same loss as the next smaller size.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 17, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Sieve Fraction (mm)	Original Grading ⁽¹⁾ (% Retained)	Mass per fraction before test (g)	Loss (%)	Weighted Loss (%)
20 × 14 14 × 10	55.7	1000.6	9.2	5.1
10 × 5	44.3	300.3	9.6	4.3
	100.0		TOTAL	9.4

Note: (1) "Original grading" refers to a combined sample with material coarser than 20 mm retained excluded.

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-01 35.1 – 44.2 m (115 – 145 ft) Combined, Fine
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 6, 2011

Sampled by: Client
Tested by: DC

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
> 5	0.0	-	--	--
5 - 2.5	12.0	100.0	6.2	0.7
2.5 - 1.25	17.5	100.0	6.7	1.2
1.25 - 0.630	26.0	100.1	7.4	1.9
0.630 - 0.315	27.6	100.0	6.9	1.9
< 0.315	16.9	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	5.7

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: _____
A. Briggs, P. Geo.





SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

June 27, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-02 16.8 – 21.3 m (55 – 70 ft) Combined, Fine
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: June 6, 2011

Sampled by: Client
Tested by: DC

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	17.3	100.0	5.1	0.9
2.5 - 1.25	23.8	100.1	5.3	1.3
1.25 - 0.630	27.7	100.0	7.8	2.2
0.630 - 0.315	19.7	100.0	8.8	1.7
< 0.315	11.5	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	6.1

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by:
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**SOUNDNESS OF AGGREGATE BY
USE OF MAGNESIUM SULPHATE
CSA A23.2-9A**

July 15, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 m (35 – 55 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	14.3	100.0	7.0	1.0
2.5 - 1.25	19.0	100.0	8.5	1.6
1.25 - 0.630	25.7	100.0	4.5	1.2
0.630 - 0.315	28.7	100.0	2.0	0.6
< 0.315	12.3	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	4.4

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 16.8 – 21.3 m (55 – 70 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	21.5	100.0	6.8	1.5
2.5 - 1.25	18.4	100.0	5.9	1.1
1.25 - 0.630	18.3	100.0	6.7	1.2
0.630 - 0.315	16.0	100.0	8.3	1.3
< 0.315	25.8	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	5.1

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 – 100 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	9.6	100.0	7.1	0.7
2.5 - 1.25	16.6	100.0	7.0	1.2
1.25 - 0.630	24.0	100.0	9.2	2.2
0.630 - 0.315	26.0	100.0	8.3	2.2
< 0.315	23.8	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	6.3

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 30.5 – 33.5 m (100-110 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	10.1	100.0	7.3	0.7
2.5 - 1.25	16.5	100.0	6.1	1.0
1.25 - 0.630	29.6	100.0	7.9	2.3
0.630 - 0.315	28.3	100.0	7.4	2.1
< 0.315	15.5	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	6.1

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: _____
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 13.7 – 15.2 m (45 – 50 ft), 18.3 – 19.8 m (60 – 65 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	10.2	100.0	7.3	0.7
2.5 - 1.25	19.1	100.0	8.0	1.5
1.25 - 0.630	32.8	100.0	7.8	2.6
0.630 - 0.315	25.6	100.0	5.9	1.5
< 0.315	12.3	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	6.3

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 – 95 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	13.2	100.0	6.3	0.8
2.5 - 1.25	20.1	100.0	8.1	1.6
1.25 - 0.630	28.4	100.0	8.6	2.4
0.630 - 0.315	23.7	100.0	7.0	1.7
< 0.315	14.6	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	6.5

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

July 19, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 30.5 – 33.5 m (100 – 110 ft) Combined, Fines
Source:	Becker Drilling


Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Sieve Fraction (mm)	Original Grading % Retained	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	11.0	100.0	6.5	0.7
2.5 - 1.25	15.3	100.0	9.7	1.5
1.25 - 0.630	23.9	100.0	10.0	2.4
0.630 - 0.315	33.2	100.0	8.9	3.0
< 0.315	16.6	--	0.0 ⁽¹⁾	0.0
	100.0		TOTAL	7.6

Note: (1) Fraction size < 0.315mm are assumed to have a loss of 0.0%.

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



SOUNDNESS OF AGGREGATE BY USE OF MAGNESIUM SULPHATE CSA A23.2-9A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Fine)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 17, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Sieve Fraction (mm)	Original Grading ⁽¹⁾ (% Retained)	Mass before test (g)	Loss (%)	Weighted Loss (%)
5 - 2.5	24.2	100.0	19.6	4.7
2.5 - 1.25	20.4	100.0	13.1	2.7
1.25 - 0.630	18.7	100.0	9.7	1.8
0.630 - 0.315	14.8	100.0	6.8	1.0
< 0.315	21.9	--	--	--
	100.0		TOTAL	10.2

Note: (1) "Original grading" refers to a combined sample with material coarser than 20 mm retained excluded.

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



APPENDIX J

LA Abrasion Test Reports



RESISTANCE TO DEGRADATION OF SMALL-SIZE COARSE AGGREGATE BY ABRASION & IMPACT IN THE LOS ANGELES MACHINE CSA 23.2-16A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 22, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: IC/DC

Grading	B
Number of revolutions	500
Loss after 500 revolutions (%)	18.3

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



RESISTANCE TO DEGRADATION OF SMALL-SIZE COARSE AGGREGATE BY ABRASION & IMPACT IN THE LOS ANGELES MACHINE CSA 23.2-16A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 22, 2009

Sampled by: BH/AB/DH(Client)
Tested by: IC/DC

Grading	B
Number of revolutions	500
Loss after 500 revolutions (%)	18.6

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



RESISTANCE TO DEGRADATION OF SMALL-SIZE COARSE AGGREGATE BY ABRASION & IMPACT IN THE LOS ANGELES MACHINE CSA 23.2-16A

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-9 and 11 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 22, 2009

Sampled by: BH/AB/DH(Client)
Tested by: IC/DC

Grading	B
Number of revolutions	500
Loss after 500 revolutions (%)	19.1

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods.
This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



**RESISTANCE TO DEGRADATION OF
SMALL-SIZE COARSE AGGREGATE BY
ABRASION & IMPACT IN THE
LOS ANGELES MACHINE
CSA 23.2-16A**

July 8, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 10.7 – 16.8 m (35 – 55 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 6, 2011

Sampled by: Client
Tested by: VN

Grading	B
Number of revolutions	500
Loss after 500 revolutions (%)	22.2

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**RESISTANCE TO DEGRADATION OF
SMALL-SIZE COARSE AGGREGATE BY
ABRASION & IMPACT IN THE
LOS ANGELES MACHINE
CSA 23.2-16A**

July 11, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 - 100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 8, 2011

Sampled by: Client
Tested by: VN

Grading	B
Number of revolutions	500
Loss after 500 revolutions (%)	20.9

Reported by: I. Chung

Reviewed by: _____

A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



**RESISTANCE TO DEGRADATION OF
SMALL-SIZE COARSE AGGREGATE BY
ABRASION & IMPACT IN THE
LOS ANGELES MACHINE
CSA 23.2-16A**

July 12, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 - 95 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 11, 2011

Sampled by: Client
Tested by: VN

Grading	B
Number of revolutions	500
Loss after 500 revolutions (%)	20.0

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 7R7 Tel: 604-591-6616 Fax: 604-591-6608



APPENDIX K

Low Density Test Reports



LOW-DENSITY GRANULAR MATERIAL IN AGGREGATE CSA A23.2-4A

July 12, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 – 100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 12, 2011

Sampled by: Client
Tested by: SJ/VN

Mass of dry sample (g)	4067.6
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Content of Low Density Particles (% by mass)	0.0

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



**LOW-DENSITY GRANULAR
MATERIAL IN AGGREGATE
CSA A23.2-4A**

July 12, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-05 22.9 – 30.5 m (75 – 100 ft) Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 12, 2011

Sampled by: Client
Tested by: SJ/VN

Mass of dry sample (g)	242.0
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Content of Low Density Particles (% by mass)	0.0

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**LOW-DENSITY GRANULAR
MATERIAL IN AGGREGATE
CSA A23.2-4A**

July 12, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 13.7 – 19.8 m (45 - 65 ft), Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 12, 2011

Sampled by: Client
Tested by: SJ/VN

Mass of dry sample (g)	221.6
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Content of Low Density Particles (% by mass)	0.0

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





LOW-DENSITY GRANULAR MATERIAL IN AGGREGATE CSA A23.2-4A

July 12, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 21.3 – 29.0 m (70 – 95 ft), Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 12, 2011

Sampled by: Client
Tested by: SJ/VN

Mass of dry sample (g)	205.7
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Content of Low Density Particles (% by mass)	0.0

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., 245, 12388 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



**LOW-DENSITY GRANULAR
MATERIAL IN AGGREGATE
CSA A23.2-4A**

July 12, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation

Sample:	DH10-07 30.5 – 33.5 m (100 – 110 ft), Combined, Fines
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 12, 2011

Sampled by: Client
Tested by: SJ/VN

Mass of dry sample (g)	225.4
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Content of Low Density Particles (% by mass)	0.0

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





**LOW-DENSITY GRANULAR
MATERIAL IN AGGREGATE
CSA A23.2-4A**

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 28, 2009
Date tested: August 14, 2009

Sampled by: BH/FHS/DH(Client)
Tested by: IC/DC

Mass of dry sample (g)	3082.8
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Percent of Low Density Particles, %	0.0

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

GOLDER ASSOCIATES LTD., Unit B, 12330 - 88th Avenue, Surrey, B.C. Canada V3W 3J6 Tel: 604-591-6616 Fax: 604-591-6608



**LOW-DENSITY GRANULAR
MATERIAL IN AGGREGATE
CSA A23.2-4A**

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 14, 2009

Sampled by: BH/AB/DH(Client)
Tested by: DC/IC

Mass of dry sample (g)	3150.8
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Percent of Low Density Particles, %	0.0

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



**LOW-DENSITY GRANULAR
MATERIAL IN AGGREGATE
CSA A23.2-4A**

August 26, 2009
Project number: 09-1416-0004.4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Alluvial Fan Test Pitting – Geomaterials Testing

Sample:	TP09-9 and 11 (Coarse)
Source:	McNab Creek, Alluvial Fan

Date sampled: May 29, 2009
Date tested: August 14, 2009

Sampled by: BH/AB/DH(Client)
Tested by: IC/DC

Mass of dry sample (g)	3180.5
Mass of decanted particles, dry (g)	0.0
Solution used	Zinc Chloride, S.G - 2.01
Percent of Low Density Particles, %	0.0

Reported by: I. Chung

Reviewed by: 
B. Hudson, B. Sc., GIT



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other zones/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



APPENDIX L

Durability Index Test Reports

July 15, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Sample:	DH10-07 21.3 – 29.0 m (70 – 95 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 13, 2011

Sampled by: Client
Tested by: IC

PROCEDURE	SEDIMENT COLUMN (inches)		DURABILITY INDEX (D _c)
A (COARSE AGGREGATE)	Trial 1	0.5	85
	Trial 2	0.5	85
	Average	0.5	85

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.



July 15, 2011
Project number: 09-1416-0004/4000

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek – Becker Aggregate Evaluation


Sample:	DH10-05 22.9 – 30.5 m (75 – 100 ft) Combined, Coarse
Source:	Becker Drilling

Date sampled: June 15-20, 2010
Date tested: July 13, 2011

Sampled by: Client
Tested by: IC

PROCEDURE	SEDIMENT COLUMN (inches)		DURABILITY INDEX (D_c)
A (COARSE AGGREGATE)	Trial 1	0.4	87
	Trial 2	0.4	87
	Average	0.4	87

Reported by: I. Chung

Reviewed by: 
A. Briggs, P. Geo.





APPENDIX M

Accelerated Mortar Bar Test Reports



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

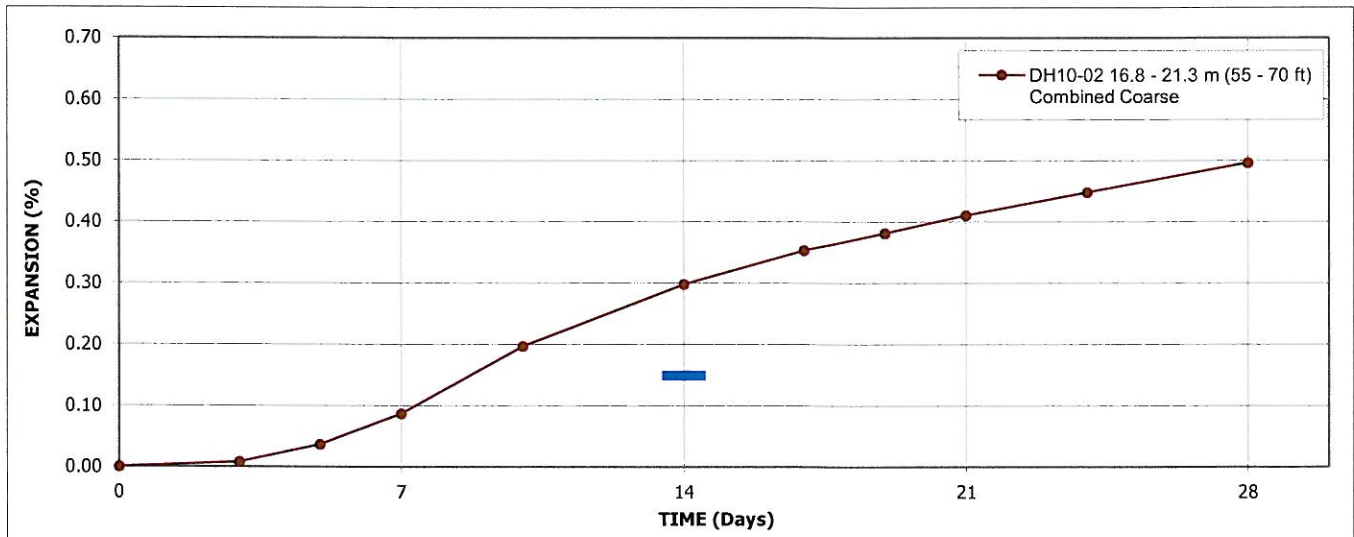
July 22, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-02 16.8 - 21.3 m (55 - 70 ft) Combined Coarse
Source:	Becker Drilling

TEST NO: AMBT-11-046	CEMENT TYPE: GU	CEMENT SOURCE: ESSROC (Picton, ON)	
SAMPLED BY: Client	CEMENT ALKALI (Na ₂ O eq.): 0.94%	WATER BINDER RATIO: 0.47	
DATE SAMPLED: June 15-20, 2010			
TOTAL CEMENT ALKALI: K₂O: 1.15% ; Na₂O: 0.18%			



		Expansion (%)										
TIME, Days	0	3	5	7	10	14	17	19	21	24	28	
AVERAGE	0.000	0.008	0.037	0.087	0.197	0.298	0.3534	0.381	0.411	0.448	0.496	
						CSA 14-day Expansion Limit						0.15

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

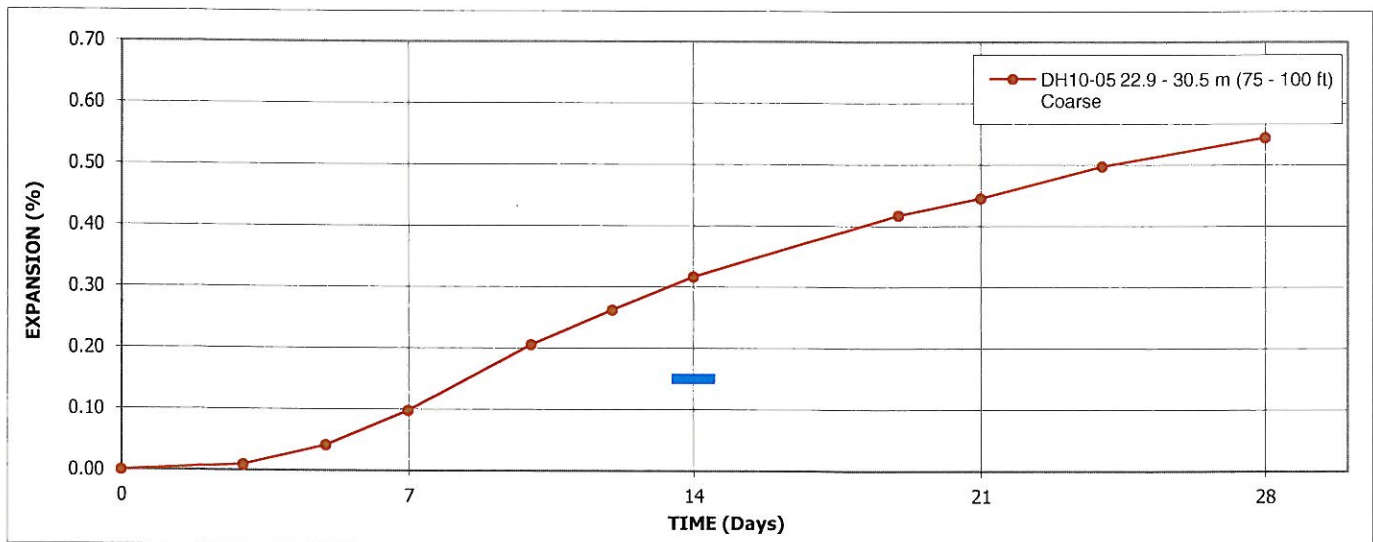
September 16, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-05 22.9 - 30.5 m (75 - 100 ft) Coarse
Source:	Becker Drilling

TEST NO:	AMBT-11-064	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/AB	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	June 15-20, 2010	WATER BINDER RATIO:	0.46
TOTAL CEMENT ALKALI: K_2O : 1.15% ; Na_2O : 0.18%		CEMENT ALKALI (Na_2O eq.):	0.94%



		Expansion (%)										
TIME, Days	0	3	5	7	10	12	14	19	21	24	28	
AVERAGE	0.000	0.009	0.041	0.098	0.206	0.262	0.317	0.417	0.445	0.497	0.544	
CSA 14-day Expansion Limit							0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

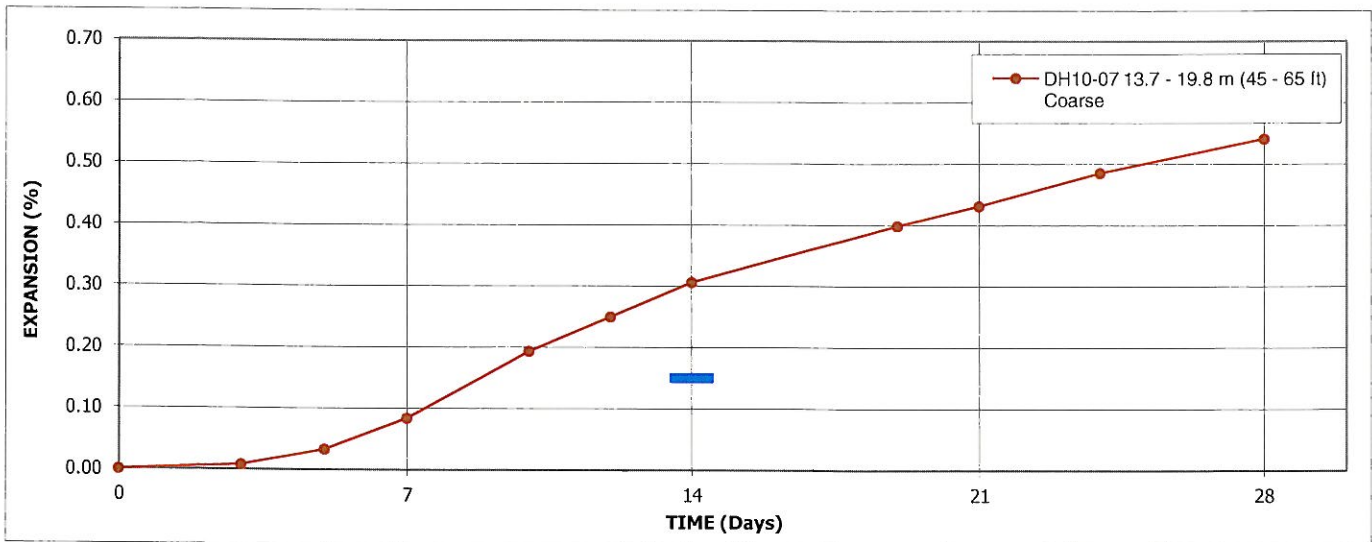
September 16, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 13.7 - 19.8 m (45 - 65 ft) Coarse
Source:	Becker Drilling

TEST NO: AMBT-11-063	CEMENT TYPE: GU
SAMPLED BY: BH/FHS/AB	CEMENT SOURCE: ESSROC (Picton, ON)
DATE SAMPLED: June 15-20, 2010	WATER BINDER RATIO: 0.45
TOTAL CEMENT ALKALI: K₂O: 1.15% ; Na₂O: 0.18%	CEMENT ALKALI (Na ₂ O eq.): 0.94%



		Expansion (%)										
TIME, Days	0	3	5	7	10	12	14	19	21	24	28	
AVERAGE	0.000	0.008	0.033	0.084	0.194	0.250	0.306	0.399	0.431	0.485	0.541	
CSA 14-day Expansion Limit							0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

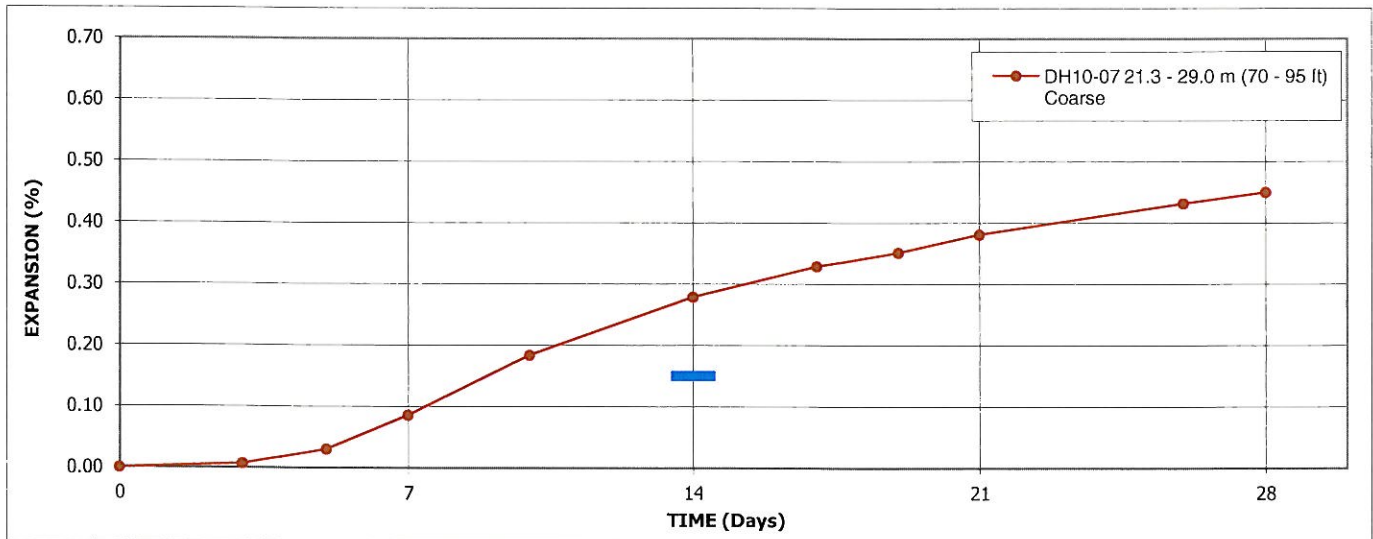
September 9, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 21.3 - 29.0 m (70 - 95 ft) Coarse
Source:	Becker Drilling

TEST NO:	AMBT-11-062	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/AB	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	June 15-20, 2010	WATER BINDER RATIO:	0.47
TOTAL CEMENT ALKALI: K_2O : 1.15% ; Na_2O : 0.18%		CEMENT ALKALI (Na_2O eq.):	0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	14	17	19	21	26	28
AVERAGE	0.000	0.007	0.030	0.086	0.184	0.279	0.329	0.351	0.381	0.432	0.450
CSA 14-day Expansion Limit						0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

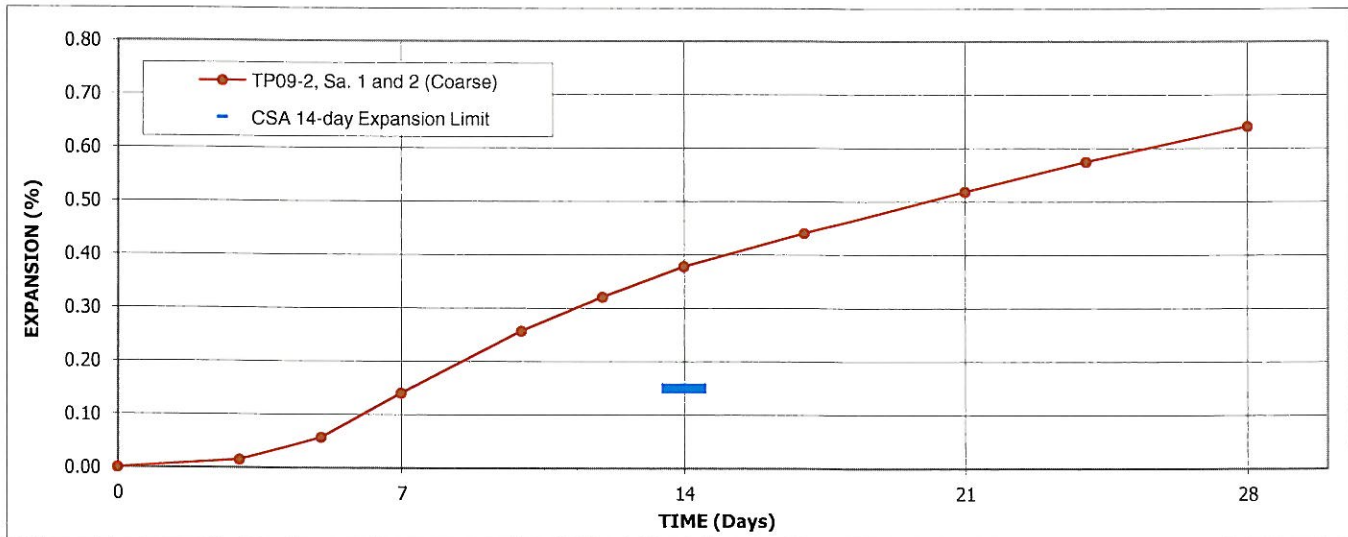
November 27, 2009
Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Preliminary Test Pitting - Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Coarse)
Source:	McNab Creek

TEST NO: AMBT-09-052	CEMENT TYPE: GU
SAMPLED BY: BH/FHS/DH(Client)	CEMENT SOURCE: ESSROC (Picton, ON)
DATE SAMPLED: May-2009	WATER BINDER RATIO: 0.47
TOTAL CEMENT ALKALI: K₂O: 1.20% ; Na₂O: 0.15%	CEMENT ALKALI (Na ₂ O eq.): 0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	12	14	17	21	24	28
AVERAGE	0.000	0.015	0.057	0.140	0.257	0.321	0.378	0.441	0.519	0.575	0.641
CSA 14-day Expansion Limit							0.15				

Notes: 1. Spratt Aggregate validation result: 0.40% expansion at 14 days, cast October 5, 2009

Reported by: B. Hudson

Reviewed by:
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

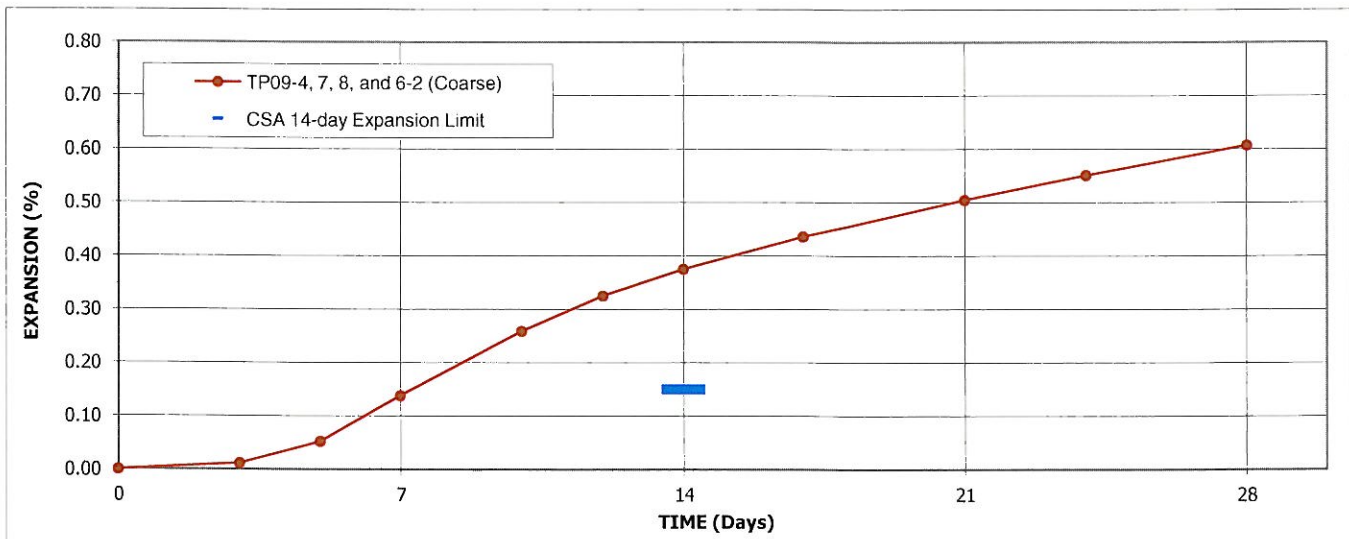
November 27, 2009
Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Preliminary Test Pitting - Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Coarse)
Source:	McNab Creek

TEST NO:	AMBT-09-054	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/DH(Client)	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	May-2009	WATER BINDER RATIO:	0.47
TOTAL CEMENT ALKALI:	K ₂ O: 1.20% ; Na ₂ O: 0.15%	CEMENT ALKALI (Na ₂ O eq.):	0.94%



Expansion (%)												
TIME, Days	0	3	5	7	10	12	14	17	21	24	28	
AVERAGE	0.000	0.011	0.052	0.138	0.259	0.325	0.375	0.436	0.505	0.551	0.607	
CSA 14-day Expansion Limit							0.15					

Notes: 1. Spratt Aggregate validation result: 0.40% expansion at 14 days, cast October 5, 2009

Reported by: B. Hudson

Reviewed by:
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

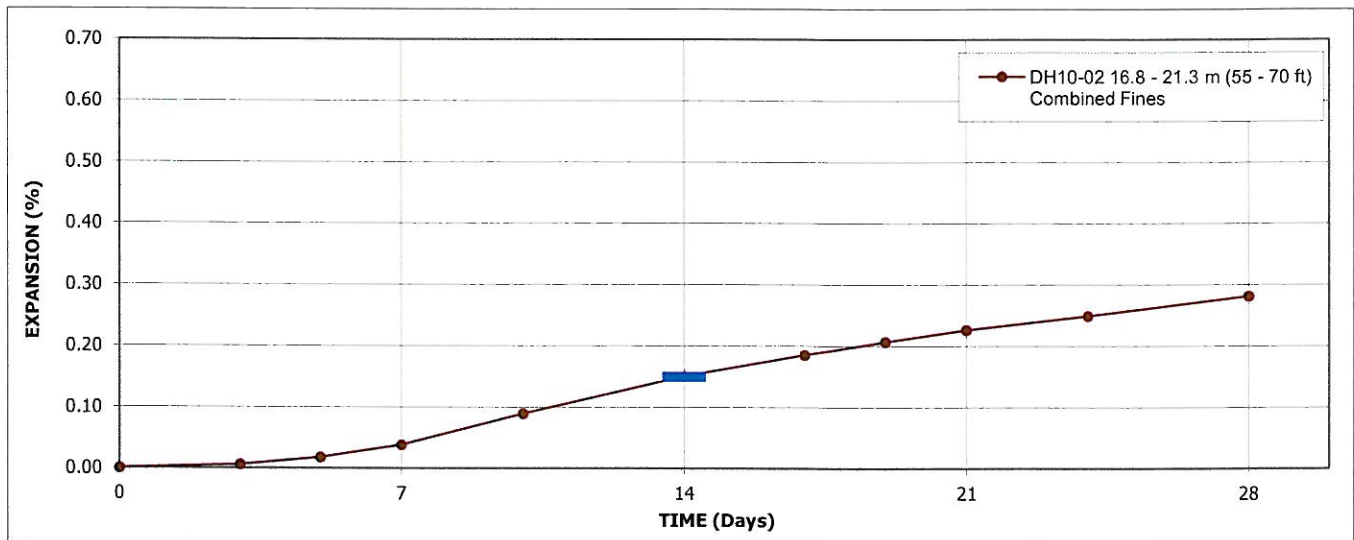
July 22, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-02 16.8 - 21.3 m (55 - 70 ft) Combined Fines
Source:	Becker Drilling

TEST NO: AMBT-11-045	CEMENT TYPE: GU
SAMPLED BY: Client	CEMENT SOURCE: ESSROC (Picton, ON)
DATE SAMPLED: June 15-20, 2010	WATER BINDER RATIO: 0.44
TOTAL CEMENT ALKALI: K₂O: 1.15% ; Na₂O: 0.18%	CEMENT ALKALI (Na ₂ O eq.): 0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	14	17	19	21	24	28
AVERAGE	0.000	0.006	0.018	0.038	0.089	0.150	0.1852	0.207	0.226	0.249	0.281
CSA 14-day Expansion Limit						0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

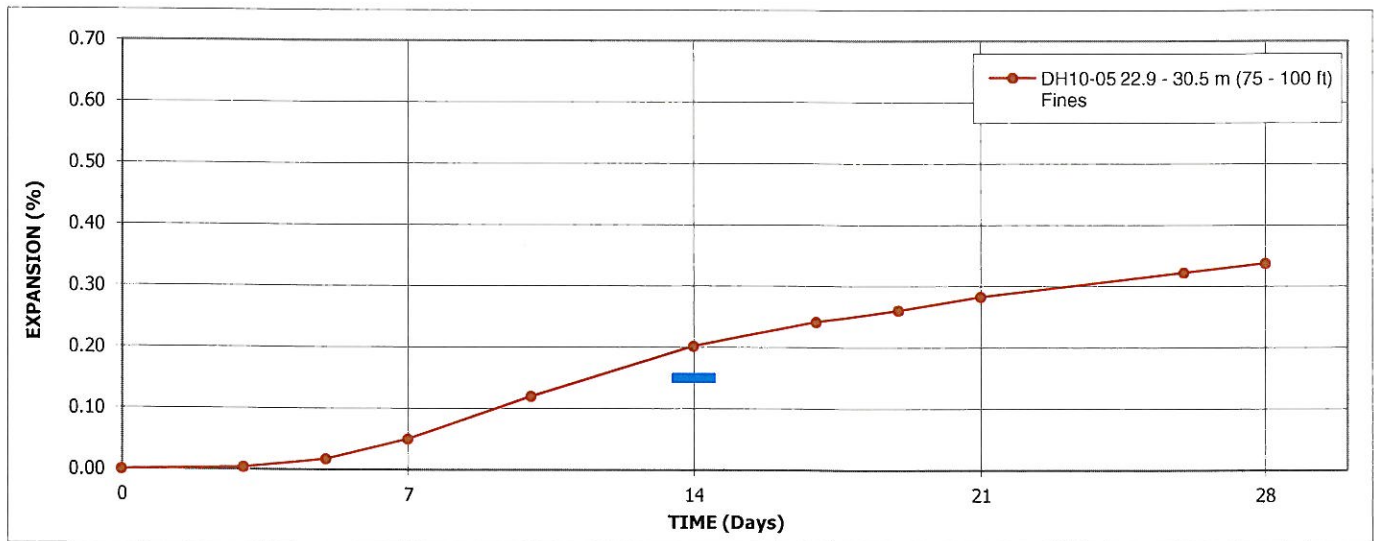
September 9, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-05 22.9 - 30.5 m (75 - 100 ft) Fines
Source:	Becker Drilling

TEST NO:	AMBT-11-061	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/AB	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	June 15-20, 2010	WATER BINDER RATIO:	0.44
TOTAL CEMENT ALKALI: K_2O : 1.15% ; Na_2O : 0.18%		CEMENT ALKALI (Na_2O eq.):	0.94%



		Expansion (%)										
TIME, Days	0	3	5	7	10	14	17	19	21	26	28	
AVERAGE	0.000	0.004	0.017	0.050	0.120	0.202	0.242	0.261	0.283	0.323	0.338	
CSA 14-day Expansion Limit						0.15						

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

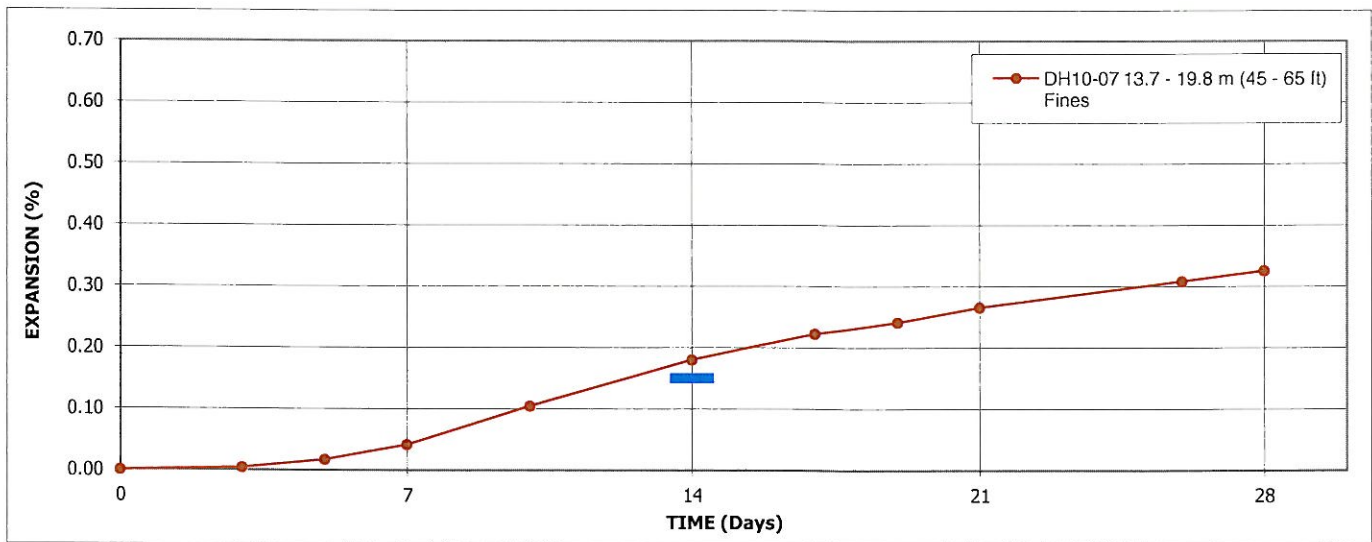
September 9, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 13.7 - 19.8 m (45 - 65 ft) Fines
Source:	Becker Drilling

TEST NO:	AMBT-11-059	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/AB	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	June 15-20, 2010	WATER BINDER RATIO:	0.43
TOTAL CEMENT ALKALI: K₂O: 1.15% ; Na₂O: 0.18%		CEMENT ALKALI (Na ₂ O eq.):	0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	14	17	19	21	26	28
AVERAGE	0.000	0.004	0.017	0.042	0.105	0.180	0.223	0.241	0.266	0.308	0.326
CSA 14-day Expansion Limit						0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

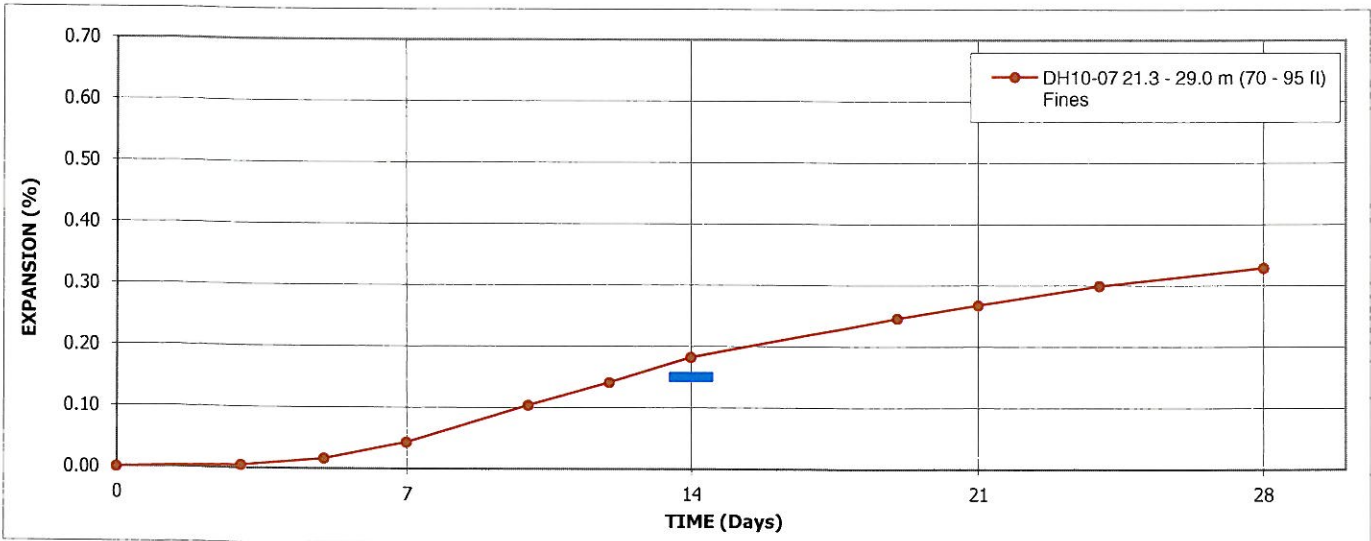
September 16, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 21.3 - 29.0 m (70 - 95 ft) Fines
Source:	Becker Drilling

TEST NO:	AMBT-11-065	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/AB	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	June 15-20, 2010	WATER BINDER RATIO:	0.44
TOTAL CEMENT ALKALI: K_2O : 1.15% ; Na_2O : 0.18%		CEMENT ALKALI (Na_2O eq.):	0.94%



Expansion (%)												
TIME, Days	0	3	5	7	10	12	14	19	21	24	28	
AVERAGE	0.000	0.005	0.016	0.043	0.104	0.141	0.182	0.246	0.268	0.299	0.329	
CSA 14-day Expansion Limit							0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

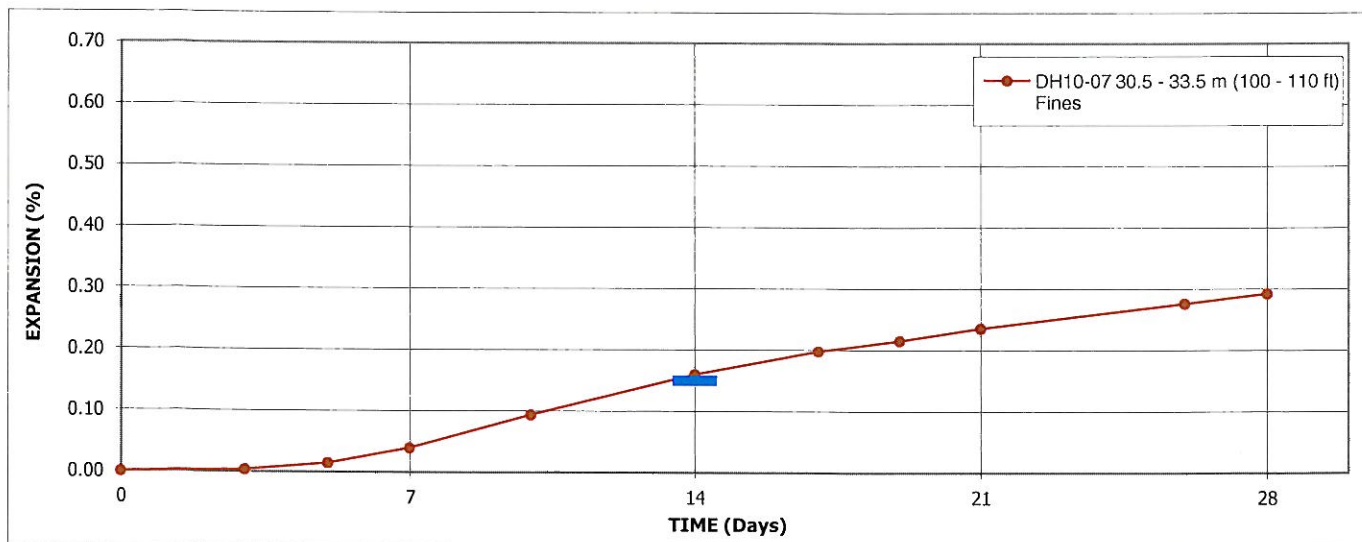
September 9, 2011
Project number: 09-1416-0004/4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek - Becker Aggregate Evaluation

Sample:	DH10-07 30.5 - 33.5 m (100 - 110 ft) Fines
Source:	Becker Drilling

TEST NO:	AMBT-11-060	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/AB	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	June 15-20, 2010	WATER BINDER RATIO:	0.44
TOTAL CEMENT ALKALI: K_2O : 1.15% ; Na_2O : 0.18%		CEMENT ALKALI (Na_2O eq.):	0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	14	17	19	21	26	28
AVERAGE	0.000	0.004	0.015	0.039	0.094	0.160	0.198	0.215	0.235	0.276	0.292
CSA 14-day Expansion Limit						0.15					

Notes: 1. Spratt Aggregate validation result: 0.38% expansion at 14 days, cast June 22, 2011.

Reported by: I. Chung

Reviewed by:
A. Briggs, M. Sc., P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

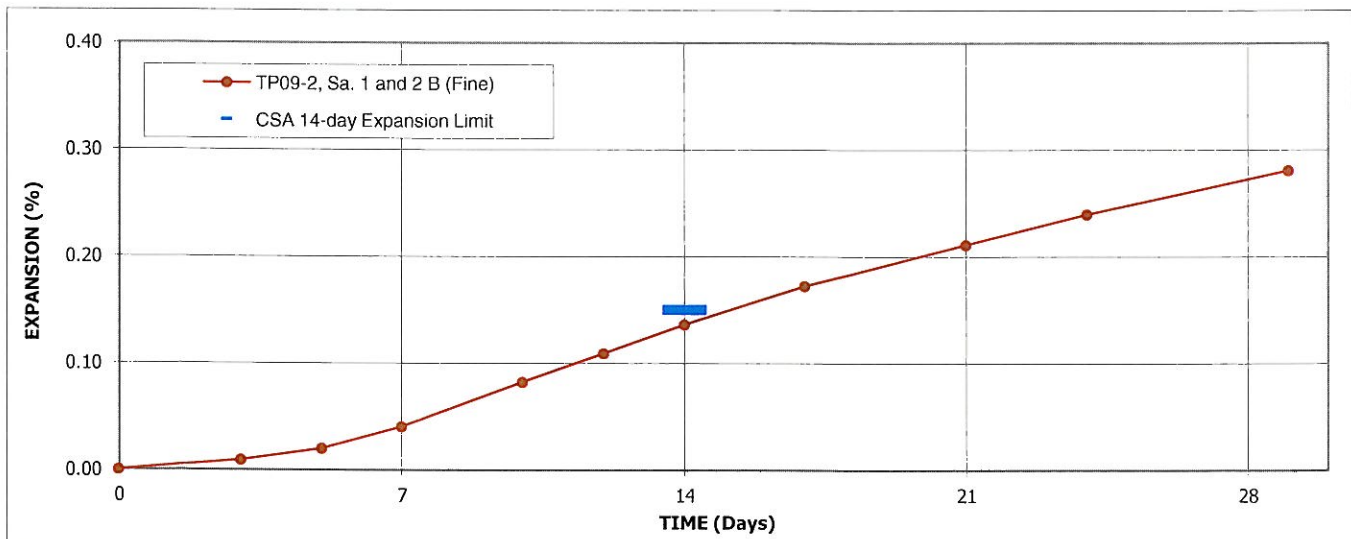
December 26, 2009
Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Preliminary Test Pitting - Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 B (Fine)
Source:	McNab Creek

TEST NO:	AMBT-09-056	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/DH(Client)	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	May-2009	WATER BINDER RATIO:	0.45
TOTAL CEMENT ALKALI: K_2O : 1.20% ; Na_2O : 0.15%		CEMENT ALKALI (Na_2O eq.):	0.94%



Expansion (%)												
TIME, Days	0	3	5	7	10	12	14	17	21	24	29	
AVERAGE	0.000	0.009	0.020	0.040	0.082	0.109	0.136	0.172	0.211	0.240	0.281	
CSA 14-day Expansion Limit							0.15					

- Notes:
1. Spratt Aggregate validation result: 0.40% expansion at 14 days, cast October 5, 2009
 2. Low density fragments of organic material washed from sample prior to testing.

Reported by: B. Hudson

Reviewed by:
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

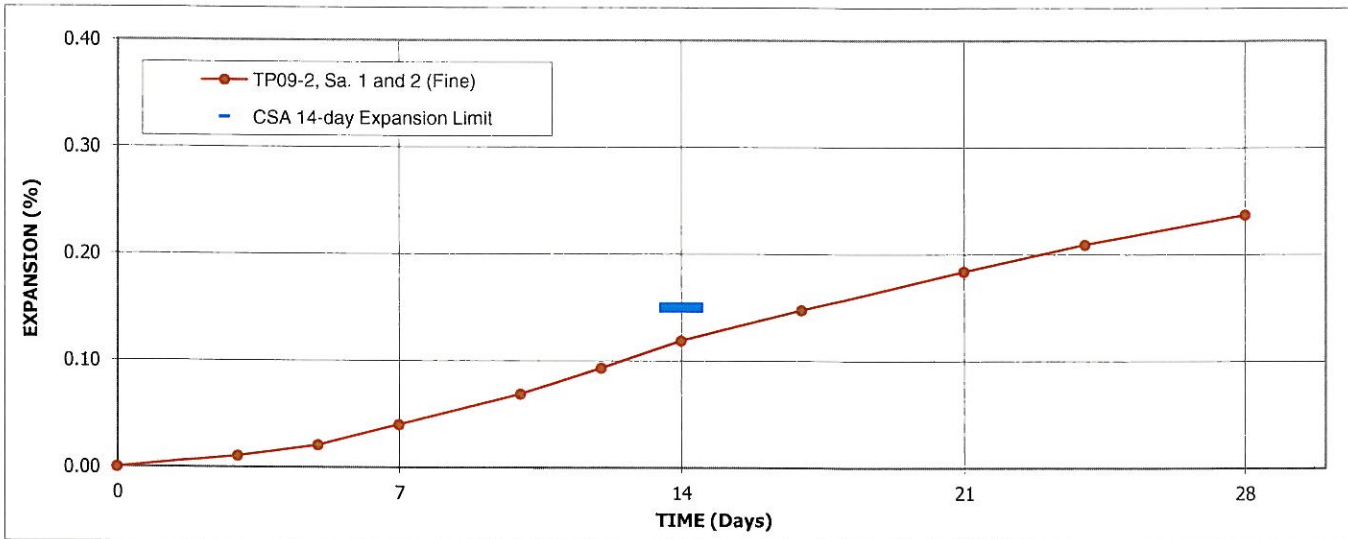
November 27, 2009
Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Preliminary Test Pitting - Geomaterials Testing

Sample:	TP09-2, Sa. 1 and 2 (Fine)
Source:	McNab Creek

TEST NO:	AMBT-09-053	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/DH(Client)	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	May-2009	WATER BINDER RATIO:	0.45
TOTAL CEMENT ALKALI:	K₂O: 1.20% ; Na₂O: 0.15%	CEMENT ALKALI (Na ₂ O eq.):	0.94%



Expansion (%)												
TIME, Days	0	3	5	7	10	12	14	17	21	24	28	
AVERAGE	0.000	0.011	0.021	0.040	0.069	0.093	0.119	0.148	0.184	0.209	0.237	
CSA 14-day Expansion Limit							0.15					

- Notes:
1. Spratt Aggregate validation result: 0.40% expansion at 14 days, cast October 5, 2009
 2. Sample contains fragments of organic material

Reported by: B. Hudson

Reviewed by: F. Shriver, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

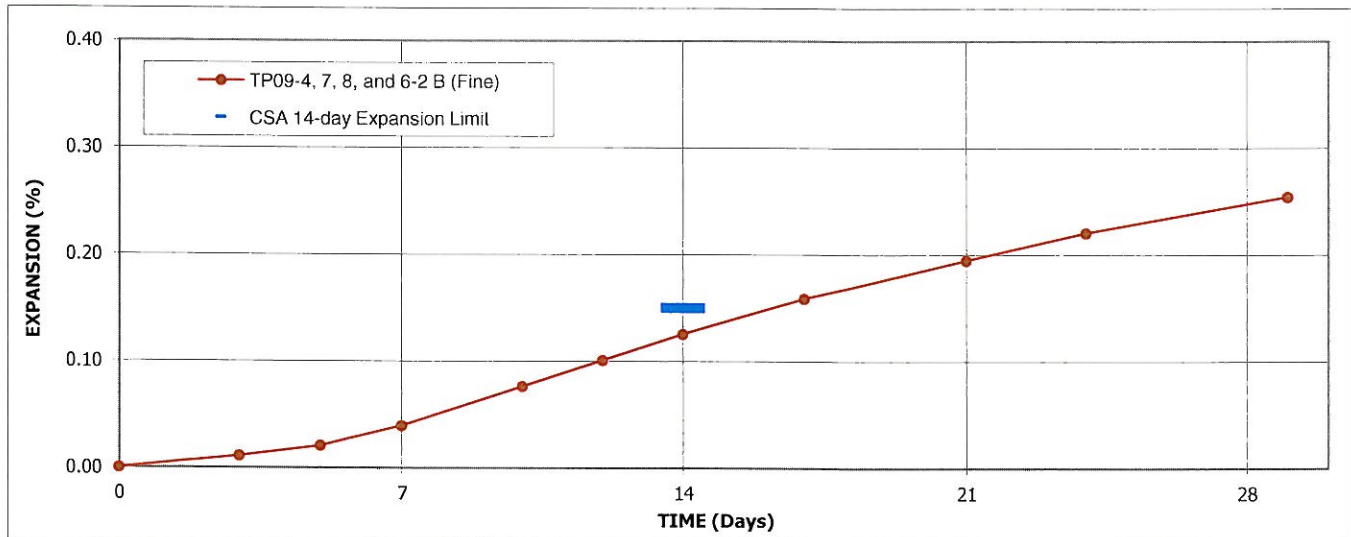
December 26, 2009
Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Preliminary Test Pitting - Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 B (Fine)
Source:	McNab Creek

TEST NO:	AMBT-09-057	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/DH(Client)	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	May-2009	WATER BINDER RATIO:	0.45
TOTAL CEMENT ALKALI: K₂O: 1.20% ; Na₂O: 0.15%		CEMENT ALKALI (Na ₂ O eq.):	0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	12	14	17	21	24	29
AVERAGE	0.000	0.011	0.021	0.039	0.076	0.101	0.125	0.159	0.195	0.221	0.254
CSA 14-day Expansion Limit							0.15				

- Notes:
1. Spratt Aggregate validation result: 0.40% expansion at 14 days, cast October 5, 2009
 2. Low density fragments of organic matter washed from sample prior to testing

Reported by: B. Hudson

Reviewed by:
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



DETECTION OF ALKALI-SILICA REACTIVE AGGREGATE BY ACCELERATED EXPANSION OF MORTAR BARS CSA A23.2-25A

BURNCO Rock Products Ltd.
1A, 2760 Emerson Street
Abbotsford, B.C., Canada
V2T 3J6

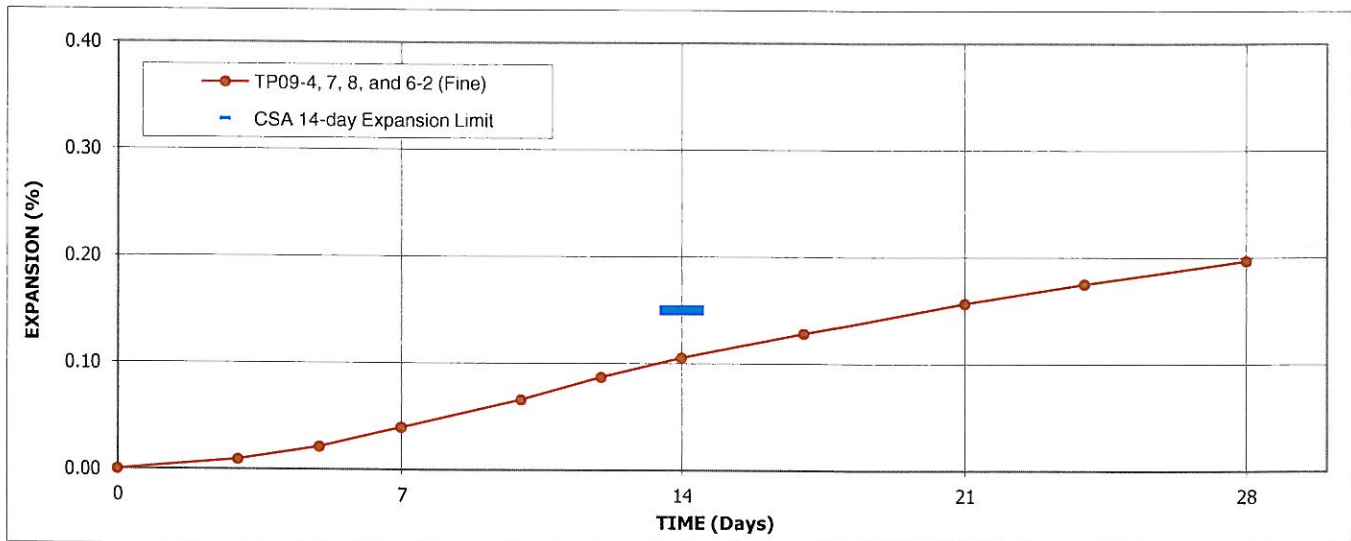
November 27, 2009
Project number: 09-1416-0004.4000

ATTENTION: Mr. Derek Holmes, Operations Manager

PROJECT: McNab Creek, Preliminary Test Pitting - Geomaterials Testing

Sample:	TP09-4, 7, 8, and 6-2 (Fine)
Source:	McNab Creek

TEST NO:	AMBT-09-055	CEMENT TYPE:	GU
SAMPLED BY:	BH/FHS/DH(Client)	CEMENT SOURCE:	ESSROC (Picton, ON)
DATE SAMPLED:	May-2009	WATER BINDER RATIO:	0.46
TOTAL CEMENT ALKALI: K₂O: 1.20% ; Na₂O: 0.15%		CEMENT ALKALI (Na ₂ O eq.):	0.94%



Expansion (%)											
TIME, Days	0	3	5	7	10	12	14	17	21	24	28
AVERAGE	0.000	0.009	0.021	0.040	0.066	0.087	0.105	0.128	0.157	0.175	0.197
CSA 14-day Expansion Limit							0.15				

- Notes:
1. Spratt Aggregate validation result: 0.40% expansion at 14 days, cast October 5, 2009
 2. Samples contain fragments of organic material

Reported by: B. Hudson

Reviewed by:
F. Shrimmer, P. Geo.



Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other production zones/periods. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.



APPENDIX N

Compressive Strength Test Reports



#245 - 12388 88th Avenue
 Surrey, B.C., Canada V3W 7R7
 Phone (604)591-6616
 Fax (604)591-6608

Concrete Test Report

Certified Concrete Testing Laboratory

Client: Burnco Rock Products

ATTN: M Derek Holmes
 Burnco Rock Products
 1A, 2760 Emerson Street
 Abbotsford, BC
 V2T 3J6

Project No: 09-1416-0004/4000
Project Name: McNab Creek Aggregate Evaluation
Date Cast: Aug-10-2011
Date Received: Aug-10-2011
Set No: 1
No. of Specimen: 3

C.C.

Site:

May 2011 DH10-01

SPCM NO.	SPECIMEN TYPE	CURE CONDN	DATE TESTED	TEST AGE DAYS	AVERAGE DIAMETER (mm) OR SIDE (mm x mm)	AVERAGE LENGTH OR SPAN (mm)	MAXIMUM LOAD (kN)	Comp./Flex. Strength		FAILURE TYPE
								Individual (MPa)	Average (MPa)	
A	Cylinder	Lab	Aug-17	7	102.0	200.0	297	36.3		
B	Cylinder	Lab	Sep-07	28	102.0	200.0	357	43.7		
C	Cylinder	Lab	Oct-05	56	102.0	200.0	360	44.1		

Design Specifications:

Spec. Comp. Strength: 45 MPa @ 28 days
Max. Aggregate Size: 20 mm
Specified Slump: ± mm
Specified Air Content: ± %

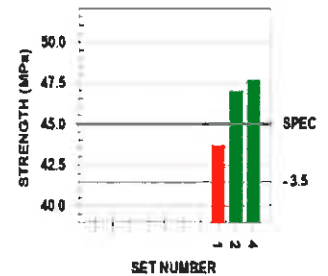
Ticket Information:

Supplier: Golder Surrey Lab
Mix No.: A23.2-14A
Truck No.:
Ticket No.:
Batch Time: 07:19
Admixtures: L/m³ L/m³
Load Volume: m³
Cumulative Volume: m³
Total Volume Ordered: m³
Water Added: litres
Golder Field Card #: 11507

Measured Values:

Air Temperature: 21.0 °C
Concrete Temp.: 22.0 °C
Slump: 70 mm
Air Content: %
Cast Time: 07:38
Cast By: GOL WJG
Mould Type: Plastic
Curing Conditions: Concrete Room
Initial Curing Temp. Min: 21.0 °C **Max:** 22.0 °C

TREND GRAPH



Pour Location:

Comments:

CPT - 028:11
 DH10-01 45'-59'
 Combined Coarse & Fine - Standard Mix

PER.


Client: Burnco Rock Products

 ATTN: M Derek Holmes
 Burnco Rock Products
 1A, 2760 Emerson Street
 Abbotsford, BC
 V2T 3J6

Project No: 09-1416-0004/4000
Project Name: McNab Creek Aggregate Evaluation
Date Cast: Aug-10-2011
Date Received: Aug-10-2011
Set No: 2
No. of Specimen: 6

C.C.
Site:

May 2011 DH10-01

SPCM NO.	SPECIMEN TYPE	CURE CONDN	DATE TESTED	TEST AGE DAYS	AVERAGE DIAMETER (mm) OR SIDE (mm x mm)	AVERAGE LENGTH OR SPAN (mm)	MAXIMUM LOAD (kN)	Comp./Flex. Strength		FAILURE TYPE
								Individual (MPa)	Average (MPa)	
A	Cylinder	Lab	Aug-17	7	102.0	200.0	314	38.4		
B	Cylinder	Lab	Aug-17	7	102.0	200.0	310	37.9	38.2	
C	Cylinder	Lab	Sep-07	28	102.0	200.0	384	47.0		
D	Cylinder	Lab	Sep-07	28	102.0	200.0	384	47.0	47.0	
E	Cylinder	Lab	Oct-05	56	102.0	200.0	396	48.5		
F	Cylinder	Lab	Oct-05	56	102.0	200.0	401	49.1	48.8	

Design Specifications:

Spec. Comp. Strength: 45 MPa @ 28 days
Max. Aggregate Size: 20 mm
Specified Slump: ± mm
Specified Air Content: ± %

Ticket Information:

Supplier: Golder Surrey Lab
Mix No.: A23.2-14A
Truck No.:
Ticket No.:
Batch Time: 07:42
Admixtures: L/m³ L/m³
Load Volume: m³
Cumulative Volume: m³
Total Volume Ordered: m³
Water Added: litres
Golder Field Card #: 11508

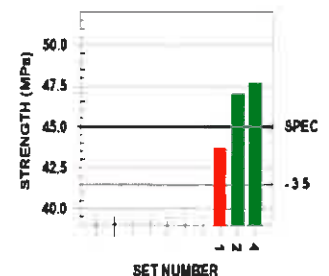
Measured Values:

Air Temperature: 21.0 °C
Concrete Temp.: 22.0 °C
Slump: 100 mm
Air Content: %
Cast Time: 08:00
Cast By: GOL WJG
Mould Type: Plastic

Curing Conditions: Concrete Room
Initial Curing Temp. Min: 21.0 °C **Max:** 22.0 °C

Pour Location:
Comments:

CPT - 029:11
 DH10-01 65'-89'
 Coarse - Standard Mix

TREND GRAPH


Client: Burnco Rock Products

 ATTN: M Derek Holmes
 Burnco Rock Products
 1A, 2760 Emerson Street
 Abbotsford, BC
 V2T 3J6

Project No: 09-1416-0004/4000

Project Name: McNab Creek Aggregate Evaluation

Date Cast: Aug-10-2011


Date Received: Aug-10-2011

Set No: 3

No. of Specimen: 6

C.C.
Site:

May 2011 DH10-01

SPCM NO.	SPECIMEN TYPE	CURE CONDN	DATE TESTED	TEST AGE DAYS	AVERAGE DIAMETER (mm) OR SIDE (mm x mm)	AVERAGE LENGTH OR SPAN (mm)	MAXIMUM LOAD (kN)	Comp./Flex. Strength		FAILURE TYPE
								Individual (MPa)	Average (MPa)	
A	Cylinder	Lab	Aug-17	7	102.0	200.0	268	32.8		
B	Cylinder	Lab	Aug-17	7	102.0	200.0	259	31.7	32.2	
C	Cylinder	Lab	Sep-07	28	102.0	200.0	334	40.9		
D	Cylinder	Lab	Sep-07	28	102.0	200.0	323	39.5	40.2*	
E	Cylinder	Lab	Oct-05	56	102.0	200.0	352	43.1		
F	Cylinder	Lab	Oct-05	56	102.0	200.0	362	44.3	43.7	

Design Specifications:

Spec. Comp. Strength: 45 MPa @ 28 days
Max. Aggregate Size: 28 mm
Specified Slump: ± mm
Specified Air Content: ± %

Ticket Information:

Supplier: Golder Surrey Lab
Mix No.: A23.2- 14A
Truck No.:
Ticket No.:
Batch Time: 08:07
Admixtures: L/m³ L/m³
Load Volume: m³
Cumulative Volume: m³
Total Volume Ordered: m³
Water Added: litres
Golder Field Card #: 11509

Measured Values:

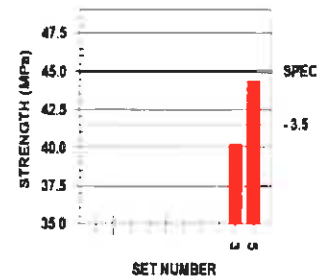
Air Temperature: 21.0 °C
Concrete Temp.: 22.0 °C
Slump: 100 mm
Air Content: %
Cast Time: 08:34
Cast By: GOL WJG
Mould Type: Plastic

Curing Conditions: Concrete Room

Initial Curing Temp. Min: 21.0 °C **Max:** 22.0 °C

Pour Location:
Comments:

CPT - 030:11
 DH10-01 65'-89'
 "Dirty" Fines - Standard Mix

TREND GRAPH




#245 - 12388 88th Avenue
 Surrey, B.C., Canada V3W 7R7
 Phone: (604)591-6616
 Fax: (604)591-6608

Concrete Test Report

Certified Concrete Testing Laboratory

Client: Burnco Rock Products

ATTN: M Derek Holmes
 Burnco Rock Products
 1A, 2760 Emerson Street
 Abbotsford, BC
 V2T 3J6

Project No: 09-1416-0004/4000
Project Name: McNab Creek Aggregate Evaluation
Date Cast: Aug-10-2011
Date Received: Aug-10-2011
Set No: 4
No. of Specimen: 6

C.C.

Site:

May 2011 DH10-01

SPCM NO.	SPECIMEN TYPE	CURE COND	DATE TESTED	TEST AGE DAYS	AVERAGE DIAMETER (mm) OR SIDE (mm x mm)	AVERAGE LENGTH OR SPAN (mm)	MAXIMUM LOAD (kN)	Comp./Flex. Strength		FAILURE TYPE
								Individual (MPa)	Average (MPa)	
A	Cylinder	Lab	Aug-17	7	102.0	200.0	324	39.7		
B	Cylinder	Lab	Aug-17	7	102.0	200.0	324	39.7	39.7	
C	Cylinder	Lab	Sep-07	28	102.0	200.0	379	46.4		
D	Cylinder	Lab	Sep-07	28	102.0	200.0	400	49.0	47.7	
E	Cylinder	Lab	Oct-05	56	102.0	200.0	414	50.7		
F	Cylinder	Lab	Oct-05	56	102.0	200.0	430	52.6	51.6	

Design Specifications:

Spec. Comp. Strength: 45 MPa @ 28 days
Max. Aggregate Size: 20 mm
Specified Slump: ± mm
Specified Air Content: ± %

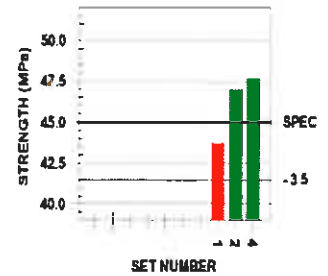
Ticket Information:

Supplier: Golder Surrey Lab
Mix No.: A23.2-14A
Truck No.:
Ticket No.:
Batch Time: 08:37
Admixtures: L/m³ L/m³
Load Volume: m³
Cumulative Volume: m³
Total Volume Ordered: m³
Water Added: litres
Golder Field Card #: 11510

Measured Values:

Air Temperature: 21.0 °C
Concrete Temp.: 22.0 °C
Slump: 100 mm
Air Content: %
Cast Time: 09:00
Cast By: GOL WJG
Mould Type: Plastic
Curing Conditions: Concrete Room
Initial Curing Temp. Min: 21.0 °C **Max:** 22.0 °C

TREND GRAPH



Pour Location:

Comments:

CPT - 031:11
 DH10-01 90'-114'
 Coarse - Standard Mix

PER.

Client: Burnco Rock Products

ATTN: M Derek Holmes
Burnco Rock Products
1A, 2760 Emerson Street
Abbotsford, BC
V2T 3J6

Project No: 09-1416-0004/4000

Project Name: McNab Creek Aggregate Evaluation

Date Cast: Aug-10-2011

Date Received: Aug-10-2011


Set No: 5

No. of Specimen: 6

C.C.

Site:

May 2011 DH10-01

SPCM NO.	SPECIMEN TYPE	CURE COND	DATE TESTED	TEST AGE DAYS	AVERAGE DIAMETER (mm) OR SIDE (mm x mm)	AVERAGE LENGTH OR SPAN (mm)	MAXIMUM LOAD (kN)	Comp./Flex. Strength		FAILURE TYPE
								Individual (MPa)	Average (MPa)	
A	Cylinder	Lab	Aug-17	7	102.0	200.0	302	37.0		
B	Cylinder	Lab	Aug-17	7	102.0	200.0	290	35.5	36.2	
C	Cylinder	Lab	Sep-07	28	102.0	200.0	366	44.8		
D	Cylinder	Lab	Sep-07	28	102.0	200.0	358	43.8	44.3*	
E	Cylinder	Lab	Oct-05	56	102.0	200.0	385	47.1		
F	Cylinder	Lab	Oct-05	56	102.0	200.0	391	47.9	47.5	

Design Specifications:

Spec. Comp. Strength: 45 MPa @ 28 days
Max. Aggregate Size: 28 mm
Specified Slump: ± mm
Specified Air Content: ± %

Ticket Information:

Supplier: Golder Surrey Lab
Mix No.: A23.2- 14A
Truck No.:
Ticket No.:
Batch Time: 09:05
Admixtures: L/m³ L/m³
Load Volume: m³
Cumulative Volume: m³
Total Volume Ordered: m³
Water Added: litres
Golder Field Card #: 11511

Measured Values:

Air Temperature: 21.0 °C
Concrete Temp.: 22.0 °C
Slump: 100 mm
Air Content: %
Cast Time: 09:27
Cast By: GOL WJG
Mould Type: Plastic

Curing Conditions: Concrete Room

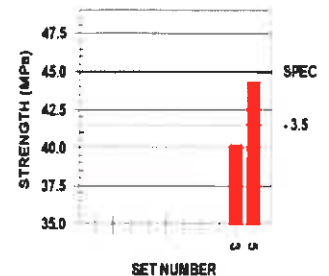
Initial Curing Temp. Min: 21.0 °C **Max:** 22.0 °C

Pour Location:

Comments:

CPT - 032:11
DH10-01 90'-114'
Fines - Standard Mix

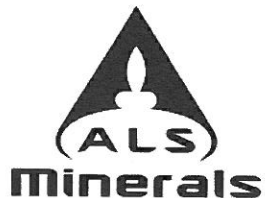
TREND GRAPH





APPENDIX O

Acid-Base Accounting Certificate of Analysis and Elemental Analysis Certificate of Analysis



ALS Canada Ltd.
 2103 Dollarton Hwy
 North Vancouver BC V7H 0A7
 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: **GOLDER ASSOCIATES LTD.**
12388 8TH AVENUE, UNIT 245
SURREY BC V3W 7R7

Page: 1
 Finalized Date: 30-SEP-2011
 This copy reported on
 12-APR-2012
 Account: GOLDER

CERTIFICATE VA11173809

Project: 09-1416-0004.4000

P.O. No.:

This report is for 8 Crushed Rock samples submitted to our lab in Vancouver, BC, Canada on 30-AUG-2011.

The following have access to data associated with this certificate:

ANETT BRIGGS

BEN HUDSON

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-QC	Pulverizing QC Test
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	
ME-MS41	51 anal. aqua regia ICPMS	
OA-VOL08	Basic Acid Base Accounting	
S-IR08	Total Sulphur (Leco)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	LECO
S-IR07	Sulphide Sulphur (Leco)	

To: **GOLDER ASSOCIATES LTD.**
ATTN: ANETT BRIGGS
12388 8TH AVENUE, UNIT 245
SURREY BC V3W 7R7

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature: 
 Colin Ramshaw, Vancouver Laboratory Manager



ALS Canada Ltd.
 2103 Dollarton Hwy
 North Vancouver BC V7H 0A7
 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

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 SURREY BC V3W 7R7

Page: 2 - A
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 30-SEP-2011
 Account: GOLDER

Project: 09-1416-0004.4000

CERTIFICATE OF ANALYSIS VA11173809

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg	OA-VOL08 FIZZ RAT Unity	OA-VOL08 MPA tCaCO3/1000	OA-VOL08 NNP tCaCO3/1000	OA-VOL08 NP tCaCO3/1000	OA-ELE07 pH Unity	OA-VOL08 Ratio (N) Unity	S-IR08 S %	S-GRA06 S %	S-GRA06a S %	S-IR07 S %	C-GAS05 C %	C-GAS05 CO2 %	ME-MS41 Ag ppm	ME-MS41 Al %
10-05 75-99 ABA		0.36	1	0.6	7	8	8.5	12.80	0.02	0.02	0.01	0.01	<0.05	0.2		
10-05 75-99 TM		0.32													0.04	1.73
10-07 45-64 ABA		0.38	1	<0.3	7	7	8.0	44.80	<0.01	<0.01	0.01	<0.01	<0.05	<0.2		
10-07 45-64 TM		0.32													0.04	1.58
10-07 70-94 ABA		0.36	1	0.6	6	7	7.7	11.20	0.02	<0.01	0.01	0.01	0.05	0.2		
10-07 70-94 TM		0.30													0.04	1.80
10-07 100-109 ABA		0.38	1	<0.3	6	6	7.8	38.40	<0.01	<0.01	<0.01	<0.01	<0.05	<0.2		
10-07 100-109 TM		0.32													0.04	1.59

***** See Appendix Page for comments regarding this certificate *****



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 North Vancouver BC V7H 0A7
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 SURREY BC V3W 7R7

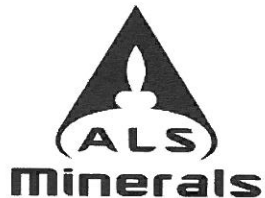
Page: 2 - B
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 30-SEP-2011
 Account: GOLDER

Project: 09-1416-0004.4000

CERTIFICATE OF ANALYSIS VA11173809

Sample Description	Method Analyte Units LOR	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Fe %	Ga ppm
10-05 75-99 ABA		0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05
10-05 75-99 TM		4.2	<0.2	<10	100	0.14	0.08	0.61	0.05	12.25	6.7	72	2.07	20.1	2.14	4.50
10-07 45-64 ABA		5.2	<0.2	<10	90	0.13	0.08	0.52	0.05	13.45	6.0	68	1.78	18.9	2.11	4.14
10-07 45-64 TM																
10-07 70-94 ABA																
10-07 70-94 TM		5.9	<0.2	<10	100	0.14	0.09	0.60	0.05	12.70	7.5	73	2.30	20.9	2.31	4.71
10-07 100-109 ABA		4.2	<0.2	<10	100	0.16	0.08	0.50	0.04	13.05	6.4	66	2.12	17.3	1.95	4.32
10-07 100-109 TM																

***** See Appendix Page for comments regarding this certificate *****



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 SURREY BC V3W 7R7

Page: 2 - C
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 30-SEP-2011
 Account: GOLDER

Project: 09-1416-0004.4000

CERTIFICATE OF ANALYSIS VA11173809

Sample Description	Method Analyte Units LOR	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm	Pb ppm
10-05 75-99 ABA		0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2	10	0.2
10-05 75-99 TM		0.06	0.08	<0.01	0.010	0.28	6.3	18.8	0.52	265	0.78	0.16	0.21	17.8	320	2.9
10-07 45-64 ABA		0.06	0.08	0.01	0.010	0.21	6.9	17.3	0.46	248	1.06	0.13	0.34	18.8	330	2.6
10-07 45-64 TM																
10-07 70-94 ABA																
10-07 70-94 TM		0.06	0.08	0.01	0.011	0.28	6.5	19.4	0.57	277	0.83	0.12	0.30	21.2	400	2.9
10-07 100-109 ABA																
10-07 100-109 TM		0.07	0.08	<0.01	0.011	0.27	6.7	18.5	0.51	269	0.85	0.11	0.29	18.3	290	2.4

***** See Appendix Page for comments regarding this certificate *****



ALS Canada Ltd.
 2103 Dollarton Hwy
 North Vancouver BC V7H 0A7
 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

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 12388 8TH AVENUE, UNIT 245
 SURREY BC V3W 7R7

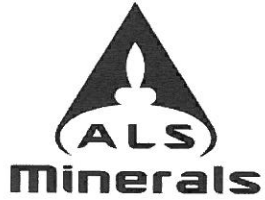
Page: 2 - D
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 30-SEP-2011
 Account: GOLDER

Project: 09-1416-0004.4000

CERTIFICATE OF ANALYSIS VA11173809

Sample Description	Method Analyte Units LOR	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm
		0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1
10-05 75-99 ABA		18.4	<0.001	<0.01	0.26	4.1	0.3	0.3	46.2	<0.01	0.01	3.7	0.097	0.15	0.82	55
10-05 75-99 TM																
10-07 45-64 ABA		14.7	<0.001	<0.01	0.25	3.7	0.3	0.3	40.4	0.01	0.01	3.4	0.087	0.12	1.01	54
10-07 45-64 TM																
10-07 70-94 ABA																
10-07 70-94 TM		19.2	<0.001	<0.01	0.27	4.0	0.3	0.3	43.5	<0.01	0.01	4.0	0.099	0.16	1.00	61
10-07 100-109 ABA																
10-07 100-109 TM		18.4	<0.001	<0.01	0.26	3.9	0.3	0.3	37.6	<0.01	0.01	4.0	0.101	0.15	0.98	45

***** See Appendix Page for comments regarding this certificate *****



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 2103 Dollarton Hwy
 North Vancouver BC V7H 0A7
 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: **GOLDER ASSOCIATES LTD.**
 12388 8TH AVENUE, UNIT 245
 SURREY BC V3W 7R7

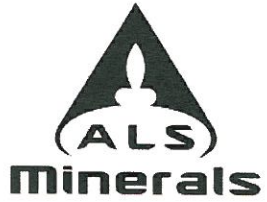
Page: 2 - E
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 30-SEP-2011
 Account: GOLDER

Project: 09-1416-0004.4000

CERTIFICATE OF ANALYSIS VA11173809

Sample Description	Method Analyte Units LOR	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		W ppm	Y ppm	Zn ppm	Zr ppm
		0.05	0.05	2	0.5
10-05 75-99 ABA 10-05 75-99 TM 10-07 45-64 ABA 10-07 45-64 TM 10-07 70-94 ABA		0.40	5.45	37	1.9
10-07 70-94 TM 10-07 100-109 ABA 10-07 100-109 TM		0.52	5.65	39	2.0
		0.34	5.56	34	1.8

***** See Appendix Page for comments regarding this certificate *****



ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: **GOLDER ASSOCIATES LTD.**
12388 8TH AVENUE, UNIT 245
SURREY BC V3W 7R7

Page: Appendix 1
Total # Appendix Pages: 1
Finalized Date: 30-SEP-2011
Account: GOLDER

Project: 09-1416-0004.4000

CERTIFICATE OF ANALYSIS VA11173809

Method	CERTIFICATE COMMENTS
ME-MS41	Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).



APPENDIX P

Shakeflask Extraction Certificate of Analysis



GOLDER ASSOCIATES LTD.
ATTN: Ben Hudson
Unit B, 12330 - 88th Avenue
Surrey BC V3W 3J6

Date Received: 29-AUG-11
Report Date: 07-SEP-11 10:05 (MT)
Version: FINAL

Client Phone: 604-591-6616

Certificate of Analysis

Lab Work Order #: L1051274
Project P.O. #: NOT SUBMITTED
Job Reference: 09-1416-0004.4000
C of C Numbers:
Legal Site Desc:

Amber Springer
Account Manager

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ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1051274-1	L1051274-2	L1051274-3	L1051274-4
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	24-AUG-11	24-AUG-11	24-AUG-11	24-AUG-11
		Sampled Time				
		Client ID	10-05 75-99 ML	10-07 45-64 ML	10-07 70-94ML	10-07 100-109 ML
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)		<0.25	<0.25	<0.25	<0.25
Leachable Anions & Nutrients	pH (pH)		7.77	7.51	7.74	8.03
Leachable Metals	Aluminum (Al)-Leachable (mg/L)		1.03	1.81	1.65	2.09
	Antimony (Sb)-Leachable (mg/L)		0.00261	0.00156	0.00300	0.00258
	Arsenic (As)-Leachable (mg/L)		0.0065	0.0046	0.0051	0.0094
	Barium (Ba)-Leachable (mg/L)		0.0083	0.0299	0.0147	0.0173
	Beryllium (Be)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050
	Bismuth (Bi)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Leachable (mg/L)		0.031	0.033	0.031	0.037
	Cadmium (Cd)-Leachable (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050
	Calcium (Ca)-Leachable (mg/L)		2.42	2.51	2.21	1.24
	Chromium (Cr)-Leachable (mg/L)		0.00108	0.00159	0.00170	0.00271
	Cobalt (Co)-Leachable (mg/L)		0.00032	0.00045	0.00052	0.00054
	Copper (Cu)-Leachable (mg/L)		0.0031	0.0070	0.0061	0.0100
	Iron (Fe)-Leachable (mg/L)		0.590	0.893	1.11	1.47
	Lead (Pb)-Leachable (mg/L)		0.00041	0.00064	0.00045	0.00068
	Lithium (Li)-Leachable (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050
	Magnesium (Mg)-Leachable (mg/L)		0.855	1.02	1.15	0.595
	Manganese (Mn)-Leachable (mg/L)		<0.011 ^{DLB}	0.0227	0.0190	0.0387
	Mercury (Hg)-Leachable (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050
	Molybdenum (Mo)-Leachable (mg/L)		0.00722	0.00956	0.0117	0.0144
	Nickel (Ni)-Leachable (mg/L)		0.00085	0.00179	0.00194	0.00210
	Phosphorus (P)-Leachable (mg/L)		<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Leachable (mg/L)		7.07	5.86	7.98	5.45
	Selenium (Se)-Leachable (mg/L)		0.00071	<0.00050	<0.00050	<0.00050
	Silicon (Si)-Leachable (mg/L)		5.19	7.11	6.72	7.48
	Silver (Ag)-Leachable (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050
	Sodium (Na)-Leachable (mg/L)		8.23	8.93	9.85	9.83
	Strontium (Sr)-Leachable (mg/L)		0.0142	0.0209	0.0158	0.00969
	Thallium (Tl)-Leachable (mg/L)		<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Leachable (mg/L)		0.035	0.057	0.067	0.090
	Uranium (U)-Leachable (mg/L)		0.000171	0.000691	0.000441	0.000605
	Vanadium (V)-Leachable (mg/L)		0.0081	0.0067	0.0075	0.0117
	Zinc (Zn)-Leachable (mg/L)		<0.010	<0.010	<0.010	0.023

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Manganese (Mn)-Leachable	MB-LOR	L1051274-1, -2, -3, -4
Method Blank	Strontium (Sr)-Leachable	MB-LOR	L1051274-1, -2, -3, -4

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLB	Detection limit was raised due to detection of analyte at comparable level in Method Blank.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
HG-SHKFLSK-CVAFS-VA	Soil	Mercury by CVAFS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-SHKFLSK-ICP-VA	Soil	Metals by ICPOES (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-SHKFLSK-MS-VA	Soil	Metals by ICPMS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - mass spectrophotometry (EPA Method 6020A).			
MOISTURE-VA	Soil	Moisture content	ASTM D2974-00 Method A
This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.			
PH-SHKFLSK-MAN-VA	Soil	pH by Manual Meter (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently analysed using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1051274

Report Date: 07-SEP-11

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Client: GOLDER ASSOCIATES LTD.
Unit B, 12330 - 88th Avenue
Surrey BC V3W 3J6

Contact: Ben Hudson

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-SHKFLSK-CVAFS-VA Soil								
Batch R2246644								
WG1343045-2 DUP L1051274-3								
Mercury (Hg)-Leachable		<0.000050	<0.000050	RPD-NA	mg/L	N/A	30	06-SEP-11
WG1343045-1 MB								
Mercury (Hg)-Leachable			<0.000050		mg/L		0.00005	06-SEP-11
WG1343538-1 MB								
Mercury (Hg)-Leachable			<0.000050		mg/L		0.00005	06-SEP-11
MET-SHKFLSK-ICP-VA Soil								
Batch R2246601								
WG1343045-2 DUP L1051274-3								
Iron (Fe)-Leachable		1.11	0.880		mg/L	23	25	06-SEP-11
Phosphorus (P)-Leachable		<0.30	<0.30	RPD-NA	mg/L	N/A	25	06-SEP-11
Silicon (Si)-Leachable		6.72	5.60		mg/L	18	25	06-SEP-11
Titanium (Ti)-Leachable		0.067	0.051	J	mg/L	0.016	0.02	06-SEP-11
WG1343045-1 MB								
Iron (Fe)-Leachable			<0.030		mg/L		0.03	06-SEP-11
Phosphorus (P)-Leachable			<0.30		mg/L		0.3	06-SEP-11
Silicon (Si)-Leachable			<0.050		mg/L		0.05	06-SEP-11
Titanium (Ti)-Leachable			<0.010		mg/L		0.01	06-SEP-11
MET-SHKFLSK-MS-VA Soil								
Batch R2246771								
WG1343045-2 DUP L1051274-3								
Aluminum (Al)-Leachable		1.65	1.31		mg/L	23	25	06-SEP-11
Antimony (Sb)-Leachable		0.00300	0.00276		mg/L	8.2	25	06-SEP-11
Arsenic (As)-Leachable		0.0051	0.0047		mg/L	8.7	25	06-SEP-11
Barium (Ba)-Leachable		0.0147	0.0145		mg/L	1.0	25	06-SEP-11
Beryllium (Be)-Leachable		<0.00050	<0.00050	RPD-NA	mg/L	N/A	25	06-SEP-11
Bismuth (Bi)-Leachable		<0.00050	<0.00050	RPD-NA	mg/L	N/A	25	06-SEP-11
Boron (B)-Leachable		0.031	0.028		mg/L	8.5	25	06-SEP-11
Cadmium (Cd)-Leachable		<0.000050	<0.000050	RPD-NA	mg/L	N/A	25	06-SEP-11
Calcium (Ca)-Leachable		2.21	2.02		mg/L	9.0	25	06-SEP-11
Chromium (Cr)-Leachable		0.00170	0.00131	J	mg/L	0.00040	0.001	06-SEP-11
Cobalt (Co)-Leachable		0.00052	0.00043		mg/L	20	25	06-SEP-11
Copper (Cu)-Leachable		0.0061	0.0055		mg/L	10	25	06-SEP-11
Lead (Pb)-Leachable		0.00045	0.00041		mg/L	9.6	25	06-SEP-11
Lithium (Li)-Leachable		<0.0050	<0.0050	RPD-NA	mg/L	N/A	25	06-SEP-11
Magnesium (Mg)-Leachable		1.15	1.04		mg/L	10	25	06-SEP-11



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-SHKFLSK-MS-VA Soil								
Batch	R2246771							
WG1343045-2 DUP		L1051274-3						
Manganese (Mn)-Leachable		0.0190	0.0158		mg/L	18	25	06-SEP-11
Molybdenum (Mo)-Leachable		0.0117	0.0110		mg/L	6.9	25	06-SEP-11
Nickel (Ni)-Leachable		0.00194	0.00244		mg/L	23	25	06-SEP-11
Potassium (K)-Leachable		7.98	7.38		mg/L	7.9	25	06-SEP-11
Selenium (Se)-Leachable		<0.00050	<0.00050	RPD-NA	mg/L	N/A	25	06-SEP-11
Silver (Ag)-Leachable		<0.000050	<0.000050	RPD-NA	mg/L	N/A	25	06-SEP-11
Sodium (Na)-Leachable		9.85	9.34		mg/L	5.3	25	06-SEP-11
Strontium (Sr)-Leachable		0.0158	0.0145		mg/L	8.7	25	06-SEP-11
Thallium (Tl)-Leachable		<0.00010	<0.00010	RPD-NA	mg/L	N/A	25	06-SEP-11
Tin (Sn)-Leachable		<0.00050	<0.00050	RPD-NA	mg/L	N/A	25	06-SEP-11
Uranium (U)-Leachable		0.000441	0.000413		mg/L	6.4	25	06-SEP-11
Vanadium (V)-Leachable		0.0075	0.0064		mg/L	16	25	06-SEP-11
Zinc (Zn)-Leachable		<0.010	<0.010	RPD-NA	mg/L	N/A	25	06-SEP-11
WG1343045-1 MB								
Aluminum (Al)-Leachable			<0.0050		mg/L		0.005	06-SEP-11
Antimony (Sb)-Leachable			<0.00010		mg/L		0.0001	06-SEP-11
Arsenic (As)-Leachable			<0.0010		mg/L		0.001	06-SEP-11
Barium (Ba)-Leachable			<0.0010		mg/L		0.001	06-SEP-11
Beryllium (Be)-Leachable			<0.00050		mg/L		0.0005	06-SEP-11
Bismuth (Bi)-Leachable			<0.00050		mg/L		0.0005	06-SEP-11
Boron (B)-Leachable			<0.010		mg/L		0.01	06-SEP-11
Cadmium (Cd)-Leachable			<0.000050		mg/L		0.00005	06-SEP-11
Calcium (Ca)-Leachable			<0.10		mg/L		0.1	06-SEP-11
Chromium (Cr)-Leachable			<0.00050		mg/L		0.0005	06-SEP-11
Cobalt (Co)-Leachable			<0.00010		mg/L		0.0001	06-SEP-11
Copper (Cu)-Leachable			<0.0010		mg/L		0.001	06-SEP-11
Lead (Pb)-Leachable			<0.00010		mg/L		0.0001	06-SEP-11
Lithium (Li)-Leachable			<0.0050		mg/L		0.005	06-SEP-11
Magnesium (Mg)-Leachable			<0.050		mg/L		0.05	06-SEP-11
Manganese (Mn)-Leachable			0.00326	MB-LOR	mg/L		0.0005	06-SEP-11
Molybdenum (Mo)-Leachable			<0.00010		mg/L		0.0001	06-SEP-11
Nickel (Ni)-Leachable			<0.00050		mg/L		0.0005	06-SEP-11
Potassium (K)-Leachable			<0.050		mg/L		0.05	06-SEP-11
Selenium (Se)-Leachable			<0.00050		mg/L		0.0005	06-SEP-11



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-SHKFLSK-MS-VA								
	Soil							
Batch	R2246771							
WG1343045-1	MB							
Silver (Ag)-Leachable			<0.000050		mg/L		0.00005	06-SEP-11
Sodium (Na)-Leachable			<0.050		mg/L		0.05	06-SEP-11
Strontium (Sr)-Leachable			0.00099	MB-LOR	mg/L		0.0005	06-SEP-11
Thallium (Tl)-Leachable			<0.00010		mg/L		0.0001	06-SEP-11
Tin (Sn)-Leachable			<0.00050		mg/L		0.0005	06-SEP-11
Uranium (U)-Leachable			<0.000010		mg/L		0.00001	06-SEP-11
Vanadium (V)-Leachable			<0.0010		mg/L		0.001	06-SEP-11
Zinc (Zn)-Leachable			<0.010		mg/L		0.01	06-SEP-11
MOISTURE-VA								
	Soil							
Batch	R2244194							
WG1340876-2	LCS							
Moisture			100		%		90-110	31-AUG-11
WG1340876-1	MB							
Moisture			<0.25		%		0.25	31-AUG-11
PH-SHKFLSK-MAN-VA								
	Soil							
Batch	R2246597							
WG1343045-2	DUP	L1051274-3						
pH		7.74	7.77		pH	0.39	25	06-SEP-11

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Ltd.
500 - 4260 Still Creek Drive
Burnaby, British Columbia, V5C 6C6
Canada
T: +1 (604) 296 4200

