

Trembley Pit No. 2878

December 2023 Technical Information Report

Pit History:

Trembley Road Pit was physically tested and sampled for aggregate gradation and quality properties in 1994 and 1995. Initial pit development and mining took place in the western end of the pit. Additional pit development to the east, covering 2.1 hectare, was completed in March of 2015. The following report documents laboratory test results and mining recommendations for the March 2015 development area.

Location:

The pit is located approximately 4.8km from the junction of Highway 26 and 97 in Quesnel via Highway 26, Quesnel Canyon Road and Trembley Road.



Legal Description: Ministry of Transportation and Infrastructure Crown Land Act Section 16 Map Reserve consisting of 70 hectares within Block B of District Lot 7289, Cariboo District. UTM coordinates at the entrance to the pit are Grid Zone 10, 5872908 Northing, 536816 Easting.

Gradation: The average and range of laboratory samples as well as oversize rock estimates (>75mm) for material observed and sampled from within the March 2015 development area is as follows:

Laboratory Samples (*Test Hole 94-24, Test Pits 95-21, 22, 25 and 32*)

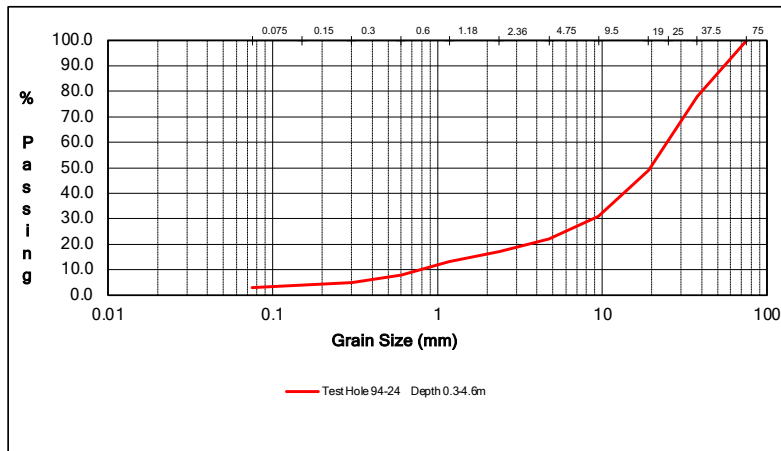
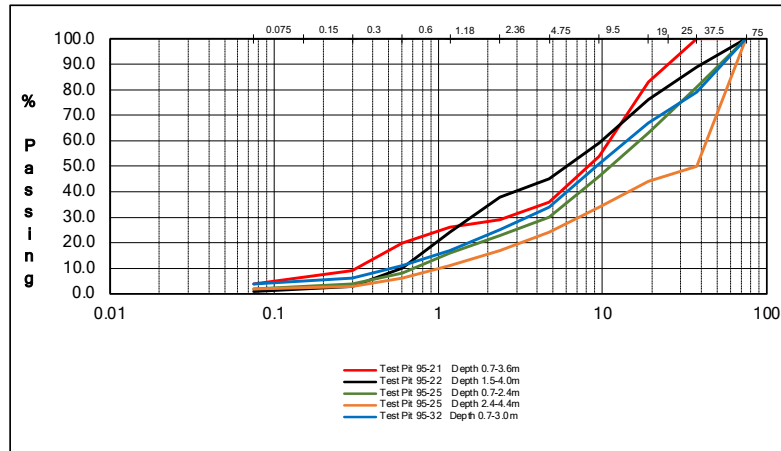
Classification:	Average (%)	Range (%)
Gravel (4.75-75mm)	69.3	55-78
Sand (0.075-4.75mm)	28.5	19-44
Fines (<0.075mm)	2.2	1-4

Overdose Rock Estimates (>75mm)

Classification:	Average (%)	Range (%)
Boulders (>375mm)	0.3	0-3
Cobbles (150-375mm)	0.8	0-4
Cobbles (75-150mm)	2.2	1-4

The maximum size rock observed was 600mm.

Pit Run Gradation Charts (Not corrected for overdose rock (>75mm)):



Gradation Summary:

Test Pit/Hole	Sample Information	Percent Passing									
		Pit Run Sieve Sizes (mm)									
		75	37.5	19	9.5	4.75	2.36	1.18	0.6	0.3	0.075
Test Pit 95-21	Depth 0.7-3.6m	100.0	83.0	54.0	36.0	29.0	26.0	20.0	9.0	4.0	1.0
Test Pit 95-22	Depth 1.5-4.0m	100.0	89.0	76.0	59.0	45.0	38.0	24.0	10.0	3.0	1.0
Test Pit 95-25	Depth 0.7-2.4m	100.0	81.0	63.0	46.0	30.0	23.0	16.0	8.0	4.0	2.0
Test Pit 95-25	Depth 2.4-4.4m	100.0	50.0	44.0	34.0	24.0	17.0	11.0	6.0	3.0	2.0
Test Pit 95-32	Depth 0.7-3.0m	100.0	79.0	67.0	51.0	34.0	25.0	17.0	11.0	6.0	4.0
Test Hole 94-24	Depth 0.3-4.6m	100.0	78.0	49.0	31.0	22.0	17.0	13.0	8.0	5.0	3.0
	MAXIMUM	100	89.0	76.0	59.0	45.0	38.0	24.0	11.0	6.0	4.0
	MINIMUM	100	50.0	44.0	34.0	24.0	17.0	11.0	6.0	3.0	1.0
	AVERAGE	100.0	76.7	58.8	42.8	30.7	24.3	16.8	8.7	4.2	2.2

Laboratory Aggregate Quality Test Results:

Sample Location	Laboratory Test			
	Micro Deval	Sand Equivalent	Degradation	Magnesium Sulphate
Test Pit 95-21				4.1% Coarse/14.5% Fine
Test Pit 95-24		85	59	
Pit Face	12.36% Coarse			

Petrographic Analysis (Test Pit 95-25)					
Rock Type	Good	Fair	Poor	Deleterious	% of Gravel
Plutonic	3	0	0	0	3
Volcanic	8	5	0	6	19
Sedimentary	0	8	0	9	17
Metamorphic	61	0	0	0	61
Quality Totals	72	13	0	15	100

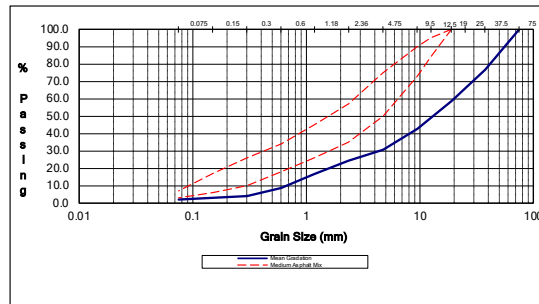
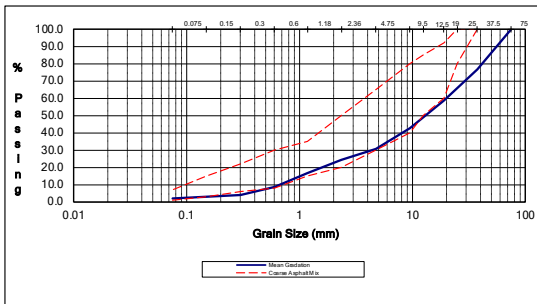
MoTI Aggregate Quality Specifications:

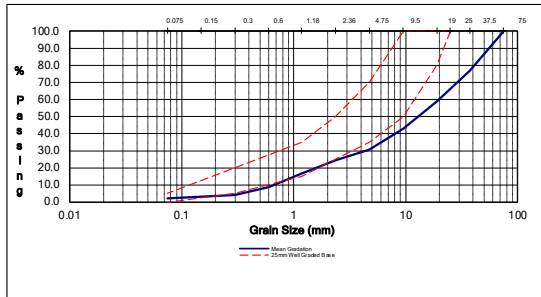
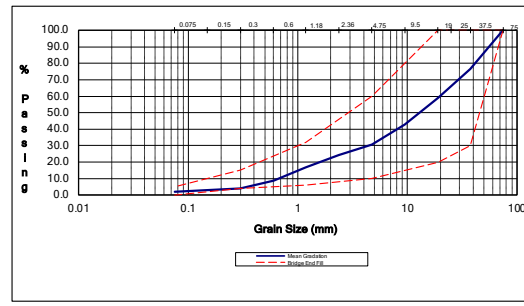
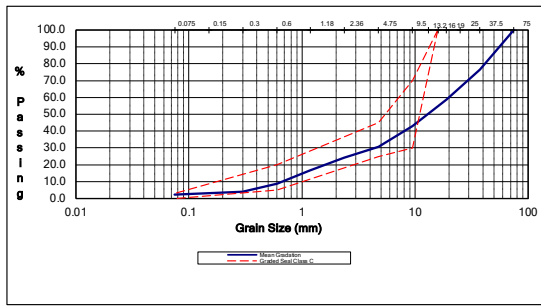
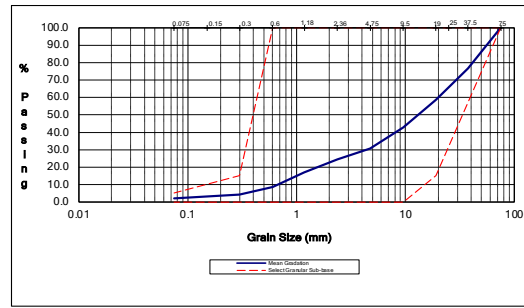
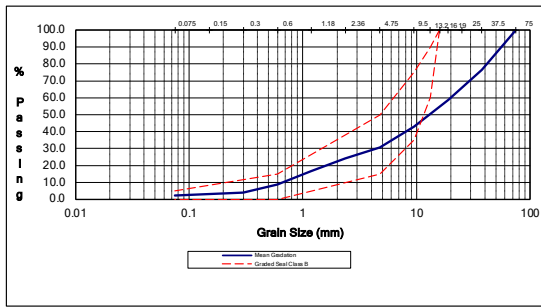
Product	Laboratory Test					
	Micro Deval	Sand Equivalent	Magnesium Sulphate	Absorption	Clay Lumps	Plasticity
25mm Well Graded Base	<25%	>40	<20% Coarse, <25% Fine			
50mm Well Graded Base	<25%	>40	<20% Coarse, <25% Fine			
75mm Well Graded Base	<17%	>40	<20% Coarse, <25% Fine			
Select Granular Sub base	<30%	>20	<20% Coarse, <25% Fine			
Bridge End Fill	<30%	>20	<20% Coarse, <25% Fine			
Superpave	<18%	>45		2.0%	1.0%	
Class 1 Asphalt	<18%	>40		2.0%	1.0%	
Class 2 Asphalt	<20%	>40		2.0%	1.5%	
Graded Aggregate Seal	<20%		12%	1.0% Coarse, 1.5% Fine	0.5%	
High Fines Surfacing	<25%	>20				<6

Suggested Material Suitability:

- Coarse Asphalt Mix
- Medium Asphalt Mix
- Graded Aggregate Seal Class B and C
- 25mm Well Graded Base
- Select Granular Sub base
- Bridge End Fill

Mean Gradations vs End Product Gradation Specifications:





Aggregate Volumes:

Potential Volume: $\pm 75,000\text{m}^3$

Based on mining the March 2015 development area of 2.5 hectares to an average depth of 3.4 metres.

Pit Development and Recommendations:

- The pit was stripped in March of 2015. The pit may require minor clearing of grass or brush that has been established since 2015.
- The crusher is recommended to be located on the existing pit floor northwest of Test Pit 95-25 with mining in a southeast direction.
- Processed aggregate may be stockpiled to the northwest of the crusher site where space permits.
- Test pitting indicates that the granular material is underlain by clay/silt at shallow depths within the March 2015 development area (refer to Test Pit Logs). The mining depths need to be carefully monitored to ensure contamination with underlain clays and silts does not occur.
- At the completion of mining activities active pit faces should be trimmed to a minimum slope of 1 1/2:1 with natural gravels. Areas mined to depletion are to be sloped to a minimum of 2:1. Reject material from aggregate production is not to be used to obtain sloping unless approved by the Regional Aggregate Resource Manager.

- The pit is located within the Province of British Columbia Agricultural Land Reserve. Pit development and reclamation is to be completed as per the applicable Agricultural Land Commission guidelines.

Test Pit Logs:

TP/TH	DEPTH		VISUAL MATERIAL DESCRIPTION	ESTIMATED GRADUATION			Oversize Rock (>75mm)			LABORATORY GRADATIONS and CLASSIFICATION	Comments
	FROM	TO		G	S	F	75mm - 150mm	150mm- 375mm	>375mm		
TH 94-24	0.0	0.3	ML								Stripped in March 2015
	0.3	4.6	GPGM	60	32	8				GP (78%G, 19%S, 3%F)	
	4.6	5.5	GPGM	70	25	5					
	5.5	6.0	GPGM	90	5	5					
TP 95-21	0.0	0.7	Overburden								Stripped in March 2015
	0.7	3.6	GP	65	33	2	3	2	0	GP (71%G, 28%S, 1%F)	
	3.6	4.2	CL/ML								
TP 95-22	0.0	0.7	Overburden								Stripped in March 2015
	0.7	1.5	GP	70	27	3	2	1	0		
	1.5	4.0	GP	55	42	3	1	0	0	GP (55%G, 44%S, 1%F)	
TP 95-25	0.0	0.7	Overburden								Stripped in March 2015
	0.7	2.4	GP	65	32	3	2	1	0	GP (69%G, 29%S, 2%F)	
	2.4	4.4	GPGM	75	25	5	4	3	1	GP (77%G, 21%S, 2%F)	
	4.4	4.7	CL/ML								
TP 95-32	0.0	0.7	Overburden								Stripped in March 2015
	0.7	3.0	GPGM	65	30	5	5	4	3	GP (66%G, 30%S, 4%F)	
	3.0	4.3	GPGM	55	37	8	1	1	0		
	4.3	4.4	CL/ML								

Site Photographs:



March 2015 Stripped Area Looking South

Closure:

Discussions and recommendations presented above are based on a field investigations conducted by the Ministry of Transportation and Infrastructure. This report has been prepared for use by the Ministry of Transportation and Infrastructure, which includes the distribution as required for purposes for which the assessment was commissioned. The assessment has been carried out in accordance with generally accepted geotechnical practice. Geotechnical judgment has been applied in developing the recommendations in this report. No other warranty is made, either expressed or implied.

Sitkum Consulting Ltd. trusts that the information presented above meets your current requirements. If you have any questions, or require further information, please do not hesitate to contact the undersigned

Sincerely,



Bryan James
Project Manager
Sitkum Consulting Ltd.