



## Ministry of Transportation and Infrastructure

Geotechnical and Materials Engineering

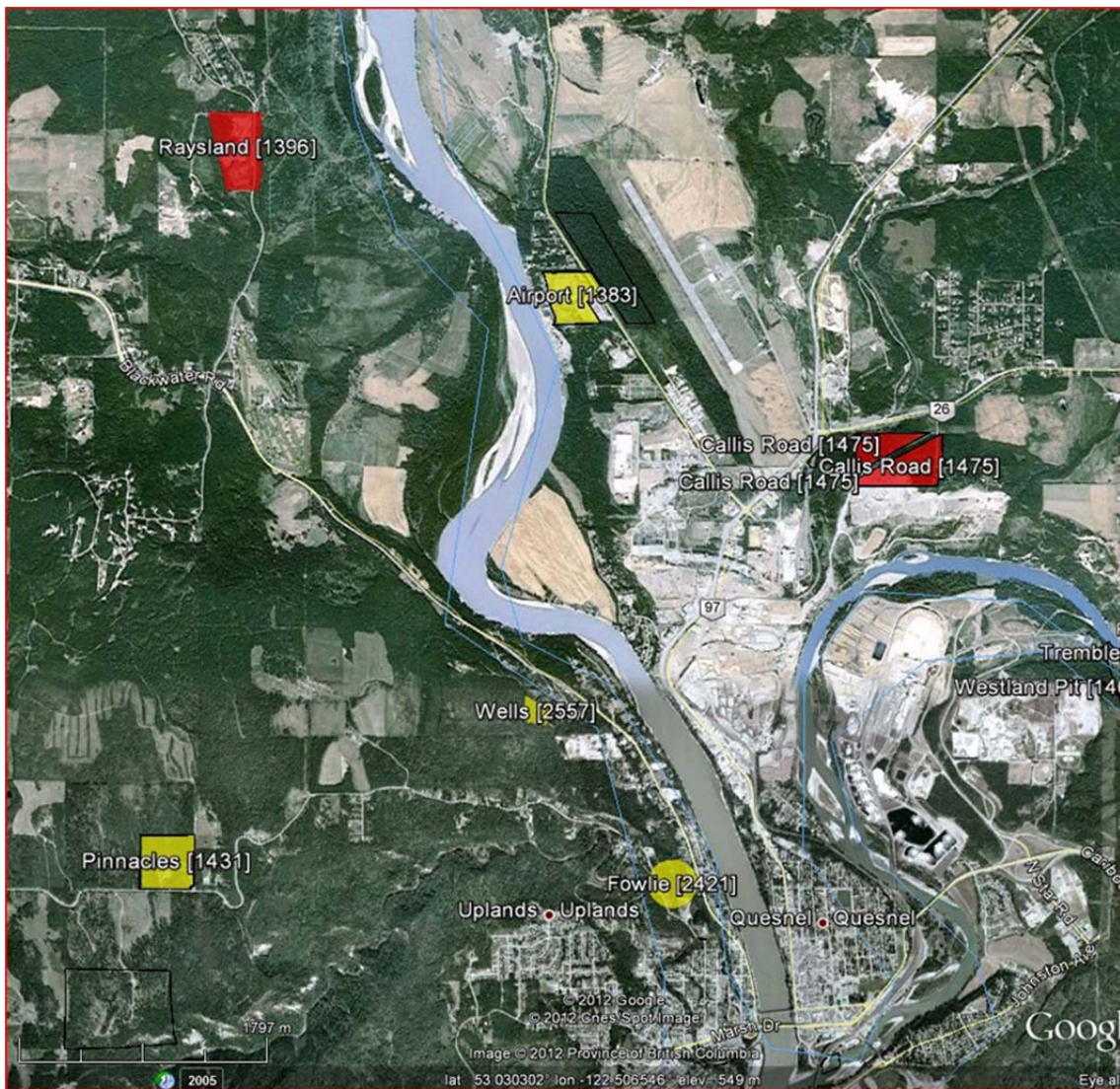
## Southern Interior Region

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# Raysland Pit No. 1396

## 2017 Technical Information Report

**Location:** The pit is located approximately 7.5 km northwest of Quesnel along the Nazko and Paradise roads.



**Legal Description:** Ministry of Transportation and Infrastructure owned property legally described as Lot A, District Lot 8635, Cariboo District, Plan 34874, containing approximately 20.21 ha. The UTM coordinates are Zone 10, 5876195 Northing, 529405 Easting.

**Gradation Area:** The average and range of gradations for samples obtained from the 1986 (TP's 86-7 to 9 and 15 to 18) test pits within the mining areas of the pit are as follows:

**Laboratory Samples**

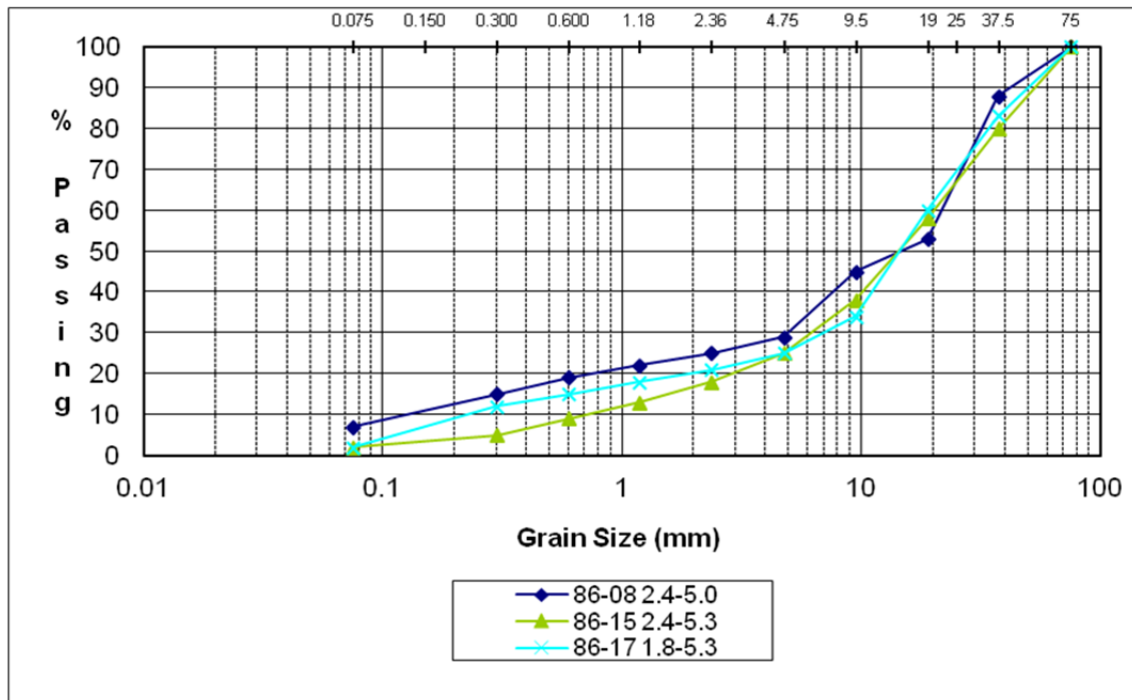
Classification:	Average (%)	Range (%)
Gravel (4.75-75mm)	73.7	71 – 75
Sand (0.075-4.75mm)	22.7	22 – 23
Fines (<0.075mm)	2.6	2 – 7

Oversize Field Estimates

Classification:	Average (%)	Range (%)
Boulders (>375mm)	0	0
Cobbles (150-375mm)	0.2	0 – 1
Cobbles (75-150mm)	3.7	0 – 5

The maximum size rock observed was 225 mm.

**Aggregate Gradation Charts:**



Summary of Test Pit Logs (including Laboratory Results – bolded in red) are located below:

1	of		1												
<b>AGGREGATE LOG</b>															
<b>PROJECT:</b>		Raysland Pit					<b>SAMPLED BY:</b>								
<b>PIT #:</b>		1396					<b>METHOD:</b>				Various				
<b>DISTRICT:</b>		Cariboo					<b>DATE:</b>				Various				
TH / TP	DEPTH		SAMPLE BAG No.	SOILS CLASS	ESTIMATED GRADATION			ESTIMATED ROCK 75mm				SAND TYPE			REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm- 150mm	150mm- 300mm	>300mm	F	M	C	
TH 01-02	0.0	2.3		ML	0	30	70								
	2.3	7.8		GP	70	30	0								
	7.8	9.3		ML											
	9.3	14.6		GP-GM	65	30	5								
	14.6	18.3		GM <sub>3</sub>	45	25	30								
TP 01-04	0.0	0.1		TS											
	0.1	2.4		ML											
	2.4	5.4		GP	65	31	4	80	3	0	0				<b>GP 76/20/4</b>
TP 86-07	0.0	2.6		ML	0	20	80								
	2.6	3.4		SP	0	96	4								
	3.4	5.0		GP	70	28	2	75	0	0	0				
86-08	0.0	2.4		ML	0	30	70								
	2.4	5.0		GP	66	30	4	150	5	0	0				<b>GP-GM 71/22/7</b>
86-09	0.0	1.5		ML	0	30	70								
	1.5	3.0		SP	0	96	4								
	3.0	5.0		GP	66	30	4	225	5	1	0				
86-15	0.0	1.0		ML	0	20	80								
	1.0	1.2		SP-SM	0	95	5								
	1.2	2.4		ML	0	20	80								
	2.4	5.3		GP	65	33	2	150	3	0	0				<b>GP 75/23/2</b>
86-16	0.0	1.2		ML	0	10	90								
	1.2	2.5		SP-SM	0	90	10								<b>SM<sub>3</sub> 0/64/36</b>
	2.5	5.1		GP	65	33	2	150	3	0	0				
86-17	0.0	0.8		ML	0	5	95								
	0.8	1.8		SM <sub>1</sub>	0	85	15								
	1.8	5.3		GP	65	33	2	150	3	0	0				<b>GP 75/23/2</b>
86-18	0.0	1.7		ML	0	5	95								
	1.7	2.0		SP	0	96	4								
	2.0	5.0		GP	65	33	2	150	3	0	0				

**Aggregate Quality:** A summary of historic aggregate quality tests performed on pit run samples from the pit are as follows:

TEST	AVERAGE	RANGE
Degradation	61.3	23 – 88
Sand Equivalent %	47.9	18 – 80
Bulk Relative Density (Coarse)	2.598	2.51 – 2.70
Bulk Relative Density (Fine)	2.573	2.44 – 2.64
Absorption (Coarse)	.947	.6 – 1.5
Absorption (Fine)	1.617	.86 – 3.5
Soundness (Coarse)	3.65	1.16 – 6.13
Soundness (Fine)	8.28	4.51 -12.04

Note: No Micro-Deval has been completed on material from Raysland Pit.

### **Granular Volume:**

Estimated Volume 36,000m<sup>3</sup>

The estimated volume has been calculated by mining the developed Suggested Mining Area to an average depth of 3 meters.

### **Pit Development and Recommendations:**

- The mining area has been previously developed by the Ministry of Transportation and Infrastructure (MoTI). Any additional development will be the responsibility of the contractor and shall be completed as per the pit development plan or as directed by the Ministry Representative.
- Due to the shallow depth of granular material caution should be exercised in excavating the pit floor past the current elevation.
- The crusher may be located on the pit floor. Mining may proceed in a western direction.
- Processed aggregate may be stockpiled to the east of the production site, where space permits.
- EMCON maintains a stockpile of winter abrasive in the pit, which is not available for use, however, all other remaining stockpiles are available for use.
- At the completion of mining, active pit faces shall be sloped to a minimum of 1 ½:1 with granular material. **Reject material from aggregate production is not to be used to slope or infill pit faces without the prior approval of the Ministry Gravel Resource Manager.**

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**Site Photographs:**



Crusher location in background right, with mining area to the left in foreground.



Underlying poor quality material at depth.

Bill Richards  
Aggregate Resources