



**Ministry of Transportation and Infrastructure**

Geotechnical and Materials Engineering

**Southern Interior Region**

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## Lynes Pit No. 1488

### 2022 Technical Information Report

**Location:** Lynes Pit is located approximately 24.4km north of Williams Lake on the east side of Highway 97. Access to the pit can be made directly from Highway 97.



Figure 1: Lynes Pit location as seen in Google Earth, 2022.

**Legal Description:** The pit can legally be described as That Part or Tract of Land in the Vicinity of DL 6158, Cariboo District, Containing 5.297 hectares, more or less. UTM Zone 10, 555892.42 Easting, 5794395.68 Northing. Crown Land Tenure File 0218790.

**Gradation:** The average and range of laboratory samples as well as oversize rock field estimates for material from the 2020 testing program at Lynes Pit are as follows:

**Laboratory Samples**

Classification	Average (%)	Range (%)
Gravel (4.75-75mm)	43.1	26.5-66.6
Sand (0.075-4.75mm)	48.5	30.6-72.8
Fines (<0.075mm)	4	0.7-12

**Oversize Field Estimates**

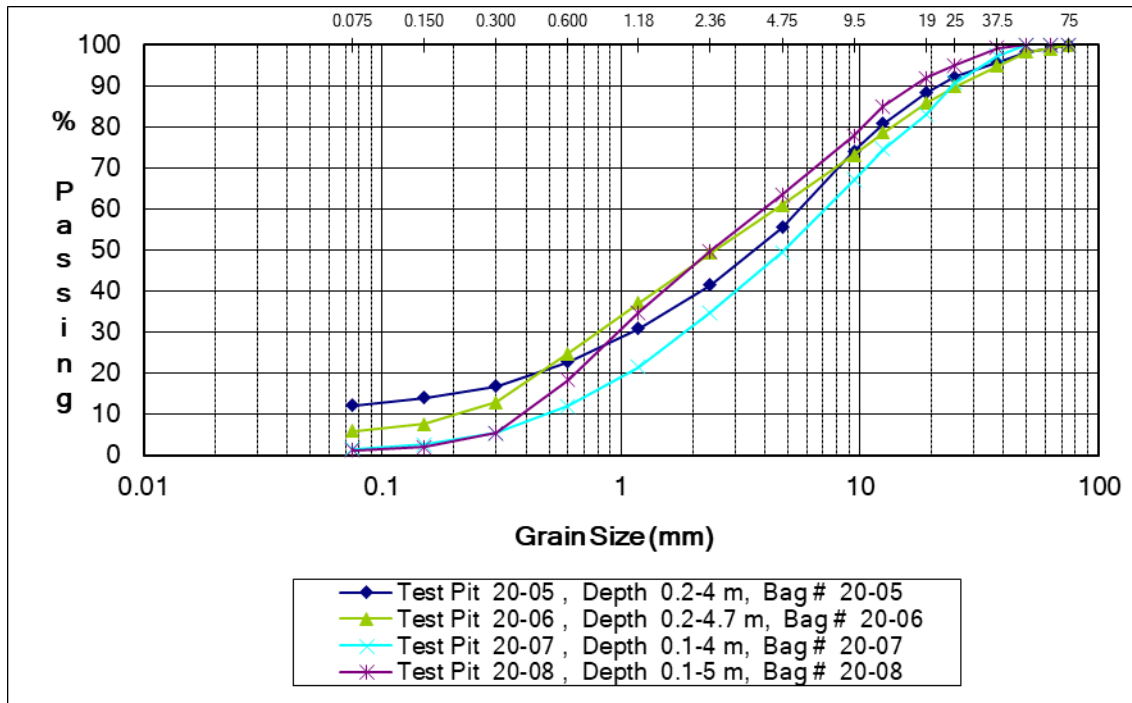
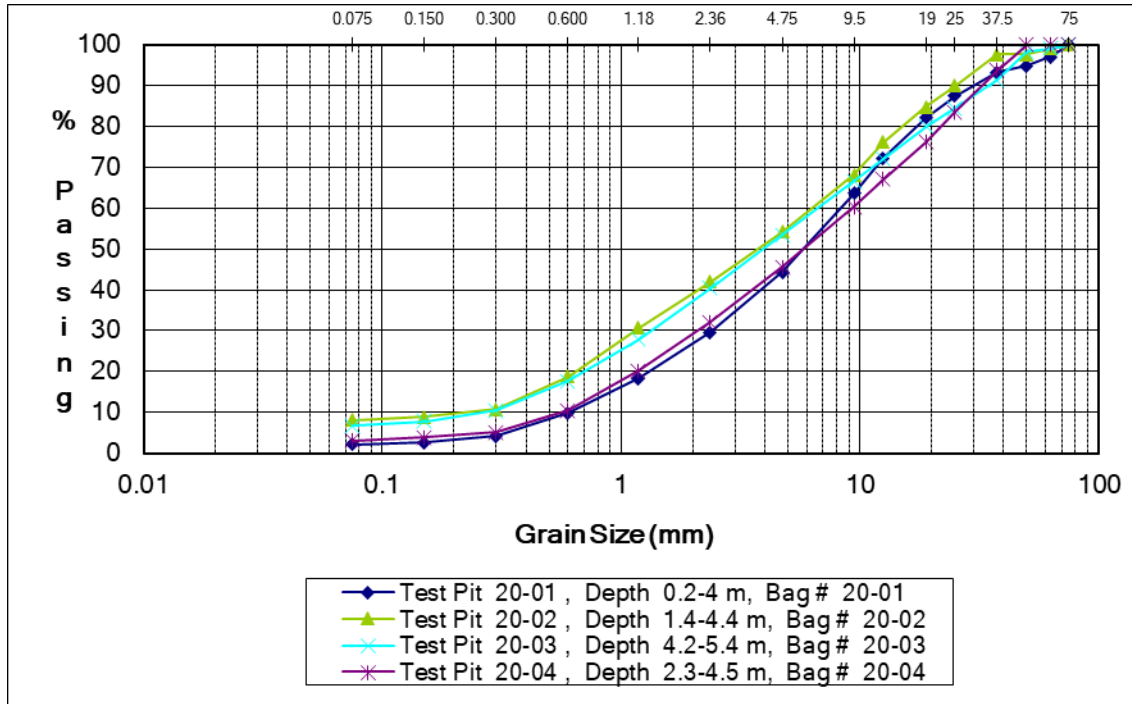
Classification	Average (%)	Range (%)
Boulders (>375mm)	0	0
Cobbles (150-375mm)	1.2	0-3
Cobbles (75-150mm)	5	2-12

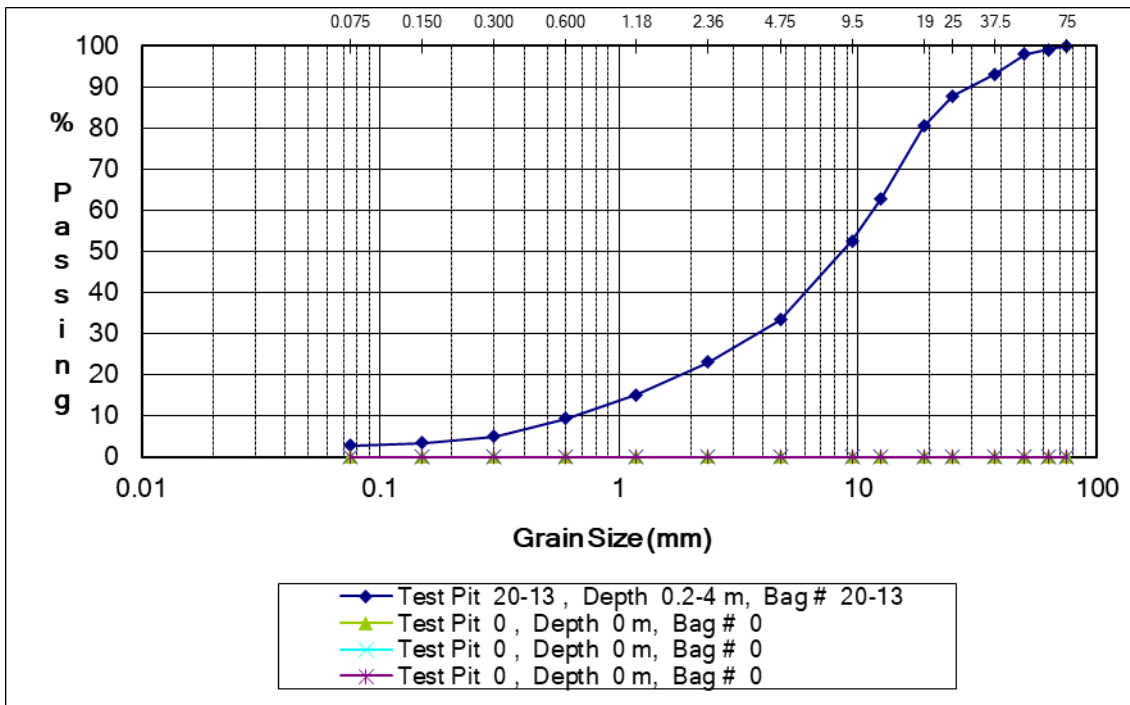
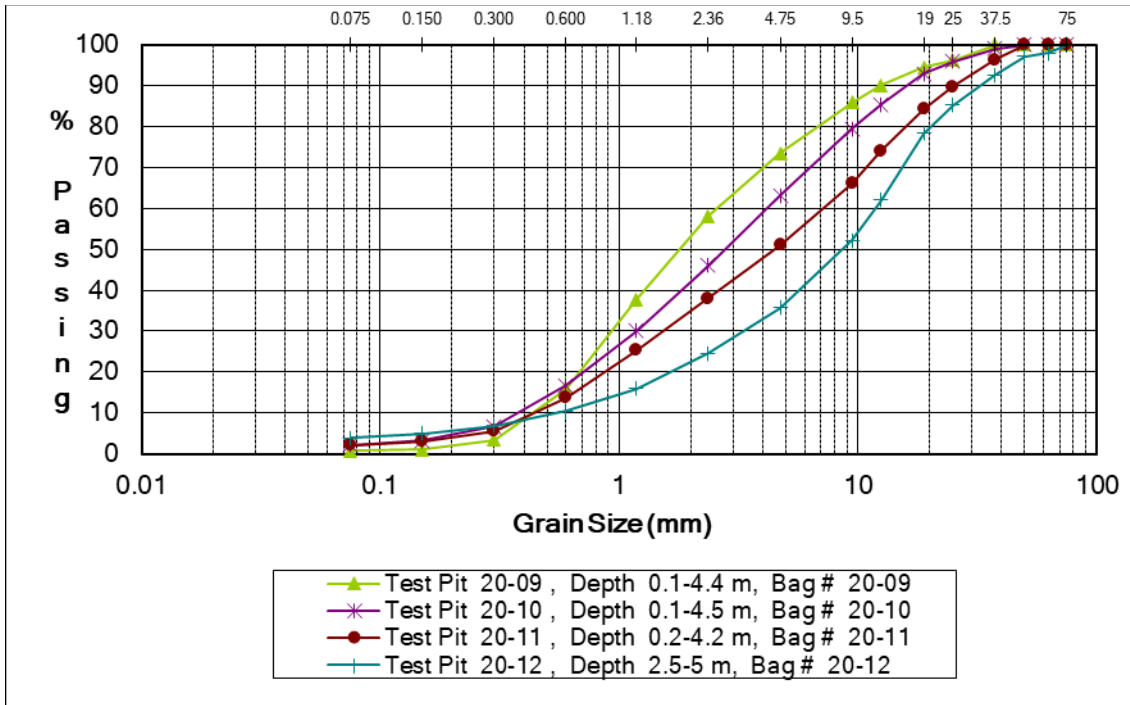
Maximum rock size observed was 280mm.

**Wet Sieve Analysis Chart:**

PROJECT REPORT OF SIEVE ANALYSIS SUMMARIES			PERCENT PASSING														
Project:	86004		Project No.:											86004			
Sample Source:	Lynes Pit		Client:											MoTI			
Material:	PIT RUN		Date:											December 7 2020			
Sample Information			Percent Passing														
Test Pit	Depth (m)	Bag #	Pit Run Sieve Sizes (mm)														
			75	63	50	37.5	25	19	12.5	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.075
20-01	0	20-01	100.0	97.0	94.8	93.3	87.4	82.1	72.2	63.6	44.3	29.5	18.3	9.8	4.1	2.6	2.1
20-02	0	20-02	100.0	99.0	97.7	97.7	90.0	84.8	76.2	68.2	54.2	42.0	30.7	18.8	10.8	8.9	8.1
20-03	0	20-03	100.0	99.0	98.2	91.4	84.4	80.0	72.1	66.6	53.4	40.4	27.9	17.6	10.5	7.8	6.6
20-04	0	20-04	100.0	100.0	100.0	93.8	83.6	76.1	67.1	60.3	45.5	32.1	20.1	10.5	5.1	3.8	3.1
20-05	0	20-05	100.0	99.0	98.3	95.8	92.2	88.3	80.8	74.0	55.5	41.4	30.9	22.7	16.8	14.0	12.1
20-06	0	20-06	100.0	99.0	98.3	94.9	89.8	85.8	78.6	73.2	61.0	49.3	37.1	24.7	12.9	7.6	5.8
20-07	0	20-07	100.0	100.0	100.0	97.4	90.8	83.0	74.5	67.1	49.4	34.8	21.5	12.0	5.4	2.5	1.5
20-08	0	20-08	100.0	100.0	100.0	99.2	95.0	91.8	85.0	77.8	63.5	49.7	34.8	18.4	5.4	2.0	1.1
20-09	0	20-09	100.0	100.0	100.0	100.0	96.3	94.6	90.2	85.9	73.5	58.2	37.8	16.0	3.4	1.1	0.7
20-10	0	20-10	100.0	100.0	100.0	99.1	96.0	93.0	85.4	79.5	63.1	46.0	30.1	16.8	6.7	3.3	2.1
20-11	0	20-11	100.0	100.0	100.0	96.4	89.8	84.4	74.2	66.2	51.1	38.0	25.3	13.8	5.6	3.1	2.2
20-12	0	20-12	100.0	98.0	97.2	92.7	85.3	78.4	62.1	52.2	35.7	24.5	16.0	10.4	6.8	5.0	3.9
20-13	0	20-13	100.0	99.0	97.9	93.1	87.8	80.5	62.8	52.5	33.4	23.0	15.1	9.3	5.0	3.4	2.7

**Aggregate Gradation Charts:**





**Summary of Test Pit Logs** (with results bolded in the chart):

<b>AGGREGATE LOG</b>													
<b>PROJECT:</b>		Lynes Pit				<b>SAMPLED BY:</b>		Samantha Kinniburgh					
<b>PIT #:</b>		1488				<b>METHOD:</b>		Excavator					
<b>DISTRICT:</b>		Cariboo				<b>DATE:</b>		Dec 3 2020					
TEST PIT NO.	DEPTH		SAMPLE BAG NO.	SOILS CLASS	ESTIMATED GRADATION			ESTIMATED ROCK 75mm				SAND TYPE F M C	REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm - 150mm	150mm - 375mm	>375mm		
20-01	0	0.2		TS									Badly sloughing at 0.5m consistent all the way down
	0.2	4	20-01	GP	60	37	3	250	10	2	0	C-M	
				<b>GW</b>	<b>55.7</b>	<b>42.2</b>	<b>2.1</b>						
20-02	0	0.1		TS									No sloughing but material felt clean Sandier than TP 20-01
	0.1	1.4		SPSM	22	70	8						
	1.4	4.4	20-02	GP	58	40	2	280	10	3	0	C-M	
			<b>SPSM</b>	<b>45.8</b>	<b>46.2</b>	<b>8.1</b>							
20-03	0	0.3		TS									Gravel seam @4.2m, thick sand and fines layer, dirty beach sand texture
	0.3	4.2		SPSM	11	80	9						
	4.2	5.4	20-03	GP	55	42	3	110	3	0	0	M	
			<b>SPSM</b>	<b>46.6</b>	<b>46.9</b>	<b>6.6</b>							
20-04	0	0.2		TS									Thick sand seam thins out towards NE end of TP, less cover of GP, sloughing at 1.5m, more OS here
	0.2	2.3		SPSM	11	80	9						
	2.3	4.5	20-04	GP	58	38	4	150	5	1	0	C-M	
			<b>GP</b>	<b>54.5</b>	<b>42.4</b>	<b>3.1</b>							
20-05	0	0.2		TS									Dirty sand layer until gravel seam below 4m, cleaner gravel below 4.2m
	0.2	4	20-05	SP	40	56	4						
	4	5.2		GP	55	42	3	180	3	1	0	M	
			<b>GM1</b>	<b>44.5</b>	<b>43.4</b>	<b>12</b>							
20-06	0	0.2		TS									Sloughing at 0.5m, sandy and consistent with sandier seams below 2m, bands at 0.3-0.5m
	0.2	4.7	20-06	SP	43	55	2	160	6	1	0	C-M	
				<b>SPSM</b>	<b>39</b>	<b>55.3</b>	<b>5.8</b>						
20-07	0	0.1		TS									TP on the triangular slope in NW corner of the pit, S of powerline, consistent and sloughing badly
	0.1	4	20-07	GP	60	38	2	120	3	0	0	C-M	
				<b>GP</b>	<b>50.6</b>	<b>47.8</b>	<b>1.5</b>						
20-08	0	0.1		TS									On the ridge in N part of tenure, gravelly sand, consistent
	0.1	5	20-08	SP	40	58	2	100	2	0	0	M	
				<b>SP</b>	<b>36.5</b>	<b>62.4</b>	<b>1.1</b>						

AGGREGATE LOG													
PROJECT: Lynes Pit				SAMPLED BY: Samantha Kinniburgh									
PIT #: 1488				METHOD: Excavator									
DISTRICT: Cariboo				DATE: Dec 3 2020									
TEST PIT NO.	DEPTH		SAMPLE BAG NO.	SOILS CLASS	ESTIMATED GRADATION			ESTIMATED ROCK 75mm				SAND TYPE F M C	REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm - 150mm	150mm - 375mm	>375mm		
20-09	0	0.1	20-09	TS									On ridge with gully from TP 20-08, sloughing at 0.3m, coarse sand
	0.1	4.4		SP	45	53	2	140	3	0	0	C-M	
					SP	26.5	72.8	0.7					
20-10	0	0.1	20-10	TS									further upridge from TP 20-09, sloughing badly
	0.1	4.5		SP	45	53	2	130	5	0	0	C-M	
					SP	36.9	61	2.1					
20-11	0	0.2	20-11	TS									Coarse, gravelly sand, badly sloughing at 0.5m
	0.2	4.2		SP	45	52	3	180	5	2	0	C-M	
					GPSP	48.9	48.9	2.2					
20-12	0	0.2	20-12	TS									Most OS in a TP yet, sloughing below 1.5m, gravelly sand overlying gravel layer
	0.2	2.5		SP									
	2.5	5		GP	62	34	4	160	10	3	0	C	
					GW	64.3	31.8	3.9					
20-13	0	0.2	20-13	TS									Good gravel after 1m, lots of OS Sloughing badly at 1m
	0.2	4		GP	65	31	4	280	12	3	0	C	
					GW	66.6	30.6	2.7					

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

TP or Year	Micro-Deval (%) (C/F)	Sand Equivalent (%)	Bulk Relative Density (C/F)	Absorption (%) (C/F)
20-01	13.7/8.3	75		
20-05	14.2/12.7	39		
20-07			2.630/2.609	1.22/1.55
20-12	16.4/17.4	57		
Average	14.8/12.8	57	2.630/2.609	1.22/1.55

**Granular Volume:**

Estimated Volume: 60,000 m<sup>3</sup>

- The estimated volume has been determined by multiplying the surface area of the suitability boundary by an average depth of 4.0 metres.

**Pit Development and Recommendations:**

- The mining area has been 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 Aggregate Resource Specialist/Manager.
- The crusher is recommended to be located as identified on the Pit Development Plan, or if there is not sufficient room in Lynes Pit No. 1488 for the contractor's liking, crusher can be set up in Mountain House Pit No. 1876.
- Mining in Lynes Pit shall proceed in an east and northeast direction as indicated.
- Processed aggregate may be stockpile where space permits, and as indicated on the Pit Development Plan. If insufficient room in Lynes Pit, then Mountain House Pit shall be used to stockpile aggregates. There is currently minimal room on the Lynes pit floor for more than 5,000m<sup>3</sup> of stockpiled material.
- It may be necessary to bulldoze granular material to the production site from above the BC Hydro transmission line in order to mitigate excessively high pit faces and continuous mining under the hydro lines. **The contractor is responsible to obtain a 30M33 Permit before stripping the overburden and pushing material through the Right of Way.** Access to and along the power line Right of Way must be maintained at all times.
- At the completion of mining, active pit faces shall be sloped to a minimum of 1 ½:1 with pit run granular material.
- **All reject materials resulting from aggregate production are to be placed in separate stockpiles free from deleterious material and in an easily accessible location. No stockpiling against the pit face is permitted without the permission from the Aggregate Resource Manager.**



**Site Photographs:**



View of potential crusher set up area, looking southwest, December 2022.



Looking northeast at mining area, December 2022.





Looking south onto mining area with potential crusher set up on the right, December 2022.



View looking southeast of developed mining area north of the hydro line, December 2022.





TP 20-02, December 2020.



TP 20-05, December 2020.





TP 20-06, December 2020.



TP 20-12, December 2020

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