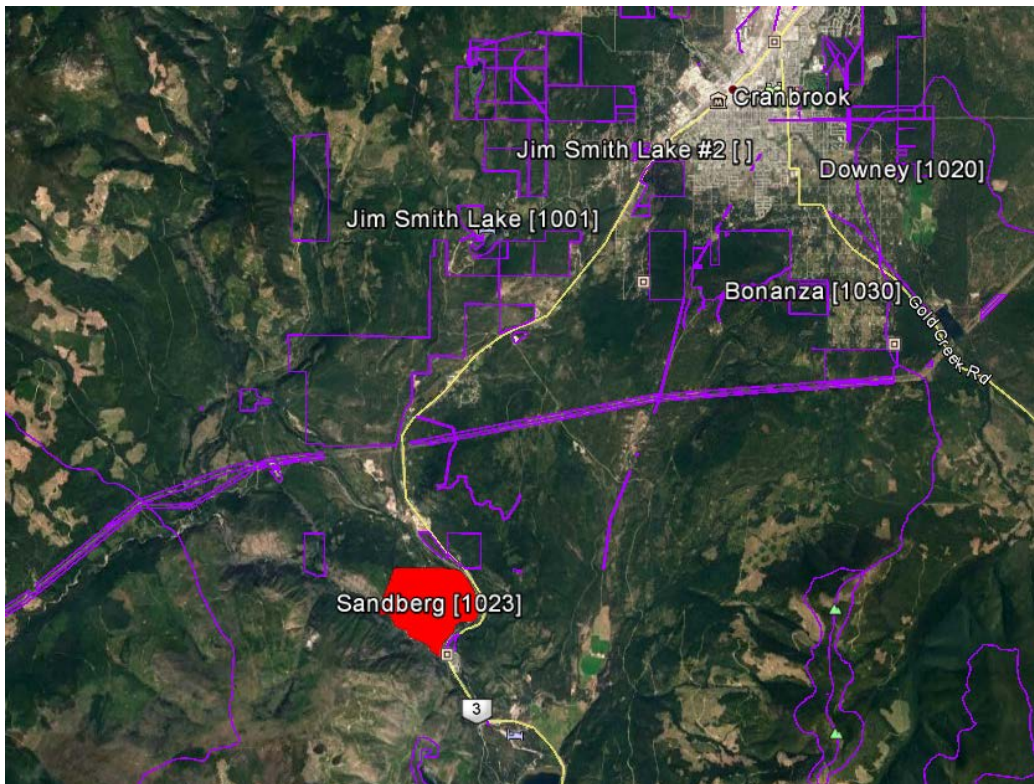


## Sandberg Pit No. 1023

### 2017 Technical Information Report

**Location:** The pit is located approximately 19 km southwest of Cranbrook on Highway 3 & 95.



**Legal Description:** The deposit is situated on unsurveyed crown land in the vicinity of D.L. 2798, K.D. The property is in the name of the Ministry of Transportation fee simple covering approximately 5.28 hectares.

**Gradation:** The average and range of laboratory samples as well as oversize rock field estimates for material contained within the 2001 testing area of the pit area as follows. The deposit has been divided into two suitability areas based on gradation, oversize rock and topographical features.

#### Area A

Laboratory Results:

Classification:	Average (%)	Range (%)
Gravel (4.75-75mm)	65	

Sand (0.075-4.75mm)	31	
Fines (<0.075mm)	4	

## Oversize Field Estimates

<b>Classification:</b>	<b>Average (%)</b>	<b>Range (%)</b>
Boulders (>375mm)	4	0-10
Cobbles (150-375mm)	11	5-15
Cobbles (75-150mm)	16	5-20

**Area B**

## Laboratory Results:

<b>Classification:</b>	<b>Average (%)</b>	<b>Range (%)</b>
Gravel (4.75-75mm)	63	
Sand (0.075-4.75mm)	33	
Fines (<0.075mm)	4	

## Oversize Field Estimates

<b>Classification:</b>	<b>Average (%)</b>	<b>Range (%)</b>
Boulders (>375mm)	2	0-7
Cobbles (150-375mm)	5	0-8
Cobbles (75-150mm)	8	2-10

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

<b>TEST</b>	<b>AVERAGE</b>	<b>RANGE</b>
<b>Degradation %</b>	62	48-79
<b>Sand Equivalent %</b>	70	67-76
<b>Magnesium Sulfate % (Coarse)</b>		
<b>Absorption % (Coarse)</b>		
<b>Specific Gravity % (Coarse)</b>		

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**Petrographic Analysis:**

Granitics	Quartzite	Sandstone
16	36	42

**Suitability:**

**Area A**

Paving Aggregate

25mm – 75 mm Well Graded Base Aggregate (sand rejection may be required to reduce material passing the 4.75 mm)

Select Granular Sub Base Aggregate

Winter Abrasive

**Area B**

Paving Aggregate

25mm – 75 mm Well Graded Base Aggregate (sand rejection may be required to reduce material passing the 4.75 mm)

Select Granular Sub Base Aggregate

Winter Abrasive

**Granular Volume:**

**Area A**

Estimated Minimum Volume      30,000 m<sup>3</sup>

**Area B**

Estimated Minimum Volume      23,000 m<sup>3</sup>

**Pit Development and Recommendations:**

- The Ministry of Transportation has developed the immediate mining area of the pit; however, it may require a minor amount of stripping prior to aggregate production. If needed, stripped topsoil/overburden is to be stockpiled along the southern edge of the mining area as indicated on the pit development plan.
- A primary crusher capable of reducing rock up to 375 mm x 450 mm is required in order to maximize the resource.

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- Caution must be exercised as water table was encountered at 1 meter below current pit floor elevation.
  - The property east and north of Sandberg Pit is private. Care must be taken not to encroach on the private gravel source. A verbal agreement with the private owner and the Ministry of Transportation has granted access across the northern corner of Sandberg Pit. No excavation can take place in this area.
  - The crusher may be set up in the lowest pit floor as indicated on the Pit Development Plan.
  - At the completion of mining, all slopes shall be trimmed to a consistent, minimum slope of 1 ½:1 with native 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's Gravel Resource Manager.**

**Photos:**



June 2016, pit stockpiles.

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