

### Location/Identification

<b>MINFILE Number:</b>	082JSW021	<b>National Mineral Inventory Number:</b>	082J5 Gyp1
<b>Name(s):</b>	<b>ELKHORN</b> ELKHORN 1, ELKHORN 2, WESTROC, COLUMBIA GYPSUM, WINDERMERE, ELKHORN QUARRY EXTENSION, ELKHORN WEST, ELKHORN EAST		
<b>Status:</b>	Producer	<b>Mining Division:</b>	Golden
<b>Mining Method</b>	Open Pit	<b>Electoral District:</b>	Columbia River-Revelstoke
<b>Regions:</b>	British Columbia	<b>Forest District:</b>	Rocky Mountain Forest District
<b>BCGS Map:</b>	082J041		
<b>NTS Map:</b>	082J05W	<b>UTM Zone:</b>	11 (NAD 83)
<b>Latitude:</b>	50 29 50 N	<b>Northing:</b>	5594489
<b>Longitude:</b>	115 54 18 W	<b>Easting:</b>	577662
<b>Elevation:</b>	1280 metres		
<b>Location Accuracy:</b>	Within 500M		
<b>Comments:</b>	Quarry site is on the south side of Windermere Creek, 800 metres south of the Windermere deposits (082JSW028) (Open File 1991-15).		

### Mineral Occurrence

<b>Commodities:</b>	Gypsum		
<b>Minerals</b>	<b>Significant:</b>	Gypsum	
	<b>Mineralization Age:</b>	Devonian	
<b>Deposit</b>	<b>Character:</b>	Massive, Stratabound	
	<b>Classification:</b>	Evaporite, Sedimentary, Industrial Min.	
	<b>Type:</b>	F02: Bedded gypsum, F04: Bedded celestite	
	<b>Shape:</b>	Tabular	<b>Modifier:</b> Folded
	<b>Dimension:</b>	250x70x0 metres	
	<b>Comments:</b>	Elkhorn 1 orebody.	

### Host Rock

<b>Dominant Host Rock:</b>	Sedimentary		
<b>Stratigraphic Age</b>	<b>Group</b>	<b>Formation</b>	<b>Igneous/Metamorphic/Other</b>
Devonian	Undefined Group	Burnais	-----
Ordovician-Silurian	Undefined Group	Beaverfoot-Brisco	-----
<b>Isotopic Age</b>	<b>Dating Method</b>	<b>Material Dated</b>	
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<b>Lithology:</b>	Gypsum, Limestone, Dolomite, Shale, Sandstone		
<b>Comments:</b>	The gypsum is in fault contact with the Beaverfoot-Brisco Formation or in conformable contact with the Devonian Cedared Formation.		

### Geological Setting

<b>Tectonic Belt:</b>	Foreland	<b>Physiographic Area:</b>	Continental Ranges
<b>Terrane:</b>	Ancestral North America		

## Inventory

**Ore Zone:** ELKHORN **Year:** 1982  
**Category:** Unclassified **Report On:** Y  
**Quantity:** 4,000,000 tonnes **NI 43-101:** N

Commodity	Grade
Gypsum	80.0000 per cent

**Comments:** Initial estimated reserves between 3.3 and 4.0 million tonnes with a grade averaging greater than 80 per cent.

**Reference:** Open File 1991-15, page 13.

## Summary Production

	Metric	Imperial
<b>Mined:</b>	17,954,009 tonnes	19,790,907 tons
<b>Milled:</b>	17,945,836 tonnes	19,781,898 tons
<b>Recovery</b>	Gypsum 17,945,836,000 kilograms	39,563,796,014 pounds

## Capsule Geology

Gypsum was discovered on Windermere Creek in 1947. Production, beginning in 1950, has been continuous to the present day totalling in excess of 6.8 million tonnes. Gypsum was mined from the four Windermere quarries (082JSW028) until 1981 and, since 1982, from the Elkhorn quarry (Elkhorn 1 deposit) south of the creek and 800 metres south of the Windermere deposits.

Gypsum, in Devonian age rocks, occurs along a northwesterly trend which has a strike length of 5 kilometres north and south of Windermere Creek. The area is underlain by a sequence of evaporites and associated carbonate rocks of the Burnais Formation with an overlying limestone and shale sequence of the Harrogate Formation. More recent work proposed the term "Cedared Formation" for a sequence of dolomites, sandstones and limestones that is, in part, stratigraphically equivalent to the Burnais Formation. Much of the carbonate strata previously included in the Burnais Formation are now tentatively assigned to either the Cedared or Harrogate formations. The Harrogate Formation is the youngest Devonian unit in the Stanford Range.

Thin-bedded or laminated gypsum of the Burnais Formation is assumed to be in fault contact with the underlying Ordovician to Silurian Beaverfoot-Brisco Formation, or in conformable contact with the Cedared Formation, and overlain conformably by black to dark grey limestone of the Harrogate Formation. The Beaverfoot-Brisco Formation is comprised of thin to medium-bedded light grey dolomite and limestone with characteristic ovular chert nodules and lenses in a carbonate matrix. The gypsum is of good quality ranging between 83 and 93 per cent gypsum. It varies in color from pale grey to grey, brownish grey and dark grey to black. Cream-colored laminae are also present.

The evaporite sequence has been folded into a series of northwest-plunging, 18 to 40 degrees, folds. Small scale faulting with minimal displacement is present. A large northwest-trending fault cuts through the lower portion of the Elkhorn quarry. Two gypsum horizons are interpreted, separated by dolomite and limestone. The lower gypsum bed is 50 metres wide and 50 to 100 metres thick. The upper bed is structurally complex and thickness is difficult to determine.

The Elkhorn 1 orebody is tabular, conforming to the slope of the hill on which it outcrops, over a vertical height of approximately 120 metres. It varies in width from 120 to 250 metres with the depth of the gypsum varying from 12 to 70 metres. Immediately to the southeast and across a north-trending draw is the Elkhorn 2 deposit. It is expected that production from this deposit will follow production from the Elkhorn 1 quarry. Reserves are estimated to be sufficient to last well into the next century.

Initial reserves for the Elkhorn 1 were estimated to be 3.3 to 4.0 million tonnes with the gypsum grade averaging better than 80 per cent. Production, shipped to Vancouver and Calgary, is primarily for the wallboard industry. Westroc Industries operates the quarry and the deposit is classified as a producer, producing between 100,000 and 1,000,000 tonnes per year (Mineral Market Update, July, 1991).

In 1996, the mine was producing about 460,000 tonnes of gypsum from two quarries (Information Circular 1997-1, page 12). In 1997, Westroc produced about 500,000 tonnes from Elkhorn 1 and Elkhorn 2.

In 2003, discovery of the Elkhorn West gypsum resource west of the Elkhorn quarry may extend the projected life of that operation beyond the 2005

exhaustion of current reserves. Westroc Industries drilled 3656 metres in 66 holes.

BPB Canada Inc. operated the mine after 2003. CertainTeed Gypsum Canada operated the mine in 2009.

### ***Bibliography***

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GSC OF 634

N MINER Oct. 19, 1998

WWW <http://www.certainteet.com>

Placer Dome File

**Date Coded:** 1986/06/25

**Coded By:** Brian Grant(BG)

**Field Check:** N

**Date Revised:** 2012/09/10

**Revised By:** Larry Jones(LDJ)

**Field Check:** N