

VGS → Northern Lights  
Feb. 1/00  
Tom Schmitt

## Hot Opal in Cold BC.txt

## Hot Opals in Cold B.C.

When you first stumble across an outcrop of volcanic hosted precious opal in the alpine of northern BC it is seldom recognizable unless you have the eyes of an eagle or the peregrine falcons that fly overhead.

Sometimes it is the flashes of red, green or blue fire against the black background that catch your eye. Sometimes it is the white blotches showing all over the rock that do the trick. Standing proud on the weathered surface these opal grains tell you to get on your hands and knees and look closer. The fact that the precious opal flashes with colour after 10,000 years of glaciation and 10 months of snow cover each year tells you that this is no ordinary opal adventure. A look around at the snow capped peaks and alpine meadows confirms why.

We are exploring and trenching 6000 feet up on a flank of the Whitesail Mountains in northwest British Columbia. The Northern Lights claim is located approx 90 air miles south of Houston, BC and access is by helicopter. This is one of the few alpine locations in the world where precious opal can be found and paying attention to the task at hand can often prove difficult when blizzards and howling winds are trying to knock you down. Our extremely short weather window lasts from late July to early September and snow can fall anytime. Frozen fingers and toes are the price paid for BFDs (bug free days) as sunshine and calm winds signal the hordes of bloodsuckers from their hiding places to have their lunch. We have only been scratching this property with hand tools but finding visible precious opal in surface outcrops over a 5 sq km area has captured our attention.

Volcanic hosted opal deposits are believed to be associated with hydrothermal activity. At the Northern Lights claim, precious opal occurs most commonly as open space fillings in the matrix and vesicles of clasts in the volcanic lahar (debris flows) and lapilli-tuff units of the Tertiary-aged Ootsa Lake Group. It also occurs as amygdules in massive flows. The dominant opal bearing lithologies are the debris flows with minor amounts in the lava flows and ashfall tuffs.

Common opal of all colours, many types of agates and even one agate with a line of precious opal inside are all found in close proximity. Geological theory does not explain how one vesicle can be filled with bright precious opal, the adjacent one empty and the occasional empty vesicle shows an inside surface that flashes with precious fire. Celadonite and zeolites are present which somehow indicate a favorable geological environment.

The types of opal we find range from nodules similar to Mexican material; thin seams in matrix that resemble Queensland boulder opal and matrix opal that has the appearance of Honduran opal crossed with dinosaur

### Hot Opal in Cold BC.txt

r bone. The nodules are generally small with white, clear, yellow, brown and even black base colour. Their clarity ranges from transparent to opaque; colour intensity varies from good to very brilliant; colour spectrum of this opal covers the entire rainbow. A transparent black opal was cut recently that shows good red and green flash. The boulder type opal generally ends up as specimen material as freezing/thawing and physical extraction all take their toll and the opal presents the weakest plane on which to fracture.

The precious opal matrix material represents our biggest volume of production at present. In appearance it shows small flecks of all colours distributed throughout various matrix hosts. The strongly vesicular hosts or matrix types can range from a dense hard black basalt to softer brown porphyritic andesite and to grey, even reddish colour material. Vesicles filled with precious opal may account for over 25 per cent of the volume of the rock. The description of the matrix material as dinosaur bone was noted by Kevin L. Smith, a renowned carver. Although sometimes the the host volcanic material will take a good polish, sadly the majority of the matrix material produced so far has been too soft for daily wear and will require stabilizing. After stabilizing the matrix material exhibits good colour and is suitable for spheres, carvings and jewelry grade cabachons.

Cutting these various types and grades of opal presents unique challenges and several cutters and carvers are using their skills and knowledge to achieve good results. Techniques such as doublets work well but natural stones are tricky due in part to the extreme environment and the deep surface weathering. As mining to date has been surface or near surface material, we believe that as trenching proceeds deeper less fractured opal will be recovered

An amazing dacite dike was the site of the original discovery of precious opal in the Whitesail range. This prominent vertical feature stands over 20 feet tall and 3 feet wide in places where it cuts through the opalized country rocks. It has been named the Great Wall by the prospectors as it resembles closely its namesake; snaking across the property in a distinctive spine.

Permanent snowpack covers much of the terrain. Tenacious alpine plants cover any marginally, habitable ground so outcrops and exposure of bedrock are minimal on the top. The top is relatively flat with the sides very steep and horizons of red, grey and black units can be followed around the flank and appear to be continuous. With a flat glaciated top and various coloured layers, our best description is that it resembles a chocolate layer cake. Precious opal in nodules, seams and as matrix hosted material has been found in over 20 places but safely trenching or extracting material is a different matter.

### Hot Opal in Cold BC.txt

Our first trench was named Zona Rosa for the red colour of the basalt.

It proved an exercise in the excavate and tumble method of mining. Luckily a flat bench 100 yards below stopped the boulders on their downward journey. The experience of tumbling stove-sized boulders weighing hundreds of pounds down a snow field onto a flat is not soon forgotten. A member of the team would be hunkered down in a safe place noting where the boulders landed. Pieces that survived the tumble were given the sledge and chisel treatment and reduced to gravel piles. Many bright precious opal specimens were found here but the action of freezing and thawing has fractured most of the near surface material. As this trench progressed into the steep slope the uphill wall became hazardous and digging was abandoned.

From another very steep site located directly above our fly-in camp we would send boulders the size of automobiles skidding down 600 feet of snowfield often to have them land within an easy walk from camp. This type of opal mining is not for the faint of heart.

We have recovered water worn precious nodules from small streams and consider them a real treat. Placer techniques have proven productive in highly weathered areas and make an attractive choice for those infrequent sunny days. Screening pea gravel for flashy nodules by a bubbling alpine creek is a very special experience.

Prospecting for precious opal in an alpine environment presents peculiar challenges and conditions. A float trail will often descend where snow and gravity have chosen. Following the float uphill until it flashes in place is always a productive way to prospect. Steep snow slopes are to be avoided without proper gear and the scree slopes and ravines provide plenty of challenge on the edges. Strongly rooted shrubs and bushes are an alpine prospector's best friend but gloves, walking sticks and even kneepads all have their place in your backpack.

In this pristine environment the many permanent snowfields provide our fresh water and a highway system. Refrigeration in camp is never a problem. Sunshine melts the snow at the rate of an incredible 2 feet per day and the resulting layer of corn snow has provided more than a few quick descents sitting on a raincoat. With your feet out front and a pickhead clenched firmly in your grip a downhill slide at the end of a hard day can lift your spirits quickly.

We cut trail where needed and found that even the resident wolves immediately started to use our trail in one particularly steep area we call the Razorbacks. Crossing the Razorbacks is perilous to the extreme and often we see mountain goats peering up at us thinking cleverly, "two legs bad /four legs good ". We agree completely with their wisdom

### Hot Opal in Cold BC.txt

Two legged visitors are scarce but the local critters add plenty of character to the site. Mountain goats, marmots and ptarmigan are common sights and have proven to be good neighbours. The wolves and the resident King of the mountain, a huge grizzly, leave us alone and tolerate our short intrusions into their territory.

Whistlers, commonly called marmots, live right next to our camp and have trails and burrows all around us. They are curious as well as frightened by tall moving objects and their shrill whistles are echoed throughout the mountain by their nearest neighbours as an effective early warning system. The sprinkling of their jaw bones with their long incisors all over the alpine suggest that the wolves are serious and efficient at hunting these mountain piggies.

Many marmot burrows are dug under huge boulders in order to avoid their most terrifying predator, the grizzly bear. Huge excavations where boulders the size of refrigerators have been torn out of the ground attest to the grizzlies desire for a whistler meal.

This last season we enjoyed fresh baked bread in camp and when a big blue grouse noticed the other alpine birds munching down crumbs in our camp he moved in as well.

The many ptarmigan don't seem to mind human company but keep our canine mascot, a miniature wiener dog named Misty, running in circles.

Misty, whose ancestors were bred to hunt badgers, chases whistlers and nearly met her demise down a marmot burrow one season. After she chased one down a hole it turned on her and tore big strips off her nose and head. The poor beatup dog limped back to camp and remained comatose next to the woodstove for close to 3 days. The lesson did not last though because after a full recovery she was even tougher on them.

Mountain goats range freely over the entire property and have walked right up to us when we are having lunch. Their stray tufts of dense white fur clinging to rocks are often mistaken from afar as white opal. The nannies and kids gather in small herds and after feeding on whatever they can find, generally seek safety in the cliffs. The billys travel around a bit more and all the goats have favorite dust baths and mineral licks on the mountain. Their ability to climb and descend seemingly vertical faces is astounding but their bones do show up as well.

Each year a lone bull moose has walked past our tents on his way through camp. Mountain cariboo also pass through the area and shed their horns.

Strangely, porcupines are encountered up high where no twigs or suitable vegetation is evident. We believe they are teenagers kicked out of the good foraging areas down in the trees. Their teeth marks on ancient 4x4 claim posts show their hunger and need to chew but with no trees

Hot Opal in Cold BC.txt

to climb they become easy targets for predators.

Frequent southern visitors to our mountains are the beautiful ruby red and emerald green rufus hummingbirds. As they follow the glorious blooming alpine flowers north they often buzz around our heads, attracted by brightly coloured headgear or backpacks. Their loud buzzing as they circle your head can be startling but their friendly antics leave smiles all around.

As access is by helicopter, we have had to rely on hand tools and portable gas powered saws and drills. We use a wheelbarrow and an alpine rickshaw outfitted with mountain bike wheels for moving loads. These have proven very efficient and this season we flew a small excavator in to assist with trenching. This digger weighs 850 pounds without its stabilizers and counterweights and flew straight and true like a dragon fly after pick-up by the chopper. Moving this lightweight machine across snow, mud and gravel is accomplished by extending the boom and bucket then lifting the front stabilizers and rolling forward on the back wheels as the boom is retracted. The speed and agility of this digger is amazing and future plans include mounting a hydraulic jackhammer in place of the bucket. Alpine trenching has taken a quantum leap forward as a relatively inexpensive Bell 206 can be used instead of the pricier heavy-lift machines.

On arrival at the top this season we found a huge snowfield covering our last seasons main trench. After hydraulicking the snow to determine its depth we found we had 12 feet of snow to contend with. Digging and hauling snow was futile so we set up an irrigation system. Gravity fed water and sprinklers fashioned from 1" pvc pipe plugged at the end with numerous holes drilled its length meant two weeks later our trench was open. The digger /rickshaw combination proved very effective at clearing overburden and weathered lahar material. The fresh lahar material proved very tough however and a ripper tooth attached to the bucket made some progress but chisels, sledges and a Cobra drill were necessary .

As we dug we encountered precious opal matrix material at the bottom of the trench, on both sides and the face so we were encouraged to trench some distance away. Our hopes were realized as precious opal bearing material kept coming out of every hole we dug. Being limited to payload and time we high-graded and trimmed the best boulders then sacked approximately 800 pounds of mine-run for a net load. Our 30 day season ended with another snowstorm.

British Columbia has a wealth of mineral resources and because of its rugged terrain, much of the province has remained unexplored or prospected . That precious opal deposits occur in BC is relatively unknown but recent discoveries are about to change that. Singular specimens hav

Hot Opal in Cold BC.txt

Opals have been found from the southern Okanogan area up to northwest British Columbia. Two other properties, notably Firestorm Opal of Burns Lake and Okanogan Opal of Vernon, BC have produced beautiful specimen and jewelry grade material. These volcanic hosted precious opal deposits indicate that closer inspection of all common opal and agate areas may yield further discoveries and significant attention is warranted. From our experience getting your nose down to ground level is required and recommended to all opal prospectors.

Rare Pineapples.txt  
New find of "Pineapples" in northern BC

The dull grey sky did not look promising as we hiked across the alpine meadows with a howling wind in our faces. My prospecting partner, Bruce Holden and I were headed to a steep canyon on Cummins Creek in northwestern British Columbia. After hiking 3 miles from our base camp Bruce suddenly pointed and said "There's a goat running towards us!" Sure enough a big billy was in full gallop on an open slope headed directly for us. Mountain goats are a common sight in the Whitesail Mountains but being run over by one is not. We watched as his rhythmic hooves scattered gravel and mud while he came full bore at us. Fifty yards away he veered slightly to the right and passed by. We both thought there must be something chasing him and waited for a pack of wolves to come by next. They never did but it was an interesting start to our 3 day prospecting trip.

The Whitesail Mountains are located approximately 90 miles by air south of Houston, BC. They are dominated by Troitsa Peak at 7350 feet and sit on a peninsula with Tahtsa Reach to the north and Whitesail Lake to the south. Both bodies of water were expanded in the mid-60's as a reservoir for the Kitimat aluminum smelter. To the east starts the flat Cariboo plateau and to the west the rugged peaks of the Coast range march to the Pacific ocean, some 200 miles away.

These mountains are included in the west-central part of the Intermontaine belt of the B.C. cordillera. The Whitesails expose the southern margin of a major east northeast trending transverse tectonic belt known as the Skeena Arch. Rock units across the Intermontaine belt include upper Paleozoic to Miocene volcanics, sediments and intrusive rocks. The Hazelton group dominates the lithologies in this area. Volcanics of the upper Cretaceous Kasalka and lower Tertiary Ootsa Lake group were deposited in a series of basins across much of the area. This volcanic-tectonic episode is responsible for the development of many significant mineral deposits in west-central B.C..

Cummins Creek flows on a southern flank of the Whitesail Mountains. Hiking across the alpine, we planned to do assessment work there on a property we had staked the previous year. Numerous quartz veins in a northwest-southeast trending zone are exposed in the creekbed and along the canyons until they disappear into the mountain terrain. The veins are up to 6 feet in thickness, are exposed for lengths up to 100 yards and can be traced for distances up to three hundred yards. The best developed veins appear to strike in a northern direction and dip vertically or at steep angles to the east.

Our interest in Cummins Creek started by reading old reports of exploration performed in the early 80's. Swarms of quartz veins with some mineralization had been found and sampled. Initial sampling and assessment

Rare Pineapples.txt

nt had been promising and a few assay samples had returned big numbers but the companies wrote off the area and let their claims lapse. The rush for epithermal deposits had waned and the area was open ground again. As we were doing exploration in an area 10 miles east it was this curiosity that led us to Cummins in the summer of 1998.

On that prospecting trip a set-out by helicopter had landed us on a gravel bar upstream of the steep canyon. We explored downstream and found numerous standing quartz veins crossing the streambed. Camping at the bottom end, we decided to stake and sample the veins for enrichment. We staked 3 units of 500 by 500 meters each covering the main swarm and took grab samples as needed. The hike out of the canyon up through the treeline and across the alpine back to our fly-in base camp took an entire day and all our energy. ICP results were promising and further assessment was needed. We felt the area had something more to show. Our hunch was right but in a very different way.

This time we did not have a set-out by chopper and had to hike in and out of the area. After the run in with the billy we had to choose a safe descent into the ravines and trees. Our luck continued as we found a snow filled ravine that led directly to Cummins Creek and we hiked down to the only level spot on the creek right above our top claimpost. Just as we started to set up camp the sun came out and we dried our gear on the warming rocks and gravel. It was the only sun we saw that trip.

Putting sore feet into the snowmelt creek brought us back to life. After setting up we explored the immediate area and only found minor veins and no mineral staining. Later, under a tarp in the rain, we decided unless conditions improved we would only sample for one full day then hike back to our main camp.

We headed downstream the next morning in the drizzle with light packs, tools and a suitable walking stick. It was necessary to criss cross the creekbed many times and even rubber boots were tricky on the boulders. Working downstream, the occasional snowpack, logjam and many waterfalls made for difficult and slippery conditions.

Covering each side of the canyon we searched for visible signs of minerals and below a big waterfall soon found some. A large standing quartz vein stood beside the creekbed. I poked the soft moss-covered top and from the mud and clay below out popped a 1 inch quartz crystal; quite fat and unusual in shape with a slightly rounded clear point and clear uniform overgrowth crystals cladding most of its length. With another mile of canyon to sample that day, I put it in my pocket and prospected downstream.

When Bruce caught up we agreed the single crystal was unusual then pro

### Rare Pineapples.txt

ceeded to search for mineralization and enrichment zones. From a very vuggy 2 foot quartz vein Bruce extracted many fine clusters and doubly terminated quartz specimens, some displaying a skirt of fine needle points at their girth. The name hedgehogs came to mind. Further downstream strange botryoidal coated quartz boulders appeared as float from an unknown source. Sampling down to the bottom post was completed in the afternoon. Conditions worsened as we headed back up. Crossing the creek became even more difficult and hazardous with the rising water and tired legs.

On the way up the canyon, Bruce stopped to dig in where he had found the skirted crystals and I headed back to the moss covered vein. After peeling a piece of moss off the top measuring 2 feet by 6 feet I noticed a back wall of white quartz. The space between had mud on top and as I poked in became sticky grey clay. Soon many single crystals began to appear. Bruce arrived and working with a screwdriver, pick and sledge we started to open the front face of a pocket lined with strange pineapple shaped crystals.

The clay coated pieces were placed in the creek and scrubbed rather quickly in the finger numbing water. Many larger single and double pineapples appeared. When a large front plate of approximately 300 pounds came free we stopped in amazement. Covering most of the inside face of this 2 foot by 3 foot by 1 foot plate were many pineapples with one up to 3 inches long by 2 inches wide. Right in the center however was a barren spot. Looking at the grey modeling clay-like impression left on the pocket confirmed this. The clay filling showed perfect indentations where the pineapples had been and a smooth spot where the plate was bare.

After poking around gently with the screwdriver, the missing crystals were soon recovered and getting the toothbrush treatment in the creek. The small sharp overgrowths quickly eroded the plastic brush and bristles. Larger plates we set on the mossy bank nearby and in 45 minutes we had collected over 400 pounds of specimens. Our enthusiasm was tempered by the failing light and taking a few choice pieces we headed back up to our camp. In front of the fire we talked about what we could possibly do with this find. We formulated a plan that would allow us to recover the bulk of the specimens but it would have to wait. During the night the voices in the creek told us that our packs would be fully loaded the next day.

Falling rain woke us but after hot drinks we quickly agreed to head downstream and continue working on the pocket for a minimal time then pack up gear and samples and head out. We packed newspapers down with us then trimmed and wrapped up the nicest specimens. Choices were difficult as we had no ambition to hike back up thousands of feet to the alpine and miles back to our main camp with anything less than the best.

Rare Pineapples.txt

The snow expressway down proved to be the Chilkoot Trail up and we just reached our main camp as darkness fell and our legs gave out.

Pulling our hard earned prizes from our backpacks our camp chief Hoopy snorted "You guys gone loco..whats wrong with your coconut..wheres the gold...quartz crystals are a dime a dozen... leaverite !". After a hot meal and a well deserved mug of our Whitesail Ale we scrubbed the pieces in warm water. Spreading them all over the table to admire we decided they looked pretty good in the propane light. Just to cause trouble, we weren't going to move them for a few days. We thought we'd make it difficult for Hoopy to do his daily chores after the drumming we had received.

Two days later Hoopy surprised us by commenting that the pineapples were very special. It seemed every morning at 5 am when he got up to get the helltooter ( woodstove) and the coffee going, they were sparkling at him with no inside lights on. The many uniform small clear overgrowth crystals capture and reflect available light making them flash and sparkle vividly in low light conditions.

The main crystals show clear tips and a generally milky center. Examination shows that secondary fluid flows have eroded the main crystal termination to a slightly curved shape and deposited the overgrowths across most of the rest of the crystal. The well terminated overgrowths appear clear and exhibit the effect of gravity and/or the fluid flow path as one side will have a noticeably flattened appearance. Their effect is pleasing and resembles pineapples in their proportion and spike exterior.

Our main camp requires helicopter support and unfortunately the weather window in the summer of 1999 was very short. Breaking down our main camp was delayed one day due to poor visibility and cloud cover over the entire northwest. The next day the ceiling lifted enough and we confirmed pick up by radio. When the chopper arrived we informed Carl the pilot that we had left 300 pounds of beautiful pineapples beside a creek nearby. He looked at us puzzled until we explained our plan. After several net loads were slung out from our main camp, Bruce and I climbed aboard for a return trip to Cummins Creek.

As we directed Carl towards the canyon, the wind and rain blew harder. We flew down below the waterfall and after hovering he stated the wind conditions and clearance were OK to pick up a sling load. He then landed us on the gravel bar upstream where we grabbed pre-packaged gunny sacks, dirty clothes, foamies, a wire sling, shackles and an ore bag

We scrambled down to where the pieces lay on the moss and proceeded to trim and wrap the best and put them in the ore bag. We then shackled

Rare Pineapples.txt

the wire sling to the ore bag. Twenty minutes later we heard the sound of rotors and standing on a large rock, snapped the sling into the belly hook of the Bell 206. He lifted the ore bag neatly up the canyon and set it down gently on the gravel bar above. We quickly hiked up then loaded the wrapped pieces into the back seat and cargo area. As we had 2 passengers and gear on board already, our load limit for specimens had been reached. We had left many pieces by the creek below. Sitting in the chopper heading back to the reach where we had parked our vehicles we let out a sigh of relief. Our final hour on Cummins Creek in the Whitesails had been incredibly hard but the sight of what we had recovered made the effort worth it.

Since this trip we have cleaned most of the specimens. People are amazed with their sparkly and flashing appearance. A choice plate is slated to be donated to the new Pacific Mineral Museum in Vancouver BC and collectors are showing a keen interest. The extreme effort and follow up required to obtain these specimens only adds to their beauty. As this remote property is staked and very hazardous, visitors are not encouraged or authorized. The owners welcome enquiries as to specimen availability and may consider further collecting at this site in the future. We realize that alongside a snowmelt creek in a canyon below a waterfall there still remains the backface and bottom of an incredible pineapple vug to explore.

**Schroeter, Tom EM:EX**

---

**From:** Schroeter, Tom EM:EX  
**Sent:** Monday, January 31, 2000 7:40 AM  
**To:** 'Randy Lord'  
**Subject:** RE: Whitesail opal update

*"Northern Lights" project*

Hi, Randy. Great to chat with you at Roundup. Have a great trip to Tuscon.  
I never received your 2 attachments (articles). Could you please send? Thanks, Tom.

---

**From:** Randy Lord[SMTP:randylord@home.com]  
**Sent:** Sunday, January 30, 2000 5:19 PM  
**To:** Schroeter, Tom EM:EX  
**Subject:** Whitesail opal update

Howdy Tom. Hope Roundup generated more interest in gemstone exploration in the province. The 2 attachments are articles I recently wrote for publication in the Mineral News and The Eclectic Lapidary. I didn't attach the photos. They read like adventure stories as their audience is varied. Headed to Tucson Feb 3 and hope to have good news to report in a few weeks. We'll have a website up shortly at [www.whitesailopal.com](http://www.whitesailopal.com) Cheers from Randy



Ministry of Energy and Mines  
Energy and Minerals Division  
Geological Survey Branch

300 - 865 Hornby Street  
Vancouver, BC  
V6Z 2G3

**FAVED**

FAX SHEET

Mineral Development Office

Date:	Feb. 11/00	Time:	9:40 am	Total Pages (incl. cover):	15
→	TO:	George Simandl			
	Organization:	GSB - Victoria			
	Fax:	(250) 952-0381	Phone:		
→	FROM:	Tom G. Schroeter, P. Eng. Senior Regional Geologist Phone: (604) 660-2812 Fax: (604) 775-0313			
→	cc:				
→	ACTION:	<input type="checkbox"/> In response to your request <input type="checkbox"/> For your action <input checked="" type="checkbox"/> For your information <input type="checkbox"/> For distribution <input type="checkbox"/> For approval <input type="checkbox"/> For comment			
→		<input type="checkbox"/> Urgent	<input checked="" type="checkbox"/> Confidential		

COMMENTS: Re: "Northern Lights" Opal - Randy Lord

George - articles I mentioned to you when I saw you on Wed. in Victoria.

Cheers,  
Tom