

Place: Arden  
Community Club  
Hall Rd  
Arden, WA



Time 7:00 PM  
Third Tuesday  
April - September  
6:00 PM October -  
March & August

## The Panorama Prospector

March 2017

### Panorama Gem and Mineral Club Minutes

*February 21, 2017  
by Anni Sebright*

President Bruce Hurley called the meeting to order at 6 p.m.

Thank you, again, to Tiffany McPherson for transcribing the minutes for the January meeting.

All hands were on deck for the February meeting. Vice President Bob Bristow reported that due to health issues Luci Bristow isn't able to do the scheduling for the greeters at the front door. Sheila Stratton volunteered to fill that position.

Bill Allen passed out an organizational sheet with all the jobs listed that go in to a successful show. Everyone received a sheet, and the jobs were filled by volunteers. Set up begins early Thursday morning the 16th. Friday morning, the 17th, starts early also with busloads of Colville Elementary children and the early bird rockhounds.

The Field Trip Committee will be meeting and proposing a list of trips for the year. If anyone has an idea for a trip, please contact Scot Jackson, Jerry Novak, Becky Dobbs, Joe Barreca, Bruce Hurley or Bob Bristow.

Jan Hurley was the February door prize winner.

Remember that March will be our last 6 o'clock meeting. We'll be back to 7 p.m. in April.



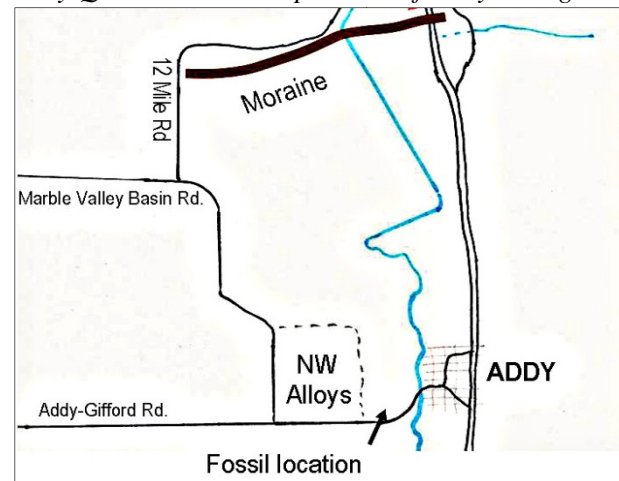
### Geology Snapshots - Hwy 395 from Arden to Deer Park

*by Sharon Borgford*

#### PART 3 Addy Quartzite and Fossils



*Addy Quartzite talus slope north of Addy -Google Earth*



The rock called Quartzite is most commonly described as a "...metamorphic rock composed almost entirely of quartz. It forms when a quartz-rich sandstone is altered by the heat, pressure, and chemical activity of metamorphism. (geology.com)

The stages of metamorphism of any rock - from being barely metamorphosed through being metamorphosed so completely that it is hard to tell if there has been remelting or not - cover a wide

range of conditions and descriptions. Terminology can be confusing because the same name can have slightly different interpretations depending on the literature being read. So, in many cases the term "quartzite" means "a very hard but un-metamorphosed sandstone, consisting chiefly of quartz grains that are so completely cemented with secondary silica that the rock breaks across or through the grains rather than around them" (mindat.org)



As mentioned in Part I, this geographical area was located on the edge of the old North American continent. Along a broad, passive ocean coastline like this, sediment can accumulate in a predictable pattern. The fairly pure sand that is required to form quartzite erodes from the continental landmass and accumulates just offshore on the continental shelf. Some silt and mud are also deposited, and become a part of the formation.

The metamorphosis of sandstone into quartzite is usually accomplished by compression in a tectonic mountain building environment (geology.com). At the time the Addy Quartzite formation was being deposited back in the Pre-Cambrian and Cambrian, the Old North American continent was in the vicinity of Rodenia, a supercontinent composed of quite a few of the cores of the other future continents of the world.

As tectonics began to move and separate the continents again, a new plate boundary formed at the western edge of the old North American continent (described in Part 1). The movement of this subducting plate pushing from the west provided the pressure to begin the metamorphosis of the sand, silt, and mud into Quartzite, Siltite, and Argillite.

The Addy Quartzite formation is estimated to be up to 4750 ft thick. It experienced only the lowest pressure and temperature metamorphism, preserving some original sedimentary features and fossils. It is divided into four units, with unit 1 being the lowest and oldest. At the bottom of the fourth unit are layers that contain fossil traces - the only level to do so out of the entire depth of the Addy Quartzite. One of the fossils became world famous.

Fossils can be in the form of the actual organism that was preserved, molds or casts of the organism or parts of it, or by just leaving a trace of its existence, such as a track or burrow. (The study of fossil traces is called Ichnology).

In the more silty, platy layers are found traces of the Trilobite *Nevadella Addyensis*. In 1950, a geologist by the name of Okulitch from British Columbia first published his paper describing this new, previously unidentified trilobite. His primary location for study of this fossil was at the south end of the low hill adjacent to the town of Addy on the west side. It became the "type" location for this fossil, and became frequently referred to in geological publications. Geologists and students came to this location throughout the years to study it. Extremely few specimens have ever been found that included the whole organism. Pieces and traces are the most common evidence of *Addyensis* here. Okulitch found enough of the head portion in his samples to determine that it was indeed a new species, one of the oldest trilobites in the world, and he included the name "Addy" as a part of the scientific name.



*Nevadella Addyensis* head - personal collection



The original bedding planes of the sands are often still visible in the quartzite, including cross-bedding and other features that have allowed geologists to generally reconstruct the conditions at the time it formed. The sands, at least in the fossilized strata, formed an underwater dune field. Different communities of organisms existed at the bottom of the seafloor on and around the dunes. Trilobite traces are not the only fossils found in this formation. There are about eleven named trace fossil features and 8 body part features found among the various outcrops of this same layer of the Addy Quartzite (Graham 2012).



*Probable burrows - personal collection*



*Brachiopod - personal collection*

In 2005, Stevens County began road construction work to revise the highway's tight curve around the end of this hill. The major part of

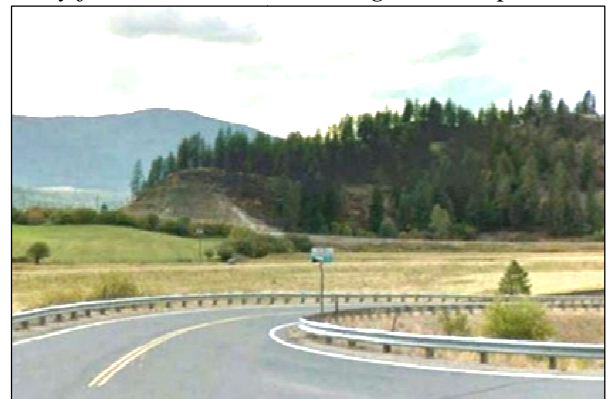
the layers containing the fossils were excavated and hauled away. It is still possible to find a few fossil remains, but the original outcrop is no longer available.



*Photo taken during road construction.*



*Addy fossil site 2016 - Google Earth photo*



*Addy fossil site as seen from Hwy 395 - Google Earth*

On the north end of this same small hill, the formation adjacent to the Addy Quartzite is the Old Dominion (Metaline) Limestone, containing high quality dolomite. In 1960, a 1944 publication by W.A.G. Bennet describing the dolomite at this location caught the eye of the Alcoa company - a topic for the next article.



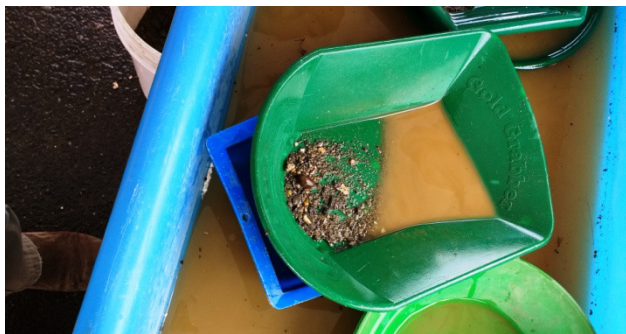
## References:

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All photographs and illustrations by Sharon Borgford unless otherwise noted.  
3/6/2017

## Prospector Man Gears Up

*by Joseph Barreca*

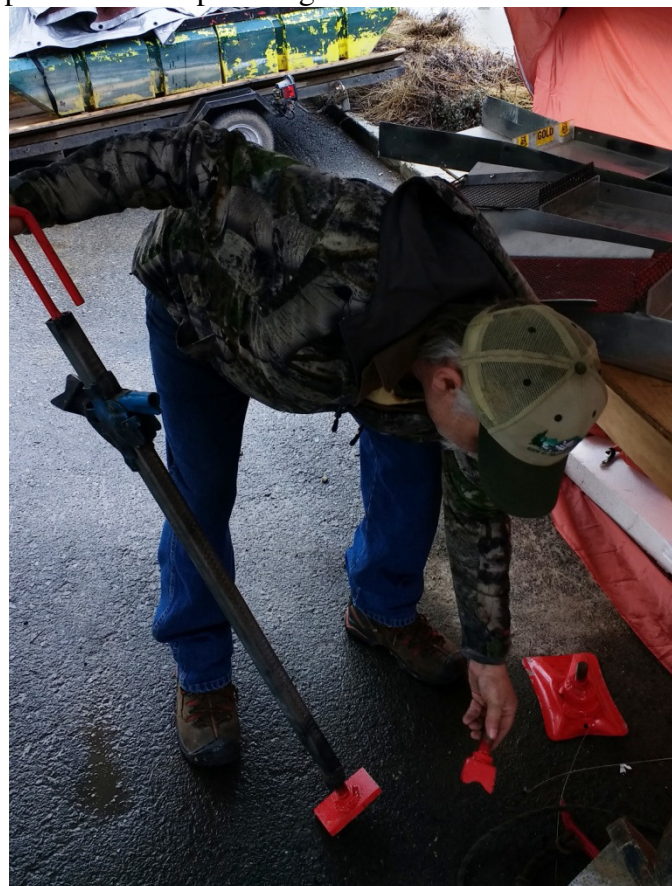


*[Gold pan with deep pockets]*

Panorama Gem and Mineral Club News March 2017

It's been over 10 years since I did the first interview with Dave Paquette for this newsletter. Dave is well known in the club for his rockhounding exploits on many fronts besides gold prospecting. But gold prospecting has to be his main thing. He does a great job of educating people and teaching kids to gold pan at our annual rock show, which is where I caught up with him this last weekend.

In his display area set up in front of the Ag Trade Center Dave had a water trough where he demonstrated many different kinds of gold pans. His favorite is shown in the first picture. The material traps on the front lip are deeper than most. It is more rectangular than the standard round pans. If you spot a little gold in the bottom, those are pieces of lead painted gold for the demonstration.



*[Boulder Jack and assorted fittings]*

The first of many new inventions that Dave showed me was a boulder jack. To really understand its value you have to picture the main place that Dave dredges for gold. It is underwater on the Similkameen River in Okanogan County. There is a strong current of icy cold water and Dave does a lot of work in the winter. To make this



feasible, he has rigged up his 5 1/2 inch dredge on a raft to do much more than just pump water. With the boulder jack he can pry rocks off the bottom and roll them into the current. This opens up pockets of gold underneath the boulders without fussing with pry bars or props.



[The back end of the dredge raft]

Notice the vertical pipe on the far side of the raft. There are two of these that can be pounded down into the river bed to hold the raft steady in the current. That allows the overflow from the dredge to dump into the current and be automatically swept away from the workings.

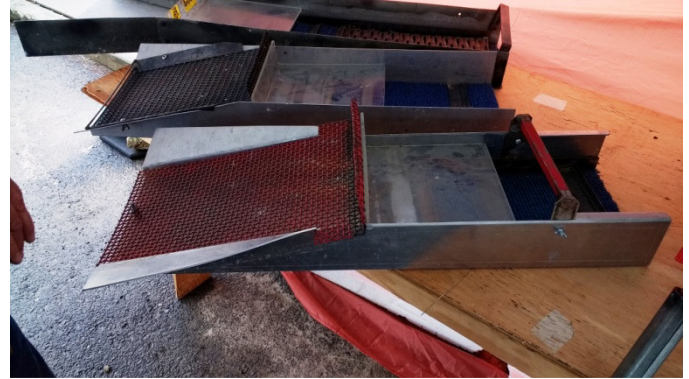


[The front end of the dredge]

A heat exchanger on the muffler for the dredge engine sends a constant stream of warm water into a small hose that Dave uses to fill his wet suit and warm up from time to time. It allows him to spend 3 hours a day underwater. A custom filter on the front end of the yellow flexible tube going into the dredge keeps dirt out of the main pump. Water from that pump shoots into the main dredge intake pipe forcing it to suck water and gravel through the intake hose and into sluice box on the back of the raft.

Underwater, Dave wears a full face mask that is receives air also driven by the dredge pump through the smaller yellow hose on the left in this picture. The full face mask is more comfortable and

gives a better view of his work on the bottom. It also lets gives him a good look at the big bass that often swim up close to get a first shot at periwinkles and other fish food stirred up by the operation.



[The short sluice box]

Most sluice boxes are long affairs that give the heavier gold nuggets time to settle into the matting on the bottom of the box. A not-so-obvious innovation in these portable sluice boxes is the Plexiglas cover just in back of the gravel screen. When placed in a stream, the water rushing over the front screen and onto the Plexiglas forces the gold and gravel through a series of baffles where the gold sinks into the plastic matting and the lighter gravel is swept away. This makes the whole system more compact and easier to move around.

A similar device sits on the larger sluice behind the dredge. It makes that system more compact and Dave can let it run for hours without worrying that he is losing gold out the back end.



This modified shovel keeps gravel from washing off the back.

<https://www.facebook.com/dave.paquette.92123>

### Membership Dues:

**\$20.00 per household per year** is due to the club Treasurer

Johnie Pitman (address below) on the third Tuesday of November for regular members.

Webpage: <http://panoramagem.com/>

Contact: Bruce Hurley, President, 509-413-2768.

We, **The Panorama Gem and Mineral Club**, are a multi-faceted group of mineral-minded people. Our proud members include some real gems, a few fossils, and even some diamonds in the rough. A few have lost some of their marbles, but they know where to get more! A few need to polish their coordination because they are always tumbling! And some are miners who use the “silver pick” as their tool of choice! It should be crystal clear, that we all enjoy this unique conglomeration and above all else we strive to **HAVE FUN**. And we never throw stones (away).

### First Meeting After the Rock Show

The monthly club meetings at the Arden Community Center will begin at 7 PM starting in March

This is the first meeting after the rock show. New people are sure to come and be fun to meet. We will talk more about what field trips to take this summer. We might need a boat if we took them right now with all of the flooding going on.

### Localities That Used To Be - Part III

*by Bruce Hurley*

#### Native Sulfur – Steamboat Springs, Washoe County, Nevada

Just south of Reno, Steamboat was originally mined for sulfur, and also contained arsenic (in realgar) and trace amounts of gold. Until the early 1980s this was an easy place to collect fine bright yellow sulfur specimens. But then the geothermal energy boom began, and by 1988 an operating power plant was installed over the old collecting locality.



#### County, Nevada

Across the playa lake from Silverpeak, Nevada, is an area which hosted a number of small sulfur deposits. While these were too small for much commercial production, they contained some of the more interesting sulfur specimens anywhere. At this locality, there were not only the more common



bright yellow crystals, but also darker yellow crystals which in places grow over them, making this one of the few known two-tone sulfur localities.

#### Native Sulfur – Alum District, Esmeralda

### Panorama Gem and Mineral Club: Organizational Chart

<b>Officers:</b>			
President:	Bruce Hurley	10617 W. Lakeside Lane, Nine Mile Falls, WA 99026	509-413-2768
Vice-President:	Bob Bristow	PO Box 1165; 2567 Mud Lake Rd. Chewelah WA 99109	509-935-4375
Secretary:	Anni Sebright	POB 293, Clayton, WA 99110	509-276-2693
Treasurer:	Johnie Pitman	701 B Williams Lake Rd, Colville, WA 99114	509-684-8887
Trustee 2:	Gene Fisher	295 Gold Creek Loop Rd, Colville, WA 99114	509-684-8546
Trustee 3:	Bill Allen	2633 Highline Rd, Chewelah, WA 99109	935-8779, 936-2446
Trustee 1:	Sherryl Sinn	725 S. Chester, Colville, WA 99114	
<b>Committee Chairs</b>			
Program Coordinator:	Bev Bockman	1750 N Havichur Loop, Post Falls, ID 83854	208-773-5384
Hospitality:	Debora Danielson	1365 Arthur Ct, Kettle Falls, WA 99141	509-960-1535
Club Shop:	Gene Fisher	295 Gold Creek Loop Rd, Colville, WA 99114	509-684-8546
Historian:	Carol Price	PO Box 77, Laurier, WA 99146	509-684-2857
Newsletter:	Joseph Barreca	2109 Hwy 25 South, Kettle Falls, WA 99141	509-738-6155
Show Chair	Bill Allen	2633 Highline Rd, Chewelah, WA 99109	935-8779, 936-2446