

PAGOSA DAILY POST

A Bit of a Stink about Hot Water, Part One

Bill Hudson | 6/30/08

For thousands, perhaps millions of years, the Great Pagosa Hot Spring had been overflowing its banks and spilling mineral-rich, sulphur-smelling hot water across a large open meadow beside the San Juan River. Over the centuries, that water had left mineral deposits in the meadow that hardened into travertine, a natural chemical precipitate of carbonate compounds.

Then, in 1995, the Town of Pagosa Springs began selling the water from its geothermal well — a municipal well that pumps water from the same aquifer feeding the Great Pagosa Hot Spring and several nearby mineral spring wells — at a very modest price to the Springs Resort, then known as the Spring Inn.

As far as I can tell, the Great Pagosa Hot Spring has never overflowed since.

Evidence shows that the water level in the mother spring has been dropping ever since the Springs Resort began using the Town's geothermal well to pump out hot springs water year round for the Resort's private use — and private profits. In fact, the Springs Resort has been pumping large quantities of recycled water from an undisclosed source, back into the mother spring — presumably to keep the water level from dropping further.

And now the Springs Resort wants the Town to double its delivery of hot water to the Resort. From all appearances, the majority of the seven-member Town Council is very eager to oblige.

But according to a statement made at the June 19 Town Council work session by Marcia Preuit — owner of neighboring business, The Spa Motel, also known as the Spa at Pagosa Springs — her spa's hot water wells once operated at an artesian pressure of 55 pounds of pressure.

They now show only 17 pounds of pressure.

“Have you done any studies to see how your outflow, flowing that much, will damage the [Great Pagosa Hot Spring]? Because, in the past, the Town water was not flowing on all year round, and the Spring recovered. Once it's turned on year round, the Spring does not recover. I think you all need to do some study on the recovery of the Spring and what it's going to do — and possibly, you pull down the aquifer, and what it will do to [the privately owned] wells.”

Preuit's comments were addressing the ongoing negotiations between the Town Council and the Springs Resort, to increase the Town's delivery of municipal hot water from 200 gallons per minute (gpm) to 400gpm. Additionally, the Town had recently drafted a lease with downtown businessman Jeff Greer, to deliver the “full output” of the Town's Rumbaugh Well to Greer's new spa business, currently under construction on Main Street. Greer will pay a reasonable annual fee for the water, according to the draft lease.

Two fascinating questions surround the Town's recent leases and lease negotiations, questions that to my knowledge have never been discussed openly in the press or in public meetings — though they have been the subject of at least one long-running lawsuit against the Town, a suit which has apparently been settled out of court.

Whether the Town's new negotiations with the Springs Resort will become the subject of a future lawsuit remains to be seen.

I am the first to admit that I am no expert on water rights, municipal geothermal heating systems — or political negotiations in the climate of economic uncertainty that currently faces Pagosa Spring. So I will share what little I know, and let our readers come to their own conclusions.

First, a little history. Ute Indian lore tells us that the Great Pagosa Hot Spring came into existence during a time of illness among the tribal members. In their quest for a cure to the mysterious illness, the tribe built a huge bonfire and spent the day and night dancing around the fire and praying for relief from their affliction. When the tribe awoke in the morning, they found a spring of hot, healing water bubbling out of the ground. They named the spring “Pah-gosa” meaning “Water” (pah) “that has a strong smell” (gosa.)

Indian lore also tells us that the right to control the Great Pagosa Hot Spring led to numerous and on-going battles between the various Indian tribes — the Utes, the Navajos, and the Apaches — who have lived in the Pagosa Springs area for centuries. Curiously perhaps, there is no evidence that any of the Indian tribes ever settled in the area around the Pagosa spring; they apparently considered the site too sacred, or perhaps too dangerous, for nearby settlement.

Settlement around the Spring was left to the white man. The first written record of a white man sighting the Spring seems to be from Captain J.N. Macomb, who led a group of U.S. Topographical Engineers through the area, and who measured and sketched the Pagosa hot spring. Within a couple of decades, the town of Pagosa Springs was growing up just across the San Juan River from the Spring — at first, in support of the new Fort Lewis army encampment, and then, after the Fort was moved west in 1882, in support of local ranchers and pioneers who had moved into the area.

Tourism came a bit later.

It may be an interesting footnote that the U.S. government, at one point, had staked a claim to the area around the Great Pagosa Hot Spring, and had plans to build a convalescent hospital for veterans of the Civil War, who were now beginning to show their age and, presumably, their infirmities from the War. But the hospital plans were put on the back burner for some reason; perhaps the Army was spending its funds fighting the Indian Wars instead. How the U.S. government property surrounding the hot spring passed into private hands, I have no idea.

Fast forward to 1980. The Spa Motel has been operating its motel, swimming pool, and mineral baths a stone’s throw from the Great Pagosa Hot Springs for about 30 years, using water from three hand-dug mineral water wells. No one is sure at the time, but some probably are able to guess that the Giordano wells are pulling water from the same aquifer that feeds the mother spring — and all the other mineral water wells in town.

Across the street is the Spring Inn, a modest little motel that uses a bit of water from the Great Pagosa Hot Spring for heating its rooms in the winter but has no pools or baths of its own. Little would anyone guess it would one day become the very-well marketed and popular Springs Resort with three dozen riverside soaking pools. The Spring Inn, I assume, has been sending their lodgers across the street to the Spa Motel to “take the water.”

The Spa Motel is also popular among the local Indian tribes; many tribal members believe in the healing properties of the water, and even drink the smelly water for health purposes.

Since the mother spring has considerable artesian pressure, it consistently spills out across the surrounding meadow, and local Pagosans have dug themselves a “Hippie Dip” bathing spot, using the overflow from the Spring. The Hippie Dip is, of course, admission-free, and sometimes clothing-free as well. Some locals reportedly disapprove of the “clothing optional” character of the Hippie Dip, and restrict themselves to using

the Spa Motel pools, paying a modest fee and protecting their sensibilities.

The Town of Pagosa Springs has just finished an inventory, dated 1978, of hot springs wells in the Pagosa area, and has located 27 of them surrounding the Great Pagosa Hot Spring. The inventory has been completed, presumably, because the Town has lately been considering the value of its local geothermal resource. Someone has come up with the bright idea of drilling a new geothermal well, over on the Downtown side of the river — where several wells already exist — and then using any mineral water they hit to power a municipal geothermal heating system, to heat the Town Hall on San Juan Street, the local school buildings on Pagosa Street, and other buildings in the downtown area.

What with the high price of heating fuels — following the OPEC Oil Embargo in 1973 and Iraq's invasion of Iran in 1979, crude oil prices have increased from \$4 a barrel to \$35 a barrel — the idea of using the town's hot water for heating makes more sense every day.

Then the Town does a pressure test, to see if, indeed, all of the wells are really tied in to the same mother aquifer. It turns out that everyone is using the same big underground pool of hot mineral water.

The Town builds a geothermal heat exchanger, so that the mineral water can stay safely inside air-tight plumbing and can transfer its heat to a glycol plumbing system that delivers the heat to downtown buildings during the cold winter months. The mineral water itself, now considerably cooler after the heat exchange, is dumped into the San Juan River. The buildings are warmed, the lukewarm mineral water is disposed of — everyone is happy.

Well, not everyone.

Over at the Spa Motel, the Giordanos have discovered that the Town's use of the mineral water is lowering the artesian pressure on their own Spa Motel wells. They have become concerned and have been questioning the Town's water rights. Those water rights have been granted to the Town for “municipal use for heating purposes,” but the Giordanos water rights are senior to the Town's — and by Colorado law, junior rights may not infringe upon senior rights.

Unfortunately for the Giordanos and for all of us, the meaning of the law appears to be increasingly dependent upon who has the best lawyer, or the biggest budget for legal fees.

There are two keys, I think, to understanding the conflicts over the Pagosa Springs mineral waters. One is to understand how water rights work in Colorado, and the other is to look at how the Town's steady expansion of its hot water use has affected the mineral water supply in the whole downtown area.

And it's crucial for the Town Council and the public to understand these topics before completing the current negotiations with the Springs Resort, which is planning a \$250 million expansion project based on their belief, it seems, that Pagosa Springs has an endlessly abundant supply of mineral water to draw upon.

Another crucial question might be, perhaps: How far should local politicians bend Colorado state law — with their attorney's permission of course — to help underwrite a wealthy developer's long term resort project, for the health of Pagosa's economic future?

A Bit of a Stink about Hot Water, Part Two

Bill Hudson | 7/1/08

My interest in some geothermal water rights questions, that bear on the future development of downtown Pagosa Springs, arose at a public meeting on June 19. That meeting was a Town Council work session — meaning that no formal decisions would be made — where Springs Resort owner Bill Whittington was negotiating aspects of a lengthy agreement with the Town, dealing with the lease of additional geothermal water from the Town’s PS-5 well. (As a perhaps incidental note, the Springs Resort website shows the owners of the resort as Whittington’s daughters, Nerissa Whittington and Keely Reyes, but Bill Whittington consistently represents the resort in appearances before Town Council.)

The negotiations had been going on for months — perhaps years, I’m not sure — and there were a couple of sticking points that Whittington and the six members of the Council present at the meeting were trying to work through. The potential agreement included increasing the amount of water leased, as well as several agreements about easements and river setbacks relating to the resort’s proposed \$250 million resort expansion.

One thing that was not being discussed, I noted, was whether the Town could legally lease the water Whittington was asking for.

As I mentioned in Part One yesterday, the Town has been leasing 200 gallon per minute (200gpm) of “waste water” from its geothermal heating operations to the Springs Resort for about ten years. This lease has been a mildly contentious issue and the subject of at least one lawsuit. Here’s a bit more of the story.

Since about 1981, the Town of Pagosa Springs, in its desire to provide a low-cost heating source to downtown businesses and residences, has been operating a geothermal heat exchanger, located on Lewis Street overlooking Centennial Park and the San Juan River. The Town draws up to about 400gpm from its nearby artesian well, known as PS-5, and runs the 140 degree mineral water through a simple system of radiator pipes, transferring the heat to a plain water system that then circulates through about 27 downtown buildings, including the local school buildings and numerous businesses.

Years ago, many downtown businesses had their own private wells and tried running pure geothermal mineral water through their radiators. Unfortunately, the mineral water is so high in mineral content that it quickly corrodes most any type of plumbing, leading to breakdowns and leaks. Folks who have lived in Pagosa for twenty years or so well remember the downtown buildings that consistently smelled of sulphur.

The Town’s heat exchanger system keeps the high-mineral-content water safely separated from the water delivered via pipes to the various downtown buildings.

According to the Town, the geothermal system is fired up around the first of October, and runs through the cold months of winter. The amount of geothermal water needed to keep the system running warm varies, of course, with the winter temperatures. At times during the coldest months — December, January and February — the system often requires nearly all of the Town’s adjudicated water rights — 450gpm. For most of the heating season, however, the system uses about 200gpm.

The Town received its water rights, to use up to its full allotment of 450gpm as needed, in 1981. That decree included not only the maximum amount of water granted, it also decreed the use to which the Town could put the water. That decree states that the Town may use the water for “municipal use associated with geothermal heating.”

In the state of Colorado, a water right consists, in essence, of three parts. One part is the date of the decree. The date places the right in a timeline, where senior water rights — the oldest water rights — must be fulfilled first in a drought situation. When there is not enough water to go around to fulfill every user’s rights, the oldest rights have priority. Asserting senior rights is referred to as “placing a call.” The Town’s right is dated 1981,

one of the most recent rights granted on the Pagosa mineral water.

Another part of an adjudicated water right is the amount, typically stated in “shares,” or in “cfs” (cubic feet per second) or in “gpm” (gallons per minute.) One share equals one “cfs” which equals 450 gpm. The Town of Pagosa Springs has the right to one share, or 450gpm, from its PS-5 well, with backup allowed from its PS-3 well in case of problems with PS-5. From what I understand, a water right owner can draw more water from a well that he has rights to, so long as he doesn’t affect the water needed by, and available to, other users of the same water source.

The third important aspect of a water right decree is the use to which the water may be put. If, for example, I have a well and a decreed right to use the water for domestic purposes — and I then build a restaurant on my property and begin using the well to supply water to run my restaurant — I would now be using the water illegally, and the Colorado Division of Water Resources would be required to put a stop to my commercial water use. My allowed use does not depend upon how much water is available or whether a call has been placed, from what I have gathered.

We will hear more about the Colorado Division of Water Resources, and its local Water Division 7 commissioner, Pete Kasper, as we get deeper into the story.

So, we will note that the Town’s water rights decree clearly states the use to which its geothermal mineral water may be put:

“Municipal use associated with geothermal heating.”

In 1995, the Town was involved in yet another lawsuit around its rights to its geothermal water. The owners of the Spring Inn, Matt Mees and Bill Dawson, were filing for water rights to all of the waste water coming from every use in Pagosa Springs. To clarify this awkward situation, we need to look at the components of the marvelous mineral water from the Pagosa aquifer. The water bubbling up from the ground, into the mother spring and into the 27 or so wells drilled in the downtown area, has artesian pressure, meaning that I can get water without having to run an electric pump. The marvelous water comes to me free of pumping expenses. That’s one component.

Another component is the water’s mineral content, mainly sulphates and sodium compounds. Since long before the coming of the white man, the Indians of this region recognized the healing properties of the numerous Pagosa hot springs. Yes, in those days, it seems there were several springs flowing in the meadow beside the San Juan River. The U.S. government also recognized the therapeutic value of the water, in the 1880s, when it had plans for a convalescent hospital in Pagosa Springs. The water continues to be marketed in tourism brochures as “naturally therapeutic,” although strictly speaking, the scientific community might argue that no proper scientific data has ever validated that claim.

A third component of the Pagosa geothermal resource is exactly that: geothermal heat. Setting aside any possible therapeutic value the water may have, the fact remains that human beings like to be warm, and Pagosa Springs can get mighty cold in the middle of winter. So the Town of Pagosa Springs, in its infinite wisdom, built a geothermal heating utility on Lewis Street to heat downtown buildings, and it acquired the rights to Pagosa water for that express purpose.

Up until 1995, the water that ran through the Town’s heat exchanger was dumped into the San Juan — about 20 degrees cooler than it had been before its trip through the exchanger. In other words, the Town was dumping 120 degree mineral water into the river — still containing its full range of therapeutic minerals and still too hot for therapeutic bathing without further cooling.

Bill Dawson and Matt Mees, as owners of the Spring Inn — later to become the Springs Resort — apparently decided that was simply a waste of good mineral water, and tried to file for the rights to the still-perfectly-usable, discarded waste water. The Town and the neighboring Spa Motel defended their water resources by opposing that filing, and voila, we have another mineral water lawsuit.

The three parties finally settled the suit, and the settlement agreement involved allowing the Spring Inn to “lease” the outflow from the Town’s heat exchanger — an outflow that was still perfectly usable for recreational bathing.

Just one small problem. The Town’s heat exchanger was not operating in the summer, which is exactly when the Spring Inn got most of its visitors. To make the plan work properly, the Town needed “lease” water to the Spring Inn even when it was not running its heat exchanger. The Spring Inn wanted 200gpm of “waste water” even in the summer months.

So the attorneys were brought in, to verify the agreement. The attorneys looked at the language of the Town’s water right decree:

“Municipal use associated with heating purposes.”

How could that be construed to mean, “and of course including leasing the water to a private resort for recreational bathing purposes” ?

A Bit of a Stink about Hot Water, Part Three

Bill Hudson | 7/2/08

A friend of mine, who is a regular reader of the Post, suggested to me yesterday that I needed to think carefully about the personal opinions that might creep into an investigative article series such as this one about the proposed lease of Pagosa Springs' geothermal resource. He suggested that mixing facts with supposition could be damaging to the ongoing negotiations between the Town Council and the Springs Resort.

I should stick to reporting the facts, he said, and think carefully about Pagosa’s future as I decide what to include in my future article installments.

“The Springs Resort is the heart of downtown, and it's going to be the heart of Pagosa’s future,” he suggested.

That is a hard prediction to argue with. When Clarissa and I arrived in Pagosa in 1993, the Springs Resort was still the Spring Inn, a modest motel with two little fiberglass hot tubs available for soaking. The motel had recently been purchased by builder and designer Matt Mees, and his partner Bill Dawson, and they had big plans for the Spring Inn. Fifteen years later, under Matt’s guidance, the Spring Resort has been transformed from a modest motel into a full-blown resort destination. Their high-quality website at pagosahotsprings.com accurately represents the luxury and service available at the resort, and a recent marketing video says the facilities “compare favorably with the finest European spas.” I have never been to a European spa, but I certainly wouldn’t argue with that claim.

According to the resort website:

“The source of these mineral-rich waters is the famous Great Pagosa Aquifer...the world's largest and deepest hot mineral spring. Sunset Magazine featured The Springs Resort as one of their "Heavenly Hot Springs" in November 2003. THE TRAVEL CHANNEL included the resort in its feature "America's Very Best--Riverwalks" in April 2004. Pool temperatures range from 83 - 114 degrees (F). Visitors from around the globe have journeyed to these waters over the centuries to

experience their legendary curative powers."

"Today's travelers come to relax in these ancient healing waters after a vigorous day of skiing at Wolf Creek Ski Area, backpacking in the San Juan Mountains, golfing around The Four Corners or simply to relieve the tensions and stresses of everyday life."

Back in the early 90s, the Spring Inn had very reasonably-priced annual passes available, and Clarissa and I would often meet with some of our new friends in the Overlook Pool, "soaking away the stresses of everyday life" and discussing the likelihood that Pagosa Springs would one day become a healing center with a national, or even international, reputation. Sitting in Matt Mees' new, artistically-designed pools, absorbing the heat and minerals from the Great Pagosa Aquifer, it was easy to imagine big things awaiting Pagosa in the coming years.

Pagosa's future seemed abundant, and bright. as we soaked in those new bathing pools.

Now the Springs Resort has new owners — the Whittingtons — although Mees continues to oversee the building of new hot springs pools, including five currently under construction overlooking the San Juan River. I had a lengthy conversation with Mees on Monday, about the history of the resort, the Great Pagosa Aquifer and the current negotiations between the Town and the Springs Resort. We touched on the existing mineral water lease, delivering up to 200 gallons per minute of "waste water" from the Town's PS-5 well to the resort.

A related development at the Springs Resort is a planned \$250 million expansion, one of the few development projects that seem serious about proceeding in the painfully slow business climate that has settled over Pagosa Springs since 2005. With seemingly a quarter of our downtown properties vacant — either as empty lots or as vacant shops for rent — the thought of a vigorous development project is very appealing to those looking for a turn-around in the local economy.

So I have to think over what my friend has suggested. What is my purpose in writing about the questions facing the Town and the Springs Resort, as they negotiate a possible new lease? How do those negotiations bear on the stalled San Juan River Restoration project? How are the negotiations related to the as-yet-unsigned lease between the Town and businessman Jeff Greer, in the middle of constructing his new spa downtown next door to Jackish Drug?

What are the "facts?"

Another friend reminded me at last night's Town Council meeting, of an old Western proverb: "Whiskey is for drinking, water is for fighting." Certainly, the numerous lengthy lawsuits that have surrounded the development of the Great Pagosa Aquifer since the Town drilled its new PS-5 well in 1980 bear out that proverb. Where water rights are concerned, the "facts" seem to be open for discussion — and disagreement.

In a public work session on June 19 with the Town Council, Springs Resort Bill Whittington apologized for any apparent confusion surrounding the proposed new lease for additional mineral water from the Town.

"I was just assuming that the [Town] staff had made you guys aware of whatever this lease is — or isn't — and they talk about attorneys in this other letter. And I assume you guys had been informed by your attorney what this does, or doesn't mean. Again, I apologize, because I thought you were aware of the lease and the option on the lease — and we're not asking for anything that hasn't already been pretty well agreed to in the lease."

"Again, this is water that you guys utilize, and it goes right into the river. It's waste water to you all — and us, we can use it. It makes sense to do the project that we are trying to do there in the \$250 million range. The tax base will be phenomenal to the city once that is completed."

As noted in earlier articles in this series, Whittington’s characterization of the mineral water lease as providing “waste water” from the Town is not entirely accurate. The Springs Resort is asking for 400 gallons per minute (gpm) from the Town’s geothermal well. During the coldest months of the winter — December, January and February — the Town sometimes pumps 400gpm through its heat exchangers, and could therefore provide 400gpm of actual “waste water.” During the fall and spring, the Town more typically pumps around 200gpm, according to Town records. During the warmer season, from about May until October, the Town does not run any water at all through its heat exchangers.

But the Springs Resort’s proposed lease asks for 400gpm, all year round. If the Town’s records are correct, then, only about 40 percent of the water delivered to the resort would be “waste water.”

Following Whittington’s presentation, Councilor Jerry Jackson asked his fellow Council members, “Is there anyone on the Council who is opposed to this [lease]?” There were no objections. “Then I guess, if in our next regular meeting, we say we are for it, then we can just have our attorneys work out the details.”

Interim Town Manager Tamra Allen then asked Jackson, “Can I get some clarification, just exactly what ‘for it’ means?”

Jackson chuckled. “Yes, ‘for it.’ For giving the Springs Resort our, quote, waste water. They would pick up any additional cost for transporting it [over the river].

Then Mayor Ross Aragon opened up the discussion to public comment. “I just want to be really emphatic about this, that I want public participation, and I want to open it up to public comment. I think it’s imperative that there’s dialog. I don’t want to come put of this meeting and be blind-sided by anyone saying they never had a chance to speak.”

A member of the audience came to the microphone and asked if the Town could explain how they would be leasing “waste water” to the resort during the summer months — under a water right that allows only “municipal use associated with geothermal heating” — when in fact the Town does no geothermal heating during the summer.

Whittington said he could explain the seeming discrepancy. “The Town uses the geothermal water to heat the downtown businesses and so forth. And when the Town shuts that system off, then [the Springs Resort] uses that same water; it doesn’t go through the heat exchangers, it just comes directly out of there to us. So it’s a year-round usage on the water. In the winter, you are getting your BTUs out of it first, and in the summer, you are not actually using it, so we just pump it directly across [to the resort].”

Allen clarified the situation further. “My understanding from the Town’s water attorney is that we can legally lease the water during the summer. It’s my understanding that the Springs Resort’s attorney is working with the Division of Water Resources to understand how much, in gallons per minutes, they can use during the summer season.”

Whittington repeated that the Town’s attorney, Janice Sheftel, has determined that the Town was “well within its rights” to lease the water to the resort during the summer months.

“We do have some new water commissioners who weren’t aware of how that worked,” Whittington explained, “and some inquiries were made, and they made some inquiries, but I think everyone is back on the same page now.”

Whittington may have been referring to a letter, sent from newly appointed Division 7 Water Commissioner Pete Kasper to the Town of Pagosa Springs on May 13, 2008.

That letter states in part, “The Town was granted a water right for [wells] PS-3 and PS-5 for municipal heating from a geothermal resource as defined in SB 481, adopted in 1981. The State does not allow any water right holder to waste water. In the May 19, 1987 judgment and decree issued to the Town for PS-3 and PS-5, this is stated very clearly in item #17, which states, ‘The Town of Pagosa Springs shall operate its wells... to avoid waste of the geothermal resource.’ Therefore, it is the opinion of this office the Town should not be operating wells PS-3 or PS-5 unless it is producing geothermal heat with its heat exchanger.”

A Bit of a Stink about Hot Water, Part Four

Bill Hudson | 7/3/08

Yesterday, in [Part Three](#), I ended with a quote from Division 7 Water Commissioner Pete Kasper’s May 13 letter to the Town of Pagosa Springs, stating that, in his opinion, the Town “should not be operating wells PS-3 or PS-5 unless it is producing geothermal heat with its heat exchanger.”

While it is certainly a “fact” that Kasper submitted this letter to the Town, Kasper’s view of the Town’s water rights is not a “fact,” but rather his professional opinion as a water commissioner with 25 years of water law experience in Colorado.

If the Town went with Kasper’s opinion, it would probably have to deny the Springs Resort’s new request for the year-round lease of water from the Town’s PS-5 well, at a flow of 400 gallons per minute (400gpm) — and also its current lease for 200gpm during the summer.

Fortunately for the Springs Resort, there are numerous other opinions to choose from. *Continued...*



The steel pedestrian bridge across the San Juan River, leading from Centennial Park to the Great Pagosa Hot Spring, carries more than pedestrians. Beneath the bridge is a black pipe that carries “waste water” from the Town’s geothermal wells — up to 200 gallon per minute — over the the Springs Resort. The water is still clean and packed with “therapeutic minerals,” even after a trip through the Town’s heat exchanger. In the summer, of course, the water comes straight from the well, because the heat exchanger does not operate in the summer months — so it is in no way “waste water.”

The Town’s water attorney is Janice Sheftel, whom I have yet to meet or talk with. Sheftel has been advising the town for many years, and recently had a meeting with Pete Kasper, to better explain the Town’s legal

approach to its municipal water right.

In a May 15 letter to interim Town Manager Tamra Allen, Sheftel stated, in part:

“The use decreed for Geothermal Wells PS-3 and PS-5, in Case 81CW60 (made absolute in 87CW35) is “municipal use associated with geothermal heating.” I think the Town has an argument that the decree does allow summer leasing of geothermal water from the wells, because the decree does not indicate the geothermal heating of what, and municipal use is not defined. Municipal use is a very broad.”

“If it should be determined by the Water Court that the 80CW61 decree does not allow municipal use for geothermal heating of pools, I would argue that the Town can still lease water from the wells outside the heating season, because the Pagosa Springs aquifer is not on call in the summer. Therefore the Town can use water from its wells in the summer, just not under the 80CW61 water right.”

There are a couple of interesting aspects to Sheftel’s opinion. As she notes, the Town’s water right decree indicates merely “geothermal heating,” but does not fully define what may be heated. So we would need to look at what the court may have meant. Again, these are opinions we are dealing with, not "facts."

Besides the two wells, PS-3 and PS-5, which are used by the Town’s geothermal heat exchanger, the Town owns another geothermal well known as the Rumbaugh Well, located near the CenturyTel office on Lewis Street. If you look at the decree for the Rumbaugh Well, that right also has decreed uses.

The court specified them fairly clearly, and the rights include “heating” as well as “sidewalk de-icing, laundromat, car wash, and recreational bathing.”

So in the case of the Rumbaugh Well, the various types of uses are named — uses that utilize heat but have nothing to do with “heating a building.” Specifically, the Rumbaugh Well decree mentions “recreational bathing” as a separate item from “heating.”

Attorney Sheftel, however, suggests that “recreational bathing” such as the Springs Resort offers its visitors is arguably just another form of “heating.”

Curiously, during the 1990s, the Town tried to get the rights from the Rumbaugh Well — including its decreed uses — transferred to the PS-3 and PS-5 wells. They were not successful in getting those rights transferred, as far as I can tell. I am not clear at this point why the Town was trying to transfer those rights, though it may be worth noting that those rights included “recreational bathing.”

Sheftel also notes that the word “municipal” is not clearly defined and may have broad applications. It’s very obvious, for example, that the Town has been using its geothermal heating system to serve numerous private downtown businesses and residences — about 20, by my count — and that the term “municipal” can be applied to a heating service provided by a municipality to private businesses.

From that point of view, Sheftel is right on the money: the term “municipal use” would clearly allow the lease of water to the Springs Resort. *Continued...*



After crossing the pedestrian bridge, the black pipe continues along the bank of the San Juan toward the Springs Resort bathing pools. A new retaining wall, seen to the right in this photo, is part of an expansion project that will add five additional bathing pools to the resort's existing 18.

Sheftel's final comments noted above are a bit more complicated to get a handle on. Sheftel notes that, even if the water court "does not allow municipal use for geothermal heating of [recreational] pools, I would argue that the Town can still lease water from the wells outside the heating season, because the Pagosa Springs aquifer is not on call in the summer. Therefore the Town can use water from its wells in the summer, just not under the 80CW61 water right."

The key phrase here is "not on call in the summer."

In Colorado, it is typical for a citizen or business to begin developing a new water use, without first applying for the right to use that water. For example, the Giordano family — developers of the Spa at Pagosa Springs, across the street from the Springs Resort — began using the water from the Pagosa Springs Aquifer in 1936. They did not go into court and get that right adjudicated until 1978.

This technically means that — should there be a shortage of water coming from the Pagosa Springs Aquifer — the Giordano wells would have to hold off taking any water until everyone with rights older than 1978 had taken their fair share. Likewise, everyone with water rights dated after 1978 — which includes the Town of Pagosa Springs PS-3 and PS-5 wells — would have to wait until the Giordanos had taken their own fair share. A water situation where rights holders are waiting their turns is known as "being on call."

As Sheftel notes, as long as the water is "not on call" the various water users are legally allowed to use as much water as they wish — so long as they are not wasting the water.

As far as I can tell, there has never been a call placed on the Pagosa Springs Aquifer. Springs Resort developer Matt Mees told me he thought the steady output of the aquifer was around 3cfs, about 1,350 gallon per minute. So far in Pagosa's history, it appears that all the combined water users have never used a total of 1,350gpm.

But that is hard to determine, it seems.

I asked Pete Kasper if the users of the Pagosa Springs Aquifer are monitoring their water use, so that everyone has a clear picture of how much total water is being taken from the aquifer. This might be particularly

important in the case of a deep underground aquifer which is not affected noticeably by heavy rainfalls, or drought, up on the surface — and where the water taken is not returned to the aquifer.

If the Town, for example, was pumping 600gpm instead of 400gpm, would the Division of Water Resources office know about that?

“I wouldn’t know it the minute it happened, no,” Kasper replied. “But we do keep records. The Town has two meters on their well; they have an instantaneous meter that shows what’s pumping right at the moment, and they have a continuous flow meter that shows how much they have used over the period of time. So I suppose they could pump 600gpm for an hour and then shut off for an hour, and it would average to 300gpm.”

The Town maintains its own records of water use, and Kasper checks those records “now and then.”

Because the corrosive mineral water from the Pagosa Springs Aquifer plays havoc with the ordinary in-pipe, impeller-type meters used in drinking water monitoring systems, the Town installed Doppler meters that read the water flow from outside the pipe.

From what I have been told by Marcia Preuit at the Spa at Pagosa Springs, and Matt Mees at the Springs Resort, neither of those two businesses have any meters installed on their mineral water systems. Because the Spa runs all of its outflow through a single white plastic pipe that empties into the San Juan River, Kasper is able to get a rough measurement of the water used, by seeing how long it takes to fill a 5 gallon bucket. Not very scientific, but it’s an estimate, at least.

Mees at the Springs Resort verified that the Springs Resort has no meters on its incoming pipes nor on its outgoing pipes. Mees said several of their bathing pools spill directly into a cooling pond, and therefore the resort’s outflow cannot be easily measured. We know that the Springs Resort is currently getting around 180gpm from the Town wells, through their current lease. They have the adjudicated right to draw about 100gpm from a pipe that goes deep into the Great Pagosa Hot Spring, but have no meter on that pipe, according to Kasper.

No one can see the total supply of water in the Pagosa Springs Aquifer, so the amount of water available to all users is guesswork. We also know that two of the three main users of the aquifer have only unscientific measurements of their water use.

We really have only two significant gauges to measure the health of the aquifer: the amount of artesian pressure, and the level of the mother spring.

What can those two measures tell us about the wisdom of selling 400gpm year-round from the Town’s PS-5 well to the Springs Resort? And is the Town Council interested in those two measures?

A Bit of a Stink about Hot Water, Part Five

Bill Hudson | 7/4/08

Yesterday, in Part Four, I suggested that the legal right of the Town of Pagosa Springs to lease “waste water” from its geothermal wells — during the summer when the Town normally uses no water for its geothermal heating system — is subject to a variety of legal opinions.

The current lease with the Springs Resort — signed in 1997 and under which the resort has been using about 180 gallons per minute (gpm) from the Town’s PS-5 well year-round — specifically states, “The Town hereby

leases to the [Springs Resort] Company 200 GPM of geothermal water from the [PS-3 and PS-5] Wells released after the Town utilizes the geothermal water in its heating system... the Town leases the 200 GPM to the Company *during the Town's annual heating season*, generally from late September through the end of May each year..."

The lease additionally refers to water 'Outside the Heating Season:'

"Since the Company's recreational use of geothermal water is a year round activity, the Company wishes to lease the 200 GPM on a year round basis. The availability of the 200 GPM during the summer may depend upon the resolution of Case N. 89CW19, District Court, Water Division 7..."

As noted in [Part Four](#), that case was an attempt to transfer the rights belonging to the Town's Rumbaugh Well — which included the right to use the water for "recreational bathing" as specified in the Rumbaugh decree — to the Town's PS-3 and PS-5 Wells, whose decrees do not specify the use "recreational bathing," but only "heating." The Town lost that case, but decided to lease its geothermal water from its PS-5 Well to the Springs anyway, during the non-heating season, even without the Rumbaugh transfer. They did so on the advice of the Town's water attorney, Janice Sheftel.

Springs Resort representative Bill Whittington, at the Town Council's June 19 work session, stressed that the Springs Resort also uses the water for heating.

"The Springs uses that water for heating, it doesn't just use it for hot tubs. It does go through heat exchangers [at the Springs Resort,] it does heat the boilers and things like that. So if you use it on that side of the river to heat, or this side of the river to heat, it's still the same purpose, and that's why you're able to do that."

Whittington seemed to be justifying the existing lease given the the legal limitations of the Town's water rights, but did not explain why the Springs Resort would be running its own heating system during the summer months.

But beyond the legal issues of the Town's right to provide "non-waste" water to the Springs Resort in the summer months, we have the scientific question: How much water can the Great Pagosa Springs Aquifer provide on a continuous basis? Does anyone know?

There can be no doubt that freely-available geothermal mineral water to a key component to Pagosa Springs' very existence, and that no reasonable business person would intentionally do anything to damage that valuable resource. As Whittington noted at the June 19 work session, "Certainly, the springs is all of our life blood. That's how the town got its name, that's what we're representing and trying to maintain. Certainly we would not do anything that would try and hinder that, and this [proposed lease for 400gpm from the Town wells] definitely helps that."

Looking at the way human beings have treated their environment over the past 200 years, however, it is obvious that people occasionally construct business arrangements that foul their own clean water supplies.

As we speak, all across the West, electric companies continue to operate coal-fired plants that are — unintentionally but steadily — polluting the region's lakes with air-borne, poisonous mercury. In other words, our human quest for comfort and wealth sometimes leads us to make decisions which harm the environment — sometimes permanently. The mercury in our Western lakes, for example, will likely never be removed in our lifetimes.

We do not know the extent of the Great Pagosa Springs Aquifer, but what evidence do we have that pumping 400gpm, year-round from the Town's wells, will not affect the aquifer's overall health? The Springs Resort and

the Town Council assert that no harm will be done. What is the evidence?

No one can see the total supply of water in the Pagosa Springs Aquifer, so the amount of water available to all users is guesswork. We really have only two significant gauges to measure the health of the aquifer: the amount of artesian pressure, and the level of the mother spring.

At the June 19 work session, Spa at Pagosa Springs owner Marcia Preuit pleaded with the Town to do further study of the aquifer before agreeing to pump nearly twice the volume of water from their downtown geothermal wells for the Springs Resort's use.

She noted that, prior to the 1997 lease with the resort and the commencement of year-round pumping of 200gpm, the water pressure at her own three wells was 55 pounds. Since 1997, the pressure has been 17 pounds.

As Springs Resort designer Matt Mees explains it, the Great Pagosa Springs aquifer originally had no drilled wells accessing its waters, and all of the water pressure — considerable artesian water pressure — had to be relieved by the water spilling freely from the several large and small springs scattered around the large travertine meadow just south of Pagosa's current downtown. As more and more wells were drilled into the aquifer — the Division of Water Resources lists about 27 historic wells — more “holes” were poked into the aquifer, and the artesian pressure has been gradually reduced, to a point where none of the historic springs now overflow freely, including the Great Pagosa Hot Springs.

Mees' explanation makes a lot of sense.

But let's consider: there are not 27 active wells in Pagosa; there are only five. The local wells currently active are Town's PS-5 Well (PS-3 is a backup well) and the three wells at the Spa Motel, plus a leaking well, beneath Jeff Greer's new downtown spa project on Main Street, which he will soon be using for his own spa. Greer was also the sole bidder for 35gpm from the Town's Rumbaugh Well, which specifically has rights for “recreational bathing.”

The Spa Motel wells — which all together produce less than 100gpm, I believe — reportedly operated at 55 pounds for about 60 years. Then the Spring Resort lease began.

Using Mees' illustration, imagine a bucket with a hole in it. When it is full, the water spurts out of the hole under high pressure. As the bucket become less full, the pressure at the hole becomes less and less. When the water drops below the hole, the pressure becomes zero.

A question to which possibly no one knows the answer is this: if the pressure at Marcia Preuit's wells were to drop to zero, would that mean the aquifer was being slowly drained dry? If the pressure at the Giordano wells fell to less than half its original pressure when the Town started pumping 200gpm year-round, what might happen to the pressure if the Town pumps 400gpm?

At a public meeting a few months ago, Mees told the Town Council that, when the current summertime draw of 200gpm from the Town's wells began 1997, the level of Great Pagosa Hot Spring dropped and then stabilized. Clarissa and I walk by the Great Pagosa Hot Springs nearly every day on our trip to the Post Office, and indeed the level has remained fairly constant for several years, despite large diameter pipes that poke down into the recesses of its turquoise depths.

According to Whittington, the Springs Resort is pumping water *into* the Great Pagosa Hot Spring. No one seems to know exactly how much water is being pumped into the Spring; there are no meters on the pipes.

I am not clear how a spring can be “stabilized” if water is being pumped into it, yet it stays at the same level. But certainly I am no expert on this subject; I have researched the subject for barely more than a week.

“In the past, the [Town’s geothermal] water was not pumped year-round, and the Spring recovered,” Marcia Preuit told the Town Council on June 19. “Once it’s turned on year-round, the Spring does not recover. I think you all need to do some more study on the recovery of the Spring.”

Is the Town Council — already struggling with a deficit budget and no doubt eager to see the Springs Resort’s planned \$250 million expansion pump some needed vitality into a struggling local economy — interested in doing “more study”? Who will pay for such studies? The taxpayers? The Springs Resort?

No one?