

AMERICAN FORK CITY COUNCIL  
MEETING MINUTES  
FEBRUARY 2, 2016

**ATTACHMENTS (3)**

Members Present:	James H. Hadfield Brad Frost Carlton Bowen	Mayor Councilman Councilman
Members Absent:	Kevin Barnes Rob Shelton Jeff Shorter	Councilman Councilman Councilman
Staff Present:	Craig Whitehead Nestor Gallo Richard Colborn Laurel Allman George Schade Cherylyn Egner Derric Rykert Audra Sorensen Wendelin Knobloch Jay Brems	City Administrator City Engineer City Recorder City Treasurer IT Director Legal Counsel Parks and Recreation Director Public Relations/Economic Development Associate Planner Water Superintendent
Also present:	Mark Hales Ron Christensen Bob Bonar Lee Barnes Plus 9	Tibble Fork Cabin Owners Association Consultant Snowbird Lehi City Water

**SPECIAL WORK SESSION**

The American Fork City Council met in a special work session on Tuesday, February 2, 2016, in the American Fork City Hall, 31 North Church Street, commencing at 5:12 p.m.

*The purpose of City Work Sessions is to prepare the City Council for upcoming agenda items on future City Council Meetings. The Work Session is not an action item meeting. No one attending the meeting should rely on any discussion or any perceived consensus as action or authorization. These come only from the City Council Meeting.*

Bob Bonar arrived late as he had set up over in the City Offices. He apologized.

Mayor Hadfield stated that this meeting was being streamed live and could be accessed from the City's Webpage and also on You Tube. This was a regular practice. This meeting was scheduled at the request of Mr. Bonar.

Mayor Hadfield explained that several months ago there was an application made by Snowbird to expand into the Mineral Basin/Mary Ellen Gulch area. American Fork City was aware of that and asked Utah County to be a little more involved. The County chose not to so American Fork City took the forefront and passed a Resolution asking the County and the Agencies of the

County to proceed with caution as the City was concerned about water quality and water quantity in the headwaters of the American Fork River that came out of those drainages.

Mayor Hadfield continued that in his experience as a man he worked in this area a number of times with the National Guard up Baker and Snake Creek. Also the National Guard built the Tibble Fork Dam as a summer camp project. He had watched with interest what Snowbird has done over the years. They have been good stalwarts of the land. The Pittsburgh Mine was a great polluter of water in that drainage of the American Fork River. Snowbird took the forefront and encapsulated the tailings and closed the mine and that was no longer a problem. However, it has been 50 years since Tibble Fork Dam was built and now they find there were a number of heavy metals to where it could not be excavated. They had to add on to the dam and build it up.

Mayor Hadfield introduced some persons that were in attendance that were affected by the waters that came out of the American Fork Drainage. American Fork was the largest stockholder in the American Fork Irrigation Company.

Bert Wilson, Lehi Mayor – Lehi City largest stockholder in the Lehi Irrigation Company  
Mark Thompson, Highland Mayor – Highland City got their Irrigation Water from the American Fork Drainage

Ernest John, American Fork Irrigation Watermaster and President of the American Fork Irrigation Company Board. Mr. John was a full-time employee for the Mayors of North Utah County to manage the water that came out of American Fork Canyon.

John Schiess, a member of the American Fork Irrigation Board and a water engineer with Horrocks Engineers.

Richard Mecham, a member of the American Fork Irrigation Board, a member of the American Fork Metropolitan Water Board, and a Board Member of the North Utah County Water Conservancy District

Mayor Hadfield noted that there were others and invited them to introduce themselves as they came forward

1. DISCUSSION WITH BOB BONAR, PRESIDENT AND CEO OF SNOWBIRD SKI & SUMMER RESORT, REGARDING PLANS FOR EXPANSION INTO MARY ELLEN GULCH IN AMERICAN FORK CANYON. (Requested by Mayor Hadfield)

Mayor Hadfield stated that he was very pleased to have Mr. Bob Bonar here tonight. It was American Fork City that asked the County to slow this process down that we might ensure that our water quality is safe for years to come and establish some kind of a system of benchmarks or some expectations so it would be known that as a project in American Fork Canyon went forward certain steps would be taken to ensure best management practices so that 20 years from now the Mayor would not be hanged as they were the Mayor of Flint, Michigan, because of water contamination.

Bob Bonar began by describing the scale and scope of what Snowbird was proposing. Over the course of the last year there had been a lot of confusion. He saw a post today on someone's website that Snowbird's development included something around Tibble Fork Reservoir. Snowbird was proposing to relocate one of their lifts in upper Mineral Basin

all on their private property. They were also proposing to add two lifts on their private property in Mary Ellen Gulch with a ZipRider along with ancillary ski lift facilities that included avalanche control devices and warming huts for public safety purposes and the ski patrol.

Mr. Bonar introduced the Snowbird Team.

Marty Banks, Attorney, who has represented Snowbird for over 20 years  
Colby Rollins, on the Board of Snowbird Resort  
Neal Artz, Cirrus Ecological Solutions, long-time associate of Snowbird

Mr. Bonar has looked at the presentation of Mr. Artz and felt there were a lot of good, solid, facts. The information provided tonight he felt would be very reassuring.

Mr. Artz began by stating that he had a PhD in Renewable Natural Resources from USU's College of Natural Resources. He had been working in the Environmental Consulting field for 25 years. He introduced Eric Duffin, their Watershed Hydrologist from the git-go with Cirrus. Cirrus began in 2000. The majority of their work involved working under the direction of federal land management and regulatory agencies to review compliance and environmental impacts associated with NEPA (National Environmental Policy Act), with the Endangered Species Act, with the Clean Water Act, and with other regulatory mandates. Since being in business, they have completed roughly 100 such major reviews the majority being for the Forest Service and the majority of those directed at ski areas and winter recreational development. Their reputation through the last 16 years has been strong.

Mr. Artz continued that mining related water quality impacts in the Upper American Fork had been recognized for a long time since the mid 1970's. The first initial assessments were completed in the late 1980's and early 1990's. That led to application to the EPA and their decision to list Upper American Fork as a CERCLA Site (Comprehensive Environmental Response, Compensation, and Liability Act of 1980, also known as a Superfund site) in 1992. That designation triggered a number of other studies by the Forest Service, the State Division of Oil and Mining, the EPA, and a preliminary assessment was generated compiling all of those initial results that led to the EPA's decision to issue a NFRAP (No Further Remedial Action Planned).

The Forest Service, collaborating with the EPA and Trout Unlimited, with other State Agencies, stepped in and completed some of the work that Mayor Hadfield alluded to. In 2003 the Dutchman Mine Repository was completed that combined materials from the Dutchman Mine, the Bog Mine, and the Sultana Smelter that sealed that material in place. In 2006 with Snowbird's initiative recognizing that some of the other more notable harmful mining leftovers from private land, they constructed the Pacific Mine Repository that included materials from the Pacific Mine, the Scotsman Mine, and a couple of others and sealed that material in place.

All of that initial research indicated that those sites plus Upper Mary Ellen Gulch, particularly the Yankee Mine, was sort of the "third leg" of the cast of characters there in

terms of adverse water quality effects. In 1997 Snowbird initiated some portal discharge diversion and moved that discharge away from the tailings piles so as not to pick up the lead and other heavy metals. In 2008 Snowbird, Trout Unlimited, and the Forest Service Engineer, who directed the first two repositories, built a project that directed the water into a pipe and took it in a more permanent way away from the mine tailings and into the creek. Those three projects generated notable water quality improvements. **(See ATTACHMENT 1)** Most of the heavy metals as measured in the North Fork of the American Fork below the confluence of Mary Ellen Gulch decreased in ratios for zero to over 80 percent. The key point to note was that even before these mitigation projects were done in the early 1990's to the late 1990's lots of water quality work was done there and standards were met.

Eric Duffin noted that on the graph the number behind the name of the metal represented parts per billion. They were quite a ways under every standard even before the work was started.

Councilman Bowen asked what the standards were for aluminum, barium, and manganese.

Mr. Duffin answered that there were no standards for those metals.

Mr. Artz continued that it was startling that they could have such alarming situations in Upper Mary Ellen Gulch and after mitigation, downstream the water standards were being met. What accounts for that was the, "Solution to pollution was dilution." By the time they reached the North Fork of the American Fork River they were far below standards and as it continued downstream there was even more dilution.

Mr. Artz reported that the 2016 Project Area, Mineral Basin and Mary Ellen Gulch, comprised 2.2 percent of the American Fork Watershed. The estimated 3 cfs flow coming out of the project area constituted about 5 percent of the annualized total flow of the American Fork River as measured at the gage above the power station. That same 3 cfs accounted for less than ½ percent of the 153,000 acre feet of annual recharge into the north Utah Valley aquifer. It was a big watershed and produced a lot of high-quality water.

It was against this background that they were asked, in accordance with the Utah County Land Use Ordinance, if there was anything that Snowbird proposed that was going to create an adverse environmental impact on water quality. With technical aspects as complicated as this one gets into the public arena it was natural that there were some misconceptions and misinterpretations. The primary ones was a totally natural call for more studies. In this case water quality effects in Upper American Fork were well studied. Since 1987 major assessments had been done by the Forest Service, by the EPA, and by two universities totaling more than fifteen. More than a thousand water samples had been collected.

Mr. Artz concluded that the situation was well understood that the problem sites had been identified and most certainly been remediated. In the case of Mary Ellen Gulch

specifically, the dogma of the EPA and Forest Service had all agreed that remediation there was as it should be and that was to leave the tailing piles as remediated be. Moving them would generate more harm than good. That was what Snowbird's proposal was to do.

Nestor Gallo asked if there were more recent studies as the past four years were dry years.

Mr. Artz responded that there was a ways to move there. They were talking about twenty-fold changes in the flow. In general there has been no exceedance of State Standards. The answer at this time was not more studies and more things to figure out; the answer was more deciding what if anything remained to be done.

Another question was would Snowbird's development affect quantities. Nothing in the proposal involved snowmaking.

Councilman Bowen asked Mr. Artz in his professional opinion if the plans that Snowbird was proposing would have any negative impact on water quality.

Mr. Artz responded that he would not be doing this work if could not provide his scientific input. Nothing that Snowbird was proposing to do involved culinary water systems, sewer systems, snowmaking, or anything that would have a negative impact on the watershed. He addressed culinary water quality by stating that although there was state assigned beneficial use for culinary water for drinking water, there were public water supply sources in springs and wells up in the canyon for American Fork City toward the mouth of the Canyon and groundwater recharge effect for the wells in the valley. Neither the spring sources used by American Fork City, their recharge areas had been mapped, nor were they recharged by the river itself. They provided 8 percent of American Fork's water. The remaining 92 percent came for the City's deep wells.

Jay Brems did not agree. It was more like 60 percent. More than half of the water supply came from those springs.

Ernie John asked Mr. Artz where his information came from.

Mr. Artz answered that it was off the City's plan that was on the website. He added that the good thing was that those wells were not in a position to be effected by water quality in the river. Unless the wellheads were flooded there should not be any effect on them. The river contributed to ground water recharge once it was out of the canyon. The USGS noted that the water coming out of the Canyon was among the youngest, cleanest, highest quality in the Region at this point. Tibble Fork Reservoir has settled out materials. When the Forest Service did their mitigation up there, they did quick assessments of total minerals in the bottom of the lake and did not find high concentrations.

Ernie John asked when that was done.

Mr. Artz answered that it was done in the early 1990's. Overall, his take on the groundwater issue was that it was simply unrealistic to think that enough metals could come out of Upper Mary Ellen Gulch to start exceeding standards in Lower Mary Ellen Gulch Creek much less the several-fold increase that it would take to simply undo the efforts of past remediation projects and get back before they were undertaken. The proof was in the pudding. Looking back when the remediation projects were done and those studies done in the late 1980's and early 1990's, if those metals were going to manifest in the watershed and aquifers in the valley they would have done that. Scientists can look back and see that the data was already in hand.

The primary recharge zone was as it came out of the mouth of the Canyon. The primary watershed was in the delta and sediments around the Canyon mouth. **(See ATTACHMENT 2)** It appeared that fewer than a half dozen primary Highland, American Fork City, and Pleasant Grove wells were in that unconsolidated aquifer. The rest of the wells were further out. The river water stayed above those fine material layers and stayed at a shallower level than the wells. The wells went down through that layer into the protected aquifer as recognized by the State.

John Schiess stated that all of the wells were effected by any recharge at the mouth of the canyon. All that water moved through the aquifer.

Mr. Artz responded that looking at the way that USGS (United States Geological Survey) modeled it, soon after the mouth of the canyon started to develop finer materials and sandy clay, the water did not flow through it.

Mr. Schiess commented that everything that recharged at the mouth of the canyon would eventually reach all of the wells.

Mr. Artz stated that the most definitive study they had seen was the USGS study from the early 1990's and conflicts with that.

Mr. Schiess expressed that what Mr. Artz said was true. Anything that flowed down in the secondary recharge area was not going to soak down. Everything that soaked in above was going to go down through those layers and would eventually get to those wells.

Mr. Artz thought that maybe the proof was in the pudding and the water quality monitoring in those wells from the 1940's until today show one single exceedance of a water quality standard and he believed that was for sulfate. It has stayed pretty clean through that period even prior to mediation. From that same study 28 percent was from the surface flow in the canyon and 70 percent from the bedrock aquifer.

Mr. Artz continued that even if the worse of the worse happened and something heinous happened up in Mary Ellen Gulch, for all the reason mentioned earlier there were a number of mitigating factors.

A gentleman in the audience asked if something were to happen would Snowbird who owned the property for 40 plus years have some liability. As an American Fork citizen the risks outweighed the odds. Who was liable?

Mr. Artz answered that the answer could get complicated and not be clear.

Martin Banks stated that if there were some type of catastrophic event the EPA or the State DEQ (Department of Environmental Quality) would likely look to any involved in the chain of ownership of that property. They would probably look first and foremost to the cause of the event and try and figure out where the potential blame was and costs be allocated amongst those with blame. Some owners may have some legal defenses available.

Councilman Frost asked if by virtue of this being under County jurisdiction and approving the application, would there be any liability on the Utah County taxpayers for allowing development to occur.

Mr. Banks would not expect that the County would take on any responsibility.

Mr. Artz felt that type of event was very unreasonable to happen.

Mayor Hadfield commented that Snowbird got a great deal of publicity out of the work that was done in Graveyard Flat and the Pittsburg Mine and others that had been well-documented and they did a great job. Now they had the Yankee Mine and the Globe Mine and they were every bit as bad as what there was when Snowbird entered Mineral Basin. He asked if there were plans of curtailing that water flow into this drainage. Were they willing to close the mines, dam them up so this heavy-metal laden water did not continue to flow into the upper water of Mary Ellen Gulch.

Mr. Bonar responded that at the Yankee Mine through the studies that were done the recommendation was to do four things.

1. Clean up of the Dutchman
2. Clean up of the Pacific Mine Area
3. Go into the Yankee Mine and re channel the water coming out of the portal to go around the tailings. That was done with the supervision of the Forest Service and oversight from Trout Unlimited

Councilman Frost asked if the EPA was involved in that process as well.

Mr. Bonar answered that they had to go through a process to get the EPA's signoff on the project. He thought they had some level of oversight. The main participants in that were the Forest Service, Tiffany Jewelers kicked in about a half million dollars, and Trout Unlimited including Snowbird and they were all given awards by the EPA for the project.

4. Was to simply stay off of the tailings. There was nothing in their proposal where they can't keep people off.

Councilman Bowen commented that this area was very rich in mineral resources. He asked if Snowbird owned those mineral rights.

Mr. Bonar answered that it was a mix. Most of what they owned back there were surface rights.

Mr. Banks explained that a mining claim would typically have a surface right and a mineral right. They did not nor had they ever applied for any mining permits from the Division of Oil, Gas, and Mining or any other federal or state agencies. They had zero plans to ever operate a mine back there.

Councilman Bowen appreciated the answer and explained that he thought that in the mountainous areas there were a lot of historical uses and lots of legitimate uses and productive uses and he personally considered mining to be one of those. They knew that historically as they were talking about tonight that could cause an impact on water quality. He knew that mining didn't currently occur in that area so it was kind of a mute-point as far as ongoing mining but if mining were to ever resume in that area he would support the right of people that owned those rights to do that activity and expected that they would do it in such a way that there would not be an impact on water quality. Also that Snowbird would respect those rights of whoever owned rights.

Mayor Hadfield asked Mr. Bonar if future plans did not call for placement of towers on tailings piles or runs or trails over tailings piles whether winter or summer uses.

Mr. Bonar responded that the mitigation plan required that they stay away from those tailings piles.

Mayor Hadfield asked if Mr. Bonar was satisfied with the sampling that had been done to date on the drainage of Mary Ellen Gulch and was it at such a point that they could establish that as a baseline and take water samples in the future to make sure that water quality remained the same.

Mr. Artz did not believe there had been enough sampling to date to establish a solid baseline and for that reason at the request of the Board of Adjustments a monitoring plan was provided. Also, there were mitigation measures in the application saying that nothing would be done in the course of development that would directly or indirectly disturb the tailings piles and that there would be the means after it was implemented to enforce closing of recreational uses.

Mr. Artz continued that when water quality was assessed in the late 1990's for a Phase 1 Assessment the worse water quality in Upper Mary Ellen Gulch for some metals was a naturally occurring bog above any mining activities. A second type of water over which concerns had been raised was irrigation water and water used for secondary systems. He knew a number in attendance had concerns for agricultural irrigation and landscape irrigation through secondary systems near the mouth of the canyon. The short on that was that current water quality measurements at the mouth of the canyon relative to



agricultural standards, the Class IV Standards, were about 5 percent across the board of average metals concentrations. A 20-fold increase would be needed to start approaching the agricultural landscape standards. That would be highly unlikely.

Kevin Roadside expressed that it was said that to reach beyond the standard would require at 20-fold increase. What would be a significant enough increase to be of concern?

Mr. Artz responded that as was somewhat expressed earlier, why give anything up. Actual readings were a moving target. Concern would be warranted when a trend developed. The monitoring was not just a blip. Another issue that has come up was the potential of construction erosion, sedimentation, and water quality impact. Snowbird would not be constructing on or near tailings piles. Proof again has been Snowbird's work for close to 50 years in Little Cottonwood Canyon, Salt Lake City's municipal watershed, and under the microscope of Salt Lake Public Utilities has been state of the Art. Their construction methods have been the source of the Forest Service first guidebook in how you develop ski areas without impacting water quality.

Mr. Schiess stated that one of the things that had not been seen on the City's side and would probably go a long way to make everyone feel better was a comprehensive inventory of mines and related materials compared with detailed construction plans. No one has seen that.

Mr. Artz said that the County Board Adjustments has been provided a lot of information that maps where the tailings piles are and so forth.

Mr. Schiess responded that anything of that detail they had not seen.

Ernie John asked who that information was provided to.

Mr. Artz answered that it was to the Board of Adjustments and to the County Planner.

Councilman Frost asked Martin Banks if that information had been released to the City.

Mr. Banks answered that nothing was protected and they did not have any objection to Utah County Associate Planning Director Bryce Armstrong making it available.

Mr. Bonar explained that they had some lift lines proposed but not specific tower locations.

Ernie John asked if they had a comprehensive mine location inventory not just tailings piles.

Mr. Banks added that the information asked of them by the County was not so much where the mine portals were, the thought being that they did not have much of a potential impact in terms of water runoff. They knew where the big mine piles were and those were identified on a map provided in connection with the applications. With the County

it was kind of a two-stage approval process. First there was the Conditional Use Permit approval and then subsequent to that was final drawings in order to get a Building Permit.

Ernie John asked specifically for not just the piles but also for the portal locations. Conceivably they could have a portal that today was not discharging water.

Nestor Gallo asked if the County did not have a site plan requirement with building locations, soils reports, etc.

Mr. Banks explained that the County had a rigorous requirement for much of the detail Mr. Gallo just identified. However, some of that detail was not required at the Conditional Use Permit stage. For example, where will that tower be, was reserved until the final engineering was done. The permit itself was conditioned upon the commitments made in the application were completed.

Mr. Schiess commented that it was often not known what was underground and then they found a mine shaft and it was opened up and the groundwater was disturbed and all of a sudden there was a situation like the recent Gold King Mine in Colorado and all of a sudden they were releasing a huge amount of contaminants into the environment. Were there contingency plans for something like that? How were they going to respond when they found something in the field that was unexpected? They would like to know about those plans.

Mr. Artz could not speak directly to a rapid response plan but they did know where the footprints would be and they did know where the mine leftovers were. Before Snowbird acquired these properties over the years assessments were done then and they had dug deep to find those old drawings and matched what they found in the field. All of that was known. There would be a lot to know if they knew where everything was. There was not nearly so much to know that one was not stepping on something.

Mr. Schiess noted that not locating everything, he did not know that was possible, but doing the best one can and having a contingency plan and rapid response plan to address those things unseen was possible.

A gentleman asked if Snowbird has had that conversation; if the Gold King Mine scenario were to happen. What was the harm in Snowbird doing additional studies to find out how much water was in the Yankee Mine.

Mr. Artz did not think there was any harm and that it was probably a pretty good idea. He brought them back to the point that Snowbird was not going to impact that area.

Ernie John noted that all of the studies done were done with no development plans. Those studies were done based on leaving the tailings alone. He wanted to see a study where the things that Snowbird were doing would not affect water quality.

Mr. Bonar asked that the City to look through their records and since Snowbird has been back there, what had they done to water quality. Since the two lifts were built back there,

see if subsequent tests showed any negative impact of water quality. He would love if a thank you was said. They had already done the most post-mining cleanup of the water in American Fork Canyon without credit. A lot of the answer to that was that ski resorts throughout the west were built with these same issues. They were skiing in areas that at one time were heavily mined and doing it successfully. Regarding a remediation plan, he thought that everyone since the Gold King Mine were working as they would to come up with a sufficient remediation plan.

Councilman Frost asked to the point of where a shaft might be, was there a way to understand where mine shafts were through current technology.

Mr. Artz hated to be old school about this but those guys that went back and drew the mining plates and mapped the geology and working of those mines back in the day, we would be hard pressed to do any better than that. The hardest problem in finding those shafts and those workings was getting those old drawings rectified to where they actually sat on the earth now. Snowbird has engaged a surveyor to align all of that historical information.

Bob Bonar made it known that they had another appointment tonight.

Ernie John asked a question concerning water quantity which was how long avalanche control in Mary Ellen Gulch had been going on.

Mr. Bonar responded that they started doing a study back there for avalanche control at the Silver Bell Mine in the mid 1970's.

Mr. John wanted to know how long they had been conducting avalanche control in Mary Ellen Gulch.

Mr. Bonar answered that they had been doing avalanche control occasionally for their snow cat skiing for the last few years. The Wasatch Powderbird Guides had a permit to do some avalanche control for at least 30 years.

Mr. John thought that was pretty minimal to what they were proposing today.

Mr. Bonar responded that they would have more avalanche control done now.

Ernie John explained that this watershed supplied agricultural and home use for irrigation in the north part of Utah County. The timing of the water runoff was critical. One week one way or another could determine whether they had to pump wells or not. No one could control Mother Nature. In the last few years, 2011 was 400 percent of normal. Since 2011 they have had 4<sup>th</sup> and the 8<sup>th</sup> driest years. He asked if there had been any studies done that would show that as avalanche control was done, how that effected the runoff coming out of the Canyon?

Mr. Artz reported that there was some generalized work done out of Colorado, but the rule of thumb was that consolidating snow in a pile at the bottom of the slope prolonged runoff.

Mr. Schiess asked if there had been any studies on avalanche head or chute and deposition areas and their effect on tailings piles.

Mr. Artz commented that avalanches have been there forever in the natural environment. The bad tailings piles in this situation; Snowbird has had a permit to study snow dynamics back there for a number of years.

That data was something they hadn't seen commented John Schiess.

Mr. Artz explained that with controlled avalanches one is trying to increase the frequency and decrease the magnitude. They need snow on the mountain not at the bottom. **(See ATTACHMENT 3)**

Ernie John explained that this was something different than what Mother Nature did. He wanted to see how it was to be mitigated or how it would not affect us.

Mr. Artz based on his professional experience and scientific expertise they were getting almost into the realm of a chaos theory of speculation.

Ernie John asked if they were changing what Mother Nature had been doing with regard to avalanche control.

Mr. Artz answered they were.

Ernie John asked if he could be told how it would affect the snow melt and the quality of the water. He needed to see some data as to how it would affect the water users. Right now he did not have an answer.

Eric Duffin stated that Mother Nature was one of extremes. Snowbird would be bringing it back to the middle. At the current time they were not going to do snowmaking in Mary Ellen Gulch.

Bob Bonar stated that they would take one more question and then they needed to go Cedar Hills for another similar meeting. If there were questions after this last one they would be happy to have them come to Snowbird and they would answer more questions.

Jay Brems asked if they were going to continue to sample pre-construction, during, and post construction and continue on every year. Could there be a bond put in place?

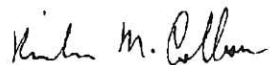
Mr. Bonar noted that the monitoring plan they were working with the County on was an 8 or a 10 year plan. They would be happy to go beyond that. They had done that on the Little Cottonwood Stream at Snowbird's expense with an independent lab for the 45 years that he had been there.

Martin Banks expressed that in regard to a bond whoever was liable would be left holding the bag.

Mayor Hadfield thanked Mr. Bonar and his team from Snowbird for their being here tonight.

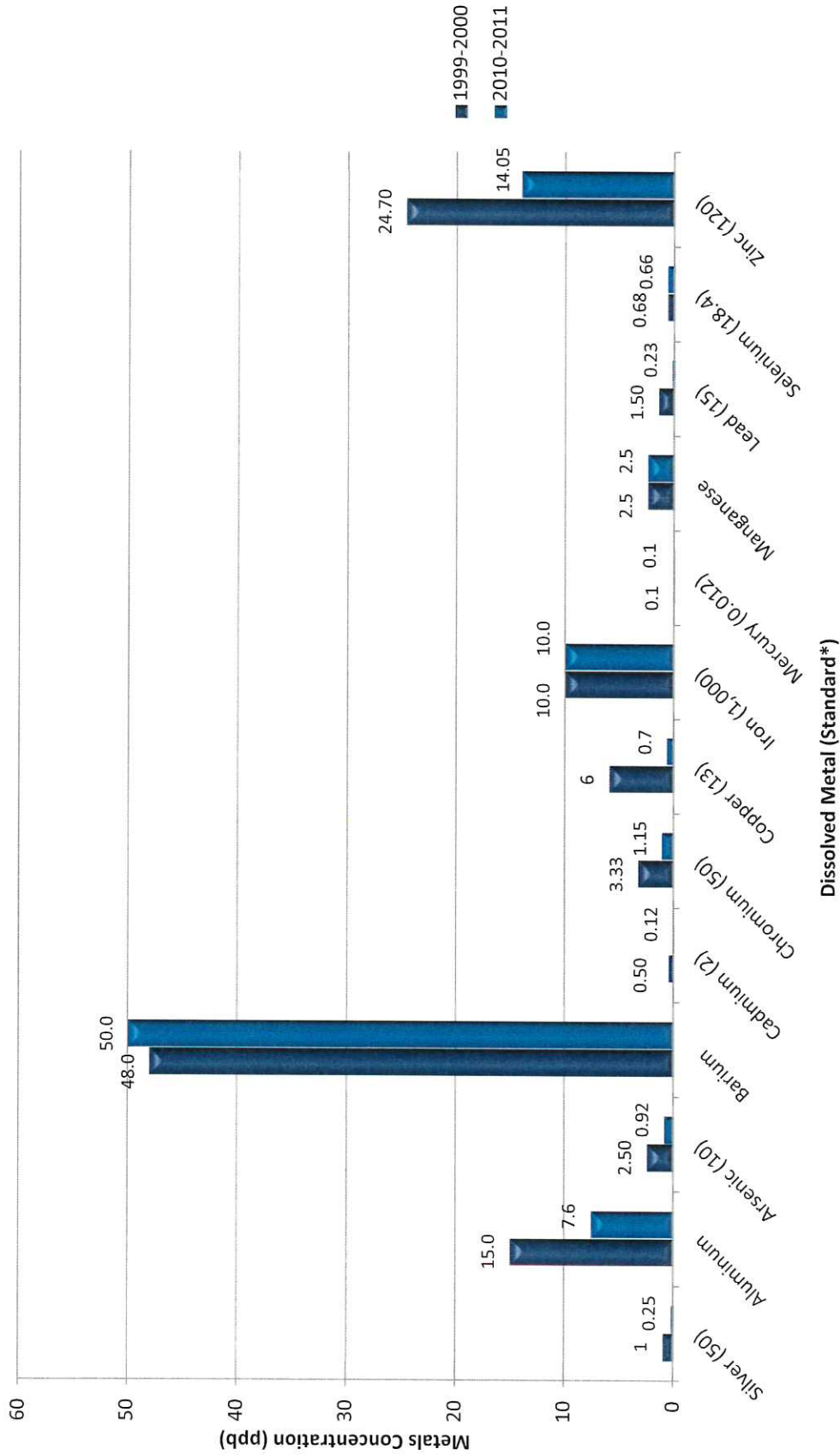
2. ADJOURNMENT

The Special Work Session adjourned at 6:40 p.m.

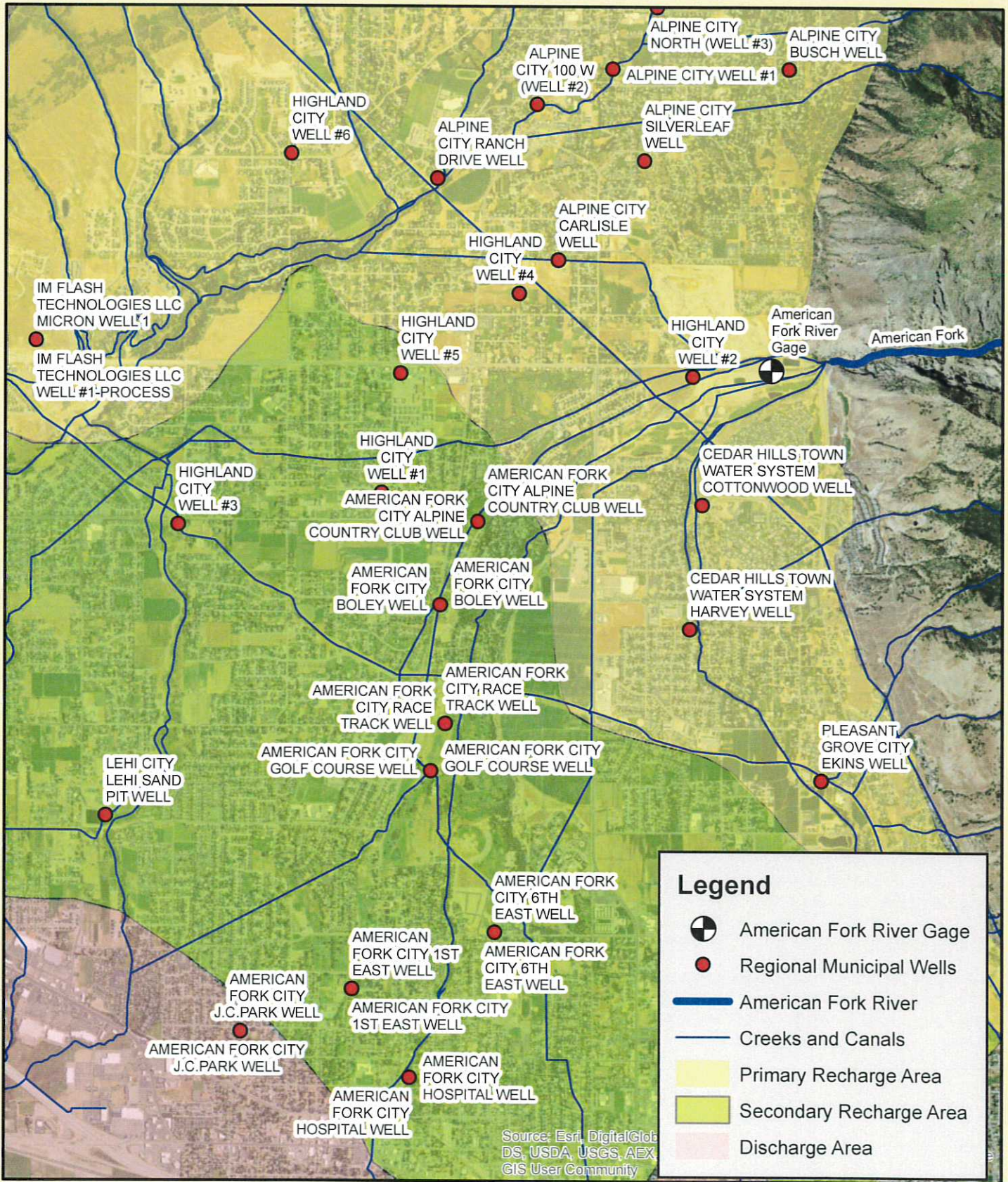
A handwritten signature in cursive script that reads "Richard M. Colborn".

Richard M. Colborn  
City Recorder

## Dissolved Metals A.F. River above Tibble Fk. Reservoir



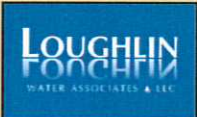
\* Value shown is lowest WQ standard from Class 1C (drinking water), Class 3A (aquatic), or Class 4 (agriculture) beneficial uses.



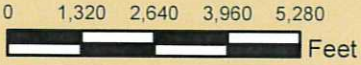
**Legend**

-  American Fork River Gage
-  Regional Municipal Wells
-  American Fork River
-  Creeks and Canals
-  Primary Recharge Area
-  Secondary Recharge Area
-  Discharge Area

Source: Esri, DigitalGlobe, DS, USDA, USGS, AEX, GIS User Community

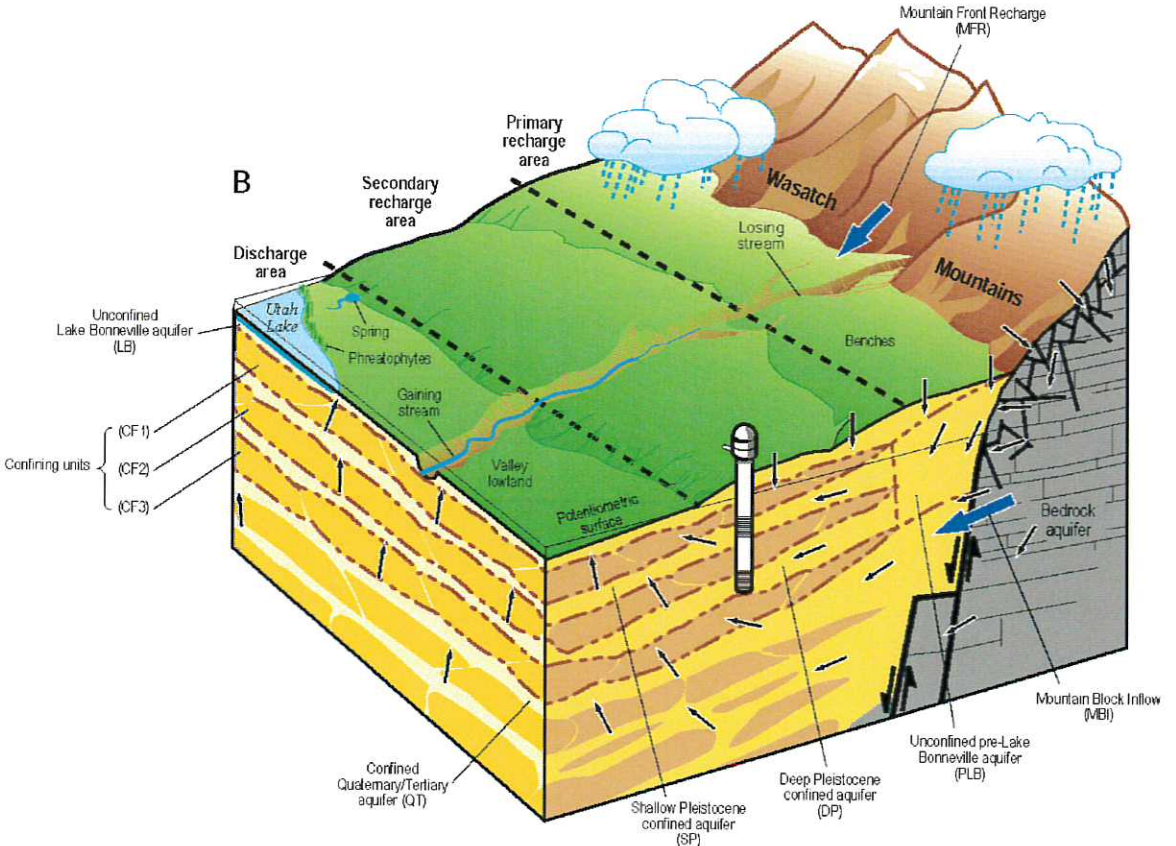
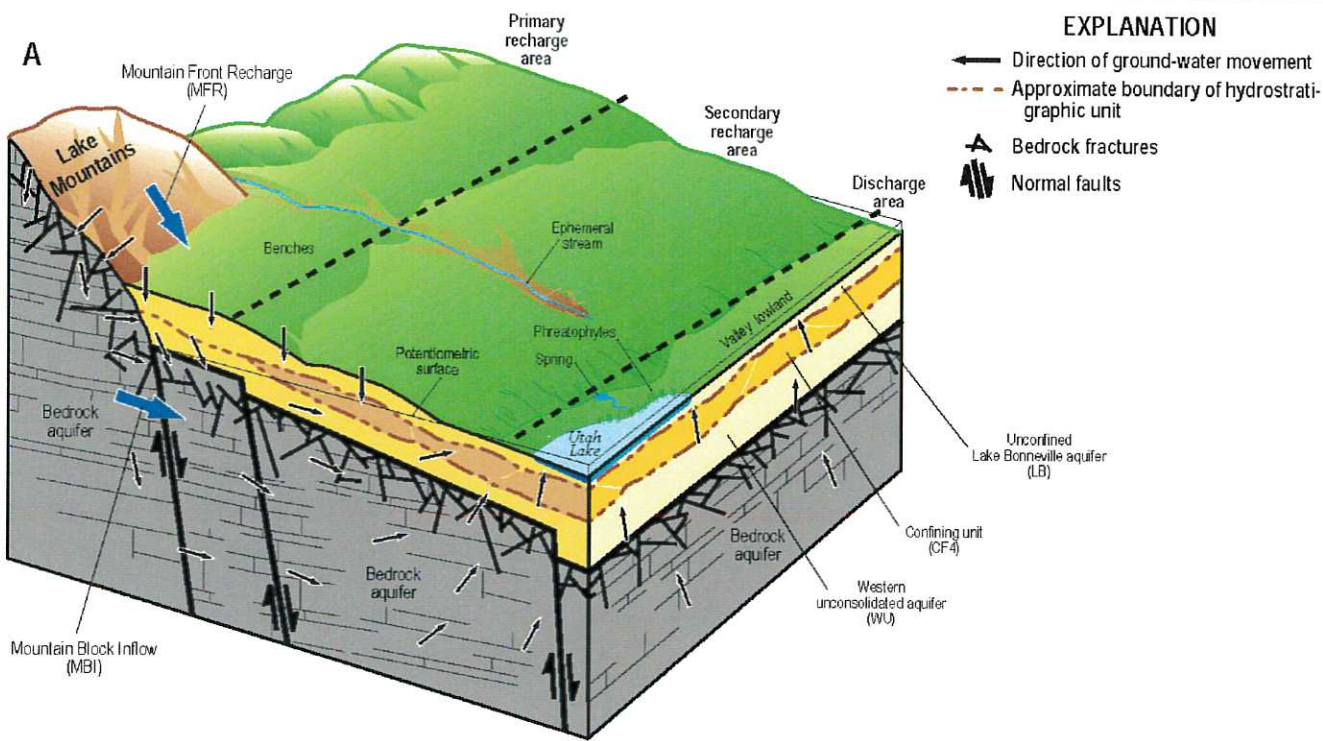


Prepared by Van F. King, P.G.



ATTACHMENT 2 TO THE  
02-02-2016 CC SWS MINUTES -  
PAGE 1 OF 2

**Figure 2**  
**Aquifer Recharge Areas**  
**Near American Fork Canyon**  
**Utah County, Utah**



Prepared by Van F. King, P.G.

Reference: Cederberg, J.R., Gardner P.M., and Thiros S.A., Hydrology of Northern Utah Valley, Utah County, Utah, 1975-2005. Scientific Investigations Report 2008-5197, February 2009, 114 p.

ATTACHMENT 2 TO THE  
02-02-2016 CC SWS MINUTES -  
PAGE 2 OF 2

**Figure 8**  
**Block Diagrams**  
**American Fork Canyon**  
**Utah County, Utah**



# Slide Paths Potentially Affecting Mary Ellen Mines Tailing Piles

