

Minutes February 2, 2000 WCRC Meeting

Meeting held in the Creede Town Hall

Called to order by Vice-Chairman Chuck Barnes at 1:10 PM

Those Attending: Name

Affiliation

E-Mail

John Howard

Glen Miller

Zeke Ward

Rod Clark

Larry Bussey

Chuck Barnes

Tim Ouellette

Steve Russell

John Andrews

Dale Pizel

Les Dobson

Perry Alspaugh

JB Alexander

Doug Lofstedt

Jim Mietz

Bruce Stover

Laura Higgins

Marvin Reynolds

Mike Wireman

David Gregory

Kathleen Reilly

Bence Close

Resident Resident

Resident NRCS Tro

ut

Unlimited Resident

NRCS NRCS NRC

S Rio Grande

Water

Conservation Fores

t Service Div. Water

Resources Residen

t EPA SLV RC &

D CDMG USFWS C

SU Co-op

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Corp CDPHE MFG

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Chairmans Report (Chuck Barnes)

Chuck begins the meeting stating that Zeke Ward is in Alamosa because his son is having surgery but may show up toward the end of the meeting. He asks if anyone has any comments about anything to do with the WCRC. Steve Russell has passed out a sheet showing the snow-pack in the mountains. He says that the far right column of the handout shows the percent of average and concludes that things look pretty gloomy. For example... Platoro is 15% of average as of Jan. 31 & the entire Rio Grande Basin is 26% of average. The committee concludes that things do indeed look gloomy. Coordinator's Report (Glen Miller) Glen speaks of the Historical Context Report by Eric Twitty. Phil Bethke did an evaluation and concluded that it was basically well written, interesting, and informative but that the geologic information was very old and outdated and needed to show the post 1956 state of the science. Mike Wireman spoke that if Phil would be willing to do it, a concise (5 page) summary on the geology of East & West Willow Creeks would provide a valuable context for our water quality data, tracing, etc. The committee agrees and Glen said he would ask Phil if he might be willing to produce this. JB said that Phil

could probably produce the report in 5 minutes because he is such an expert that he could recall all the information "off the top of his head" and just start writing. Phil also thought that the more recent (post 1950) history should be included in this report. For example, B.T. Poxon and Herman Emperius are not mentioned. Glen spoke of the fact that according to the standards of the State Historical Society something has to be more than 50 years old to be considered historical and that is why Eric did not mention it in his report. However; Phil, Glen, and everyone on the committee believes that collecting this post 1950's information is very important especially since most of the people that mined at that time are still alive and can tell us things that historians 50 years from now would have to guess at. Everyone spoke informally of the good fortune that has presented itself to the committee by having Phil come on board. Les Dobson pointed out that the Forest Service had a report completed (presently in draft photocopied format) called "Site Histories of Selected Mines Near Creede." Copies are available to anyone who wants one. Glen has read part of it and considers it very good with a load of detailed facts and raw data and yet not too complex for the lay reader. It is not know if Eric used this report in making his own, but Glen will talk to him about it next week. Tracer study: Glen spoke that so far we have found no evidence of the dye that was put into the plug at the 9360 adit on Windy Gulch. We are continuing to collect more samples and have Gareth Davies analyze them. Several people thought that we should collect a sample from the seep coming out of the ground by the City Hall. Glen said that he hadn't thought of it but will collect a sample from that point. (Incidentally: as I write these minutes on Feb. 8, JB and I tried to collect a sample on the 5th from this seep but couldn't because it is all frozen up). Perry Alspaugh asked, "how long are we going to keep taking these samples, forever and ever?" Glen said that the original idea was to do it until we are convinced there is either something or nothing there. Mike and others advised that we continue on through high flow probably till July. JB asked how long it normally takes for a dye to be found. Bruce Stover and Mike Wireman agreed that it can be found from as little as a few hours until as long as 3 months and that in the six or seven hard rock mine sites that they've done this, they have always recovered the dye. JB concluded that the dye might have already gone by and we didn't catch it, but that we probably ought to continue to try for a few more months before we throw our hats in the air and call it quits. Someone asked if we checked Miners Creek for the dye. Glen said no, because it was decided at an earlier meeting not to do that. Zeke just walked in and said that, that was up to the Miners Creek Reclamation Committee. John Howard said "That is a different group. Same people only a different group." Everyone laughed and no more was said on the subject of tracing. Glen pointed out for the sake of Doug Lofstedt from the EPA and Kathleen Reilly of CDPHE, both involved in our sec. 319 grant funding, that the committee is very appreciative of the money made available from that source for historical characterization even though that type of thing is not generally what 319 money is used for. We are appreciative because all the work that we are now getting ready to do on the Commodore would have been brought to a screeching halt by the State Historical Society without the money to pay Eric Twitty (authorized historian) to characterize this site and say yes or no to it. We don't intend to bother Kathleen and Doug about year 2000 historical characterization because we are working to get the State Historical Society on line to provide this funding from now on. "In kind" donations: Glen spoke of the fact that we are looking good in this area. We should easily have enough to meet our 319 grant obligations and more left over for other grant funding. Glen pointed out that MFG came in with over \$33,000 of match and that the County, City, and CDOW haven't even been added up yet but will show very large numbers. Kathleen Reilly said that they are required according to their rules to post the "in kind" match of projects such as ours on the web for anyone to see. She appreciates that because of the way we are doing it on our own web-site, it makes her job easier in this regard. September Low-flow sampling event (JB Alexander) JB uses an overhead projector to show his graphs. We have the Riverwatch data in and JB has been crunching numbers for about a week. He invites everyone to draw their own conclusions from the data he will show. I will loosely quote his report. There is no significant Zinc loading on East Willow until you get to the Solomon where the graph shows a big jump and then it rises gradually until there is just over 200 parts per billion(ppb) where it dumps into West Willow. The tolerance level for aquatic life according to the Colorado Table Value Standards (TVS) for zinc in a hardness of 16 ppb is 22 ppb, but this is for the most sensitive and intolerant of species. The probable maximum for trout in East Willow is around 200 ppb. This means that from the Solomon

on down, we are at the marginal limit for trout to be able to survive. The graph for cadmium is similar to zinc except that there is a small spike on the graph near the Outlet Mine. The good news is that although the TVS for Cadmium at 16 ppb hardness is 0.5, the probable maximum for trout in East Willow is 4ppb and the worst it gets is around 1.7 ppb. The graph for lead shows nothing significant until the Solomon where there is a big spike up to 10 ppb which is the marginal probable maximum for trout survivability and it continues this way to the East - West Willow Confluence. For Zinc on West Willow, there is no loading of significance until the Amethyst mine where the graph jumps toward the 200 ppb and stays in this area until Nelson Tunnel where there is a huge spike and the numbers continue to climb until the East Willow Confluence where 7,500 ppb of dissolved Zinc is shown. Remember 200 is probable max for Zinc. Lead and Cadmium tell a similar story of reaching the ragged edge of trout survivability at the Amethyst and continues on to the Nelson where the numbers go out of site. The graphs for Main-stem Willow show that from Where East and West Willow run together, there is not a whole lot of change all the way to the Rio Grande in either Lead, Zinc, or Cadmium. To summarize, The water is in good shape on East Willow from the top clear down to the Solomon (about 2 miles) where it picks up Lead and Zinc concentrations that are marginal for trout survival for the rest of the 1.2 miles of East Willow before it joins up with West Willow. The water in West Willow is in good shape from the top (Allen's Crossing) to the Amethyst (about 2 miles) where it becomes marginal for trout survivability to the Nelson (about 1.1 miles) where it picks up a horrible amount of contamination and stays that way to its confluence with East Willow (about .6 of a mile). Main-stem Willow, due to the fact that we are now running a flow that consists of 2/3 East Willow, which is more or less OK, and 1/3 West Willow, which is absolutely atrocious; this mixes together to give Zinc levels of around 2900 ppb (probable max for trout 200), Cadmium levels of around 14 ppb (probable max for trout 4ppb), and lead levels of about 30 ppb (probable max for trout 10 ppb). Its obvious that if we don't fix this little piece of West Willow that we can forget about all the rest of it.

JB concludes that with his quick overview of the data, this is what it has shown him so far. Chuck Barnes asked if there is any flow out of the Commodore. JB said that there isn't much and it is contributing next to nothing toward West Willow contamination levels. JB produced a graph that shows that 66% of the contamination of West Willow comes from the Nelson adit, 26% is unaccounted for (probably groundwater where we will need to crawl around and do more research) and most of the last 8% comes from a tailings seep below the Commodore waste rock pile and also the Amethyst Mine area. Glen pointed out that JB has worked many hours on this data analysis and has gone above and beyond any call of duty and the committee is very appreciative of this. (There is a spontaneous round of applause for JB and the work that he has done) Biological Report by Laura Higgins Laura thanked JB for his effort and pointed out that it is good news that this data gathering event in September didn't show a significant metals contribution into main-stem Willow from the flood-plane below town. The rest of what she had to say did not come through on the tape recorder. Sorry Laura. Zeke asked, if based on the information we have collected at this sampling event, do we have, or have we collected enough information of what could be considered a good or adequate baseline? JB said yes, but it was only one event, we will learn a lot more when we do the high flow. It either changes or it doesn't change and either way it is valid information. JB pointed out that we could not get flow data on the Rio Grande because we couldn't wade the river. They were draining the reservoir and the water was unusually high for the time of year. This survey that we did, did not characterize the Rio Grande but did a good job on Willow Creek.

Zeke expressed again the question as to whether we have enough information to give us a good baseline of data from which to proceed with the making of cost effective decisions? Mike Wireman answered no, but that we have one heck of a good start and that according to Laura Higgins' graph, we are down into the third part where the data we collect is narrowing the field of data left to be collected and soon we will be in the 4th part where we will be able to make the big decisions that are required to ultimately meet the committee's objectives. Mike says and Laura agrees, that most people would advise that we have two more field seasons of work left before we would be confident to make the final hard core decisions. We are clearly still in the characterization stage. Zeke asked what more needs done on the Rio Grande itself and is there the possibility that at some point down the road; would we feel that we should have concentrated more on the Rio Grande? JB points out that as far as characterizing the river (Rio Grande), he

knows of no data that would indicate that there is a problem in the river in the first place. Mike asks a question to the State of Colorado, "Is there going to come a time when a certain number relating to water quality must be met in the Rio Grande from a TMDL perspective or whatever?" Kathleen says she cannot answer that at present. JB said that from the two samples we took on the Rio Grande, that they were completely different and no conclusions could be drawn from that data. Kathleen asks JB if he or the committee has made any connection between what we are doing on Willow Creek and how this would likely affect the Rio Grande? JB and Mike point out that any improvement on Willow Creek can only help the Rio Grande, however, the Rio Grande typically has 1000 CFS of flow and Willow has 25 CFS, so there can't be too much of a metals contribution because of the comparison in flow. In moving on with the agenda, Chuck thanks Laura for her presentation and says that he is looking forward to her reporting on our biological sampling data as soon as possible. Stream Tracing Overview (Mike Wireman) Mike spoke of the importance of having a complete low and high flow sampling of the same 64 sites because experience has shown that in 9 out of 10 mine sites there is a significant difference. The good news from the September sampling event is that we see very little leaching from the Emperius tailings pile. Based just upon this data set, we wouldn't do anything down there, but when that alluvium fills up with water in May, we may see a very different story. After both the high and low flow events are completed, then we will be in a position to narrow our search focus. What is apparent from our present data is that the majority of the loading is from the underground mine workings with the minor exception of the West Willow Seep and the Midwest rock pile. Realizing this, we can then decide what methods of investigation would be best to shift to. Mike quotes JB as saying that 26% of the metals loading is un-accounted for. We will probably tighten that up to 20% or so. If we have concluded that the Nelson is the big deal here, what do we now do about the Nelson? The tools that would need to be brought there is a reconnaissance of the adit, where we would map all locations of where water comes in, where it goes, and do selective chemistry, and determine flow volumes. With this we can determine that X percent of metals loading comes from this source, X percent from that source, etc. With stream and groundwater tracing, physical reconnaissance and mapping, and chemically sampling the water; we would be able to determine that; this is where the water comes in, this is where the chemistry gets changed, and this is where it comes out. Zeke spoke of reports from USGS that show that maybe 70 and as high as 90% of our Zinc loading might come from sediments that are already in the creek. Mike says that our report shows that only the 26% of the un-accounted for loading could possibly come from sediments but that we will want to determine for sure as we continue our characterization program. JB spoke that we ought to check for Barium on the next round because we know that one mountain has a lot and the other doesn't and that might tell us where the water is coming from and that we ought also to check for Silver at some place like out of the Nelson. Mike said it would be easy to change our Sampling Analysis Plan (SAP) to accommodate this. He must know how the coordinator links anything to do with the SAP as a nightmare to be avoided, but it is apparently a simple procedure. Commodore Report (Bruce Stover) Bruce spoke of plans to start specific engineering work this summer and start construction in the Fall. John advised that if possible, we should try and use local contractors as much as possible. Bruce said that it often works well if several small contractors could band together on a joint venture and pool their equipment and resources and be able to bond the job. He has seen ventures like this out bid the larger contractors and turn a good profit. TAC Committee overview by Chairman John Howard John spoke of the meeting this morning and told that the next meeting will be at the first of March at 7:00 AM where we will meet for breakfast. He spoke of the importance of dealing with the Nelson Tunnel. Mike gave a quick summary of the procedure that this would involve being, to physically go in and map the water flow input points, flow volumes, associated geologic and mine workings structures, do field parameter chemistry and take lab samples and compute as JB has done the total loadings, etc. With this information, we could then begin to narrow the search and discover the real problem. We may isolate the loadings problems to a small area and possibly divert water away from these areas and end up only having to deal with a highly concentrated but much lower flow volume which is a situation that is cost effective to treat. An example from Bruce and Mike's experience at the Mary Murphy Mine is that a 15 gallon per minute flow from a certain chute is responsible for 75% of the total Zinc loading at the mouth of the adit which has a total of 220 gallons per minute of flow. Bruce spoke that some people might be scared off at the idea that

we can't get back there to do this exploratory work because of flooded adits, cave ins, etc. But we have miners here that know how to do that and if we get a program in place, they may come forward and provide their help and expertise with this project and the over all savings to companies and the committee could be huge. John came up with the great idea of getting Bruce and Mike to come up with a list of questions they would like answered about the Nelson Tunnel and that we get the miners together that worked in this area and buy them a dinner and learn all we can about what's going on under the mountain. Kathleen asked if we can get the TAC together and make a detailed plan so that a grant can be in by its late March deadline and do we have permission to do this from the owner? Glen spoke that at the next TAC meeting we will need to formulate this plan. Zeke said we have general permission to do construction work at the Commodore Site (Nelson Adit) but that he will get specific permission for work to be done to re-open this adit. Perry pointed out that we will have to watch how we alter the flow from the Nelson since the city has a right to a part of this water. Chuck invited Zeke to say a few words as a Chairman's report since he wasn't here at the early part of the meeting to do that. Zeke spoke that the Prospective Purchaser Agreement is still being worked on but that there is no significant news at present.

Zeke's sources tell him that they are confident that stakeholder groups and municipalities are finally going to get the Good Samaritan Amendment to the Clean Water Act. Mike says he will buy him a beer if this happens. Meeting adjourned shortly after 3:00 PM

Minutes submitted by: Approved and accepted: _____

Glen Miller
Project Watershed Coordinator

Zeke Ward

Chairman Next meeting is scheduled for

Wednesday March 1st at 1:00 PM at the Creede Town Hall.