OGMCOAL - Fwd: Public Comment for CFC - SUFCO

From: April Abate
To: Chris Hansen; mdavis@archcoal.com
Date: 12/14/2010 3:38 PM
Subject: Fwd: Public Comment for CFC - SUFCO
CC: OGMCOAL@utah.gov
Attachments: DOCUMENT COPY; April Abate.vcf

Mike and Chris,

Attached please find a copy of a comment letter that discusses the Acord Lakes and Skumpah Reservoir areas near SUFCO. I am planning on drafting a response letter to this person.

If you have any comments on this letter, please let me know within the next 10 days.

Thanks very much,

April

April A. Abate
Environmental Scientist II
Division of Oil, Gas and Mining
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a

C/041/002 Incoming
cc: Dana, April
X

SUBJECT: APPLICATION BY THE CANYON FUEL CO. FOR A COAL MINING PERMIT REVISION

PUBLISHED IN THE PUBLIC NOTICE (RICHFIELD REAPER)

RECEIVED
DEC 09 2010
DIV. OF OIL, GAS & MINING

Nov. 30, 2010

I am writing this letter to express my concerns about the loss of water in the area of Acord Lakes, Duncan Mt. an area called the Pines and in general, the area south and east of the white mountain located on the Fish Lake Ntl. Forest and areas also on the Manti-La Sal Ntl. Forest.

I have owned property at Acord Lakes since 1973 and during that time I have observed significant water losses in the area, such as Acord Lakes going dry in 2010 and 2009. I have seen the smaller Lake on the south side of the road frequently go dry but I have never seen, regardless of drought conditions the larger lake on the north side of the road go dry.

These Lakes, according to forest service map, that I have are supplied with water from two intermittent creeks, one flowing from the north out of Lisonby springs, another directly out of the canyon to the west of the larger lake. (intermittent means they flow most below the ground). These water supplies have been greatly reduced for some reason and regardless of normal snow fall these lakes are not filling as they used to.

Acord Lakes are located in the area that is considered a closed basin with the mountain range directly west seperating it from the Salina Creek Drainage and an underground upheaval that traps the water, so it can't flow into the Colorado River basin or into the mine tunnels of the Sufco mine. Because our property is located in this closed basin area, we were able to get a permit to drill a water well on our property. The intermittent creek to the west that flows into Acord Lake goes through our property, that and the fact That the map I have shows where core drilling in the 70's took place to locate coal veins, shows the elevation and the depth that water was located. This indicated there should be water on our property. We drilled for water in different locations, with one well going to the depth of 1127 ft. and were unable to locate any water. We have renewed our well permit and are considering drilling again. If there is water trapped in this basin I would like to locate it!

This year 2010 we completed and put into operation two Wild Life Water Guzzlers on our property to water Wild Life, since Acord Lakes are no longer a reliable water source and the closest water being Skutumpah reservoir. The method used to collect this water was to funnel water off a 1000 sq. ft. metal roof over a garage into a 1700 hundred gallon underground water tank with a water line running out to a water trough with a float on it to shut water off when trough is full. A similar Guzzler was installed to collect water off the metal roof over horse shed. These were installed by the Robinson crew that do a lot of work in the area for very reasonable prices. I tell you about these projects to show we are doing what we can to alleviate the problem.

The next area of concern I would like to discuss is the loss of water in Skutumpah Reservoir, located just north and adjacent to the Acord lakes area.
On June 5th 2010 we had a meeting at our cabin at Acord Lakes to discuss this and other water loss concerns in the area. The follow- is a list of people who attended that meeting which was on a saturday and they took their day off to be there, which I greatly appreceiated and in a letter to the Editor in the RICHFIELD REAPER I expressed my appreceiation. I overlooked one person from the Fish Lake Ntl. Forest in that letter and I apologize for that, her name is Marianne Orton N.E.P.A. CORODINATOR

Jason Kling	District Ranger Fish Lake Ntl. Forest
Mike Hardley	Division Wildlife Resources Cedar City
Dale Harber	Geologist Manti Ntl. Forest
Lynn Christensen	Representing Salina Creek Water users Assoc.
Marianne orton	Fish Lake Ntl. Forest N.E.P.A. CORODINATOR
John Byers	Engineer SUFCO MINE

I also wish to thank the people I have talked to over the past year who have been so helpful.

Steve Rigby-BLM Price Office	Project Manager Greens Hollow Coal Lease.
April Abate-Division Oil, Gas & Mining	
Stan Adams-	Well Permit Information
Marc Stillson-	Division Of Water Rights Price Office
Dion Gardner	Division of Water Rights Richfield Office
Allen Rowley	Supt. Fishlake Ntl. Forest
Terry Krasko	Fishlake Ntl. Forest
Mike Ottenbacker	D.W.R. Fisheries Cedar City
Dave Marble	State Engineers Office Dam Inspector

The concern I have with that reservoir, is the sink hole that has developed directly in front of the dam (see attached Areil Print of Reservoir Provided by AGEC). When the water overflows the natural Lake area its backed up and stored by the dam, all of this water is going into the sink hole and this water does not reappear below the dam and this has been confirmed by Dave Marble the The State Dam Inspector and this concern has prompted him to declare the dam unsafe and has condemned the dam and has instructed the Salina Creek Water Users to leave head gate open and to no longer store water in reservoir.The Salina Creek Water Users Association own the dam and also have a water right that allows them to 500 ac. of water per year. Another area of concern about the water coming into this reservoir is at the headwaters of Skutumpah Creek (which is located in the Salina Creek Water Drainage) the water can and is diverted by the means of a simple rock and tarp dam to flow into the south fork of Quitchumpah Creek.

This is done according to my understanding under a long standing agreement of the water users in the area. If anyone has the legal right to do this is under investigation (at My request) by Marc Stillson with The Division Of Water Rights Price Office, who has juristiction over this area. Another interesting fact about this is there is another creek that flows from the north west into Skutumpah Creek and does'nt show on a lot of the maps of that area. We call this NO NAME CREEK. Also None of the maps I have seen show the South Fork of Quitchumpah creek even connecting with Skutumpaw creek. These facts mentioned leave me to wonder how much is even known or understood about water issues in this area?
The water that is being lost due to the sink hole in Skutumpah reservoir is unknown as to where it is going, or to what caused the sink hole. Seismic activity in the area is one source that could have caused the problem. According to the Greens Hollow Coal Lease Environmental Impact Study here after referred to as the E.I.S. Page 118 states that the probable maximum seismic event created by Long Wall method of mining would be 3.4 on the Richter scale. This can and does cause Sink Holes and surface cracks some as deep as 50 ft.Page 116 discusses surface subsidence associated with mining are the formation of sink holes and the formation of troughs.
This becomes more of a concern as the existing leases are modified. Last year there were three lease modifications on the Quitchumpah lease western edge which added 2316 ac. to that lease and came very close to the Acord Lakes property area.
In the Public Notice section of the Richfield Reaper Oct. 27, 2010 it states the Canyon Fuel Company filed a permit revision that is adding 2,312.74 ac. of lease to allow coal mining operations to continue within the lease hold lands of the Canyon Fuel Company. These expansions bring mining activity closer to the Salina Creek Water shed and increase the possibility of TRANS BASIN DIVERSION OF WATER.
When we had the meeting about the water issues Lynn Christensen said the Salina Creek Water users Association were willing to give up ownership of the skutumpah Reservoir Dam and only take the overflow of water, if someone was willing to fix the sink hole, and maintain the dam.
This is a great opportunity that should be taken advantage of! They can't continue to shoulder this financial burden alone and in my opinion why should they, since they are not the only ones that benefit from this reservoir.
Wildlife would benefit, Fish would benefit, Fisherman and Hunters would benefit (this is a heavily used and fished reservoir) and is the only one on the FISHLAKE NTL. FOREST NORTH OF I-70, Ranchers Farmers, and Forest visitors would all benefit.
It would also be a great water source to fight Wild Fires on the Ntl. Forest and Private Property.It is the #1 place we could prevent the loss of water we are experiencing in the area!!!!!!!

Everyone agrees it would be a very worthwhile project, but the problem is where does the money come from?
After doing a lot of research and studying the Greens Hollow Environmental Impact Statement. I would like to make my case as to where the money should come from and why. All of my information unless stated otherwise comes from this Study. This study should be read by everyone, especially those that are in a position or have an obligation to protect our natural resources. I would like to list some of the negative and the positive aspects of mining.
In 09 The Sufco Mine pumped 3900 Gallons of water per minute out a portal and into Quitchumpah creek which flows into the Muddy and joins up with the Fremont by Hanksville and becomes the Dirty Devil and this Dumps into the Colorado River. There is no place to store this water until it gets to Lake Powell and then it is lost to not only the area from which it came but also to the entire state of Utah. I have not been able to find out how much of this water is used before it goes into Lake Powell or who is the rightful owner of this water. I do know there is 325,851 gal. of water in an ac. ft. and this amounts to 6,292.60 ac. ft. of water. Water is very expensive to buy or to lease and it is only going to get more ex. pensive in the future! The Salina Creek Water Shed and the Colorado River Basin Water Shed is seperated by a mountain range on the west side of Acord Lakes and Runs North to The East Side of Skutumpah Reservoir and continues north on the east side of Skutumpah creek and on to the White Mt. Mining could cause Transbasin Diversion of water.
Sufco currently hauls 10,000 gal water per day to cattle on summer range but only during the time the cattle are on that alottment. This leaves the question, what about WildLife and the Riparian area affected by the loss of water that is due to mining?
Sufco currently mines approximately 6.43 million tons of coal per year with a water loss of 300 gallons of water for every ton of coal produced.
Page 22 E.I.S. states Long-Wall mining under North Water Area (Pines Tract) 2003-2006 Flows ceased in four springs shortly afer mining (late 2003), but reemerged the following year down slope. Discharge from a total of three springs lost following two seperate subsidence mining occurences (2005 and 2006). Water not restored following mitigation (i.e., installation of grout curtain).
In this area from the 1850s to the present at least 23 springs were developed for livestock use, and 43 other livestock water improvements including stock ponds have been built. In spite of these and other water projects, water still has to be hauled to cattle.
On page s-5 in regards to the Greens Hollow Coal lease it states Subsidence could damage range improvements and facilities, including spring developments.
Continued impacts to water resources could affect the viability of livestock grazing permits. Direct, indirect and cumulative impacts to water resources including but not limited to points of diversion or use and vegetation may change all or a portion of the area from primary range to secondary range, and impact grazing capacity.
I MIGHT ADD THIS WOULD CERTAINLY IMPACT WILDLIFE AS WELL!!

Under the terms of the mines lease agreement they are required to replace water to the affected areas. As you might imagine this can be very difficult to do, considering some of this water is considered to be irreplaceable.
This again only makes the Skutumpah Project that much more important!
Some projects currently being persued are Pines Tract North Water
Long term water replacement. 2009-?
Reestablish water to area as per lease stipulation
Wildcat Knolls habitat improvement project (funded in part by SUFCO) to improve sage grouse and Big Game Habitat (project begun in 2008)
Three WildLife guzzlers installed in 2005.
IN the E.I.S. it lists many water and Habitat Improvement projects, but to what extent SUFCO participated and where the money came from was not clearly stated.
I have listed just a few examples of the impact mining has on the area and just a few examples of what is being done to solve the problems.

We now come to the question of how much money is generated by mining, and where that money goes. We know that no other industry contributes as much to the economy of Sevier Co. as the SUFCO MINE and the trucking companies that haul the coal from the mine!
Page 41 of the E.I.S. STATES there are 363 jobs at the SUFCO MINE.
279 truck driving jobs, 980 indirect mine support jobs.
Page 92 lists the existing SUFCO Mine fiscal effects.

MINERAL LEASE ROYALTY AND BONUS MONIES	06=$13,132,000	07-$13,961,000
PROPERTY TAXES	06=1,797,000	07 $1,055,000
PAID BY SUFCO MINE TO SEVIER COUNTY	06=1797,000	07 $1,055,000
PAID BY CONTRACT TRUCKING CO. TO SEVIER C.	06= 179,200	07 $212,700
SALES TAXES PAID BY SUFCO MINE	06=3,586,00	07 $3,365,000
PAID BY CONTRACT TRUCKING CO.	06= 186,000	07 $ 191,000
FUEL AND USE TAXES PAID BY CONTRACT TRUCK.	06=3,589,000	07 $4,060,000
TOTAL	06=$22,469,200	07$22,844,700

PAGE 91 of the E.I.S. states Federal lease royalties are collected on federally administered public lands.fifty per cent of the revenue collected is returned to the STATE OF UTAH, which goes into the mineral leasing fund. The state then allocates 33 percent of that revenue to the PERMANENT COMMUNITY IMPACT FUND, from which cities in the project area can obtain funding for various infrastructure-related projects. The state allocates another 25 percent to the county inwhich the coal is mined. This means the Feds. get over six million the state gets six million of which the county and cities get fifty eight per cent. WHAT HAPPENS TO THE REST OF THE MONEY THE STATE GETS AND WHAT HAPPENS TO THE MONEY THE FEDS. GET? I CAN'T FIND WHERE ANY ON THIS MONEY IS SPENT TO CORRECT ANY OF THE PROBLEMS I HAVE MENTIONED IN THIS LETTER!

The SUFCO MINE according to the E.I.S. as currently leased, will extend the life of the mine to 2015, this does not take into account the recent expansions of the existing leases, that fact is not mentioned in the public notice in the paper. There is also no mention of the effect mining may have on these lease expansions; unless they were done in a previous report. I believe the impact it may have should be stated at the time of the lease expansion!! I ALSO believe a map should be provided to show the exact location of the expansions. It is very difficult to tell where they are with the information given in the Public Notice. This Public Notice process may fulfill the legal responsibility, but it sure leaves a lot of unanswered questions. I will look into this further and see if I can get the answeres to these questions.

The lease modifications that have been recently made add another 2316 ac. to the western edge of existing leases, this was approved in Dec. 09 The current lease modification will add another 2312.74 ac., this I assume is also on the western edge of exising leases, thus bringing mining closer and closer to the Salina Creek Watershed. This also brings a concern about the springs located on the Acord Lakes private property area especially the two springs we get our water from. These springs are located only a mile or two from the Mine entrance to the west. If these springs ceased to flow or were lost and then reappeared down slope as has happened to some springs this would be a tremendous loss to property owners who have donated time and money to put in a water collection system, storage system and a place to receive this water. This water is currently being used by anyone needing water!

Information obtained from the division of water rights, provides the following information about these springs.

Springs #4 94-299 states the quantity of water claimed is 10 gpm Date when water was first uses was prior to 1890 according to G. M. BURR.The water was collected by means of a concrete collecting box. and piped to a cabin that no longer exists but shown on GLO LAND PLAT OF 1891. This water is currently being collected in as underground storage tank and is used by property owners and the general public. This system was installed by property owners.

The amount of water delivered by this spring now has not been established, but I know it is considerably less than above mentioned.

The other spring known as #3 94-298 flows into a series of water tanks underground that store 10,000 gal. water these were also installed by Acord Lake property owners. This spring was estimated to be flowing at 18 gal. per minute.I know this spring no longer flows at that rate. I have a list of all the springs in the Acord Lakes area and what they used to flow and I will find out what the current rates are.

The proposed GREENS HOLLOW COAL LEASE which has not been awarded yet to the SUFCO MINE, but I'm sure will be, will probably happen in the next few months. This lease is for 6175 ac. of which only about 100 ac. is on the FISHLAKE NTL. FOREST THE REST ON THE MANTI-LA SAL NTL. FOREST, IN SANPETE AND SEVIER COUNTIES. This would increase the life of the mine by about 9 years. The coal would be mined using the existing mine tunnels and the water would be discharged from the same portal that is currently being used, into Quitchumpah creek. There are 56.6 million tons of recoverable coal in this lease, times that by 300 and you get the estimated amount of water that will be pumped out of mine.
The approximate 56.6 Million tons of coal would generate about $1.47 BILLION. TOTAL ROYALTIES AND TAX REVENUES FROME THE ADDITIONAL COAL WOULD BE ABOUT $194 MILLION. THE STATE WOULD RECEIVE 50 PERCENT AND THE COUNTIES WOULD RECEIVE A PROPORTIONATE SHARE.(SEVIER CO. WOULD BE SHARING WITH SANPETE CO.) ALSO THIS WOULD EXTEND MINE OPERATION TO 2024, WHICH STILL DOES"NT ACCOUNT FOR THE OTHER LEASE MODIFICATIONS PREVIOUSLYL MENTIONED!!

My point I would like to make is this, a resource that has contributed so much, to not only the local Economy, but the state and federal as well, deserves to have more of this money ear marked for the purpose of dealing with the problems in the immediate area from which all of this revenue has been generated!!
I believe I have identified the source that the money should come from to fix the Sink Hole problem in SKUTUMPAH RESERVOIR and now we need to see who's pocket it should come out of. THE STATE, FEDERAL THE COUNTIES OR THE SUFCO MINE?

I would like to mention some other water issues to help build my case for the project I have proposed. I heard on the evening news not long ago that SALT LAKE CO. had received 2 mill. for restoration work on LITTLE COTTONWOOD CREEK and were going to receive an additional 4 mill. for the project. I have'nt found out where that money is coming from but I will.
In F&S magazine I read an article that said Colorado wants to take 80 Billion gallons of water a year out of Flaming Gorge and install a pipe line for 570 miles into Colorado to transport this water. NEVADA wants to drill wells on the UTAH NEVADA BORDER IN SNAKE VALLEY IN THE GREAT BASIN and threaten the water supply to area ranchers. There seems to be funds available to threaten our water supply but none to save it!!
In a recent article written in FIELD & STREAM MAGAZINE BY BOB MARSHALL STATES We are racing into a water crisis, and unfortunately, most politicians either don't understand it or don't want to face up to it. In the past when rains return (as it always does) the reservoirs will fill again, fish will swim upstream, game animals will multiply, and farmers and fisherman will stop fighting. But the Nation's water experts say that familiar cycle is coming to an end. They see a future in which fresh water is more precious that oil, where tankers transport water to needy regions, where the largest and most expensive pipelines the world will ever see are laid to bring potable water from northern climates to a parched U.S. Unchecked, unplanned, and ill-advised development is outstripping the water supply. A 2007 report by the U.S. Government accountability office says that 36 states will face critical water shortages over

the next decade and those extimates do not fully account for the increased losses due to a warming climate. It sounds like a science fiction tale, but unless we change our development practices, it's the not so distant future.

There is no adapting to a lack of water. Life stops when the well runs dry. The terror of that reality is already rippling across the Nation. Atlanta came within 90 days of running out of water two years ago. Some Florida communities have cancelled building permits due to a lack of water for new residents. Towns in Tennessee are borrowing water from neighbors in Alabama. Texas and Oklahoma are involved ina court fight over water from the Red River system.

We have to insist that governments-local, state, and federal-develop water management plans first, before they consider any future development. This has to be done on the front end, coming in after development is a losing situation because there will be too much invested already. We can't win that fight!

If you forsee any threat to the water supply in your region, here are some tips: Become knowledgeable on the subject, read unquenchable America's water crisis and what to do about it, by Robert Glennon, 2009 Island Press.

Contact your State Fisheries agency and ask if there are any existing water shortage to fish and wildlife.

Urge elected officials to oppose projects that would use water irresponsibly.

Practice what you preach. Water conservation begins at home.

In conclusion I would just like to make it very clear that I fully support mining and realize how important it is to the economy. I also believe we need to do more to correct the problems I Have talked about in this article. I intend to send copies of this letter to every govt. agency State Federal and Local and try to get support from where ever I can. I can use all the help I can get and I would appreceiate a response from anyone receiving this letter.

Sincerely Yours,

Leon Christensen
2330 E. 2210 N.
P.O. box 38
Richfield, Utah 84701

Home phone---435-896-8931
Cell phone---801-560-3531
Fax#--------435-896-4024

This letter and other water issues are on my web site,my son set up for me.

WEST WATER WATCH.BLOG SPOT. COMM

From: Dave Marble
To: Forbush, Kirk; Monroe, Terry; Pirouznia, Roddy
Date: 11/5/2009 4:45 PM
Subject: Skutumpah / UT00279

I had a telephone conversation with Pat Robbins of the Salina Creek Irrigation Company this afternoon to discuss the inspection report we sent in September. Pat acknowledged that the dam is unsafe to store water and agreed that the gate will remain open to prevent water storage. He understands that investigation and likely significant rehabilitation of the dam would be required to restore storage authorization behind the dam. I'm trying to remember now, Terry, the gate setting at the inspection. As you recall, there was some old wood stave pipe wire round about the gate. As I recall it was closed or mostly closed. Pat agreed to go the dam and make sure the gate is open and to chain it, or remove the wheel, or whatever it takes to make sure it is left open. As long as they live up the agreement, I'm not sure we need to take any further action (ie require breaching), but we should verify that it is not storing water. Given that the dam remains intact, I'm inclined to leave it on the database for inspection, mostly just to verify that it is not storing water.

Any additional thoughts or input?

Roddy, please add a note to the database indicating that the company has agreed to the leave the gate permanently open and that it should not store any water above the outlet intake.

Thanks

Dave

David K. Marble, P.E.
Assistant Utah State Engineer / Dam Safety
(801) 538-7376
davemarble@utah.gov

This photo was supplied by Joe Degooyer project manager AGEC. PLEASE review the attached correspondence he has had with dam inspector Dave Marble, and the proposal his firm has made.

Would'nt it be great if this reservoir could be filled to it's capacity. there would be plenty of water to do that if the water being diverted down the south fork of Quitchumpah creek was either stopped or greatly reduced. We could also pump some of the water that is currently being pumped out of the mine into it!!

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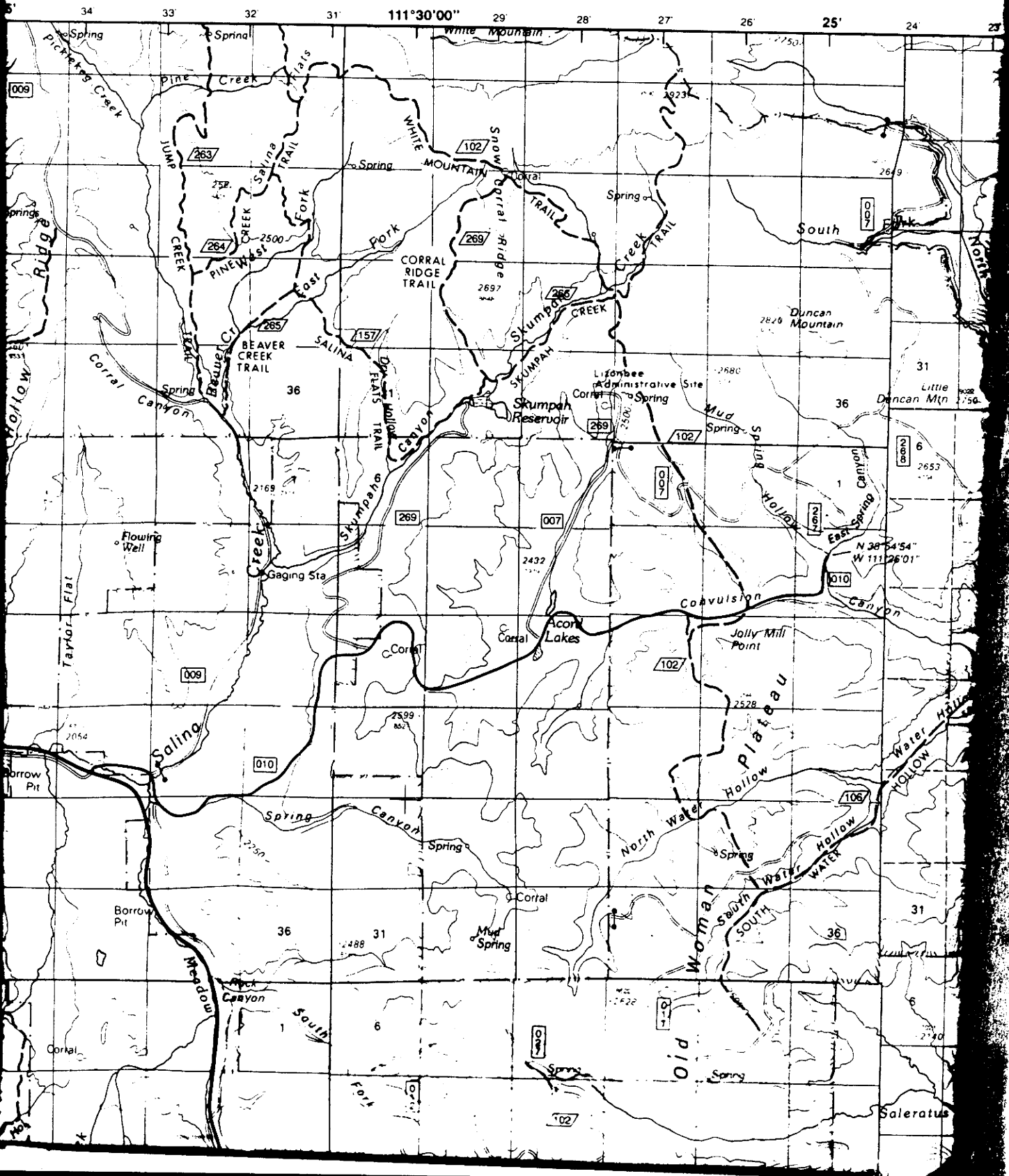

/

LYN CHRISTENSEN
<lynchristensen @msn.com>
08/18/2010 11:44 AM

To Forest <lchristensen@fs.fed.us>
cc
bcc
Subject FW: Skutumpah Reservoir Dam/Sink Hole

Subject: FW: Skutumpah Reservoir Dam/Sink Hole
Date: Tue, 17 Aug 2010 15:36:08 -0600
From: joedego@agecinc.com
To: lynchristensen@msn.com
CC: jdegooyer@science.utah.edu; richarddegooyer@comcast.net

Hi Lyn,

I'm glad to have your email address to work on this issue with you.

My family is the original owner of lot 51 at Acord Lakes, and I have basically grown up down there. I am very concerned about the sinkhole situation and want to do all I can to help find a resolution.

Below you will find the email correspondence I have had with Dave Marble at Dam Safety.

From the conversation I see at least two options:

1) Investigate the existing sinkhole and design a solution.
2) Investigate a new location for a dam.
3) Perform both Investigations at the same time.
4) Do nothing.

On the surface, it would seem that fixing the existing sinkhole would be the easiest and cheapest solution. (Well, doing nothing is actually the cheapest and easiest option). However, we don't know what we're up against until we investigate the subsurface conditions.
Dave Marble will be instrumental in helping to define an appropriate scope of services regarding fixing the sinkhole.

Abandoning the existing dam and building a new one farther upstream seems to be a very expensive and time consuming proposition. However, it may be a better solution in the long run, dependant on what a geotechnical investigation reveals about the extent of the sinkhole problem. I've attached an aerial print with a possible location for a new dam.

My company does have the capability to explore the subsurface conditions around the existing sinkhole and in the location of a new dam. We would auger drill through the soil in the base of the reservoir until we reach bedrock. We would then switch over to air or mud rotary coring methods to advance into the bedrock at least ten to twenty feet. This process would be repeated in several locations along the upstream toe of the existing dam and around the sinkhole as well as across the base of a new dam, if that scope of service were desired.

I know this is a lot of information to disseminate. Take your time in reviewing it and discussing it with your Water Users Association and other stakeholders. Feel free to call me and discuss the project.

Lastly, I wanted to express that I have witnessed many people cross the existing dam on motorized vehicles this summer. Each time I go to my cabin I run down there and replace the trail marker and road less area signage by the gate. A new, wider gate is likely warranted, as some people just d

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respect the land and run down the signage and trespass anyway. Let me know if you need help in that area. I'm sure we can get Acord Lakes landowners to help.

Oh ya, one more thing. My dad took a picture of a mountain lion in the driveway of our cabin last Wednesday (August 11th). First time we've ever actually seen one up there in all these years. Pretty cool.

I look forward to hearing from you.

Sincerely,
Joe

Joseph R. DeGooyer
Staff Engineering/Environmental Technician
Project Manager

AGEC
Applied GeoTech
600 West Sandy Parkway
Sandy, UT 84070
801-566-6399
801-651-5899 (mobile)
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www.agecinc.com

A solid understanding from the ... up.

From: Dave Marble [mailto:davemarble@utah.gov]
Sent: Monday, August 16, 2010 4:19 PM
To: Joe DeGooyer
Subject: RE: Skutumpah Reservoir Dam/Sink Hole

Joe,

I made comments as shown in red below. Let me know if you have other questions.

Dave

David K. Marble, P.E.
Assistant Utah State Engineer / Dam Safety
(801) 538-7376
davemarble@utah.gov

>>> "Joe DeGooyer" <joedego@agecinc.com> 8/16/2010 2:32 PM >>>
Good Afternoon Dave,
I wanted to thank you for your response to my first email concerning Skutumpah Reservoir. Your insight, information and expertise are very valuable and appreciated.

The sinkhole has been slowly growing this summer. Rainfall events have continued to send water down

the drainage, further eroding the sinkhole. The water flows into the sinkhole and disappears underground. I have not seen it daylight farther down the drainage. Fractured sandstone bedrock can be seen in the sides of the sinkhole (as can the large glob of concrete originally placed to plug the original sinkhole). There is also evidence of additional piping that will likely cause more sinkholes around the large existing sinkhole. I suspect seismic activity in the area may have contributed to the current situation.
Left unchecked, the repeated snowmelt and rainfall events will continue to erode the bed of the reservoir adjacent the dam. I would expect that the existing dam will eventually be eroded away if nothing is done.

Observation of the fractured sandstone bedrock in the sides of the sinkhole makes me think we could pump dozens to hundreds of cubic yards of cementitious grout into the existing sinkhole and have a new sinkhole eventually open up a few feet away. Perhaps grouting the base of the reservoir throughout the shallow end, adjacent the dam, then placing an impermeable liner would be an acceptable repair. (Any thoughts?)

I would be concerned about any proposal to grout through the dam, so grouting at the upstream toe are is possible. The core or impermeable section of the dam would need to be tied into this "cutoff." An impermeable liner in a large reservoir always raises questions of how far do you take it? Lining the entire basin may be impractical, but partial liners can be ineffective if seepage fines it way under the liner. In any event, we really don't know the solution until an investigation identifies the scope of the problem.

Some discussion has been given to constructing a new dam at the site. The topography indicates that there may be an acceptable location a few hundred feet to the east of the existing dam.
What steps would need to be taken to achieve such a project? (I assume a geotechnical investigation in the area of the proposed dam be done first.)

Design plans (including design reports, drawings, and construction specifications) need to be submitted to dam safety for review and approval. These documents need to demonstrate that all state safety criteria has been achieved. Certainly a geology and geotechnical investigation would be needed, as would a hydrology and hydraulic report. Water right and land ownership issues would need to be addressed.

One of the Acord Lakes landowners, Leon Christensen, is pursuing funding options for rehabilitation of the existing dam or construction of a new dam. I would image that several funding sources would need to be pooled to achieve construction of a new dam.
Would a new dam be owned by the current dam owners, the entity that pays to build a new dam, or the entity that owns the ground that a new dam is built on (Forest Service)?

Ownership would have to be established but wouldn't have to be the entity that pays for the new dam. Since the structure/reservoir would be on Forest Service land, their involvement and approval (both land use and dam design) would likely be required, but I can't speak for that agency. The water right to store water in the existing reservoir is owned by Salina Creek Irrigation Company. If the dam was not owned by them, their water right would need to be acquired or their approval given. Documentation of ownership would need to be provided to us but there is no formula to decide that. The existing dam owners and/or other entities would need to establish ownership.

If AGEC were to mobilize to investigate the site, we would want to provide as much information as possible to help in the decision making and design process.
If desired, we would want to provide info regarding the subsurface conditions around the existing sinkhole and area adjacent the existing dam. (Maybe a repair to the sinkhole is possible). I understand that this would be under the direction of the Salina Creek Water Users Association.
If a new dam were possible we would want to gather information in that area too. Would this be under the direction of the State, the Salina Creek W.U. Assoc. or others?

Any dam construction would be regulated by the state. Again, since it is on their land, I would suspect that the Forest Service authorization would be required. Other involvement would likely be decided by who the owner is and who is paying the bill. Construction on federal land would likely require environmental documentation and approval.

Without any recent input from the Salina Creek Water Users Association, several of the interested parties are trying to advance a solution to the current situation. We want to be part of a viable solution that satisfies the safety and design requirements of the State while returning the reservoir to at least its original capacity. The reservoir is a valuable resource to landowners, wildlife, livestock, etc. In its current condition the reservoir is experiencing extreme pressure from recreational users and poses a real safety concern at the sinkhole. Any assistance you can give in support of our cause will be greatly appreciated.

Since Salina Creek owns the water right, at some point you will have to have cooperation with Salina Creek in some format or find some other way to acquire land and rights.

Thanks again for you time. I look forward to hearing from you when you get time.
Sincerely,
Joe

Joseph R. DeGooyer
Senior Staff Engineering/Environmental Technician
Project Manager

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A solid understanding from the [illegible] up.

From: Dave Marble [mailto:davemarble@utah.gov]
Sent: Tuesday, July 27, 2010 5:56 PM
To: Joe DeGooyer
Subject: Re: Skutumpah Reservoir Dam/Sink Hole

Joe,

Sorry to take a while to respond to you request. I have been traveling most of the last two weeks and I am trying to get caught up. I'll see if I can answer your questions:

The sinkhole is the real problem but it is our position that the formation of the sinkhole in the immediate foundation/abutment groin indicates that the dam is at risk to similar or continued piping/erosion. We have ordered the outlet opened and reservoir water not to be stored against the dam.

We have little additional information. The formation of the sinkhole puts the dam at risk, but we do not have information specifically regarding the mechanism of the sinkhole formation. The sinkhole formed

several years ago and the irrigation company attempted to fix it by plugging it with concrete. You can see the concrete in the edges of the current sinkhole which appears to have formed by working its way around the attempted plug.

We have some drawings detailing a rehabilitation to the dam during the late 1980's. We do not have a design report or construction specifications. Based on the drawings it appears that the existing outlet was installed at that time and the old outlet abandoned. There were also apparently sinkholes observed at that time but I see no indication on the drawings of an attempt to repair them. All correspondence and drawings that we have available have been scanned and are available on our website. There may also be an old Phase I report prepared under the direction of the Corp of Engineers during the late 1970's/early 1980's, but they are filed separately and I have not looked for it. If you are interested you are welcome to see it.

I think before we can really determine an appropriate fix, an investigation of the sinkhole causes needs to be conducted so we know what were are trying to fix and the magnitude of the problem. I would assume that we are dealing with fractured bedrock that is allowing soil to be eroded through it. The repair will have to address the existing sinkhole but will also have to address is the right abutment of the dam is subject to the same erosion and if the entire dam/abutment interface needs to be protected.

The dam owner is responsible for the dam and any efforts to design a repair. Dam Safety will have to review and approved in advance any proposed plans to fix the dam. Any agreements to provide investigation/design services will need to be made between your firm and the owner. I would suggest that we be included on establishing the scope of work to make sure our concerns are being addressed.

I hope the above information is helpful. Feel free to contact me if you have any additional questions.

Dave Marble

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>>> "Joe DeGooyer" <joedego@agecinc.com> 7/13/2010 1:10 PM >>>
Good Afternoon Dave (and Kurt)
I am writing to inquire about the Skutumpah Reservoir Dam and the sink hole in the base of the reservoir adjacent the outlet structure.
I am a landowner at Acord Lakes and as such am concerned about the future of the reservoir.

In a meeting at Acord Lakes in June of this year I was pleased to meet ~~Steve Rig~~ Dale Harber by (Manti-LaSal National Forest Geologist), Jason Kling (Fishlake National Forest District Ranger), Michael Hadley (Southern Region Wildlife Biologist), Lyn Christensen (Forest Protection officer and Salina Creek Water Users Association Representative) and several concerned land owners within the Acord Lakes community. During the meeting a discussion ensued regarding possible solutions/repairs to the sinkhole and the safety of the dam structure.

What is the Division's current position regarding the dam structure? (Is the structure itself at risk, or is the sinkhole the real problem?)
Does the Division have any information and/or comment regarding the sinkhole? (cause, remediation,

6.

etc.)
What information does the Division have regarding the construction of the original dam and the subsequent modifications to the outlet structure? (I have searched the Division's website without much luck.)

Some ideas brainstormed during the meeting in June included filling the sinkhole with bentonite, concrete or a grout containing both. Another idea was to construct a new dam farther 'upstream' of the sinkhole location. It was generally agreed that some type of geotechnical investigation was warranted.

My firm owns and operates three drill rigs that support our geotechnical and geological operations. We have performed several investigations for dam safety. (Chandler Drive Dam, Rotary Glen Dam and others)
We are very interested in offering our assistance in finding a solution to the sinkhole issue and gaining information about the existing dam structure, if needed.
We may be able to offer our assistance at a significantly reduced cost, if not for free. (I will donate my time, at the very least.)

Any information and/or direction you can give will be greatly appreciated. I would like to help in any way I can to develop an appropriate course of action that can return the reservoir to a safe condition.

Sincerely,
Joe DeGooyer

P.S. The attached photo was taken on this last Saturday, July 10, 2010.

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A solid understanding from the ground up.

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