

Big Lost River Ground Water District

2017 Management and Aquifer Stabilization Plan

Version 3.0 --- March 2017

Introduction: The Big Lost River Ground Water District (BLRGWD) has been recently organized to represent the collective interests of all participating ground water users in the basin. This fledgling GWD has many challenges it is currently trying to settle while still focusing on its primary purpose as enunciated in its mission statement which “is to protect and stabilize the basin’s aquifers while protecting all members ground water rights which will promote the full economic benefit derived from using Basin 34’s groundwater resource”. BLRGWD believes this proactive approach of maintaining a stable aquifer is the best approach when dealing with intra basin delivery calls and water management issues. To that end, BLRGWD submits this 2017 Management and Aquifer Stabilization Plan (hereinafter referred to as the “Plan”) as an initial first step in a more comprehensive long term plan.

Disclaimer: This Plan is being developed with the limited expertise of lay ground water users who can only afford minimal consultation from experts. Therefore, this plan is subject to change as more is learned, understood, and the potential implementation of meaningful practices are funded. The Plan is intended to protect only those Ground WRs held by District members who are participates in good standing. Former members who have requested their lands be excluded from the District shall not receive any benefit(s) deprived by any of the BLRGWD projects or programs described herein and as such may be subjected to any regulatory actions taken by the Director of IDWR that he deems appropriate. We appreciate the patience of state and local officials as we proceed.

Background of Current Water Supply Conditions in Basin 34

The mountain snowpack water equivalent as of Feb. 21, 2017 as shown on Idaho Snow Survey SNOTEL Data reports the Big Lost River Basin at 189% of the median (1981-2010). (See attachment 1) The Mackay Reservoir has reported at 87.5% full (38,300 AF) and gaining 1% (431 AF) per 3-4 days by the Watermaster of Water District 34 at the Recharge Committee Meeting held on Jan. 31, 2017. USGS data supports those reports and indicates the Reservoir continued to fill to approximately 39,900 AF by the 17th of February. On Feb. 18, 2017 the Big Lost River Irrigation District stopped impounding storage water and began releasing 220 - 400 cfs (as depicted on attachment 2, two USGS charts) through the 2B gaging station located immediately below the Reservoir. Land and home owners located adjacent to the Big Lost River and Antelope Creek began to express fears of flooding in mid-February. Some Butte County Commissioners have indicated they intend on seeking an emergency flood declaration from the State of Idaho if and when projected watershed run-off forecasts come to fruition.

As of the date of this Plan’s submittal, Butte County Commissioners have already requested the Director of IDWR authorize the diversion of additional volumes pursuant to WD Rule 40.06 (see attachment 3), and the WD 34 Advisory Committee will likely be meeting in the upcoming days to affirm their support for that request. The hope is that with the anticipated emergency declaration and the authorization to divert additional volumes, water users will be able to make any necessary temporary transfers changing points of diversion (Pt. of D) enabling all canals to be filled to capacity so irrigators can convey river water and additional volumes to their respective places of use (Pl. of U) when excess supplies are available. This practice alone would greatly reduce the use of secondary ground water rights from being used which in turn would help recover and stabilize the aquifer.

The unofficial conclusion of BLRGWD is that there will be an abundance of surface water supplies in the Big Lost River Basin during the spring to mid-irrigation months of the irrigation season, and possibly into the early fall season. Significant excess volumes of water could be put to beneficial use by surface water rights owners if they elected to call for their water rights to be satisfied and the WD34 Recharge Committee conducts managed recharge to the fullest extent possible. The GWD believes there will still be significant river flows exiting the valley past the Arco Gaging Station that could have been used for a beneficial use within the basin. This will signal where possible opportunities for improved water management are that will be integrated into subsequent year's stabilization plans.

Fundamental Components of this Plan:

- 1.) Monitoring Surface Water Flows and Ground Water Levels
- 2.) Managed Recharge participation with other Basin Entities
- 3.) Irrigation Conversions back to Surface Water when Supplies are Available
- 4.) The Development of Ground Water Diversion Reduction Methodologies based on WR Priorities and High to Low Range Watershed Projections
- 5.) Rule 40.06 Diversion of Additional Flow
- 6.) Conjunctive Management and Response to Delivery Calls for Mitigation this year
- 7.) Corrections to the IDWR Certified List of Ground Water Rights in Basin 34

1.) Monitoring Surface Water Flows and Ground Water Levels

IDWR has been monitoring ground water levels in the Big Lost River Basin for a number of years. This data has been used in several reports and can be accessed online at the IDWR Website. One of the more recent reports is the Water Improvement and Solutions Team Meeting report of December 10, 2014, prepared by Dennis Owsley, P.G. Technical Hydrogeologist, IDWR. (See cover page of report - Attachment 4) While these types of reports are very useful in beginning to understand the aquifer in the Big Lost River Basin, the more data that is gathered from additional locations will add to the general and site specific understanding of the aquifer as management and regulatory actions are implemented.

BLRGWD is interested in all of the hydrological and hydrogeological information that is available regarding the Big Lost River Basin, and is currently participating with other qualified consultants, experts, and interested parties who are willing to collaborate in the programs of data collection. The District is currently employing Jaxon Higgs of Water Well Consultants, Inc. to work with IDWR staff in determining where and what additional information will be most useful in developing future management programs and stabilization projects. (See Attachment 5 - Data Collection Evaluation) Also, the Butte County Soil and Water District as indicated they are interested in providing money and technical assistance in the monitoring of ground water levels in the basin. The District will pursue that collaborative relationship.

This year's projects will focus on understanding: a.) How the abundant snowpack and water shed will affect the recovery and stabilization of aquifer water levels in the basin, b.) How managed recharge enhances the natural supplies of river and ground water flows, and c.) Where future managed recharge sites would provide the greatest benefit for both short and long term planning strategies. The District will continue to collaborate with these qualified entities this year and in subsequent years.

Action Items for this year:

- -Monitor Surface Flows at the Howell, B-2, Leslie Bridge, Moore and Arco Diversions, and Arco Gaging Stations for available supplies and excess flows.
- -Select and add six (6) additional sites to establish ground water level monitoring stations as recommended by qualified consultants.
- -Identify interested entities and form a collaboration Group to review monitoring results and determine next year's monitoring program.
- -Create an enhanced depository of real hydrological and geological data reports and summaries that depict and describe the unique hydrogeological features of Basin 34.
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2.) Managed Recharge participation with other Basin Entities

As discussed briefly above, it is apparent there will be periods of flood water supplies within the basin this year. The objective of both senior surface and junior ground water users should be to optimize this opportunity to the fullest extent possible. The principle challenge the WD34 Recharge Committee has with managed recharge is the persistent loss of public and private property to conduct recharge on. It seems everyone wants the benefit of enhanced aquifer levels and river flows but few are willing to sacrifice the inconvenience of having a large recharge site next to their home, stockyards, or cultivated fields. The second challenge the Recharge Committee has is having to constantly correct the false narrative regarding the "60 cfs trigger at the Arco Gage" and whether or not the water lost beyond the boundaries of the Big Lost River Basin could have otherwise be used in some location within the basin where ground water levels are stressed the most. BLRGWD encourages the owner of the Recharge Permits 34-07571 and 34-07573 (Water District No. 34) to interpret the language contained in the Recharge Plan of Operation in the most progressive and reasonable manner that is honest, fair, and consistent with the intent of the recharge plan, which is to recharge the Big Lost River Basin's aquifer.

It appears both of these challenges could be remedied if all interested stake holders (i.e. WD34, Cities, INL, NRCS, BCSWD, BLRGWD, BLRID, IFGD, Protestants, and Petitioners) were willing to financially supporting some larger scale infrastructure projects starting above the Mackay Reservoir and ending in the Arco vicinity. If such projects were properly engineered, the District would contribute substantial money to such recharge facilities. BLRGWD is willing to approach all of the potential interested parties to determine if there is a sincere interest in this kind of a collaborative effort.

Another source of water that the GWD has identified as a potential supply for managed recharge was inadvertently discovered by Matt Anders and David Hoekema of IDWR while they developed the Demand Database Accounting System for WD34. In their Sept. 13, 2016 presentation to the WD Advisory Committee they identified 550 of the 1,280 surface water rights that were never called for even one day during the 2016 irrigation season. (See attached chart 6) These water rights range in priority from 1884 to 2006. Pre-1900 priorities appear to represent the most substantial volume of water supply, and have Pts. of D throughout the entire Big Lost River system.

Our questioning and investigation of these trending non-uses of available surface water supplies has caused us to reach two conclusions: First) the senior surface right holder(s) do not have confidence in the availability of the surface supply being delivered to their field headgate(s) especially at the beginning of the irrigation season, so they elect to divert their more reliable ground water supply for irrigation purposes,

Second) some of these same senior surface right holder(s) have no desire to commit the time, money, and/or any effort to the rigorous practice of the irrigation of their lands. Some have even lost the knowledge of how to call for their respective WRs. They have no interest in the irrigation of their lands for purposes of crop production, but they do express a desire to retain the benefits of having wetted areas in proximity to their homes and Pl. of U.

BLRGWD believes there are two distinctly different remedies for these two causes of non-use:

First) senior surface right owners who desire to continue to irrigate their lands need some kind of incentive to convert back to using their senior surface water supply in lieu of their secondary junior ground water right(s). Apparently the economics of paying for higher lift ground water supplies vs. low lift canal water is not sufficient motivation alone. USGS and Pivotrac gaging station monitors prove the surface water supplies were available in all of the river reaches for most of the 2016 irrigation season. (See Attachment 7) Therefore, the problem or cause of unavailability to the end water user(s) must occur somewhere between the Pt. of D from the river to the field headgate and Pl. of U. Although regulation is not the preferred remedy to cause the resumed use of available surface water supplies before using secondary supplies, it might be the only reasonable answer in this matter.

Second) some senior surface right owners do not want to exercise their WRs for irrigation purposes but they still want the aesthetics from having wetted areas in the vicinity of their Pl. of U, which is usually in close proximity to where they live. (See petition to establish a CGWA filed before the Director of IDWR on Sept. 19, 2016, Attachment 8) As an alternative to irrigating the current Pl. of U, if these WRs have not already been forfeited due to non-use, owners of these WRs could be incentivized to make transfers changing the purpose of use (POU) from irrigation to managed recharge. The Pts. of D would not need to be changed, just the Pl. of U to the nearest recharge site in the vicinity of the former irrigated lands. This remedy would protect the established WRs and provide the aesthetics of having wetted areas and green-belts that in turn would help support the localized aquifer water levels. Again, BLRGWD believes there are conservation programs available that could help financially incentivize these conversions. And one of the best parts of this conversion program is these particular WRs would not necessarily need to be subjected to the "60 cfs trigger" at the Arco Gaging Station.

Action Items for this year:

- -Determine if additional surface flows are available for Managed Recharge by observing flows at the Arco Gaging Station.
- -With the assistance of WD34 Recharge Committee and NRCS, design-fund-construct a major recharge infrastructure above the Mackay Reservoir from the Big Lost River into the Chilly-Barton Flats.
- -With the assistance of NRCS staff, develop the conservation practice and select WR owners who are willing to convert at least 10% of the reported 550 non-used WRs from consumptive irrigation uses to non-consumptive managed recharge and green belts.
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3.) Irrigation Conversions back to Surface Water when Supplies are Available

As discussed briefly above, there has been a trend over the last several decades for irrigators to move from surface water usage to ground water usage primarily because the ground water has been the more reliable water source and heretofore the less regulated supply. Most irrigators who have converted to pressurized sprinkler systems have elected not to build dual pumping stations that could utilize water supplies from either surface or ground water sources due to the additional operation and construction costs (i.e. secondary motors, panels, electrical demand charges, sumps, measuring devices, and conveyance assessments). This natural trend of irrigation efficiencies has resulted in a significant number of senior surface water rights not being called for and the corresponding increases in total annual ground water usage throughout the basin as reported in the WD34 Watermaster Annual Reports.

To reverse this natural eco-financial trend one of two things must happen:

One) the cost of ground water usage would have to increase as a result of regulation to the point that its usage becomes overwhelmingly burdensome. This is certainly not the correct or preferred manner to cause the reduction and/or cessation of ground water usage, or

Two) surface water supplies, when available, must be efficiently conveyed from the Pt. of D and reliably delivered to the Pl. of U. This remedy will require the concerted efforts of both water users and conveyance entities.

BLRGWD would like to establish a working relationship with all of the local conveyance entities to determine how best to improve conveyance efficiencies. Water user groups from various areas of the valley (i.e. Burnett Canal, Moore Canal, and Munsey/Arco Canals) should continue this kind of a relationship with their water conveyance entity. Traditional and non-traditional agriculture support institutions such as local NRCS, BCSWD, and Conservation groups should also be willing to develop working relationships with water users and conveyance entities by providing both technical and financial incentives.

As mentioned previously, BLRGWD strongly embraces the BCSWD's offer to assist in monitoring ground water levels. We also understand NRCS is currently developing program incentives that will help individual WR owners participate in conservation conversion practices. We believe IDWR and State Legislators need to understand what the possibilities are and develop legislation and regulations that simplify and stream-line the transfer and conversion processes (especially when those conversions are from consumptive to non-consumptive uses). The stabilization and beneficial use of the aquifer must occur with the participation of all stake holders. BLRGWD will be reaching out to all of these institutions and entities that can demonstrate a willingness to proactively engage in balanced utility and stabilization of the aquifer this year.

Action Items for this year:

- -Meet with Lost River Electric Co-op management to discuss ways to avoid additional KW demand charges for dual equipped pumping stations.
- -Meet with Big Lost River Irrigation District management to develop strategies for improving canal conveyance efficiencies.
- -Convert 10% (55 of 550) of the 2016 non-used surface water rights back to primary source supplies for irrigation. This practice is commonly called "soft conversions" in other GWD in the ESPA.
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4.) The Development of Ground Water Diversion Reduction Methodologies based on WR Priorities and High to Low Range Watershed Projections

One of the purposes of this Plan is to indicate what BLRGWD believes are good reasonable aquifer stabilization practices. The reduction of annual volume pumpage and the idling of irrigated acres are draconian measures that are not warranted this year due to the abundant snowpack and run-off projections. BLRGWD believes the more proactive approach of the above described components should be the focus for 2107. However, we also reserve the right to discuss and develop appropriate schedules and methodologies for the reductions of ground water usage based on priorities and water supply projections in the coming years, if needed. We will then be in a better position to discuss them with our members and then make such proposals. We believe the first step in stabilizing the aquifer is to study the effects of the high and low watershed yields and surface supply conversions by monitoring ground water levels in real time cause and effect analysis. This is the perfect year to do that.

Another component of possible reductions is the lands of those ground water users who are not participating in this Plan or any other approved plan. BLRGWD noted the clear and unavoidable language expressed in the Final Order Curtailing Ground Water Rights in the ESPA dated Jan. 17, 2017, ".... holders of ground water rights listed in Attachment D to this order may participate in an approved mitigation plan through a ground water district and shall have fifteen days to join....." and ".... Holders of ground water rights affected by this order may also submit a proposed mitigation plan to the Director in accordance with CM Rule 43...." (Order at p.7, par. 5). BLRGWD hopes non-participating ground water users do one or the other, because it seems likely any curtailment order(s) for ground water users in Basin 34 will be very similar to orders issued to the junior ground water users in the ESPA.

Action Items for this year:

- -Promote CREP Acre program eligibility for Butte and Custer Counties.
- -Analysis Ground Water Right Allocation Tiers based on Priorities and Arrogated Appropriations.
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5.) Rule 40.06 Diversion of Additional Flow

The practice of diverting additional flows in the Big Lost River Basin is not as rare as one might think. Like this year, 2011 was a year when additional volumes were available. Because the Director authorized additional diversion volumes that year, surface water users were able to apply higher rates of water when it was available which significantly reduce the need to pump ground water supplies later in that season and in subsequent years. Those additional volumes also resulted in greater incidental volumes of recharge into the aquifer. Prior to 2011, there were many years that high river flows produced water supplies in excess of what was needed to satisfy all natural flow water rights. These were years before water regulation was what it has become today. When such conditions existed, canals were filled to over flowing, the Mackay Reservoir was filled and refilled several times, low lands were flooded, and in some instances highways and bridges were temporally closed.

Ground water users do not directly have access to "additional volumes", but they do benefit indirectly when they are available. BLRGWD hopes those surface water users that have access to those excess water supplies take full of advantage of this year's opportunities.

Action Items for this year:

- -Write a Supporting Letter Regarding the Request for Rule 40.06 Additional Flows.
- -Ensure the tracking of all surface diversions by using the recently developed WD 34 Demand Based WR Accounting program.
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6.) Conjunctive Management and Response to Delivery Calls for Mitigation this Year

As of the date of the submittal of this Plan there are no Delivery Calls directed towards Big Lost River Basin ground water users pursuant to either Water District 34 Water Distribution Rules (WD 34 Rule 50) or Conjunctive Management Rules ("CMR Rule 43"). It is anticipated that due to the current abundant snowpack and watershed projections for the Big Lost River Basin, the Director of IDWR will not order the curtailment of any junior ground water users in the basin this year. However, if senior surface water users from within the basin were to "request mitigation pursuant to" WD 34 Rule 50 "at the time those water user(s) make their initial request to the watermaster for delivery of their water right", BLRGWD would immediately begin "to acquire water supplies necessary to augment natural flow for mitigation purposes as described in this rule" on a proportional bases of their member's "average annual diversion from wells subject to conjunctive administration". Those acquired water supplies would then be held in reserve by BLRGWD and subsequently made available to the watermaster as provided for in WD 34 Rule 50. It is also anticipated that "groundwater users who fail to pay the assessed costs for acquiring mitigation water shall be penalized in the same manner as any other water user failing to" participate in this District's plan or in another mitigation plan approved by the Director.

If the Director were to "revise[s] estimate[s]" or makes different "determination[s]" factors in WD 34 Rule 50, BLRGWD reserves the right to amend this Plan and respond to the Call in any manner it deems appropriate and in the best interests of its members. Also, IDWR senior staff members have recently indicated to BLRGWD Directors that the "water rights with 1905 and earlier priority dates" language in WD 34 Rule 50 might warrant adjustment to '1884 or possibly early 1885s and senior priorities' due to an internal office review of pre-sprinkler conditions to post-sprinkler conversion conditions within the basin. BLRGWD would not be opposed to this revision in WD 34 Rule 50.

7.) Corrections to the IDWR Certified List of Ground Water Rights in Basin 34

As BLRGWD has commenced the performing of the normal duties and functions of the District it has been observed the list of certified ground water rights provided by IDWR is considerably out dated when describing the current owners of WRs, correct addresses for the current owners, and many errors of duplication and/or insufficient clarity of described WR combined limits and conditions. The general membership participation and assessment book is all derived from this certified list. The Board is currently looking for ways to coordinate with IDWR staff to correct the errors and discrepancies contained in the list.

Action Items for this year:

- -Form a committee including qualified IDWR staff WR analysts, District Directors and Office Management to review and properly catalog all ground water right elements as described in the SRBA Partial Decrees.
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Conclusion

One of the main points in this Plan is that if we look at water management and regulation only from the perspective of drought years, we will certainly make some mistakes that will have devastating consequences on all water users within the basin. BLRGWD believes the best view is the long view, with the ability to augment and adjust in the short term as conditions warrant. We encourage IDWR officials to comment on this 2017 Management and Stabilization Plan so BLRGWD will be able to refine and focus on areas of that need improvement.

Respectfully Submitted this 24th day of MARCH, 2017.


Moj Broadie, Chairman

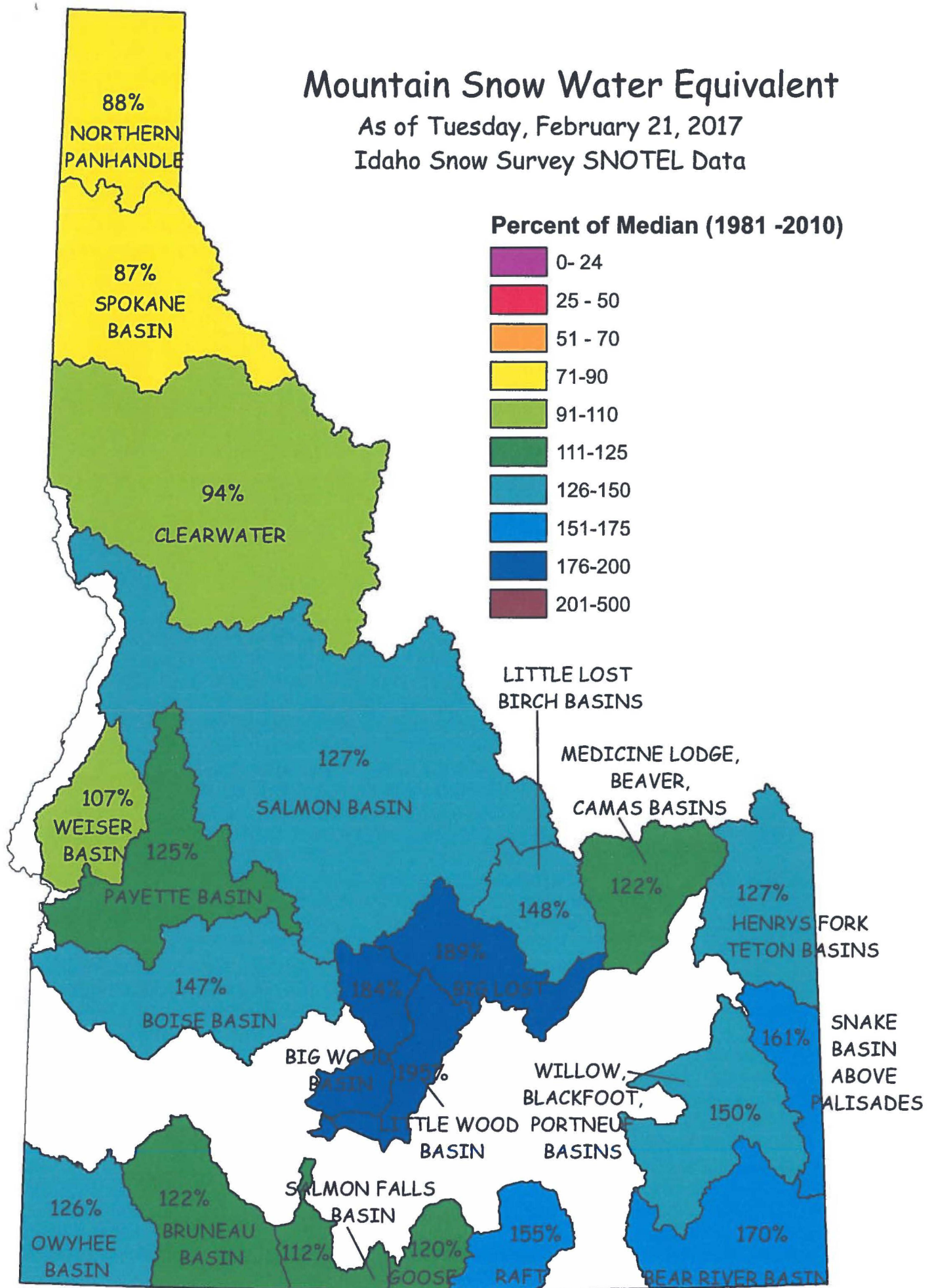
Attachments

1. Idaho Snow Survey SNOTEL Report as of Feb. 21, 2017
2. Two USGS Charts: 13126000 Mackay Reservoir and 13127000 Big Lost River B-2 Gage
3. Butte County Commissioner Letter dated Feb. 27, 2017 Request for Additional Flows
4. Dennis Owsley, Water Improvement and Solutions, Dec. 10, 2014
5. Data Collection Evaluation, Water Well Consultants, Inc. March 6, 2017
6. IDWR, Demand Database Accounting System for WD34
7. USGS Chart 13127000 Big Lost River B-2 Gage May 1 – Oct 15, 2017
Pivotrac Charts Leslie Bridge and East Side Out May 20 – Oct 31, 2017
8. Petition to establish Critical Ground Water Area in the Big Lost River Basin filed Sept. 19, 2017

Mountain Snow Water Equivalent

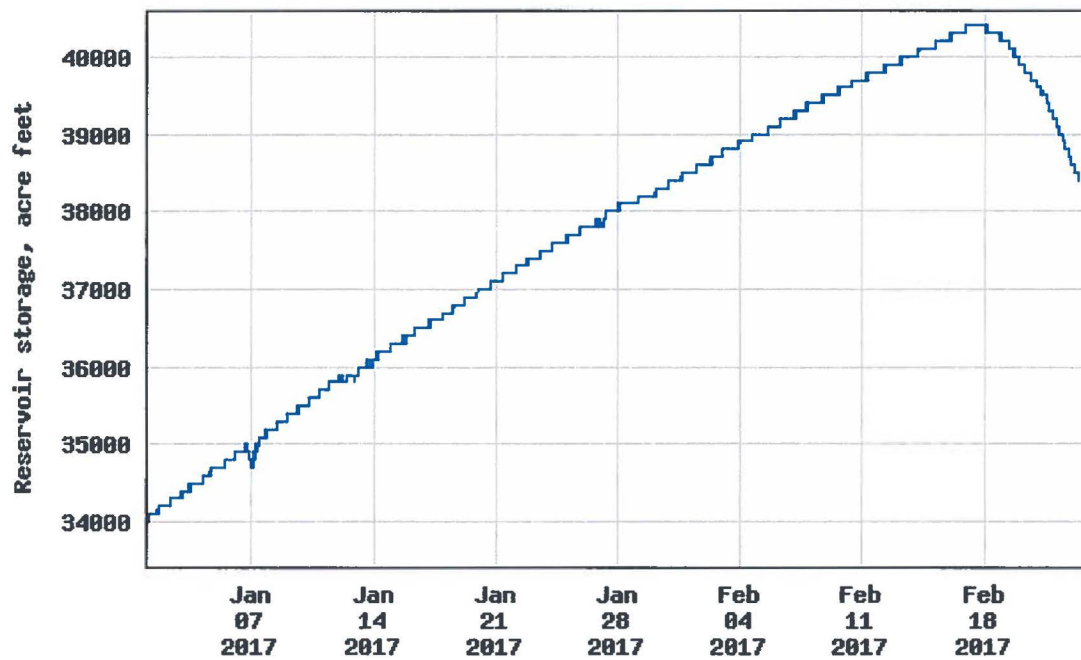
As of Tuesday, February 21, 2017

Idaho Snow Survey SNOTEL Data





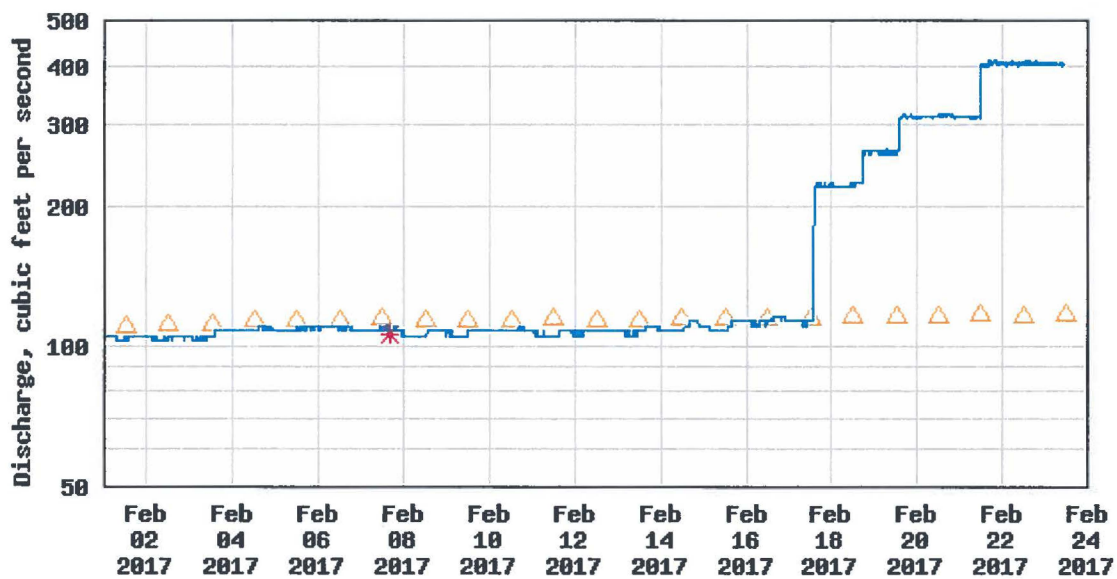
USGS 13126000 MACKAY RES NR MACKAY ID



----- Provisional Data Subject to Revision -----



USGS 13127000 BIG LOST RIVER BL MACKAY RES NR MACKAY ID



----- Provisional Data Subject to Revision -----

△ Median daily statistic (104 years) * Measured discharge
— Discharge



Butte County Commissioners

P.O. Box 737 - Arco, Idaho 83213

February 27, 2017

Director Gary Spackman
Idaho Department of Water Resources
PO Box 83720
Boise, Idaho 83720-6700

Re: Request for the diversion of additional flows for the 2017 irrigation season

Dear Director Spackman;

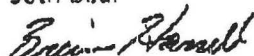
Because it is reported in the Arco Advertiser that there is a 196% of normal in the Big Lost River drainage and the Mackay Reservoir is sat 91% of capacity and releasing water and that the Little Lost River drainage is reported to be at 48% of normal.

Therefore, the Butte County Board of Commissioners do request the diversion of additional flows for the 2017 Irrigation season in Water Districts #33 and #34.

This request will not only abate the flooding potential, but also recharge the aquifer as more water will be spread over the land, thus by spreading and slowing the waters exit from the valley, will help mitigate the damage potential that flooding will have on land as well as infrastructure. This would also allow for an increased benefit to the resource, the land and the aquifer, as the water flows through the valley.

Your consideration and consultation with the Water Masters of District #33 and #34, along with the Directors of the Big Lost River Irrigation District and the District #3 Recharge Committee would be appreciated.


Seth Beal


Brian Harrell


Rose Bernal

cc.

Water Master Dist. #34

Big Lost River Irrigation Dist.

Dist. #34 Recharge Committee

Dist. #34 Recharge Committee



Big Lost Aquifer System



Water Improvement and Solutions Team Meeting
December 10, 2014

Dennis Owsley, P.G. Technical Hydrogeologist
Idaho Department of Water Resources

BIG LOST RIVER VALLEY GROUND WATER DISTRICT

Data Collection Evaluation

Prepared by: Water Well Consultants, Inc
March 6, 2017

Introduction. Surface and ground water sources are inseparably connected in the Big Lost River Valley. Groundwater availability is purely dependent upon precipitation. A groundwater management plan should be structured to adapt to precipitation changes year after year. As such, it is critical to understand the surface water/groundwater relationship with as much detail as possible.

Many research projects and associated reports have been completed in the Big Lost River Valley. While these projects provide great information on the water resources and geology of the area there are still a few areas lacking in data. Snow and precipitation data for the 2016-2017 winter show potential for a big water year for the valley. Collection of data during this event is critical to formulating a long-term management plan. This letter report describes the additional data needs for the upcoming runoff event. Included is a cost estimate for manpower and equipment required to accomplish the suggested data collection.

Surface Water. Seepage in canals during the irrigation season is well known. No additional information is needed, especially with the new PIVOTRAC telemetered system in place and operable. However, seepage of the main stem of the Big Lost River is unknown. None of the PIVOTRAC stations are on the main stem. The USGS maintains 2 stations on the river but the data is on each extreme of the river.

Therefore, it will be critical to obtain streamflow measurements on the main stem (if it is used for flood water dispersal) between the Leslie Bridge and Arco. Knowing the seepage rate of the river will allow correlation of recharge with rising water levels in wells. Recharge volume calculations and aquifer parameters will be estimated from these correlations. If the main stem is not used for flood water dispersal, no streamflow measurements are necessary. All required infiltration data can be obtained from the PIVOTRAC system.

Measurements at four locations will be critical for seepage calculations. All measurements will be made when the main stem is filled and flowing to the near Arco gage. The PIVOTRAC station at Leslie Bridge will be utilized for the uppermost study area location and no manual measurement will be required there. Manual measurements at three other locations should suffice for the main stem: at Darlington, at Moore, and at Arco. The Arco measurement should be made below the Munsey confluence and the highway.

Currently the Reservoir is releasing approximately 600 cfs. The water has not reached the highway near Arco. Stream measurements should be made after water has reached the highway. Additional measurements should be made in correlation to large changes in releases.

Ground Water. Ground water levels describe the relationship between surface water and ground water. In a valley like the Big Lost River Valley, the interaction is dynamic. The seepage measurements discussed above will provide the data to show the volume of water infiltrating into the ground, and the water levels will describe the response to seepage and the direction of ground water flow. Understanding the response to river flows in the ground water system is necessary if a management plan is going to provide the maximum use of the water resources for agriculture and other uses.

Idaho Department of Water Resources has a monitoring network currently in place in the Big Lost River Valley, but there are some areas where additional data is needed. The attached map shows the locations of current monitoring sites and locations where data is needed.

There are currently 6 locations lacking in ground water data. The first area is below Chilly but above Fish Hatchery Road. This location will describe the infiltration rates and volumes above the reservoir and provide critical information of flow into the reservoir.

The second location is aerially along or near Pass Creek Road and east of the highway. This location is above the sinks and will be critical to help determine groundwater infiltration timing for the valley.

The third location is due west of the Leslie Butte near the intersection of 4050 N and 3600 W. This location will provide information of the contribution of Pass Creek to the ground water system along with the seepage measurements of the Main Stem of the Big Lost River.

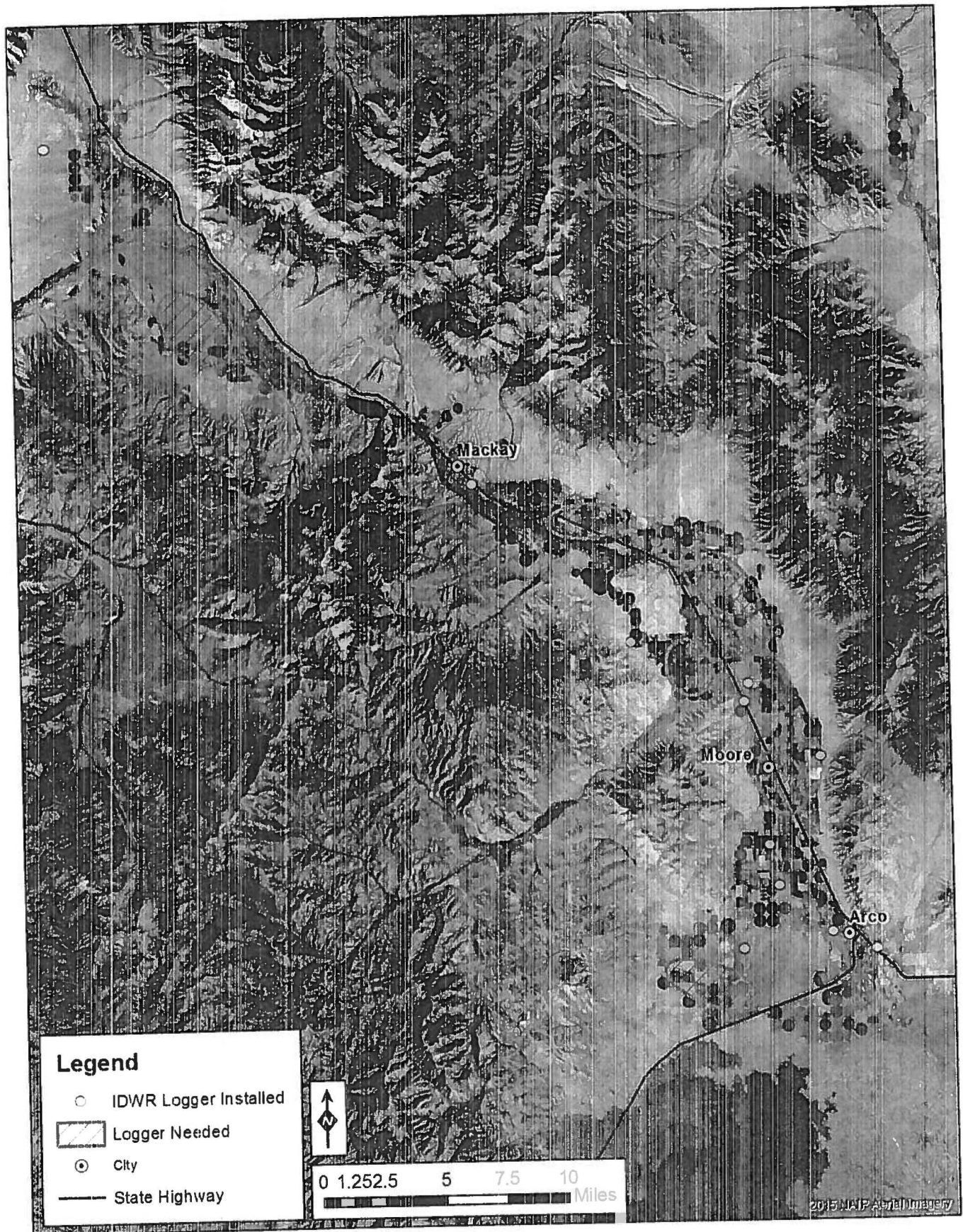
The fourth location is near Darlington. A well has been selected and is currently instrumented with a pressure transducer making 2 readings per day. The instrumented well is at approximately 3550 N 3600 W.

The fifth location is just west of Moore in the vicinity of 3175 N between the river and Spring Creek. There is a small gap in the data in this particular location.

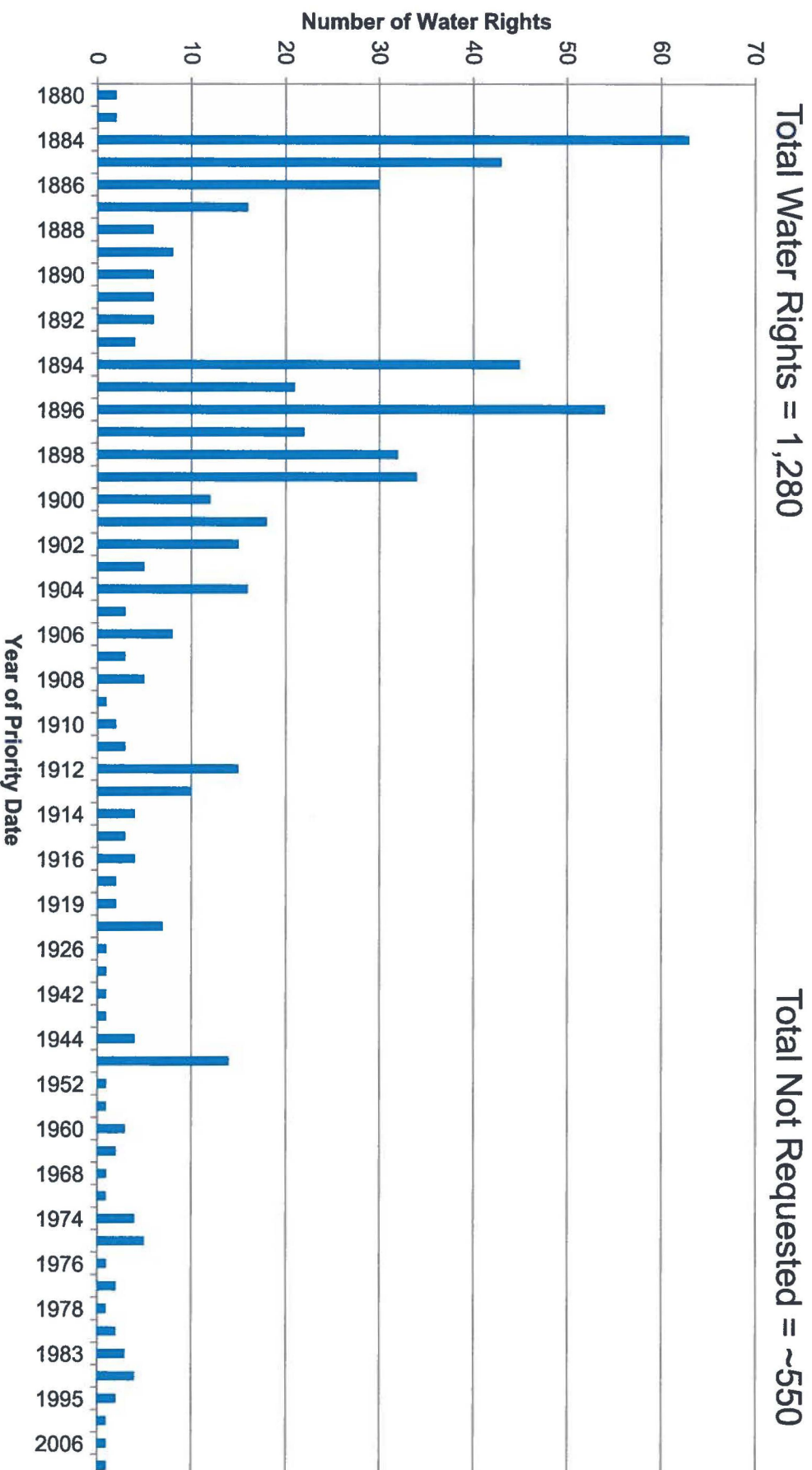
The sixth location is approximately 6 miles west of Arco. This location is not critical if funding is short. This location will provide data that is used to determine the slope of the water table into the mouth of the ESPA.

Water level data will be collected using level logger transducers installed in existing wells. The included cost estimate is for In-Situ's Rugged Troll 100s. This same equipment is used by the Idaho Department of Water Resources in many of their ground water level monitoring sites.

BIG LOST RIVER VALLEY GROUND WATER DISTRICT

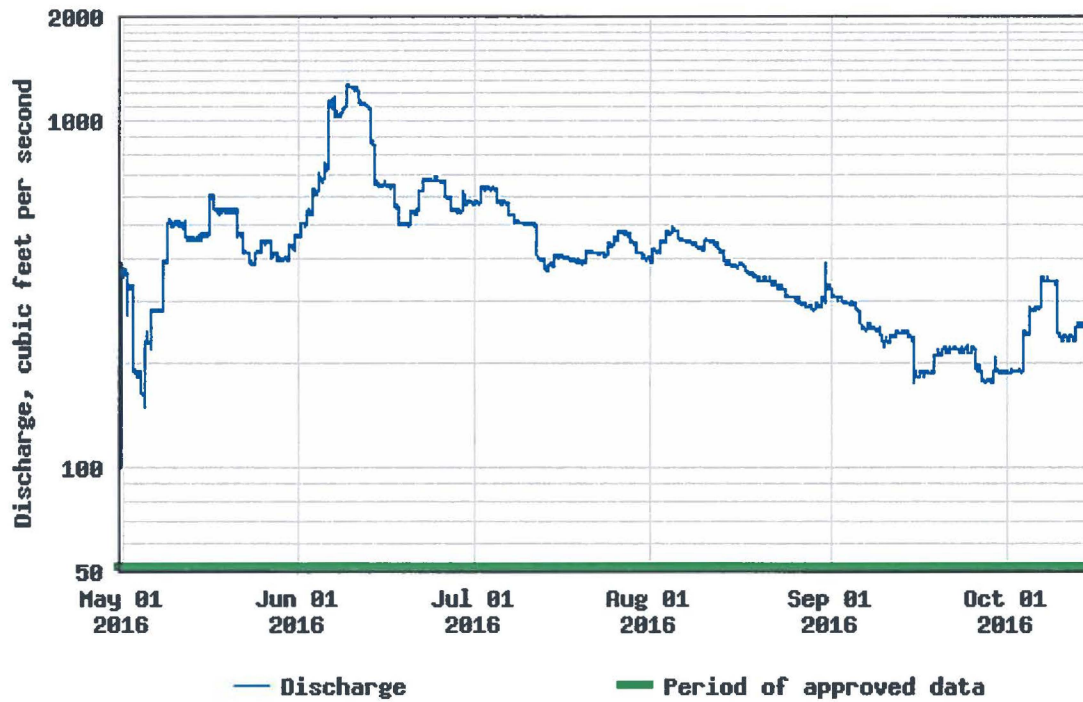


Water Rights Not Requested for Delivery





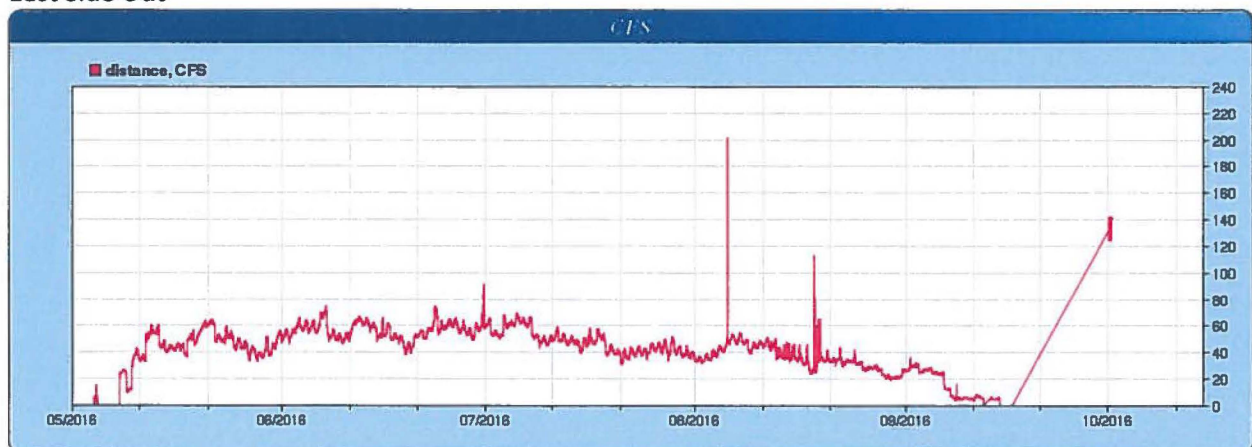
USGS 13127000 BIG LOST RIVER BL MACKAY RES NR MACKAY ID



Leslie Bridge



East Side Out



The signers of this petition are requesting the assistance of the Idaho Department of Water Resources in creating a Critical Ground Water Area in the Big Lost River Basin in order to stabilize the aquifer for the following reasons:

1. Numerous wells have gone dry, or are going dry, and have been replaced or are being re-drilled. This is very costly and sometimes unbearable to effected households. Some individuals have been forced to move because of the costs, others have had to sell their property, some are trucking water in, and others are pulling money from places like their 401K to cover the costs. A number of irrigators have faced similar problems, and have been forced to sell their water rights to bigger entities because they could not afford to drill. Declining aquifer levels are creating a hardship on our local economy.
2. We are concerned that the rate of recharge is not keeping up with the rate that the aquifer is being mined. The summary page of Dennis Owsley, P.G. Technical Hydrogeologist's Big Lost Aquifer System report concludes that "Current gaining and losing reaches are impacted by lowered ground water levels (less gaining reaches). Ground water levels are lower than 1985 conditions and appear to be continually dropping (last two years have seen record low water levels in some wells)." (2014). In the 1990's approximately fifty thousand acre ft. were pumped from the aquifer per year. In the 2000's approximately one hundred thousand acre feet are pumped on average. In less than 20 years pumping has doubled, and recharge has gone down due to less people flood irrigating, lining of canals, lack of precipitation, and no stream flow in our river. Since 2014 the trend toward lowering aquifer levels is continuing at an alarming rate. Numerous household and irrigation wells are going dry.
3. According to Mr. Owsley's report the Big Lost had drought conditions for 20 out of 26 years from approximately 1986 to 2012 (pg. 6, 2014). Slide seven shows a correlation between precipitation and water levels. We are currently in the middle of a drought cycle.
4. The loss of the river and wells going dry is having a devastating effect on our local economy. This once lush green landscape has been turned into a dry desert. Area home and land values are consistently dropping, even while other areas are recovering. It is a burden to our economy, a huge burden to our tax base, and it threatens the future survival of families in our valley. When wells go dry it also makes it difficult to attract families to move here. Butte County is currently one of two counties in the state of Idaho losing population.

The signers of this petition are requesting:

1. **A year-round minimum streamflow of at least 60 cfs per day in the Big Lost River to at least the Arco gage.**
2. For the director to establish reasonable pumping levels for the valley.
3. For the director to stop the use of rotation credits.
4. For the director to stabilize the aquifer using a conjunctive management plan.
5. Ground water rights cannot be transferred away from their existing areas to other parts of the valley, and ground water wells need to remain close to the lands they are irrigating.