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BEFORE THE DEPARTMENT OF WATER RESOURCES OF
THE STATE OF IDAHO

IN THE MATTER OF THE NORTH SNAKE AND MAGIC VALLEY GROUND WATER IRRIGATION DISTRICTS' 2009 JOINT MITIGATION PLAN TO COMPENSATE BLUE LAKES TROUT FARM, INC. (Water Right Nos. 36-0235a, 36-07210, and 36-07427)	Docket Nos. **CM-MP-2009-001** **CM-MP-2009-002** **CM-MP-2009-003** **PETITION FOR RECONSIDERATION**

COMES NOW Blue Lakes Trout Farm Inc. ("Blue Lakes"), by and through its attorneys, Ringert Law Chartered, and hereby files this *Petition for Reconsideration* of the Director's *Order Granting Motion To Limit Scope of Hearing; Denying Motion to Strike; and Scheduling Order ("Order Limiting Scope")* issued on December 22, 2009. This petition is filed pursuant to IDAPA 37.01.01.711.

The grounds for this petition are that: (1) there is no jurisdictional impediment preventing the Director from considering the issues raised by Blue Lakes; (2) the Director is required to comply with the District Court's remand order; (3) there is no basis for the Director to refuse to consider

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new, updated or improved analysis and/or methods for determining the impact of junior ground water diversions on Blue Lakes' water rights; and (4) the Director's *Order Limiting Scope* violates Blue Lakes' right to due process.

INTRODUCTION

The Ground Water Districts (GWDs) filed a *Motion to Limit Scope of Hearing and Proposed Schedule ("Motion to Limit Scope")* on December 4, 2009 asking the Director to limit the hearing in this matter to preclude consideration of issues "relating to the use of the trimline, the spring percentages, the mitigation owed, the amount of material injury found, etc. . . . until the appeal involving those issues has been finalized." *Motion to Limit Scope* at 3.

On December 16, 2009, Blue Lakes lodged its brief in opposition to the GWDs' *Motion to Limit Scope*. Blue Lakes argued that because the Hearing Officer, the Director and the District Court have all recognized the need for ongoing analysis to more accurately determine the impacts of ground water pumping on spring flows and spring rights, the parties are not precluded from presenting new analysis and/or improved methods for evaluating these impacts. Blue Lakes also argued that, to comply with the District Court's remand order, in addition to the established injury to Blue Lakes' 1973 priority water right no. 36-07427, the injury to Blue Lakes' 1971 priority water right must also be addressed prior to the upcoming irrigation season.

On December 22, 2009, the Director issued his *Order Limiting Scope*, in which he determined that the pendency of the appeal in *Clear Springs Foods, Inc. v. Tuthill,* case no. 2008-444 (Fifth Jud. Dist. Gooding County) and *res judicata* prohibit him from considering the issues raised by Blue Lakes.

On January 15, 2010, the GWDs filed a *Notice of Appeal* from the District Court's *Order on*

Petition for Rehearing. On February 5, 2009, Blue Lakes and Clear Springs filed a cross-appeal. No party identified for appeal the issues Blue Lakes has raised before the Director.

ARGUMENT

The *Order Limiting Scope* states that, despite the Director's duty to utilize the best available information in his administration of water rights, there are "two legal principles that prohibit the director from considering the information proffered by Blue Lakes." *Order* at 3. First, the Director believes that he is without jurisdiction to consider the matters raised by Blue Lakes because the District Court's Order in *Clear Springs v. Tuthill* did not comply with I.A.R. 13.3. Second, the Director asserts that *res judicata* prohibits him from considering information related to the Director's model uncertainty, trimline and spring apportionment determinations. *Order Limiting Scope* at 3.

1. There is No Jurisdictional Impediment to the Director's Duty to Administer Water Rights

I.A.R. 13.3 does not apply to this case because the District Court's order of remand is not a temporary remand, i.e. a remand pending the District Court's review prior to the issuance of an opinion. The remand order is instead a component of the District Court's opinion, which is a final order. The District Court is no longer "sitting in its appellate capacity," as suggested by the Director. Accordingly, compliance with I.A.R. 13.3 is not required for the District Court's remand to be effective.

The Director incorrectly states that, the "*Order on Petitions for Rehearing* is an appealable order and jurisdiction will not be reinvested with the Director until either the time for appeal has expired with no party filing for appeal, or the matter is concluded by the Supreme Court." *Order Limiting Scope* at 3. (No party filed a notice of appeal on the issues Blue Lakes has raised in this proceeding.) The Director's statutory jurisdiction and obligation to administer the Blue Lakes' water

delivery call was not divested by the petitions for judicial review or by the pendency of the appeal. Indeed, administration has continued throughout the pendency of the appeal.

The Director's notion that his jurisdiction must be "reinvested" before he has authority to act in accordance with the District Court's remand and utilize best available science appears to be inappropriately transposed from the use of the term "reinvest" in *Syth v. Parke*, 121 Idaho 162, 163, 823 P.2d 706, 767 (1991), whereby the Idaho Supreme Court explained that the Supreme Court did not "reinvest the trial court with jurisdiction to rule upon its own *sua sponte* motion to reconsider its prior order granting a new trial." While a district court retains jurisdiction to enforce its orders, its jurisdiction to act with respect to a case it has decided pending appeal to a higher court is generally divested, absent further instruction from the higher court. A district court's episodic jurisdiction over a case should not be confused with the Director's ongoing, statutory duty to administer water rights.

2. The Director is Required to Comply with the District Court's Remand Order

In the *Order on Petitions for Rehearing*, issued on December 4, 2009, Judge Melanson remanded the case to IDWR to "apply the appropriate burdens of proof and evidentiary standards when considering seasonal variations" as part of a determination of material injury to Blue Lakes' 1971 priority water right no. 36-07210. *Order on Petitions for Rehearing*, at 12-13.

In *Musser v. Higginsion*, 125 Idaho 392, 871 P.2d 809, the Director and IDWR acknowledged their duty to comply with a district court order pending the appeal of that order to the Idaho Supreme Court. The Director and IDWR filed the attached *Motion to Stay Writ of Mandate (And Ex Parte Temporary Stay)* to avoid having to "immediately promulgate temporary rules for distribution of water between the Snake Plain Aquifer and the Snake River." Attachment A at 5.

In *Musser*, the Director acknowledged that he and "IDWR must comply with the Writ of Mandate during the pendency of the appeal, even though IDWR believes that it is wrongly entered." *Id.* In this recognition, the Director cited *Bayes v. State*, 117 Idaho 96, 785 P.2d 660 (Ct. App. 1989), wherein the Idaho Court of Appeals quoted at length from its earlier decision in *In re Contempt of Reeves*, 112 Idaho 574, 733 P.2d 795 (Ct.App.1987):

> If a party were free to disobey any order with which he or she disagreed, the entire judicial process would break down. As the United States Supreme Court explained in *Maness v. Meyers, 419 U.S. 449, 95 S.Ct. 584, 42 L.Ed.2d 574 (1975)*:
>
> > We begin with the basic proposition that **all orders and judgments of courts must be complied with promptly**. If a person to whom a court directs an order believes that order is incorrect the remedy is to appeal, but **absent a stay, to comply with the order pending appeal**. Persons who make private determinations of the law and refuse to obey an order generally risk criminal contempt even if the order is ultimately ruled incorrect . . . . **Such orders must be complied with promptly and completely**, for the alternative would be to frustrate and disrupt the progress of the trial with issues collateral to the central questions in litigation. This does not mean, of course, that every ruling by a presiding judge must be accepted in silence. Counsel may object to a ruling. An objection alerts opposing counsel and the court to an issue so that the former may respond and the latter may be fully advised before ruling. [Citations omitted.] But, **once the court has ruled, counsel and others involved in the action must abide by the ruling and comply with the court's orders** . . . . Remedies for judicial error may be cumbersome but the inquiry flowing from an error generally is not irreparable, and orderly processes are imperative to the operation of the adversary system of justice.
>
> *419 U.S. at 458-60, 95 S.Ct. at 591-92. See also Walker v. City of Birmingham, 388 U.S. 307, 87 S.Ct. 1824, 18 L.Ed.2d 1210 (1967); Howat v. Kansas, 258 U.S. 181, 42 S.Ct. 277, 66 L.Ed. 550 (1922).* This rule applies even where the order later is found to have infringed upon constitutional rights or to be based upon an unconstitutional statute. [Citations omitted.] Only in the case where an order was "transparently invalid or had only a frivolous pretense to validity" will a criminal contempt finding be reversed. [Citations omitted.] We believe that this is a heavy burden to meet, and that an individual who disobeys an order of the court acts at his

> peril. Unless he can convince the appellate court that the order was so clearly invalid that no reasonable man could believe otherwise, a criminal contempt order will be upheld. We further consider it incumbent upon the individual to bring the error to the attention of the court before undertaking to disobey the order. [Citations omitted.]

Bayes v. State, 117 Idaho at 99-101, 785 P.2d at 663-664 (bolded emphasis added).

The Musser Court denied the Director's motion to stay. Attachment A, *Order Denying Motion to Stay Writ of Mandate.*

The same legal principle explained in *Bayes v. State* and applicable in *Musser* applies in this case. Accordingly, the Director is required to comply with the District Court's remand order promptly and completely. Hydraulically connected junior ground water right holders have the burden to show that their diversions do not cause material injury to the Blue Lakes' 1971 priority water right. If they fail to meet this burden, they must be curtailed or receive approval for a plan that mitigates the injury they cause to the Blue Lakes' 1971 priority water right. A mitigation plan submitted in response to a material injury determination must be approved prior to allowing juniors subject to administration to commence water use. *Order on Petitions for Rehearing* at 13.

3. There is No Basis for the Director to Refuse to Consider New, Updated or Improved Analysis and/or Methods for Determining the Impact of Junior Ground Water Diversions on Blue Lakes Water Rights

In his response to Blue Lakes' water delivery call, the former Director used the ESPA model for the first time to administer hydraulically connected ground and surface water rights. The Director's use of a computer model for this purpose involves numerous technical issues that are the subject of ongoing analysis and discussion among ESPA hydrologic and modeling experts. Utilizing the scientific method, the experts test and refine or reject hypotheses, methods and conclusions. Through this process, the best available scientific understanding of the relationship between the

ESPA and hydraulically-connected spring source evolves. To be based on the best available information, the Director's administrative actions must tack and evolve as well.

The judicial objective of finality expressed by the legal principle *res judicata* does not fit well in these early stages of the interface between evolving scientific understanding and administrative action. This has been recognized in the orders issued by the Hearing Officer, the Director and the District Court, and acknowledged by the parties involved in these proceedings. The Director's *Order Limiting Scope* stands in stark contrast to the previously uncontroverted recognition of these circumstances.

Two of the technical issues that are the subject of ongoing analysis and discussion are how to determine and account for model uncertainty in the administration of junior ground water rights causing injury, and how to determine the extent to which junior ground water withdrawals deplete individual spring flows. The resolution of these issues significantly affect the Director's injury and mitigation determinations. It is these issues that Blue Lakes seeks to address with new, updated and improved analysis and methods.

The Director states that he "would ordinarily agree that . . . he should utilize the best available information." *Order Limiting Scope* at 3. He further states, however, that he is prohibited from "considering the information proffered by Blue Lakes," by "at least two legal principles." Contrary to this statement, there are no overriding principles that prevent the Director from meeting his undisputed duty to utilize the best available information in administering water rights.

a. The Pendency of the Appeal Does Not Suspend the Director's Duty to Consider and Utilize the Best Available Information in Administering Water Rights

The first legal principle described by the Director is "jurisdiction." As previously discussed, however, the pendency of the appeal of the Director's 2005 Order on Blue Lakes' water delivery call

does not divest the Director of jurisdiction to administer water rights in response to Blue Lakes' water delivery call. Nor does the appeal affect the Director's obligation to utilize the best available information when administering water rights. The District Court found that, given the information available at the time, the Director did not abuse his discretion in making his model uncertainty, trimline, and spring apportionment decisions. The District Court did not, however, sanctify those decisions. Clearly, if the Director had the discretion to make those decisions, he has the discretion to modify or abandon them altogether as and when necessary for his administrative decisions and actions to comport with contemporary information, analysis and understandings.

In fact, the Director has a duty to utilize the best available science to determine the impact of junior ESPA ground water diversions on Blue Lakes' senior water rights, and adjust his decisions and actions accordingly. I.C. § 42-607; CMR 42.01.c; *American Falls Res. Dist. No. 2 v. IDWR*, 143 Idaho 862, 878-879, 154 P.3d 433, 449-450 (2007). No party has ever contested this proposition that the Director is required to utilize the best available information in response to the Blue Lakes' water delivery call. The Director adopted and the District Court affirmed the Hearing Officer's finding that: "Continuing efforts should be made to improve the accuracy of all scientific conclusions." "If that produces more reliable results, those results should be used in the future." *Responses to Petitions for Reconsideration and Clarification and Dairymen's Stipulated Agreement* ("*Reconsideration Order*") at 7-8. The District Court also found that when better methods are developed to determine the impact of ground water diversions on spring flows and to deal with model uncertainty in administration, those better methods should be used. *Order on Petition for Judicial Review* at 25-29.

Accordingly, the pendency of the appeal cannot possibly suspend the Director's duty to utilize the best available information and, to that end, to consider the information Blue Lakes seeks to present. Just as the Director is required to comply with the District Court's remand order *(see supra* at 4-6), the Director is also required to comply with the direction of the Hearing Officer (which the Director adopted) and the District Court to utilize the best available information.

b. Res Judicata Does Not Apply

Res Judicata is the second legal principle the Director believes prohibits him "from considering the information proffered by Blue Lakes." *Order Limiting Scope* at 3. The inapplicability of *res judicata* to preclude consideration of the information Blue Lakes seeks to present is clear from the language of the aforementioned administrative and judicial orders. They each expressly provide for the consideration and use of improved analysis and methods to determine the impact of junior ground water withdrawals on Blue Lakes' water rights. The orders specifically reference the Director's determinations of model uncertainty, trimline, and spring apportionment. Accordingly, *res judicata* cannot possibly apply to preclude Blue Lakes from presenting the very information the orders require to be considered.

When traditional concepts of *res judicata* do not work well, they should be relaxed or qualified to prevent injustice. 2 Davis, Administrative Law, § 18.03 (1958). The doctrine of *res judicata* is not applicable when new information is available, its application would produce a result that is inconsistent with the prior adjudication, or its application would produce a result contrary to policy. See *Erickson v. Amoth*, 105 Idaho 798, 800-801 (1983), *Sagewillow, Inc. v. Idaho Dep't of Water Res.*, 138 Idaho 831, 845 (2003). As discussed, the Director's application of *res judicata* to prohibit him from considering the best available information is clearly inconsistent with the prior

adjudication. It also produces a result that is contrary to the policy and duty of the director to receive, consider and utilize such information.

The Director's *Order Limiting Scope* states that Blue Lakes has not shown that it will present new information that was not available at the time of the 2007 hearing on the Director's 2005 Orders on the Blue Lakes and Clear Springs water delivery calls. The following description is offered in response to explain what Blue Lakes intends to present.

At the time of the 2007 hearing on the Director's 2005 Orders on the Blue Lakes and Clear Springs water delivery calls, the prevailing view was that the ESPA ground water model could only be used to predict the impact of junior ground water diversions on reaches of the Snake River to which it had been calibrated, and that it could not be used directly to reliably determine the impact of ground water withdrawals to individual springs. Due to the perceived "reach only" limitation of the model, the District Court found that the Director did not abuse his discretion to: (1) use the model to predict the impact of junior ground water diversions on the Devils Washbowl to Buhl reach and base administration on that prediction; (2) assign a 10% +/- uncertainty to the model's outputs, based on stream gage error; (3) based on this uncertainty estimate, apply a 10% "trimline" which excludes from administration a substantial number of junior wells that are shown by the ESPA model to deplete Blue Lakes' spring source, and (4) prorate the impact of junior ground water diversions on Blue Lakes' spring source (20%, 10 cfs) to define the juniors' mitigation obligation to Blue Lakes.

The Hearing Officer, the Director, the District Court, and Dr. Allen Wylie have all recognized the shortcomings of Director's model uncertainty, trimline or spring percentage

determinations, and the need for further analysis. *See, Blue Lakes Opposition to Motion to Limit Scope of Hearing* at 6-8.

After the 2007 hearing, Blue Lakes' consultant obtained previously unavailable information from IDWR and performed additional analysis to discover that, because the model has been calibrated to the Blue Lakes' spring source, it can be used to show the impact of ground water diversions on Blue Lakes' springs. This method produces more accurate and reliable results than the "reach only" approach with the Director's "trimline" and "spring percentage" "post-modeling administrative adjustments." *See Direct Testimony of Charles Brockway, Ph.D., P.E.*, January 11, 2010. This is in part because it eliminates the impact of error associated with stream gage measurements. Blue Lakes is prepared to present this method and its results to the Director.

Also subsequent to the 2007 hearing, several experts authored and submitted the attached White Paper (Attachment B) to advise the Director and the ESPAM Committee that the trimline represents a scientifically indefensible application of model uncertainty. During his recent deposition testimony, Dr. Wylie agreed with this conclusion of the White Paper. Affidavit of Daniel V. Steenson (submitted in support of *Blue Lakes Opposition to Motion to Limit Scope of Hearing*), Ex. C at 101-108. Based upon the analysis of the White Paper, Blue Lakes is also prepared to present a method of applying model uncertainty in the administration of junior ground water rights that is more scientifically defensible than the "trimline."

4. The Director's Order Limiting Scope Violates Blue Lakes' Right to Due Process

The Constitution of the United States provides that no person shall be deprived of "life, liberty, or property, without due process of law." U.S.C.A. Const. Amend. 14, §1; Const. Art. 1, §13. Procedural due process is a protection against the arbitrary deprivation of one of these rights.

Mathews v. Eldridge, 424 U.S. 319, 332, 96 S.Ct. 893, 47 L.Ed.2d 18 (1976). It protects the minimum guarantees of notice and a hearing where deprivation of a property interest may occur. *Boise Tower Assocs., LLC v. Hogland,* 215 P.3d 494, 500 (2009). Because a water right is a property right, procedural due process is applicable when a party may be deprived of its water right.

Blues Lakes' water rights have been and continue to be injured as a result of diversions by hydraulically connected junior ground water users. Due in part to the Director's flawed model uncertainty, trimline, and spring apportionment determinations, the Director has substantially understated the depletive effect of junior ground water diversions on Blue Lakes' water rights, and is allowing large numbers of junior ground water rights to continue to cause injury to Blue Lakes' water rights without providing adequate mitigation. The Director's use of the flawed injury determination in evaluating the adequacy of a mitigation plan deprives Blue Lakes of the full benefit of its water rights. The Director's refusal to allow Blue Lakes to present better analysis and methods to determine the impact of junior ground water diversions on Blue Lakes' water rights deprives Blue Lakes of its right to procedural due process prior to continued deprivation of Blue Lakes' water rights.

CONCLUSION

For the foregoing reasons, the Director must comply with the District Court's remand order. The Director must also allow Blue Lakes to present new information to show that there are more reliable and scientifically defensible methods to determine the impact of junior ground water diversions on Blue Lakes' water supply and deal with model uncertainty in the administration of junior ground water rights.

Dated this 9th day of February, 2010.

RINGERT LAW CHARTERED

By: _____
Daniel Steenson
Attorneys for Blue Lakes Trout Farm, Inc.

CERTIFICATE OF SERVICE

I hereby certify that on this 9th day of February, 2010, I served a true and correct copy of the foregoing **PETITION FOR RECONSIDERATION** by delivering it to the following individuals by the method indicated below, addressed as stated.

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ATTACHMENT A

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IN THE SUPREME COURT OF THE STATE OF IDAHO

In Re the General Adjudication of Rights to the Use of Water From the Snake River Drainage Basin Water System	Case No. 20807
J. ALVIN MUSSER; TIM MUSSER; and HOWARD "BUTCH" MORRIS, Petitioners-Respondents, vs. R. KEITH HIGGINSON, in his official capacity as director of the Idaho Department of Water Resources, and the IDAHO DEPARTMENT OF WATER RESOURCES, Respondents-Appellants.	MOTION TO STAY WRIT OF MANDATE (AND EX PARTE TEMPORARY STAY)

FILED - ORIGINAL
SEP - 9 1993
Supreme Court ___ Court of Appeals ___
Entered on ATS by ___

Attachment A

MOTION FOR STAY DURING PENDENCY OF APPEAL

R. Keith Higginson, director of the Idaho Department of Water Resources and the Idaho Department of Water Resources (together "IDWR") move the Court pursuant to I.A.R. 13(g) to stay, during the pendency of IDWR's appeal to this Court, the Writ of Mandate entered on August 5, 1993 by the District Court of the Fifth Judicial District, in and for the County of Twin Falls, Case No. 39576, a copy of which is attached as Exhibit A.

IDWR made application to the district court for a stay of the Writ of Mandate which was denied by order dated August 30, 1993. A copy of which order is attached as Exhibit B.

The grounds for this motion are as follows:

1. Petitioners are the owners of a water right in Hagerman Valley, the source of which is a tunnel built into the bluffs in which many natural springs are located that are interconnected with the Snake Plain Aquifer. Because of low water flows from the tunnel, Petitioners made demands upon IDWR to fully and immediately deliver water to them in the amount of their water right. IDWR honored the demands to the extent they involved distribution of water within Water District 36A, where Petitioners' right is located, but declined to grant Petitioners' demands to the extent they requested IDWR to immediately shut off ground water pumpers in the Plain outside of the water district. IDWR could not meet Petitioners' demand because it does not presently know the hydrologic and legal relationship between individual ground water rights to the Snake Plain Aquifer and Petitioners' water rights. Indeed, one of the primary reasons

for the SRBA was to resolve the legal interrelationship between water rights such as these. In order to grant Petitioners' demand, IDWR believes the ground water users must be afforded an opportunity for a hearing to present any defenses to Petitioners' demands. Immediately upon IDWR's partial denial of Petitioners' demand, Petitioners approached the District Court for the Fifth Judicial District for a writ of mandate directing IDWR to immediately deliver Petitioners' water right.

2. Prior to the hearing, Petitioners' changed their demand. They indicated that they were not asking IDWR to take any particular action, they only sought an order from the district court directing IDWR to take action pursuant to I.C. § 42-602. Based upon this changed demand, IDWR offered to conduct an expedited contested case hearing to determine whether ground water users were interfering with Petitioners' water right, and also announced its intent to enter into rulemaking to address conjunctive management of the Snake River surface and ground water resources. Petitioners rejected these measures as insufficient and proceeded to trial, although at trial they still claimed that they were not asking IDWR to take any particular action to shut off water rights.

3. On August 5, 1993, the district court commanded IDWR by Writ of Mandate to "immediately comply with I.C. § 42-602 and distribute water in accordance with the Constitution of the State of Idaho and the laws of this state commonly referred to as the Doctrine of Prior Appropriation." In its Order and Memorandum Decision Granting Petition for Writ of Mandate, the district

court stated that "the Director must respond to calls for distribution by following rules and regulations for the distribution of water which he is authorized to adopt under I.C. § 42-603." Id. at 5 (emphasis added).

4. The district court further concluded that the availability of contested case proceedings conducted pursuant to IDWR's Rules of Procedure, IDAPA 37; Title 01, is not adequate to comply with the duty imposed by I.C. § 42-602. Memorandum Decision at 7. As a result, although IDWR is still willing to provide Petitioners, and any other right holder for that matter, a hearing when there is a possibility that their right is being affected by another, that option is no longer available or sufficient under the district court's reasoning to comply with the I.C. § 42-602.

5. The district court's command is a dramatic departure from IDWR's historic practice. Historically, IDWR has not regulated distribution of surface water and ground water through rules. Instead, IDWR has relied upon water right adjudication decrees, water right licenses and permits, case law, and statutory law, as well as the availability of contested case hearing proceedings pursuant to I.C. §§ 42-237b-e and Chapter 52, Title 67, Idaho Code, to address water distribution problems. Affidavit of Norman C. Young. Presently, IDWR has no rules or regulations for the distribution of water. Thus, IDWR is not able to comply with the district court's mandate, to "respond to calls for distribution by following rules and regulations."

6. Thus, IDWR is and will be in violation of the court's Writ every time a call is made on IDWR to distribute water pursuant to I.C. § 42-602 until comprehensive rules for the distribution of surface water and ground water are promulgated by IDWR. Indeed, the August 9 and 24, 1993, letters from Patrick D. Brown, attorney for Petitioners, attached to the Affidavit of Norman C. Young, appear to have been written with the intent of supporting a motion for contempt proceeding against IDWR for failure to comply with the Writ of Mandate.

7. IDWR must comply with the Writ of Mandate during the pendency of the appeal, even though IDWR believes that it was wrongly entered. *Bayes v. State*, 117 Idaho 96, 99-101 (Ct. App. 1989). A Notice of Appeal was filed with the district court on August 11, 1993. A copy of the Notice of Appeal is attached hereto as Exhibit C. This leaves IDWR two options: IDWR must immediately promulgate temporary rules for distribution of water between the Snake Plain Aquifer and the Snake River, or, as IDWR has done, move this Court for a stay of the district court's Writ pending the outcome of this appeal, or until IDWR promulgates permanent rules, whichever is earlier.

8. Promulgation of temporary rules is a poor alternative in this matter. The interrelationship of water rights in the Snake Plain Aquifer and the surface springs in the Hagerman Valley is extraordinarily complex. IDWR is not able at this time to determine the timing, location, or amount of the impact of a ground water withdrawal from the Snake Plain Aquifer upon the Hagerman Springs. There is, however, at least technically an

impact by withdrawals on the Snake Plain Aquifer upon the springs. The temporary rules would have to resolve this conflict as a general matter, while correctly interpreting and applying the prior appropriation doctrine. If the ground water pumpers on the Snake Plain are required by temporary rules to shut off their wells because of their impact upon the springs at Hagerman, there will be a huge impact on both Idaho's economy and the individual ground water pumper and such rules may thwart the public policy of full economic development of underground water resources. I.C. § 42-226. Further, it is probable that shutting off ground water pumpers would not provide spring water users any usable water for this season. See paragraph 12 below.

9. IDWR has studied the physical relationship between ground water and the Snake Plain Aquifer and the Snake River in the past, and is in the process of doing a further study to clarify that relationship. Affidavit of Norman C. Young. As a logical part of this process IDWR has promulgated a Notice of Intent to Promulgate Rules with a target date of March 4, 1994. That Notice of Intent to Promulgate Rules describes the process as a negotiated rule making as is the preference of the legislature pursuant to Idaho Code 67-5220. Promulgation of the temporary rules, would circumvent this process.

10. Because of the complexity of the issues involved; the potentially serious financial impact of rules upon thousands of water users and the general economy of the state; the Legislature's preference for agencies to use the negotiated rule-making process set forth in I.C. § 67-5220; the need to ensure

that affected parties have an opportunity to be heard; and the need for further evidence regarding the type of rules needed, it would be inappropriate for IDWR to attempt to promulgate temporary rules on an emergency basis to conjunctively manage the Snake Plain Aquifer and the Snake River. Affidavit of Norman C. Young. Thus, at this time, IDWR cannot comply with the district court's command to deliver surface and ground water pursuant to rules and regulations in a reasonable and meaningful manner.

11. Petitioners will not be harmed by issuance of the stay requested by IDWR. IDWR's current measurements indicate that the water needs of Petitioners for the lands presently under production can be satisfied by properly distributing by priority and amount the water available from sources within Water District 36-A. Instructions to the watermaster have been issued to this effect. Affidavit of Norman C. Young. If Petitioners are still dissatisfied with the amount of water they are receiving they may petition IDWR for a contested case hearing to determine if ground water users they specify should be shut off. IDWR has used administrative hearings for this type of dispute in the past. *See, e.g. Stevenson v. Steele*, 93 Idaho 4 (1969).

12. Even if IDWR had rules in place regarding the distribution of water between the Snake Plain Aquifer and the Snake River, information available to IDWR is not adequate to establish the amount, location and timing of the effect that specific diversions under water rights from the Snake Plain Aquifer have upon the water supply available to specific water rights. As the Director testified, at the July 8, 1993 hearing

on the Petition for Writ of Mandate, under the circumstances presented by the present case "no additional water probably would show up at the senior's point of diversion" this season if junior ground water users were to be shut off in an attempt to increase the flow of water in the Curran Tunnel. Tr. p. 80, L. 11-15. A true copy of that portion of the Transcript of the July 8, 1993, hearing is attached hereto as Exhibit D. The Director has also stated that "[i]nformation presently available to the director does not establish the effect of diversions under water rights from the Snake Plain Aquifer in Basin 36 on the water supply available to senior water rights from the springs, the spring-fed tributaries, or the Snake River downstream from Milner Dam." Director's Report for Reporting Area 3 at ¶ 5, p. 10, quoted in Memorandum Decision at 6. Staying the Writ of Mandate will allow IDWR time to thoughtfully determine how to deal with these factual complexities in permanent rules.

MOTION FOR EX PARTE TEMPORARY STAY

IDWR further moves the Court pursuant to I.A.R. 13.1 for an ex parte temporary stay of execution of the writ of mandate entered on August 5, 1993 pending determination of the above MOTION FOR STAY DURING PENDENCY OF APPEAL made under I.A.R. 13(g). The grounds for this motion are as follows:

13. The same reasons that support the above MOTION FOR STAY DURING PENDENCY OF APPEAL also support the motion for ex parte stay of execution of the writ of mandate. IDWR could immediately and irreparably be in contempt of the writ of mandate

before a ruling can be made upon this application for stay during the pendency of the appeal. Paragraphs 1 through 8 above are incorporated herein by reference.

14. IDWR certifies and represents that it has made an effort to give notice of this application to Petitioners by calling them and informing them of IDWR's intentions and faxing them this Motion and Affidavit of Norman C. Young on September 8, 1993.

15. This motion is further supported by the attached affidavit of Norman C. Young.

PRAYER FOR RELIEF

1. IDWR requests that this Court enter an order staying, during the pendency of IDWR's appeal to this Court, the Writ of Mandate entered on August 5, 1993 by the District Court of the Fifth Judicial District, or until IDWR has promulgated permanent rules for the conjunctive administration of the Snake Plain Aquifer and Snake River, whichever comes first.

2. IDWR further requests that this Court grant its MOTION FOR EX PARTE TEMPORARY STAY of execution of the writ of mandate entered on August 5, 1993 pending determination of the above

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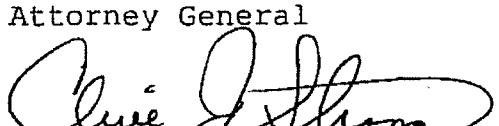
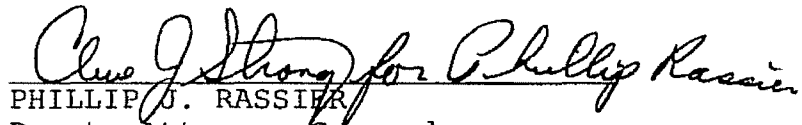
MOTION FOR STAY DURING PENDENCY OF APPEAL made under I.A.R. 13(g).

Respectfully submitted this 8th day of September, 1993.

LARRY ECHOHAWK
Attorney General



CLIVE J. STRONG
Deputy Attorney General
Chief, Natural Resources Division



PHILLIP J. RASSIER
Deputy Attorney General
Department of Water Resources

PETER R. ANDERSON
Deputy Attorney General
Natural Resources Division

P3237NBA

VERIFICATION

State of Idaho)
) ss
County of Ada)

PETER R. ANDERSON, being first duly sworn upon oath, deposes and says as follows:

That he is one of the attorneys in the above-entitled action; that he has read the above and foregoing MOTION TO STAY WRIT OF MANDATE (AND EX PARTE TEMPORARY STAY) and knows the contents thereof; and that the facts therein stated are true.

Peter R. Anderson
PETER R. ANDERSON
Deputy Attorney General
Natural Resources Division

SUBSCRIBED AND SWORN to before me this 8th day of September, 1993.

Carrie Jo Clark
NOTARY PUBLIC FOR IDAHO
Residing at Boise
My Commission Expires June 16, 1994

In the Supreme Court of the State of Idaho

IN RE THE GENERAL ADJUDICATION OF RIGHTS TO THE USE OF WATER FROM THE SNAKE RIVER DRAINAGE BASIN WATER SYSTEM.	
ALVIN MUSSER; TIM MUSSER; and HOWARD "BUTCH" MORRIS, Petitioners-Respondents,	ORDER DENYING MOTION TO STAY WRIT OF MANDATE
v.	NO. 20807
R. KEITH HIGGINSON, in his official capacity as Director of the Idaho Department of Water Resources and the IDAHO DEPARTMENT OF WATER RESOURCES, Respondents-Appellants.	Ref. 93S-209

A MOTION TO STAY WRIT OF MANDATE with supporting documents was filed by Appellants September 9, 1993. A BRIEF IN OPPOSITION TO IDWR'S MOTION TO STAY WRIT OF MANDATE with attachments was filed by Respondents September 22, 1993. The Court is fully advised; therefore, after due consideration,

IT HEREBY IS ORDERED that the MOTION TO STAY WRIT OF MANDATE be, and hereby is, DENIED.

DATED this 18th day of October, 1993.

By Order of the Supreme Court

Frederick C. Lyon, Clerk

cc: Counsel of Record
District Court Clerk
District Judge Daniel C. Hurlbutt

Entered on ATS
By: ____

ATTACHMENT B

White Paper
Technical Evaluation of Trim Line

Submitted by the following members of the
Eastern Snake Hydrologic Modeling Committee:

John Koreny, HDR, Inc.
Charles E. Brockway, Brockway Engineering, PLLC.
Willem Schreuder, Principia Mathematica
John Bowling, Dave Blew, Idaho Power Co.
Jim Brannon, Leonard Rice Engineers, Inc.

June 5, 2009

1.0 INTRODUCTION

1.1 Background

The authors of this White Paper have completed a technical analysis of the 10 percent trim line concept developed by the Idaho Department of Water Resources (IDWR). The trim line delineates the area within the Enhanced Snake Plain Aquifer Model (ESPAM) boundary where individual aquifer depletions by junior-priority ground water pumping are assumed to result in less than 10 percent depletion to an identified spring reach at steady state. Pumping outside of the trim line is not included in the model impact simulation and is incorrectly assumed to have no effect on spring flow. IDWR uses the 10 percent trim line to: 1) determine areas where junior-priority ground water users are no longer responsible to mitigate for the impacts of their aquifer depletions on individual springs; and 2) identify acceptable forms of mitigation based upon geographical location either within or outside of the 10 percent trim line. Our analysis is submitted at the invitation of Director David Tuthill to members of the Eastern Snake Hydrologic Modeling Committee (ESHMC), as described in the Feb. 25, 2009 letter in **Attachment A**. The letter states the following topic for ESHMC consideration: "*As part of the uncertainty analysis, should the ESHMC address the technical aspects (not policy issues) of a trim line as a function of uncertainty*." The underlying issue is how to correctly determine and utilize model uncertainty in evaluating ESPAM outputs.

The ESPAM model is used to quantify the relationship between withdrawals from and additions to the Eastern Snake Plain Aquifer (ESPA), and ESPA groundwater levels and spring flows emanating from the ESPA. Although model uncertainty has not been quantified, IDWR has assigned 10 percent uncertainty factor and incorrectly linked model uncertainty to a trim line. In his February 25th letter, the Director states that "*The development of a more scientifically based error factor should be a priority in improvement.*" The Director recommends further analysis and data collection, "*to minimize uncertainty in future versions of the ESPAM Model*", and states that, "*The investigation of uncertainty should be accomplished through regular committee analysis and discussion.*"

The Director's letter explains that: "*The purpose of the trim line or clip was to avoid curtailing ground water users who might have no effect on enhancing reach gains.*" The letter also suggests that the trim line delineates ground water withdrawals that have a *de-minimus* effect on spring and surface reach gains.

Based on our analysis, we have reached the following conclusions:

1. The inference that ground water withdrawals outside the 10 percent trim line might have no effect on reach gains based on an assumed model uncertainty of +/- 10 percent is incorrect. A 10% error factor does not mean that ESPAM outputs could be 100% inaccurate with respect to ground water withdrawals that occur beyond the trim line. The correct interpretation and use of model uncertainty is that each withdrawal and addition of water to the ESPA will have the ESPAM-predicted effect on reach gains, subject an error factor, which may or may not be +/- 10 percent.

2. Ground water withdrawals beyond the 10% trim line do not have a *de-minimus* effect on spring and surface reach gains. The cumulative impact of the pumping by junior-priority ground water wells located outside of the 10 percent trim line reduces the spring flow by between one-half to one-third of the total flow impact. A reduction of the senior's supply by one-half to one-third is obviously significant and is well above a *de-minimus* impact. The 10 percent trim line is clearly excluding a large majority of the ground water pumping that does in fact have an impact on spring flow.

3. The uncertainty of the ESPAM model has not been determined.
4. The uncertainty of most of the model calibration data, especially the data used to calibrate the below-Milner spring reaches is much less than 10 percent.
5. The trim line has nothing to do with model uncertainty. The trim line is simply the boundary identified by the Director of the Department of Water Resources that designates those wells where individual aquifer depletions by junior-priority ground water pumping are assumed to result in less than 10 percent depletion to a spring reach. The trimline as used by the Director is not justified. Some other procedure needs to be developed that more closely identifies those ground water users that collectively have a *de-minimus* impact on spring flow.

As discussed in Section 3.0 of this White Paper there is a continuing need for improved methods to simulate spring flow and to evaluate impacts at individual springs. The authors of this White Paper would like to submit information for consideration of these topics for additional discussion.

Tables and figures are presented at the conclusion of the text. A PowerPoint presentation prepared for the Eastern Snake Hydrologic Modeling Committee (ESHMC) is presented as **Attachment B**. An email from Dr. Richard Allen is cited in **Attachment C**.

2.0 TRIM LINE

2.1 What is the Trim Line?

The 10 percent trim line defines the area within the Eastern Snake Plain Aquifer (ESPA) model boundary where individual aquifer depletions by junior-priority ground water pumping are assumed to result in less than 10 percent depletion to an identified spring reach. The location of the area within the trim line for the Devils Washbowl to Buhl and Buhl to Thousand Springs reaches is shown on **Figures 1** and **2**.

IDWR's technical basis for the 10 percent trim line is that some of the model calibration data, specifically the Snake River gage data, is only accurate to within 10 percent. The 10 percent uncertainty in the model is therefore assumed to be the same as the error in the Snake River gage data used as part of the calibration data in the model. The errors in this and other assumptions regarding the trim line are explained below.

2.2 The Trim Line is an Incorrect Interpretation and Use of Model Uncertainty

The following issues with the model uncertainty rationale for the trim line were identified during our review.

a) **The uncertainty of the ESPA model has not been established.** Model uncertainty is based on a combination of uncertainty in the conceptual model, the input data, calibration targets and numerical error. These errors can compound or cancel each other out. Specifying a single uncertainty value to the entire model based on the accuracy of a single parameter is not technically valid.

b) **Model uncertainty is not addressed by a trim line. The 10 percent trim line criteria is not related to model uncertainty.** The trim line has nothing to do with model uncertainty. The trim line is simply the boundary identified by the Director of the Department of Water Resources that designates those wells where individual aquifer depletions by junior-priority ground water pumping are assumed to result in less than 10 percent depletion to a spring reach.

   Model uncertainty is the error of the model output caused by uncertainty in the model input data, calibration data, failures in the conceptual model or numerical error. In the case of the ESPA model, the uncertainty in the output applies to junior-priority ground water pumpers both <u>inside and outside of the trim line</u>. Also, the model uncertainty is plus or minus the model-calculated impact. For example, if 10 cfs of consumptive-use pumping by a junior-priority ground water user reduced flow at a spring reach by 1 cfs, then a 10 percent model uncertainty factor would mean that

the junior-priority ground water user had a 1 cfs impact plus or minus 0.1 cfs. Therefore, there is no justification to only apply model uncertainty to wells within a certain area of the aquifer or to reduce the calculated impact due to model uncertainty. **The measurement error of many of the model calibration targets is much less than ±10 percent.** The reason cited for the 10 percent trim line is the error in the Snake River gage data used for model calibration. This is not justified for several reasons. First, the individual and reach gain spring flow data (not Snake River gage data) is used for model calibration in the below Milner reaches. Second, it is factually incorrect to assume that the uncertainty in simulated model output is the same as Snake River gage data, which is the least-accurate calibration data. The model uncertainty is a function of the uncertainty in all the calibration data, and most of the model calibration data are more accurate than 10 percent, as described below.

Ground Water Level Calibration Data The largest calibration dataset for the model is field-measured ground water levels in wells. Ground water levels are usually measured to an accuracy between 0.01 to 0.1 feet, which is less than a 1 percent uncertainty for the vast majority of wells measured when compared to the total ground water surface elevation across the aquifer or the seasonal vertical change in ground water levels at a well.

Spring Flow Calibration_Data The model calibration in the west half of the ESPA at the below-Milner spring reaches uses spring flow measurements for model calibration. The steady state spring flow calibration data was compiled from measurements at flumes, weirs or pipelines and reported in the 1991 USGS report by Covington and Weaver.[1] The transient calibration was performed using data from individual springs. The flow measurements at many of the individual springs (such as Blue Lakes Spring and Clear Lakes Spring) were

[1] Covington, H.R. and J.N. Weaver, 1991. Geologic Maps and Profiles of the North Wall of the Snake River Canyon Thousand Springs and Niagara Springs Quadrangles, Idaho. USGS Misc. Investigations Series, Map 1-1947-C. U.S. Geological Survey, Boise, ID.

collected from facility diversions with measurement structures (weirs or flumes in pipelines, canals and open ditches) used for administration and delivery of water.

The spring flow data used for model calibration was measured more accurately than river gage data. Spring flow measurements are collected using a standard weir or flume and are more accurate because both the cross-sectional area and water stage is known and the total flow can be calculated using standard equations to a precision of about 2 percent.[2] Where pipe flow meters are used for measured spring flows, the accuracy is also about 2%. Measurements in pipes or canals without weirs or flumes using a flow meter are also more accurate than a river gage because the cross-sectional area of flow is regular and defined. The precision of a flow meter for these types of measurements is generally considered to be 95 percent or less. Therefore, the accuracy of the calibration data for the below-Milner springs is probably from 2 to 5 percent.

c) **The breakdown of river reaches inappropriately influences the 10 percent trim line area.** The determination of the trim line area is largely dependent on the size of the reaches specified in the model. Although there are other factors that influence the trim line area (like the water right priority), if these factors are held constant, then larger river reaches will have larger trim line areas and smaller river reaches will have smaller trim line areas. This is part of the reason for the difference in the trim line developed for the Devils Washbowl to Buhl reach (**Figure 3**), Buhl to Thousand Springs reach (**Figure 4**) and Thousand Springs to Malad Gorge reach. The impacts analysis quantity should not be determined by the spatial assignment of the spring reaches.

[2] U.S. Bureau of Reclamation, 2001. Water Measurement Manual, U.S. Bureau of Reclamation, Denver, CO, pg. 7-1.

2.2 The Trimline Does Not Delineate De-minimus Impacts

The use of a 10 percent trim line does not account for the cumulative depletion from wells located outside of the trim line and drastically under-predicts the actual impacts to spring flow. The data on **Tables 1** and **2** show that a 10 percent trim line clipped to WD 130 excludes 89 percent of the ground water irrigated acres on the ESPA and 46 percent of the total impact of junior-priority ground water pumping on the Buhl to Thousand Springs reach. **Table 3** and **4** show that a 10 percent trim line clipped to WD 130 excludes 79 percent of the ground water irrigated areas on the ESPA and 35 percent of the total impact of junior-priority ground water pumping on the Devils Washbowl to Buhl reach. The data in **Table 3** and **4** shows that junior-priority wells with a known and quantified impact to a senior spring user are being excluded from administration. There is no reasonable technical justification to disregard the cumulative impacts from individual ground water depletions located outside of the trim line if they are a major portion of the total impacts to spring flow. This procedure essentially discounts depletions outside the trim line and, if a trim line boundary is to be employed, it could be argued that similar contributions to the aquifer outside the trim line should also be discounted. For instance, any known changes in input such as crop consumptive use changes, changes in tributary underflow or conversions over the remainder of the aquifer might be considered as non-contributory and not considered in the evaluation of changes in spring flow. If they are considered non-contributory they are then defacto non-tributary which hydrologically is simply not correct.

In our experience applying hydrologic models for water right or water supply impact determinations for transfers or new water right applications, a trim line is not used to exclude the cumulative impacts from individual wells on a river or spring. Water users are typically required to provide mitigation for the extent of their impacts as determined by a calibrated model or another analytical procedure. The State of Colorado has established a threshold for administration of impact of a well on a surface water body that cannot exceed one tenth of one percent of the amount of production of the well. This standard accounts for the

cumulative significant depletive effects from many wells on pumping surface water.

Tables 2 and **4** show that IDWR's use of the 10 percent trim line disregards the cumulative depletion from individual ground water wells outside of the trim line and thus reduces the determination of impacts from junior-priority ground water pumping to about 54 to 65 percent of the actual predicted impact to the spring reaches. A procedure that fails to identify 35 to 46 percent of the total impacts to spring flow is not reasonable or justified and does not correctly identify pumpers with less than a de-minimus impact on the spring.

As a point of comparison, we selected a 1 percent trim line area using the same method in the 2005 Order for the 10 percent trim line. The 1 percent trim line was only used as an example to show that the 10 percent trim line fails to identify junior-priority wells that cause a large percentage of the impacts to spring flow. The 1 percent trim line (see **Figure 3**) identifies the area where individual aquifer depletions by junior-priority ground water pumping will result in less than 1 percent depletion to the spring reaches. **Tables 2** and **4** show that a 1 percent trim line identifies most of the impacts by ground water pumping on the spring reaches as compared to the 10 percent trim line. For example, assuming a 1971 priority date, the 1 percent trim line provides 95.5 cfs at the Devils Washbowl to Buhl reach which is almost as much as all of the pumping in the entire ESPA (96.3 cfs), as shown on **Figure 4**. Use of a 10 percent trim line reduces the determination of impacts to the Devils Washbowl to Buhl spring reach to 63 cfs, which is only 65 percent of the full impact to the spring from junior-priority ground water pumping, simply due to the position selected for the trim line.

3.0 NEED FOR IMPROVED METHODS TO SIMULATE SPRING FLOW AND TO EVALUATE IMPACTS AT INDIVIDUAL SPRINGS

The ESHMC is currently involved with development and calibration of Version 2 of the ESPAM model. We believe that the representation of individual springs and spring reaches in the model needs more improvement, with respect to both spring flow calibration dataset and the details of the drain boundary.

The ESPAM model results have been used to predict the impacts from ground water pumping to spring flow reaches. This is accomplished by using the model to determine the impacts at a reach and then assigning a portion of the impact to an individual spring based on the measured amount of flow arriving at the spring as compared to the reach. This method introduces many potential errors and the results are highly dependent on the discretization of the spring reaches and the assumptions used to estimate the spring flow occurring at an individual spring as a percentage of the total spring flow in a reach. If there are multiple users from a spring, the method also has to assign the percentage of flow between users.

Recognizing the necessity for use of the ESPAM model in both planning and administration these issues should be addressed by the ESHMC and recommendations provided to the Department.

4.0 REFERENCES

Covington, H.R. and J.N Weaver, 1991. Geologic Maps and Profiles of the North Wall of the Snake River Canyon Thousand Springs and Niagara Springs Quadrangle, Idaho. USGS Misc. Investigations Series, Map 1-1947-C. U.S. Geological Survey, Boise, ID.

US Dept. of the Interior, Techniques of Water-Resources Investigations of the USGS, Discharge Measurements at Gauging Stations: Book 3, Chapter A8 pg 3, 1984.

US Dept. of the Interior, Techniques of Water-Resources Investigations of the USGS, Computation of Continuous Records of Streamflow : Book 3 Chapter A13 pgs 45-52, 1984.

Table 1 **Areas associated with priority dates junior to 1955 and 1964 for trim lines over the entire ESPA and using a 1% trim line and a 10% trim line for the Buhl to Thousand Springs reach.**

	Groundwater Irrigated Area (acres)	# of Model Cells	Groundwater Consumptive Use (ac-ft)
September 15, 1955 Priority			
All Rights Junior to 1955	717,428	4,070	1,434,570
1% trim line	288,577	1,797	632,033
10% trim line, *not* clipped to WD130	85,059	649	202,375
10% trim line, clipped to WD130 (IDWR trim line)	75,509	614	181,328
February 4, 1964 Priority			
All Rights Junior to 1964	506,265	3,815	1,008,541
1% trim line	193,508	1,702	423,404
10% trim line, *not* clipped to WD130	56,852	611	136,066
10% trim line, clipped to WD130 (IDWR trim line)	51,071	594	123,326

Table 2 **Impacts from ground water pumping (at steady-state) with priority dates junior to 1955 and 1964 for trim lines over the entire ESPA and using a 1% trim line and a 10% trim line for the Buhl to Thousand Springs reach.**

September 15, 1955 Priority		
Scenario	**Modeled Buhl to Thousand Springs Reach Gain (cfs)**	**Assuming 6.9% of Flow in Buhl to Thousand Springs Reach as in Order (cfs)**
Full curtailment	98.22	6.78
1% trim line	94.08	6.49
10% trim line *not* clipped to WD130	56.32	3.89
10% trim line clipped to WD130	53.27	3.68
February 4, 1964 Priority		
Scenario	**Modeled Buhl to Thousand Springs Reach Gain (cfs)**	**Assuming 6.9% of Flow in Buhl to Thousand Springs Reach as in Order (cfs)**
Full curtailment	66.52	4.59
1% trim line	63.59	4.39
10% trim line *not* clipped to WD130	39.29	2.71
10% trim line clipped to WD130	37.42	2.58

Table 3 **Areas associated with priority dates junior to 1971 and 1973 for trim lines over the entire ESPA and using a 1% trim line and a 10% trim line for the Devils Washbowl to Buhl reach.**

	Groundwater Irrigated Area (acres)	# of Model Cells	Groundwater Withdrawal (ac-ft)
November 17, 1971 Priority			
All Rights Junior to 1971	361,600	3603	721,818
1% trim	260,955	2661	547,933
10% trim, with out clip to WD130	116,711	1473	261,562
10% trim, clipped to WD130 (IDWR trim line)	74,936	1068	173,241
December 28, 1973 Priority			
Al Rights Junior to 1973	290,655	3481	577,642
1% trim	207,148	2560	433,813
10% trim	88,878	1427	198,130
10% trim, clipped to WD130 (IDWR trim line)	58,364	1046	134,091

Table 4 **Impacts from ground water pumping (at steady-state) with priority dates junior to 1971 and 1973 for trim lines over the entire ESPA and using a 1% trim line and a 10% trim line for the Devils Washbowl to Buhl reach.**

Scenario	Devils Washbowl to Buhl Reach Gain (cfs)	Director's Order (20%)
November 17, 1971 Priority		
Full curtailment	96.28	19.26
1% trim line	95.46	19.09
10% trim line clipped to WD130 (2005 Order trim line)	62.96	12.59
December 8, 1973 Priority		
Full curtailment	73.52	14.70
1% trim line	72.84	14.57
10% trim line clipped to WD130 (2005 Order trim line)	48.58	9.72

Attachment A
February 25, 2009 Letter from Director Tuthill

State of Idaho
DEPARTMENT OF WATER RESOURCES
322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098
Phone: (208) 287-4800 • Fax: (208) 287-6700 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

DAVID R. TUTHILL, JR.
Director

February 25, 2009

To the members of the ESHMC:

I appreciate the hard work and significant contributions the modeling committee is making toward updating and improving the ESPA Model. On January 15th, 2009, the committee sent me the following question:

As part of the uncertainty analysis, should the ESHMC address the technical aspects (not policy issues) of a trim line as a function of uncertainty?

Please note that the subject of the trim line was addressed by the Hearing Officer's January 11, 2008 Opinion in the Spring Users case (Blue Lakes Trout Farm, Inc. and Clear Springs Foods, Inc.). The Hearing Officer stated that:

4. It was proper for the Director to determine a margin of error which resulted in the so called "trim line." *The 10% margin of error factor assigned by the former Director was not the result of a perfect protocol that might render a different figure or range of figures. No such protocol was in place and there was none forthcoming in a reasonable time when the decisions on the Spring Users' calls had to be made. There is common sense to the 10% error factor assigned by the former Director, based on the assumption that the model cannot be better than the input of a key component. The evidence is clear that the model is not perfect and should have an error factor developed to utilize. It may be simple but true - a 10% factor is closer to accurate than no error factor, once the scientists agree, as they do, that an error factor is desirable. Until a better factor is established, the Director in his best judgment may use 10%. The development of a more scientifically based error factor should be a priority in improvement.*

More recently, the trim line was discussed in the Hearing Officer's April 29th, 2008 Opinion in the Surface Water Coalition case:

7. The former Director utilized a 10% margin of error that is appropriate until a more scientifically based margin is established. Development of a more scientifically, peer reviewed, margin should be a priority. *Development of the model has not proceeded to the point of establishing a margin of error. Those involved in the development of the model agree that it is not 100% accurate and that it is desirable to determine an error factor. The calls that have been made have necessitated decisions before the next stage in model development. The former Director recognized that there had to be a margin of error in the application of the model and assigned a 10% error factor. This conclusion was based on the fact that the gauges used in water measurement have a plus or minus error factor of 10%. The former Director concluded that the model could be no better than the measuring gauges used and used the 10% margin absent a better figure developed through further testing of the model. No party offered credible evidence of a better margin of error.*

8. The former Director used the 10% margin of error as a trim line, excluding ground water users from curtailment who were in that margin. *The purpose of the trim line or clip was to avoid curtailing ground water users who might have no effect on enhancing reach gains. Application of the trim line was proper to avoid a significant probability that curtailment would extend to ground water users who would suffer significantly without contributing water where necessary to remediate the material injury to the surface water users.*

Based on these opinions, I believe there is sufficient guidance and a basis for the use of a trim line. The trim line is related to my determination of injury in that it defines users whose contribution to the shortage suffered by a calling party is d*e minimus*. However, during the next ESHMC meeting (March 31st – April 1), members of the committee are welcome to bring a write-up and make a 10 to 15 minute presentation regarding the technical aspects of the use of a trim line. The write-ups and meeting minutes will become part of a white paper that is an ESHMC publication similar to the previous white paper on the "ESHMC Member Opinions of the ESPA Model" (January, 2007).

The white paper does not supersede the need for the ESHMC to address uncertainty associated with Version 2.0 of the ESPA Model as it pertains to predictions of river and spring reach gains. The associated level of uncertainty will be most useful in determining where and what type of data to collect to minimize uncertainty in future versions of the ESPA Model. The investigation of uncertainty should be accomplished through regular committee analysis and discussion.

Thank you again for your efforts.

Sincerely,

David R. Tuthill, Jr.
Director

Attachment B
PowerPoint Presentation

Technical Analysis of the “Trim Line”

John Koreny, HDR, Inc.

Charles E. Brockway, Brockway Engineering, Inc.

Willem Schreuder, Principia Mathematica

John Bowling, Idaho Power

David Blew, Idaho Power

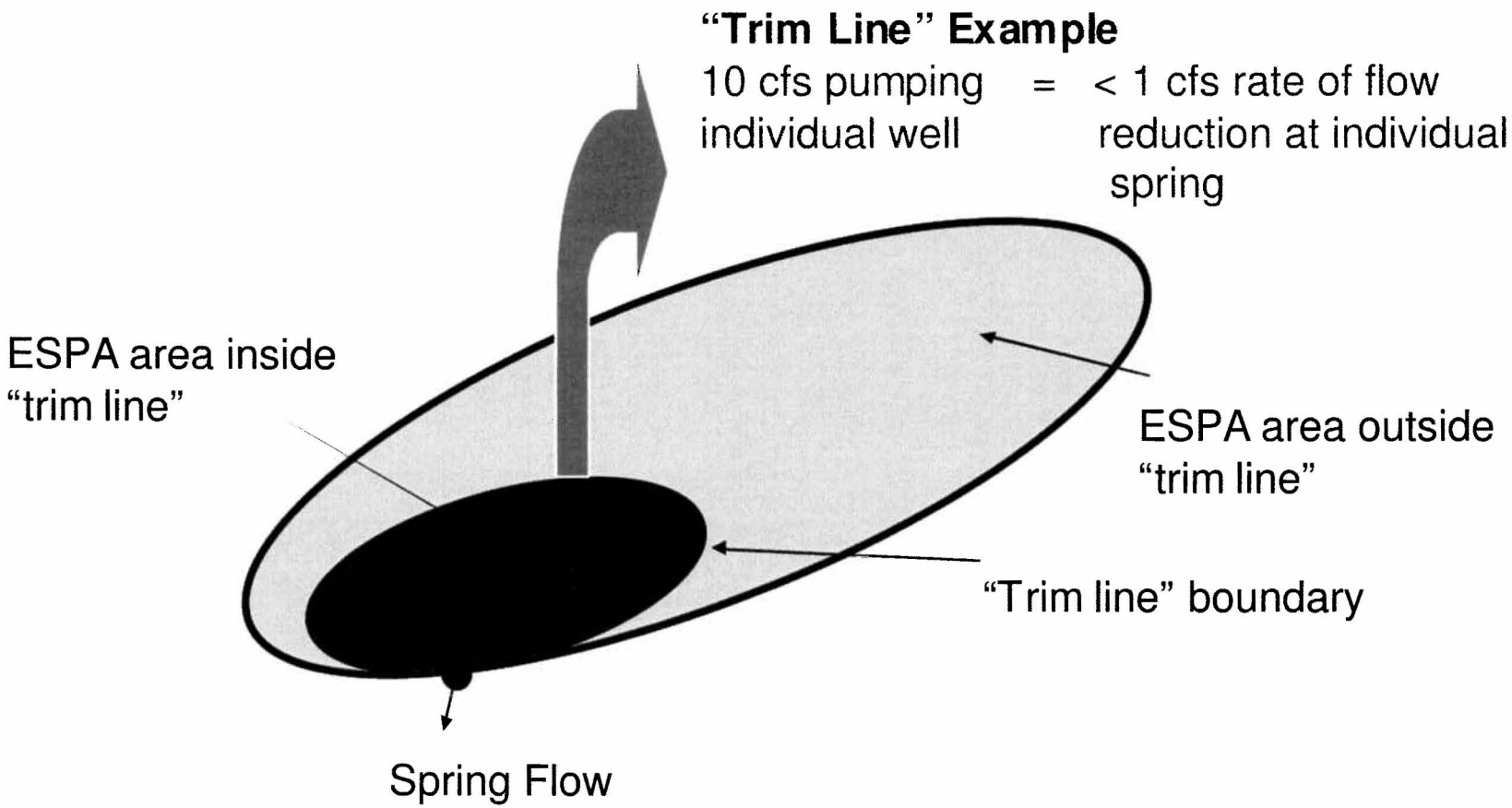
Outline

- What is the “trim line”?
- What is model uncertainty? Is the “trim line” a function of model uncertainty?
- How has the trim line been used for the Blue Lakes Trout Farm (Blue Lakes Spring) and Snake River Farms (Clear Springs) delivery call? Is it technically justified?
- If we are going to use a “trim line”- what should it try to accomplish?

What is the "Trim Line"?

- Area of ESPA where ground water pumping will deplete flow at individual spring by less than 10 percent of total consumptive use. Determined by ESPAM.
  - Example: Ground water pumping (consumptive use) of 10 cfs outside the trim line would deplete flow at the individual spring by less than 1 cfs.
- "Trim line" also includes a clip to the WD 130 boundary.

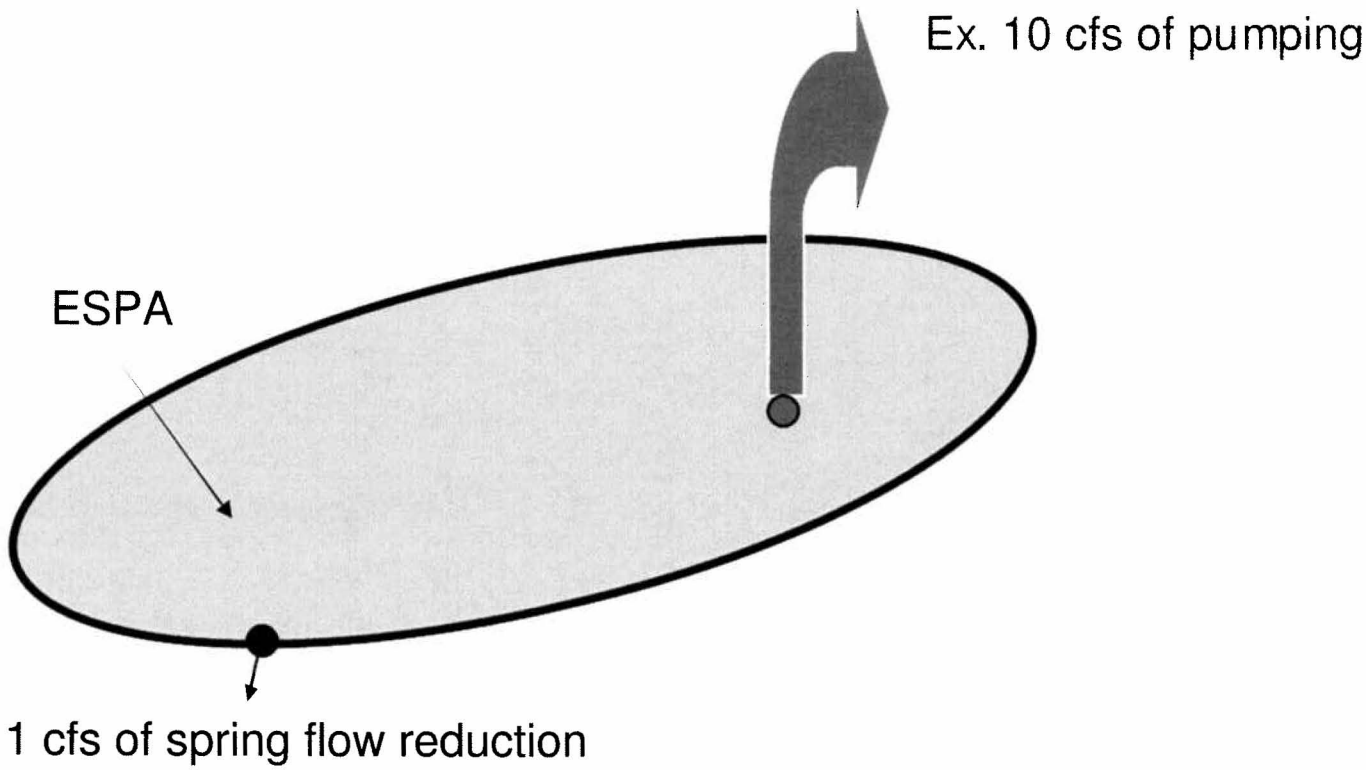
What is the "Trim Line"?



Incorrect Assumption that 10% Uncertainty in Calibration Targets Justifies "Trim Line"

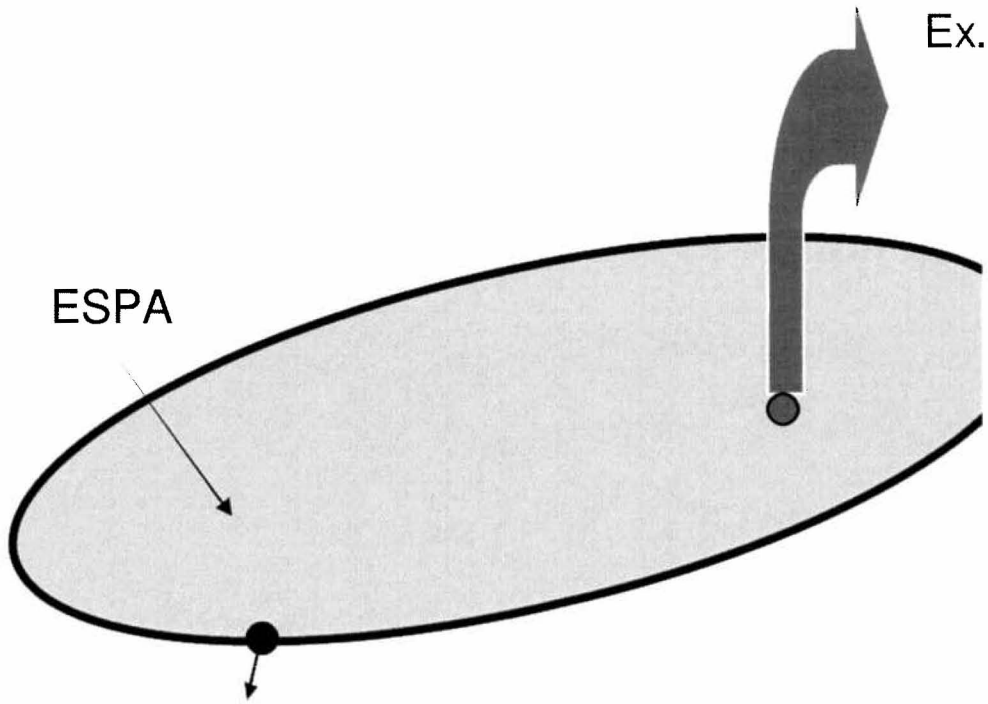
- Uncertainty in model calibration targets:
  - Ground water levels (± 1-10 ft, <1% accuracy, *hundreds of targets*)
  - Spring flow (varies, ± 2 to 5% as high as 10% depending on measuring device- weir, flow meter in canal, *targets*)
  - River reach gains (varies, ± 5 to 10 percent or greater, *targets*)
- There is no reasonable justification to assume that the model calibration target accuracy is limited to river gage accuracy or that it is 10 percent.

What is a technically justified method to calculate the effects of 10% model uncertainty on the impacts of an individual well pumping on a spring?



10% model uncertainty = ± 10% at spring flow or 0.1 cfs spring flow reduction

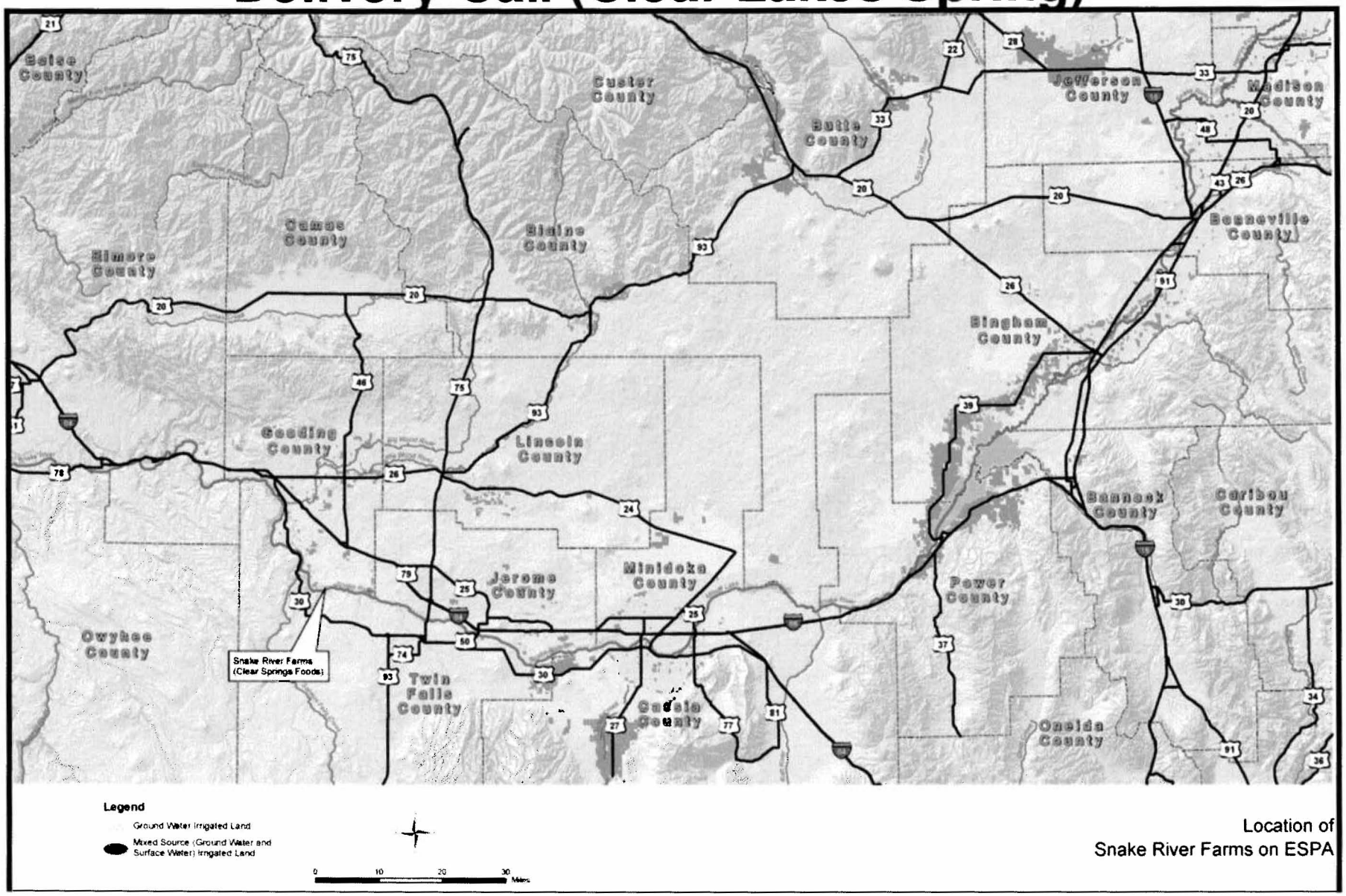
What is a technically justified method to calculate the effects of 10% model uncertainty on the impacts of an individual well pumping on a spring?



Model uncertainty can not be used as a justification to disregard known impacts by juniors against a senior supply unless there is a futile call determination. Curtailment of juniors outside of trim line would increase spring flow and is not futile.

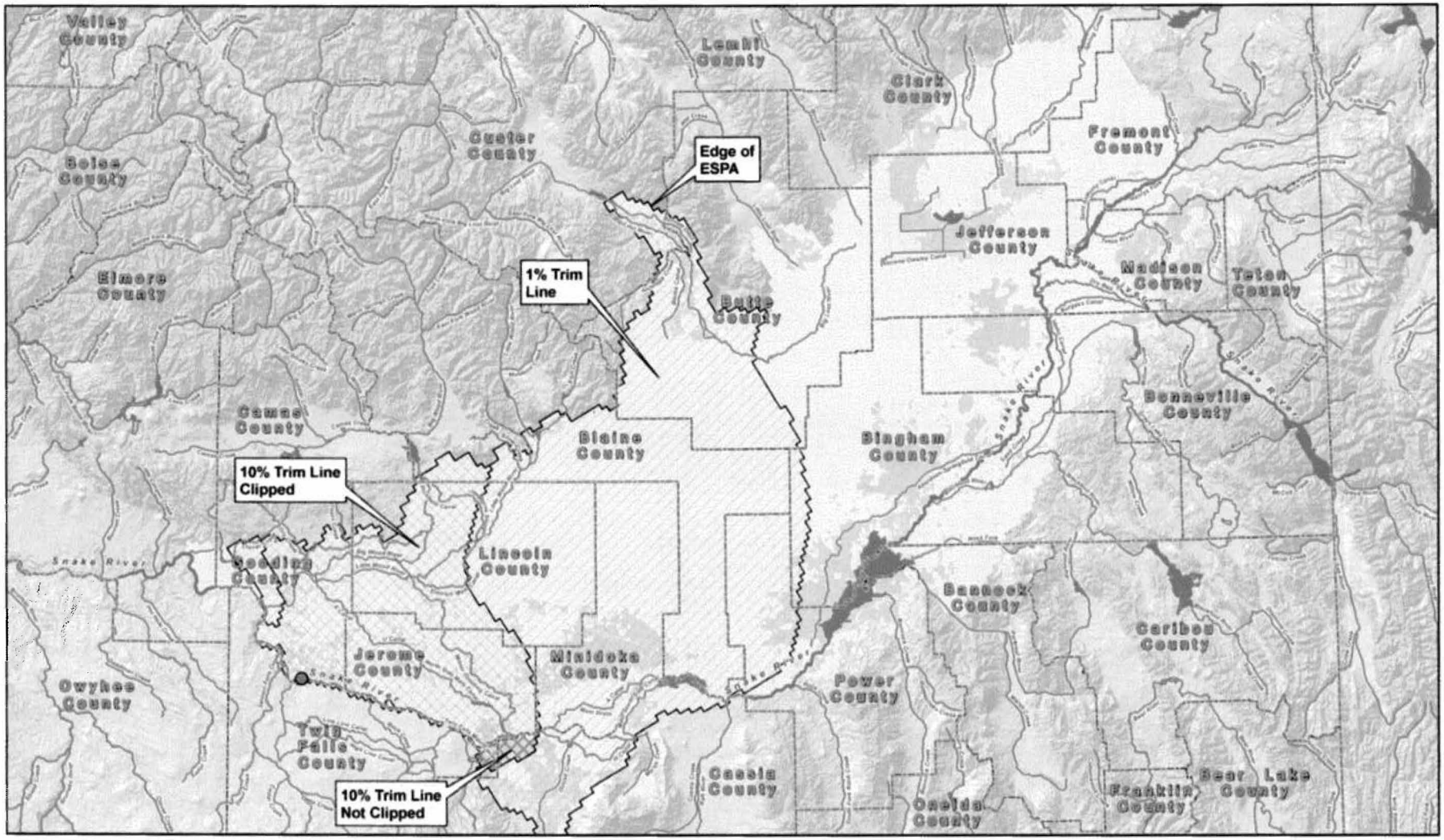
10% model uncertainty = ± 0.1 cfs spring flow reduction

Use of "Trim Line" for Snake River Farms Delivery Call (Clear Lakes Spring)



Location of Snake River Farms on ESPA

Use of "Trim Line" for Snake River Farms Delivery Call (Clear Lakes Spring)



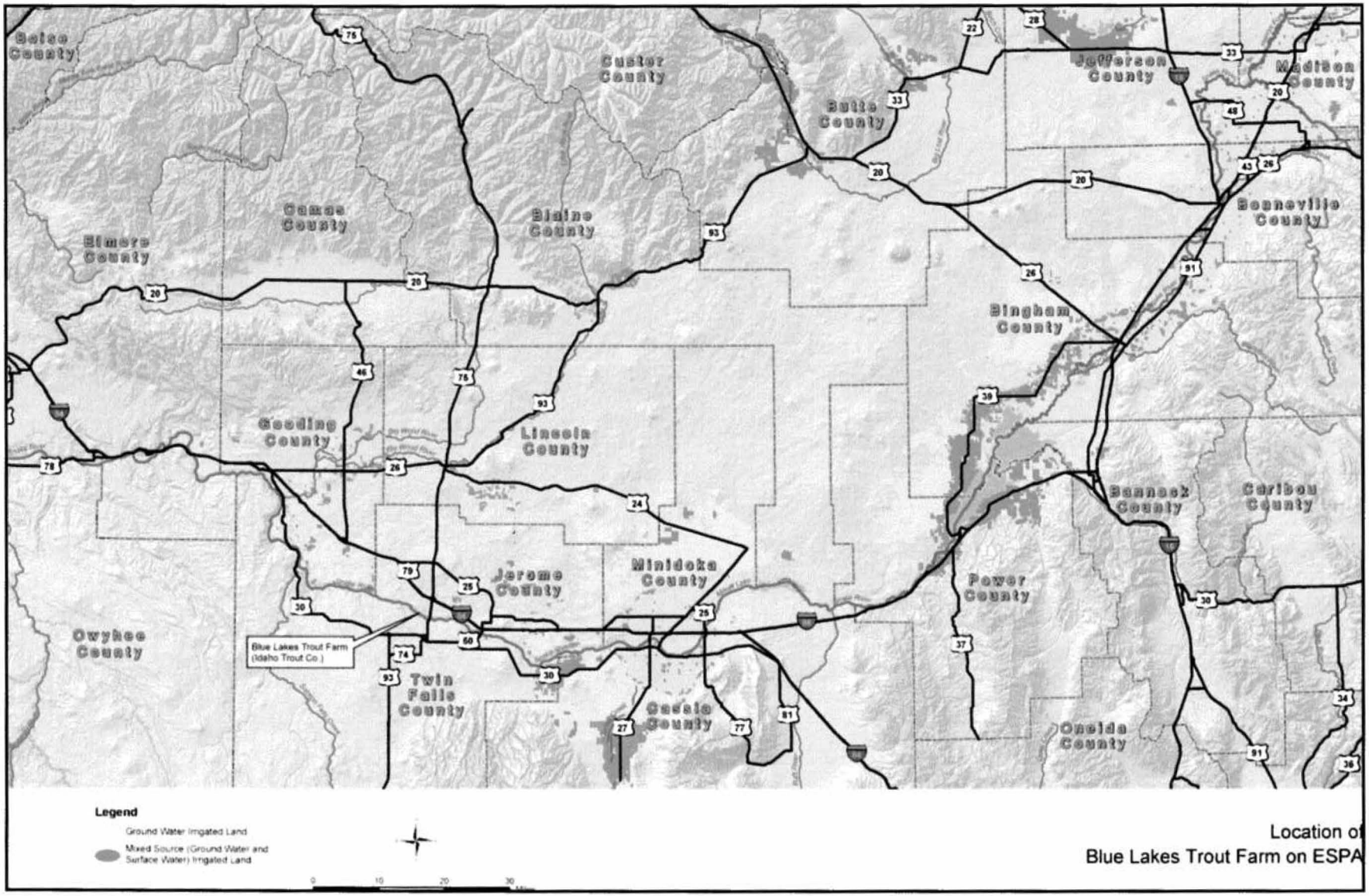
Use of "Trim Line" for Snake River Farms Delivery Call (Clear Lakes Spring)

	Curtailed Groundwater Irrigated Area (acres)	# of Model Cells	Curtailed Groundwater Consumptive Use (ac-ft)
September 15, 1955 Priority			
Full Curtailment of Junior Rights	717,428	4,070	1,434,570
1% trim line	288,577	1,797	632,033
10% trim line, *not* clipped to WD130	85,059	649	202,375
10% trim line, clipped to WD130	75,509	614	181,328
February 4, 1964 Priority			
Full Curtailment of Junior Rights	506,265	3,815	1,008,541
1% trim line	193,508	1,702	423,404
10% trim line, *not* clipped to WD130	56,852	611	136,066
10% trim line, clipped to WD130	51,071	594	123,326

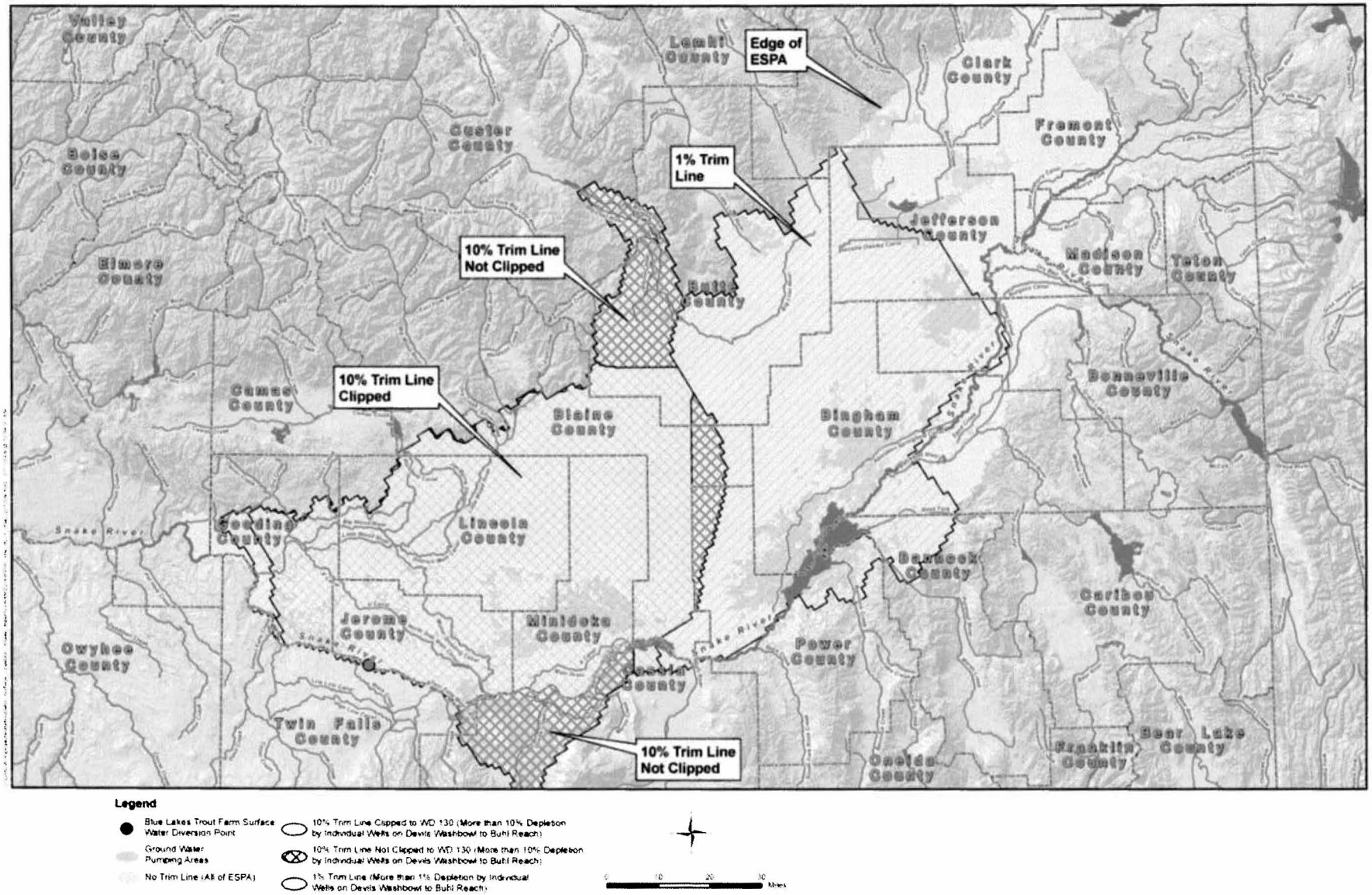
Use of "Trim Line" for Snake River Farms Delivery Call (Clear Lakes Spring)

September 15, 1955 Priority			
Scenario	Modeled Buhl to Thousand Springs Reach Gain (cfs)	Assuming 6.9% of Flow in Buhl to Thousand Springs Reach as in Order (cfs)	Modeled Clear Lakes Spring Drain Flow (cfs)
Full curtailment	98.22	6.78	22.90
1% trim line	94.08	6.49	21.90
10% trim line *not* clipped to WD130	56.32	3.89	12.79
10% trim line clipped to WD130	53.27	3.68	12.05

Use of "Trim Line" for Blue Lakes Trout Farm Delivery Call (Blue Lakes Spring)



Use of "Trim Line" for Blue Lakes Trout Farm Delivery Call (Blue Lakes Spring)



Use of "Trim Line" for Blue Lakes Trout Farm Delivery Call (Blue Lakes Spring)

	Curtailed GW Irrigated Area (acres)	# of Model Cells	Curtailed Groundwater Withdrawal (ac-ft)
November 17, 1971 Priority			
Full Curtailment of Junior Rights	361,600	3603	721,818
1% trim	260,955	2661	547,933
10% trim, with out clip to WD130	116,711	1473	261,562
10% trim, clipped to WD130	74,936	1068	173,241
December 28, 1973 Priority			
Full Curtailment of Junior Rights	290,655	3481	577,642
1% trim	207,148	2560	433,813
10% trim	88,878	1427	198,130
10% trim, clipped to WD130	58,364	1046	134,091

Use of "Trim Line" for Blue Lakes Trout Farm Delivery Call (Blue Lakes Spring)

Scenario	Devils Washbowl to Buhl Reach Gain (cfs)	Director's Order (20%)	Blue Lakes Springs
11/17/1971 priority, full curtailment	96.28	19.26	33.08
11/17/1971 priority, 1% trim line	95.46	19.09	32.76
11/17/1971 priority, 10% trim line clipped to WD1	62.96	12.59	19.77

Scenario	Devils Washbowl to Buhl Reach Gain (cfs)	Director's Order (20%)	Blue Lakes Springs
12/28/1973 priority, full curtailment	73.52	14.70	25.83
12/28/1973 priority, 1% trim line	72.84	14.57	25.56
12/28/1973 priority, 10% trim line clipped to WD1	48.58	9.72	15.87

Conclusions

- Many model calibration targets (gw levels, spring flow measurements) are more accurate than 10 percent.
- No reasonable justification to use model uncertainty as basis for “trim line”.
- No technical or admin. basis for WD 130 clip to “trim line”.
- If model uncertainty is to be considered- it should be done calculating the impacts of individual wells on individual springs- not using a trim line.
- The “trim line” disregards the impacts from many wells that cumulatively reduce up to ½ of the senior’s spring flow.
- There is no evidence of a futile call for these individual impacts.
- Mitigation for these impacts would restore the senior’s supply and can be ordered at the same quantity of impacts.

Conclusions

- If a “trim line” is to be used, the basis for selection should be to identify those wells that impact the senior’s supply above a *de-minimus* impact.
- Selection of a “trim line” that reduces the senior’s supply by one-half obviously does not identify the wells causing more than a *de-minimus* impact.
- More work should be done to identify a “trim line” that focuses the mitigation requirements on the junior pumping causing an impact while at the same time restoring the senior’s supply. A 1% “trim line” is an option that meets this goal. More evaluation needed.
- There is an option to order mitigation by junior’s to the extent that they are causing impacts. There is no need for “full curtailment”. The current IDWR orders within the trim line do not require full curtailment and allow mitigation to the extent of impacts.

Attachment C
Email from Dr. Richard Allen

From: Richard G. Allen [mailto:rallen@kimberly.uidaho.edu]
Sent: Wednesday, February 25, 2009 1:24 PM
To: Allan Wylie; Anderson, Hal; bcontor@if.uidaho.edu; Bryan Kenworthy; Chuck Brockway; cmb@hydrosphere.com; Dar Crammond; Dave Blew; Dave Tuthill; Greg Clark; greg@spronkwater.com; Gregg S. Ten Eyck; hyqual@cableone.net; J. D. May; JBowling@idahopower.com; Jennifer Johnson; Jim Taylor; Koreny, John S.; johnson@if.uidaho.edu; Jon Gould; jrbartol@usgs.gov; Leslie Stillwater; Linda Lemmon; Lindgren, John; Mike Beus; Raymondi, Rick; Sean Vincent; Sharon Parkinson; Stacey Taylor; Swank, Lyle; Tom Wood; Willem Schreuder
Cc: Olenichak, Tony; Karen Wogsland (E-mail); Morse, Tony; Kramber, Bill; Marilyn Bragg
Subject: Re: Director's response to the committee question

Rick R.,

I have one comment on the Hearing Officer's statement that:
...the guages used in water measurement have a plus or minus error factor of 10%.

and the use of this 10% to suggest uncertainty in GW pumping impacts on spring flows. I believe that general consensus among water analysts is that the 10% (or other value) associated with surface measurement accuracy has a strong random error component, perhaps as much as half of the total error value. The other part is systematic or bias error.

Given the large number of measurement sites and repeated measures at specific sites, the random error term decreases with the square root of the number of measures and may even tend toward zero for the ESPA. Thus, some part of the 10% should not carry into the water balance accuracy of the ESPA model.

Another comment is that I have difficulty seeing a strong connection between uncertainty associated with the GW water balance (stemming from water measurement inaccuracies) and prediction of impact on spring flow by GW pumping. Clearly there is some connection, but impacts are more dominated by hydraulic gradient (and aquifer levels) and transmissivities rather than by water balance. The relation is there, but I am not sure it is strong enough to warrant a direct transfer of uncertainty terms (even if all error were systematic).

My sense is that some other measure (or justification) of uncertainty should be explored for establishing a trim line.

Rick A.

On 25 Feb 2009 at 10:22, Raymondi, Rick wrote:

>
> Hi everyone,
>
> Please note the Director's response to the question submitted by the
> committee after the January meeting. I will follow up after you've
> had time to review the response. Also, I've developed a folder on
> our web site for documents related to model uncertainty.