

MEMO

STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

322 E. FRONT STREET, P.O. BOX 83720, BOISE, IDAHO 83720-0098

PHONE: (208) 287-4800 FAX: (208) 287-6700

DATE: OCTOBER 30, 2008

TO: Jeff Peppersack

FROM: Mat Weaver 

CC: Ernie Carlsen

SUBJECT: **35-13542 SOUTH INTERCHANGE WATER PERMIT
MITIGATION PLAN SUMMARY AND REVIEW**

INTRODUCTION

Per your request, this memo summarizes my hydrological assessment of the subject water right permit application and subsequent mitigation plan. I have reviewed the mitigation plan for conformance with the Idaho Department of Water Resource (IDWR) documentation intended to provide guidance to the mitigation process, including the "ESPA Transfer Spreadsheet Memorandum" dated August 13, 2007 and the "Evaluation of Mitigation Plans for Water Right Permits" Draft Memorandum dated April 20, 2006.

WATER PERMIT SUMMARY

The Idaho Department of Water Resources (IDWR) received an application for a new water permit on October 20th 2005 from the South Interchange Properties, LLC. The application requested a **groundwater diversion of 0.20 CFS and up to 140 AFA** for commercial and industrial use from 01/01 to 12/31. The point of diversion (POD) was described as the SW ¼ of the NW ¼ of the NE ¼ of Section 8, Township 1N, Range 37E (ESPA Model Grid Cell - 74:154), Bonneville County, Idaho near the town of Shelley.

In a letter received on December 29th, 2005 a Mitigation Statement regarding the proposed beneficial use was presented to IDWR, in the statement justification was given for an **annual use of 140.7 AF of which 5% or 7.4 AF was recognized as being consumed by the use**. The remaining 95% of the water will be discharged to the Snake River as treated wastewater from the City of Shelley Waste Water Treatment Plant, the average residence time of water in the treatment plant is 120 days.

APPLICANT'S PROPOSED MITIGATION PLAN(S)

In the initial Mitigation Statement (12/29/05), the applicant recognized two mitigation options.

1. The development of the industrial complex will convert approximately 80 acres of irrigation farm land to non-irrigated industrial development. The decrease in irrigation associated with the “drying up” of 80 acres could mitigate for the 7.4 AFA of consumptive use. Water for irrigation was provided by the New Sweden Irrigation District.
2. Mr. Frank Vandersloot, the owner, is the holder of irrigation ground water right 35-7206D (POD: NE¼ of the SE¼ of Section 9, T2N, R36E). The applicant proposed “drying up” 4-5 acres of land under this water right and transferring the use as an alternative means of mitigating for the 7.4 AFA of consumptive use.

A second, or “different alternative” mitigation proposal was received by IDWR on September 26th, 2006. In this proposal the applicant addressed each reach where injury was predicted separately.

1. Rexburg to Henry's Fork: Applicant controls an ownership interest in land near Ashton, Idaho, on a small tributary (Blue Creek) to the Henry's Fork River. Water Rights 21-2012, 21-2034, and 21-7148 (POD: NE¼ of the SW ¼ of the NW ¼ of Section 15, T9N, R43E) are appurtenant to this land. Proof reports for the Blue Creek surface water rights are included in the appendix. The applicant proposes the “drying up” of 5.8 acres, which equates to 17.4 AFA with a Field Headgate Requirement of 3.0. The “drying up” of ground would initiate at 0.4 acres and progress to 5.8 acres by 2061.
2. Heise to Shelley: The applicant would use up to 13.8 AFA of a total of 130 AFA of water owned by the applicant, in the form of 130 shares of stock of Palisades Water Users, Inc. A proof report of Palisades Water Users water right 1-10214 is included in the appendix. Each share is worth 1 acre-foot of storage in Palisades Reservoir. The committed volume of water would initiate at 2.5 AFA and progress to 13.8 AFA in 2041.

In a letter to IDWR dated August 9th, 2007 the applicant attempted to summarize the proposed mitigation, and although not expressly stated, the summary appears to represent a combination of the previous two mitigation proposals.

1. At Point of Diversion: The decrease in irrigation associated with the “drying up” of 80 acres (industrial complex). Water for irrigation is provided by the New Sweden Irrigation District.
2. Rexburg to Henry's Fork: Applicant controls an ownership interest in land near Ashton, Idaho, on a small tributary (Blue Creek) to the Henry's Fork River. Water Rights 21-2012, 21-2034, and 21-7148 (POD: NE¼ of the SW ¼ of the NW ¼ of Section 15, T9N, R43E) are appurtenant to this land. Proof reports for the Blue Creek surface water rights are included in the appendix. The applicant proposes the “drying up” of 5.8 acres, which equates to 17.4 AFA with a Field Headgate Requirement of 3.0. The “drying up” of ground would initiate at 0.4 acres and progress to 5.8 acres by 2061.

3. Heise to Shelley: The applicant would use up to 13.8 AFA of a total of 130 AFA of water owned by the applicant, in the form of 130 shares of stock of Palisades Water Users, Inc. A proof report of Palisades Water Users water right 1-10214 is included in the appendix. Each share is worth 1 acre-foot of storage in Palisades Reservoir. The committed volume of water would initiate at 2.5 AFA and progress to 13.8 AFA in 2041.

MITIGATION PLAN EVALUATION

Water right application 35-13542 is located within the Snake River Moratorium Area. Therefore, an approved mitigation plan protecting the combined surface and ground water system in this region, from the groundwater diversion requested in the permit application, is required before the permit may be approved and issued by IDWR.

DEPLETION ANALYSIS - ESPA MODEL

The development of a successful mitigation plan requires the analysis of the quantity of water that will be depleted from the source due to the appropriation. When considering the need for mitigation it is important to remember that a water right can be injured in **time, location, and quantity**.

The applicant's mitigation plan identifies the consumption of 7.4 ac-ft of a total 140.7 ac-ft per year proposed for diversion in the application. When considering injury to water right holders an evaluation of the depletionary volume of water is not enough, consideration must also be given to the total amount of water diverted including consumptive and non-consumptive water. Even though the non-consumptive water is being returned to the Snake River, the act of diverting the ground water has the capacity to influence specific reaches of the river upstream and downstream of the diversion point. These influences are due to the direct hydrological link between the Snake River and the ESPA which is recognized by Rule 50 of *Idaho's Rules for Conjunctive Management of Surface and Ground Water* (IDAPA 37.03.11). This rule also categorizes the Snake River Moratorium Area as an "area determined to have a common ground water supply", which is specifically defined by IDAPA 37.03.11:

0.10.01 Area Having a Common Ground Water Supply. A ground water source within which the diversion and use of ground water or changes in ground water recharge affect the flow of water in a surface water source or within which the diversion and use of water by a holder of a ground water right affects the ground water supply available to the holders of other ground water rights. (Section 42-237a.g., Idaho Code)

The "Enhanced Eastern Snake Plain Aquifer Ground-Water Rights Transfer Spreadsheet" v3.1 was used to evaluate the impacts of the proposed ground water diversion on all reaches of the Snake River within the model boundaries. A diversion of 46.9 ac-ft/trimesters (140.7 ac-ft/year) at cell 75:154 was used for modeling. The results of this modeling exercise are graphically presented in *Figures 1 and 2*.

Fig. 1: Permit 35-13542 Proposed Ground Water Diversion Effect Above Milner Dam

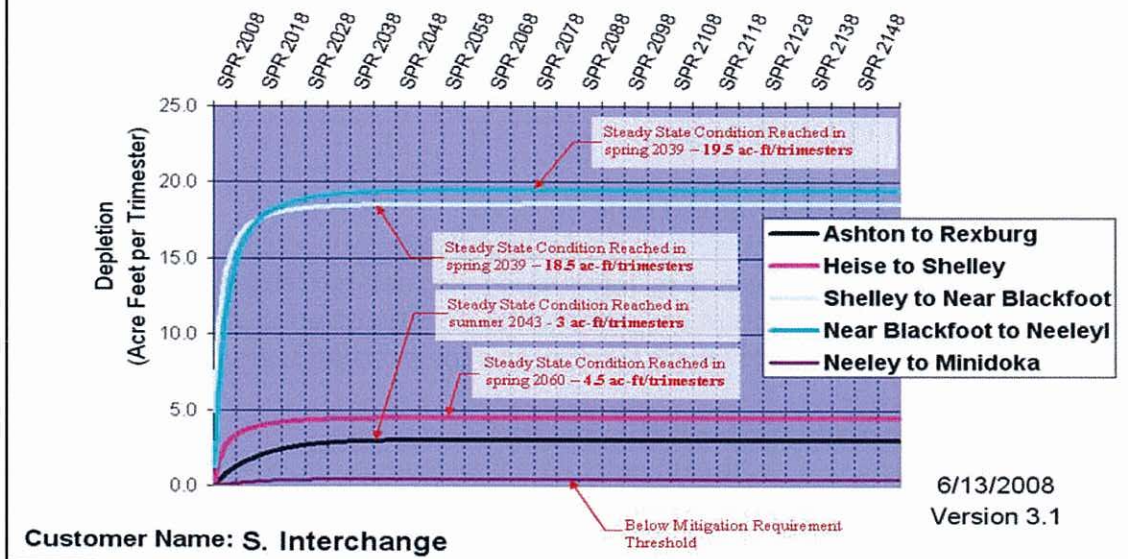
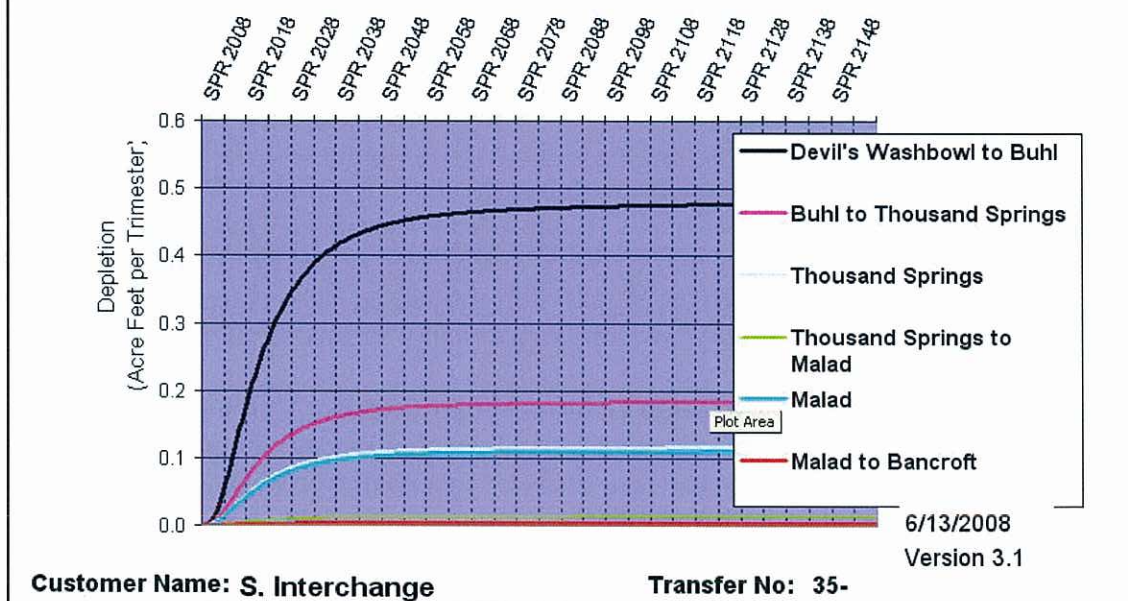


Fig. 2: Permit 35-13542 Proposed Ground Water Diversion Effect Below Milner Dam



At steady state conditions the proposed ground water diversion will deplete the Ashton to Rexburg (AtR) reach by 3.0 ac-ft/trimester, the Heise to Shelley (HtS) reach by 4.5 ac-ft/trimester, the Shelley to Near Blackfoot (StNB) reach by 18.5 ac-ft/trimester, and the Near Blackfoot to Neeley (NBtN) reach by 19.5 ac-ft/trimester. A mitigation plan compensating for the depletion of these four reaches of the Snake River in time, location, and quantity is required for the successful approval of this permit. The depletionary affects of the proposed diversion on the Snake River

reaches below Milner Dam were not above the threshold value of 2 ac-ft/trimester required to warrant mitigation under current IDWR policy.

REVIEW OF PROPOSED MITIGATION

1. Source of Mitigation Water

The applicant has proposed multiple sources of mitigation water to offset impacts from the proposed ground water diversion; refer to *Table 1* for a summary. As an arbitrary naming convention, Mitigation Waters A refers to water mitigation to the AtR reach, Mitigation Waters B refers to the StH reach, and Mitigation Waters C refers to all affected reaches downstream of the StH reach.

Table 1. Water Right Permit 35-13542 - South Interchange							
Modeled Depletion Due To Proposed Ground Water Diversion							
Description	Season of Use	Location (TRS)	Reach	Volume (ac-ft/trimester)			
Modeled Depletion	1/1 - 12/31	N/A	Ashton to Rexburg	3.0			
Modeled Depletion	1/1 - 12/31	N/A	Heise to Shelley	4.5			
Modeled Depletion	1/1 - 12/31	N/A	Shelley to Near Blackfoot	18.5			
Modeled Depletion	1/1 - 12/31	N/A	Near Blackfoot to Neeley	19.5			
Proposed Mitigation Water							
Description	Season of Use	Location (TRS)	Reach	Volume (ac-ft/year)	Sufficiency Check		
					Time	Location	Quantity
Mitigation Waters A: WR 21-2012*	4/1 - 10/31	T9N, R43E, 15-16	Ashton to Rexburg	5.54	No	Yes	No
& WR 21-2034*	4/1 - 10/31	T9N, R43E, 15-16	Ashton to Rexburg	5.54	No	Yes	No
Mitigation Waters B: WR 1-10214 (Palisades Water Users Shares)	3/15 - 11/15	N/A	Heise to Shelley	14	No	Yes	No
Mitigation Waters C: Return Water via Shelley WWTF	1/1 - 12/31	T1N, R37E, 8	Heise to Shelley	44.4	Yes	Yes	Yes
*WRs 21-2012 and 21-2034 are limited to the irrigation of a combined total of 141.2 acres in a single irrigation season, with the combined use limits of 3.4 CFS and 5.54 ac-ft/year.							

2. Time

The applicant has proposed multiple water rights with varying seasons of use; refer to *Table 2* for a summary.

Table 2. Water Right Permit 35-13542 - South Interchange				
Season of Use Comparison				
	Modeled Depletion	Mitigation Waters A	Mitigation Waters B	Mitigation Water C
Start of Water Use	1-Jan	1-Apr	15-Mar	1-Jan
End of Water Use	31-Dec	31-Oct	15-Nov	31-Dec
Total Days of Water Use	365.00	213.00	245.00	365.00
Percent of Full Year	100%	58%	67%	100%

3. Location

The applicant has proposed multiple water rights for mitigation with varying locations throughout eastern Idaho; refer to *Figure 3* for an overall map depicting eastern Idaho and the Applicant's proposed diversion point and mitigation water locations. The applicant has provided mitigation waters which are located in, or tributary to, each reach that will be impacted by the ground water diversion.

4. Quantity

The applicant has proposed at full mitigation a volume of water, which they believe to be equal to or greater than the modeled depletion volumes for all reaches of concern; refer to *Table 3* for a summary. For the Ashton to Rexburg reach and the Heise to Shelley reach the applicant is proposing a graduated increase in mitigation water to match the graduated increase in the effective depletion of the reach, with the full allotment of mitigation water provided when the depletionary affects of the respective river reach achieve steady state, as predicted by the model.

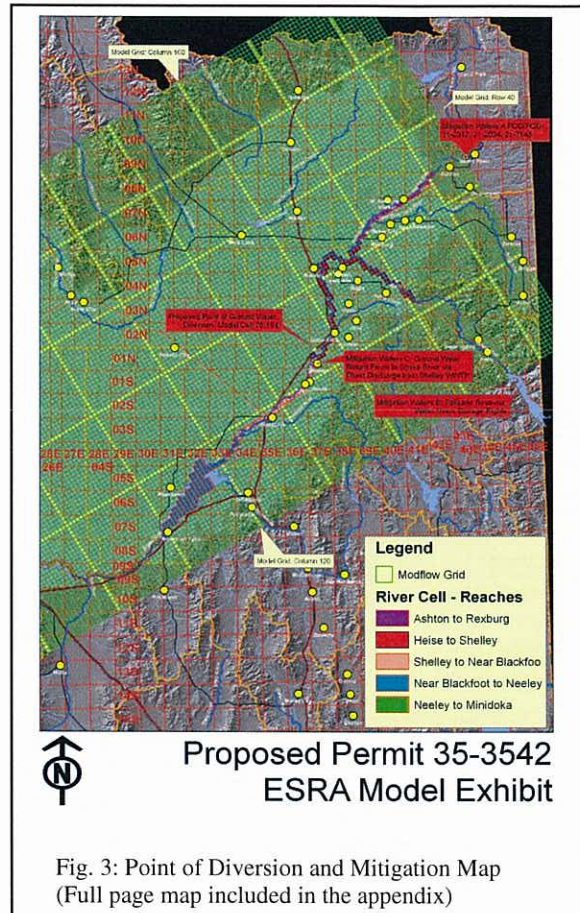


Table 3. Mitigation Volumes

Description	Reach	Depletion Vol. (ac-ft/year)	Mitigation Vol. (ac-ft/year)
Mitigation Waters A	Ashton to Rexburg	9	9
Mitigation Waters B	Shelley to Heise	13.5	13.8
Mitigation Waters C	Shelley to Near Blackfoot	55.5	--
	Near Blackfoot to Neeley	58.5	--
	Combined Vol.	114	133.3

5. How is Water Delivered (Type I – Replacement Water)

Mitigation Waters B and C represent Type I mitigation. Mitigation Waters B is Palisade Reservoir storage water that is currently undesignated. The applicant has proposed the delivery of the storage water into the HtS reach of

the Snake River via release from the Palisade Reservoir. Mitigation Waters C will be released to the StNB reach of the Snake River via direct discharge from the City of Shelley Waste Water Treatment Plant. To reach the NBtN reach of the Snake River, Mitigation Waters C will have to travel down river through the StNB reach of the Snake River.

6. Identification of Land or Use Terminated (Type II – Non-Use Water)

Mitigation Waters A represent Type II mitigation water. The applicant has proposed the non-use of existing irrigation surface water rights diverted from Blue Creek (tributary to the Henry's Fork River) as the source for Mitigation Waters A. In support of the proposed Type II mitigation water, the applicant has identified ground historically irrigated with the water rights that will be "dried up" and no longer irrigated. By not diverting the surface water rights, the water will stay in Blue Creek. From there the water will flow into the Henry's Fork of the Snake River and downstream into the AtR reach of the Snake River where the mitigation is actually needed.

7. Validity Review of Mitigation Water

In order to determine if the volume of water associated with a proposed mitigation plan is sufficient to the task at hand, a review of the validity of the water rights is required.

a. Mitigation Waters A:

- i. Historic Use & Availability of Water** – Mitigation Waters A is comprised of three surface water rights. The applicant submitted historical delivery records of the water to the property for the last 11 years. In that time the records indicate that a full allotment of water, as described by the water rights, has never been delivered. During that time water has been delivered on average 98 days out of a possible 214 days for WR 21-2034 and 44 days out of a possible 214 days for WR 21-2012, calculations provided in the appendix. Confusingly, WR 21-7148 was presented to IDWR for mitigation and then not considered by the applicant because it is an irrigation storage right.
- ii. Forfeiture Protection** – Review of aerial imagery from 1987, 1992, 2004, and 2006 suggests that this ground was irrigated in some capacity during these years. In addition, the applicant submitted historical records of irrigation delivery water to the property in question for the last 11 years. Due to the evidence of beneficial use of the irrigation waters comprising Mitigation Waters A, forfeiture does not seem to be an issue.
- iii. Overlapping Rights** – The Freemont-Madison Irrigation District has irrigation water rights (21-24A, 21-26A, 21-27A, 21-120A, 21-121A, 21-122A, 21-123A, 21-124A, 21-125A, 21-126A) with the same place of use as described by the water rights comprising Mitigation Waters A. The applicant indicated in their letter dated

January 30th, 2008, that the owners of the land in question “historically rented Fremont-Madison storage water to supplement the supply during such times of any irrigation season when the supply under [their water rights] is short”. The Fremont-Madison irrigation rights seem to represent a supplemental irrigation water right to the grounds in question and therefore an overlap in use does not exist.

- iv. **Water Quality** – Issues regarding water quality concerns in association with the proposed mitigation waters are not applicable in this instance.
- v. **Water Master Consent** – Specific written or verbal consent for the application from the Water Master of Water District 120 is not evident in the file. However, past correspondence seems to suggest the Water Master is aware of the proposed application and mitigation and has not spoken out against the proposal.

b. Mitigation Waters B:

- i. **Historic Use & Availability of Water** – Joe Kaufmann with Water District 01 assists in the management of Palisades Water Users (PWU), Incorporated’s storage water in Palisades Reservoir. Joe provided historical storage records for Palisades Reservoir for the last 18 years; refer to the appendix for historical data. The historical storage records indicated that PWU has not received their full allotment of water six out of the last 18 years, of which five of those years were consecutive.
- ii. **Forfeiture Protection** – Issues regarding forfeiture concerns in association with the proposed mitigation waters are not applicable in this instance.
- iii. **Overlapping Rights** – Issues regarding overlapping use concerns in association with the proposed mitigation waters are not applicable in this instance.
- iv. **Water Quality** - Issues regarding water quality concerns in association with the proposed mitigation waters are not applicable in this instance.
- v. **Water Master Consent:** Specific written or verbal consent for the application from the Water Master of Water District 01 is not evident in the file. However, past correspondence seems to suggest the Water Master is aware of the proposed application and mitigation and has not spoken out directly against the proposal.

c. Mitigation Waters C:

Mitigation Waters C are comprised of water that will be generated by the proposed diversion of ground water associated with the permit. As such, questions of validity pertaining to an existing right’s nature of use being changed to a mitigation use does not apply.

8. Authority Review of Mitigation Water

a. Mitigation Waters A:

IDWR ownership records indicate that Mr. David Kuhn is the current owner of the existing surface water rights on Blue Creek (Mitigation Waters A) that are proposed as a source of mitigation to the AtR reach. No justification or proof has been provided by the applicant illustrating their authority to commit these surface water rights from their existing irrigational use to one of mitigation.

b. Mitigation Waters B:

Wendy Murphy with Water District 01 assists in the management of Palisades Water Users, Incorporated's storage water in Palisades Reservoir. Wendy indicated in a phone conversation on June 18, 2008, that the applicant, through the entity of Natural Guardian, was currently in ownership of 960 total shares of water. Of the 960 shares, 130 shares have no use currently designated.

c. Mitigation Waters C:

Approval of water right permit 35-13542 would give authority over the mitigation waters to the applicant.

CONCLUSIONS

The mitigation plan as proposed by the applicant is currently insufficient to adequately account for depletions to the ESPA system as a result of the proposed ground water diversion. There are components of the plan for which specific details are still outstanding or that are not acceptable in their current form. Outstanding issues associated with the proposed plan include the following, and should be addressed to the satisfaction of IDWR prior to issuance of the permit.

- **Comprehensive Written Mitigation Plan** – To date a comprehensive written description of the proposed mitigation plan, clearly defining all proposed mitigation water, has not been provided by the applicant. Such a document should be submitted to IDWR for review and approval. At a minimum the plan should have a summary of the proposed mitigation, identification of all mitigation waters, ESPA transfer model results, proof of authority over proposed mitigation waters, and correspondences from affected third parties (owner of proposed mitigation rights, Palisades Water Users, Inc., irrigation companies, etc.) giving written consent to the commitment of water for mitigation purposes proposed by the plan. IDWR has prepared a "Mitigation Plan Evaluation" worksheet that outlines all pertinent information that should be addressed in the mitigation plan; a copy of this worksheet is included in the appendix.
- **Graduated Increase in Mitigation Water Through Time** - The mitigation plan proposes a graduated increase in mitigation water through time to match modeled depletionary affects. In one instance the applicant has suggested incremental increases in mitigation waters from year to year over the course of 83 years before

arriving at the full mitigation volume. I would recommend that the total amount of mitigated water required for the steady state condition be provided from the start, and coincide with the beginning of ground water diversion. This will lead to a simpler implementation of mitigation waters on the part of the applicant, and a lesser effort required by the watermaster in ensuring that waters in proper volume are being used for their intended purpose. It also seems that by requiring the full mitigation volume from the on-set of diversion, that there will be less likelihood for error (specifically under delivery) in the volume of mitigation waters provided by the applicant, thereby decreasing the likelihood of injury to others.

An alternative to providing the full steady state condition of mitigation water from the on set could be the requirement of annual reporting. As an alternative, IDWR could require that records verifying the diversion of mitigation water as described by the conditions of the water right permit, be maintained and compiled into an annual report, that is confirmed as accurate by the watermasters of Water District 01 and 120, and the Chief Operator of the City of Shelley Waste Water Treatment Plant, in written statements to be included in the report. Annual reports should be prepared by a professional consultant, such as an Engineer, Hydrologist, or Geologist, maintained for a minimum of five years, and made available to IDWR upon request.

- **Extreme Conveyance Distances of Mitigation Water** – There appears to be reason for concern regarding the location of proposed mitigation waters and their lack of proximity to the reaches of the Snake River that they are augmenting.

Mitigation Waters A are meant to alleviate the depletion of water in the AtR reach of the Snake River, yet the waters initiate in Blue Creek which drains to the Henry's Fork River at a point approximately 20 river miles up stream from the ESPA model boundary and the beginning of the AtR reach. Mitigation Waters B are meant to alleviate the depletion of water in the HtS reach of the Snake River, yet the water when released from Palisade Reservoir must travel some 35-40 river miles to reach the intended destination. Mitigation waters C are meant to alleviate the depletion of waters in the StNB and NBtN reaches of the Snake River, the water is released at the upper end of the StNB reach and must travel 35-40 river miles downstream before arriving at the start of the NBtN reach.

The concern is that there is no way to verify that the waters intended for mitigation in downstream reaches in fact reach their destination. It is conceivable that the waters may be diverted, percolate into the aquifer, or in some other way be intercepted prior to arriving at the point where mitigation has been determined to be needed.

- **Mitigation Water Seasons of Use** – Mitigation Waters A and B have a season of use that is less than the proposed year round use associated with the permit, refer to *Table 2*. Although it appears that the mitigation waters will be able to make up the anticipated depleted volumes of water in the Snake River over the course of an entire calendar year, they will not match volume for volume at a monthly scale.

Mitigation Waters A augments waters in the AtR reach of the Snake River and under a best case scenario will only be delivered from April to October (typical irrigation season for the region). Any injury that occurs to senior water right holders from November to March will not be mitigated until the following irrigation season. It should be noted that the AtR reach of the Snake River does not have storage facilities associated with it. The primary consumptive use of the water in this reach is irrigation, which takes place in the same year the precipitation occurs and runs off. Although depletion due to the proposed diversion will occur in this reach year round, injury to water right holders is most likely to occur during the irrigation season, when the irrigators are using their water. Therefore, if limiting injury to senior water right holders is the primary concern, IDWR may be able to look past the temporal discrepancy between the annual period of depletion and the sub-annual period of mitigation. Assuming that although depletion occurs year round, injury will likely only occur during the irrigation season, and mitigation waters are provided for that time period.

Mitigation Waters B augments waters in the HtS reach of the Snake River and is only delivered from March 15th to November 15th. Any injury that occurs to senior water right holders from November 16th to March 14th will not be mitigated until the following season of use. Unlike the AtR reach of the Snake River, the HtS reach consists of multiple dams that provide power, impound water, and divert water year round, for year round and future uses. Deprivation of water to this reach during periods of time other than the irrigation season may result in real injury to senior water right holders. Therefore, approval of Mitigation Waters B, with their current sub-annual season of use may result in injury.

- **Termination of the Use of Water Associated with the Permit** - Cessation of the use of water under this permit does not lead to the immediate removal of depletionary affects on the ESPA due to this water use. If and when the ground water is no longer being diverted for this use, it will take some transitional time for the ESPA to reach a new steady state condition. Mitigation will be required to continue past the cessation of the use of water until that time that the system achieves steady state. In that time the proposed mitigation waters should not be allowed to be used for any other purpose.
- **Mitigation Waters A – Specific Shortcomings**
 - **Ownership Proof Blue Creek Surface Water Rights** - No documentation of ownership or authorization to use the water rights associated with mitigation waters A (Blue Creek Surface Water Rights) has been submitted to IDWR. In addition, acknowledgement or consent by the owner recognizing that the official records will be updated by IDWR to reflect the change in use to mitigation will also be required prior to approval of the proposed mitigation plan.
 - **Area of Desiccated Land on the Blue Creek Property** – The applicant submitted a letter to IDWR on January 30th, 2008, addressing on-going mitigation plan issues. In this letter the applicant provided spreadsheets and a written

justification for the desiccation (“drying up”) of 10 acres over 83 years to mitigate depletions in the AtR reach. The amount of ground proposed for desiccation was based upon historical averages of precipitation deficits (water consumption by crop uptake), over an 11 year time period, which was reported by the applicant to be one of the driest on record. I do not concur with all of the arguments and data put forth in their justification, but understood the basic spirit of the proposal. Based upon their approach, with slight modifications, I prepared calculations that indicated an average precipitation deficit of 122.5 ac-ft/season over the past eleven years. This equates to a precipitation deficit of 0.87 ac-ft per acre. ESPA model results indicate depletion to the AtR reach of 3 ac-ft/trimester, or 9 ac-ft/year. The desiccation of 10.4 acres of ground is required to mitigate the anticipated depletions to the AtR reach. Although this number is in close agreement with the applicant’s number, my methodology for arriving at the number was different, all calculations are included in the appendix.

The logic of the “historical average” approach to mitigation outlined above is somewhat misleading and may be cause for concern. There is a tendency to assume that because a historical average has been used, which inflates the number of acres of land that must be desiccated, the potential for injury to senior water right holders has been adequately addressed. At the core of this approach lies the logic that there will be lean years in which depletions may be under-mitigated, which will be compensated by surplus years in which depletions are over-mitigated. However, for any given year, if a senior water right holder is injured, it is immaterial for them to be over compensated for water in some future year. By the time over compensation occurs the detrimental implications associated with the injury will have already transpired and may be beyond recourse.

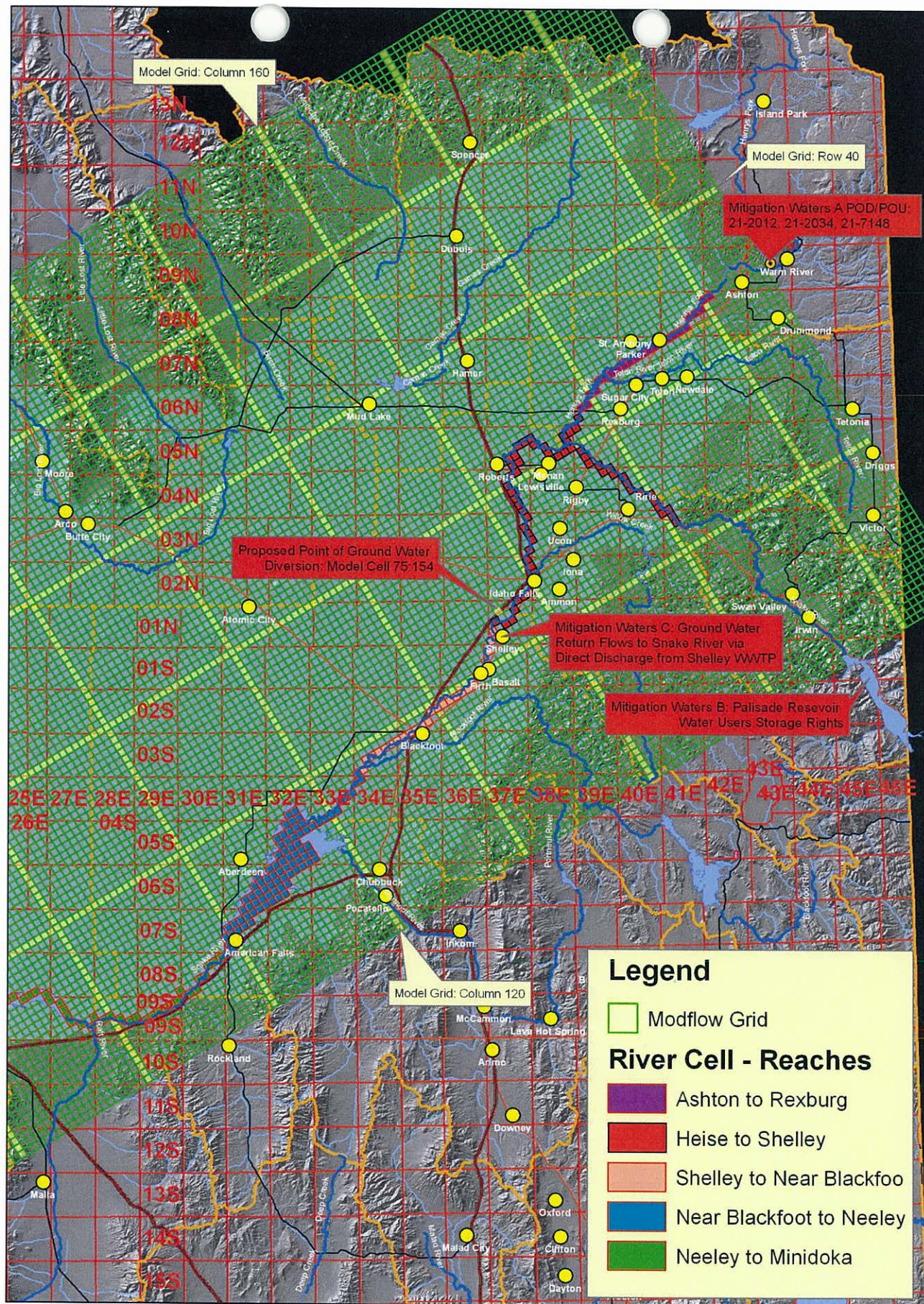
Historical records of water delivery associated with the water rights comprising Mitigation Waters A indicate years where no water was delivered or an extremely limited amount of water was delivered. The applicant has indicated in these lean years that supplemental Freemont-Madison water has been used for irrigation. If in fact the Department cannot accept the “historical average” approach to mitigation, we could require that Mitigation Waters A also be supplemented with Freemont-Madison Water to assure that the required volume of mitigation water is provided each and every year.

- **Mitigation Waters B – Specific Shortcomings**
 - **Ownership Proof Palisades Water User Shares** - No agreement or consent document signed by an authorized officer of the delivery entity pertaining to the Palisade Water Users’ Palisade Reservoir storage water has been provided to IDWR. Such documentation should at a minimum state that the delivery entity agrees (a) to the use of its water right for mitigation and (b) that the water right records(s) of IDWR can be changed to reflect the nonuse of the water as a mitigation use.

- **Detailed Description of Release of Mitigation Waters B** – No comprehensive management plan or description has been offered by the applicant providing details for the proposed use of Palisade Water User's storage water for mitigation. Including how and when the water will be released and how and when the water will be measured. As discussed above, injury to water users in the HtS reach of the Snake River can occur year round. However, the season of use associated with the PWU shares is only from March 15th to November 15th. Therefore, in their mitigation plan the applicant should address the discrepancy in time that injury can occur versus when water will be available for mitigation, and how they will overcome this problem.
- **Volume of PWU's Storage Water Required for Mitigation** – The applicant has suggested using 13.8 shares (1 share = 1 ac-foot of storage) of PWU storage water for mitigation. It is not clear that PWU will recognize anything less than a whole share to be designated for a specific use. Furthermore, historical records provided by Water District 01 indicate that there were five consecutive years, from 2001 to 2005, in which the applicant would not have received his full allotment of water, and for three of those years no water was delivered. Water balance calculations included in the appendix, indicate that the applicant would be required to dedicate 64 full shares of water, to assure that enough water was available for mitigation to accommodate the drought event that occurred from 2001 to 2005. This time period from 2001 to 2005 represents the most severe drought scenario in recent history, however, it does not necessarily represent a "worst case" scenario or even a scenario with any statistical relevance such as the 100 year drought or 500 year drought event. Therefore, IDWR may want to require storage water in addition to the 64 shares, although at this time it is unclear how best to determine additional storage volume requirements.
- **Detailed Description of Release of Mitigation Waters C** – No comprehensive management plan or description has been offered by the applicant providing details for the return of diverted ground water to the Snake River via the City of Shelley Waste Water Treatment Plant (WWTP). Including how and when the water will be released, how and when the water will be measured, or acknowledgement from the WWTP that the waste water represent mitigation waters that must be returned to the Snake River for the plan to be valid.

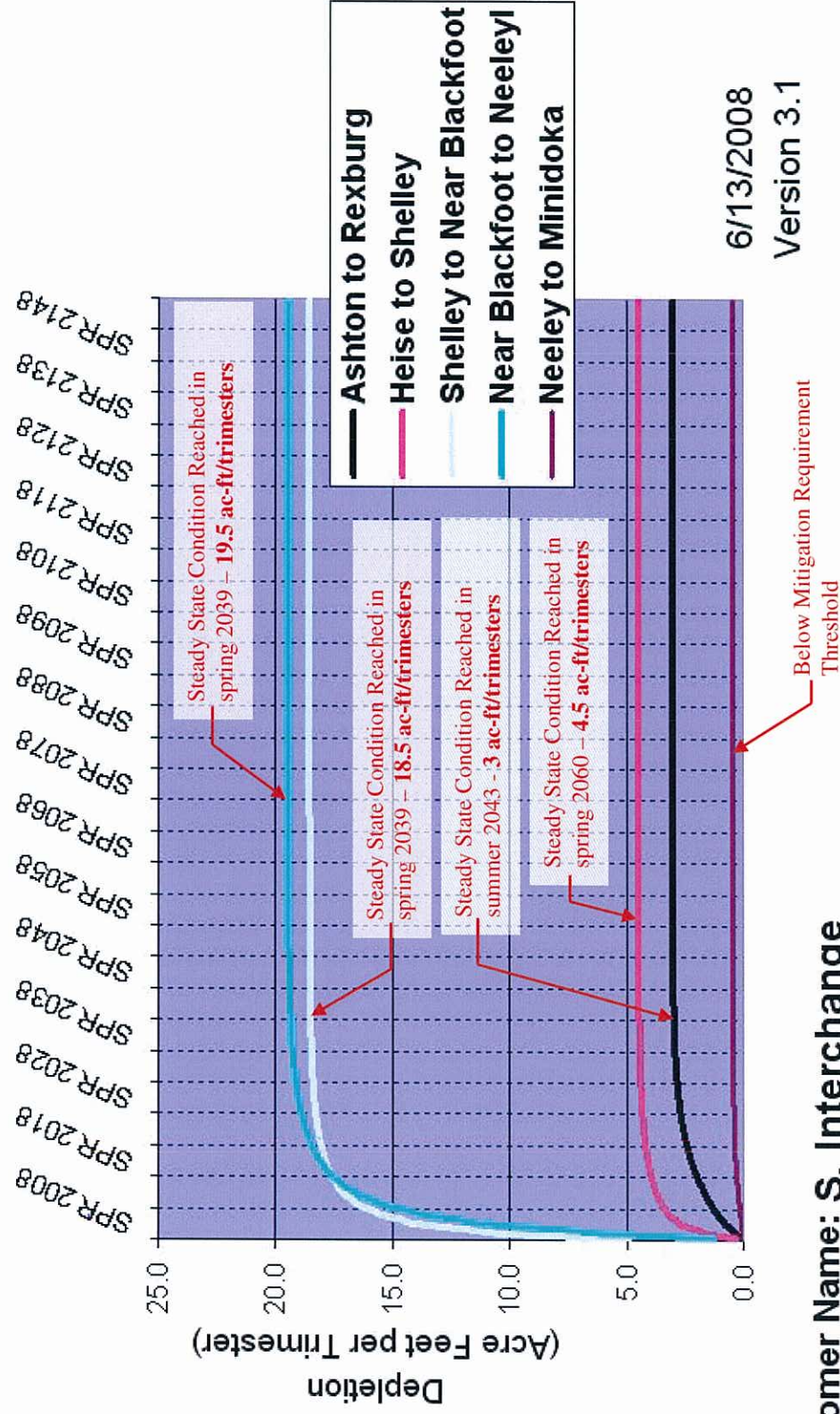
APPENDIX

1. Full Sheet Print Out of Figure 1
2. Full Sheet Print Out of Figure 3
3. WR 21-2012 Proof Report
4. WR 21-2034 Proof Report
5. WR 01-10214 Proof Report
6. Mitigation Waters A – Consumptive Use Calculations
7. Mitigation Waters A – Previous 11 Year Historical Records of Total Days of the Irrigation Season of Actual Water Delivery
8. Mitigation Waters B – Mitigation Water Balance Calculations
9. Mitigation Waters B – Previous 18 Year Historical Records of Palisade Reservoir Storage Volumes
10. IDWR “Mitigation Plan Evaluation” Worksheet



Proposed Permit 35-3542 ESRA Model Exhibit

Net Transfer Effect Above Milner **(Total Effect With Transfer - Total Effect Without Transfer)**



Customer Name: S. Interchange

6/13/2008
Version 3.1

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 21-2012

WATER RIGHT NUMBER: 21-2012

<u>Owner Type</u>	<u>Name and Address</u>
Original Owner	LOUISE HOWELL-FORREST PO BOX 602 ASHTON, ID 83420 (208)652-3320
Original Owner	HOWELL FORREST PO BOX 602 ASHTON, ID 83420 (208)652-3320
Current Owner	DAVID KUHN 3991 N 5TH E IDAHO FALLS, ID 83401 (208)552-1162

Priority Date: 06/01/1973

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
BLUE CREEK	HENRYS FORK

<u>Beneficial Use</u>	<u>From</u> <u>To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	1.900 CFS	
	<u>Total Diversion:</u>	1.900 CFS	

Location of Point(s) of Diversion

BLUE CREEK NE1/4SW1/4NW1/4 Sec. 15, Twp 09N, Rge 43E, B.M.

FREMONT County

Place of Use

IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09N	43E	15							22.0				19.0	14.0					55.0
09N	43E	16				.1									40.0	.1	30.0	16.0	86.2

Total Acres: 141.2

Conditions of Approval:

1. E56 The rights listed below are limited to the irrigation of a combined total of 141.2 acres in a single irrigation season. Combined Right Nos.:21-2012, 21-2034, 21-7148

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 21-2012

2. TRANSFER 1842. ALSO SEE MEMORANDUM DECISION AND ORDER ISSUED 1/29/1977 SETTING PRIORITY DATE TO 1973.
3. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
4. K06 This right is limited to the irrigation of 141 acres within the place of use described above in a single irrigation season.

Remarks:Comments:

1. pskaggs 9/14/2007 Water Right

Comment: This water right record was updated by decree record from old RightID 13519 to new RightID 590359.

2. pskaggs 9/14/2007 POD

Comment: Updated shape

3. pskaggs 9/14/2007 POU

Comment: Updated Shape

4. pskaggs 9/14/2007 1:49:22 PM Explanatory Comment

Comment: Part A not claimed in SRBA & Part B superceded by partial decree 21-2012.

Dates and Other Information:

Licensed Date:

Decreed Date: 2/2/2007

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate Per Acre:

Generic Max Volume Per Acre:

Decree Defendant:

Decree Plaintiff:

Civil Case Number: 39576

Judicial District: FIFTH

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Carey Act Number:

Mitigation Plan: False

Combined Use Limits:

<u>Rate</u>	<u>Volume</u>	<u>Acres</u>
3.4	5.54	141.2

Combined Water Rights: 21-7148 , 21-2012 , 21-2034

Water Supply Bank:

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 21-2034

WATER RIGHT NUMBER: 21-2034

<u>Owner Type</u>	<u>Name and Address</u>
Original Owner	FORREST HOWELL PO BOX 602 ASHTON, ID 83420 (208)652-3320
Original Owner	JOSEPH H EGBERT MARYSVILLE, ID
Current Owner	DAVID KUHN 3991 N 5TH E IDAHO FALLS, ID 83401 (208)552-1162
Original Owner	LOUISE HOWELL-FORREST PO BOX 602 ASHTON, ID 83420 (208)652-3320

Priority Date: 01/18/1909

Basis: Decreed

Status: Active

<u>Source</u>	<u>Tributary</u>
BLUE CREEK	HENRYS FORK

<u>Beneficial Use</u>	<u>From</u> <u>To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	1.600 CFS	
	<u>Total Diversion:</u>	1.600 CFS	

Location of Point(s) of Diversion

BLUE CREEK NE1/4SW1/4NW1/4 Sec. 15, Twp 09N, Rge 43E, B.M.

FREMONT County

Place of Use

IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09N	43E	15							22.0				19.0	14.0					55.0
09N	43E	16				.1									40.0	.1	30.0	16.0	86.2

Total Acres: 141.2

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 21-2034

Conditions of Approval:

1. C18 This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.
2. K06 This right is limited to the irrigation of 80 acres within the place of use described above in a single irrigation season.
3. E56 The rights listed below are limited to the irrigation of a combined total of 141.2 acres in a single irrigation season. Combined Right Nos.:21-2012, 21-2034, 21-7148

Remarks:Comments:

1. psdaggs 9/14/2007 POD
Comment: Updated shape

2. psdaggs 9/14/2007 POU
Comment: Updated Shape

Dates and Other Information:

Licensed Date:
Decreed Date: 2/2/2007
Enlargement Use Priority Date:
Enlargement Statute Priority Date:
State or Federal: S
Owner Name Connector:
Water District Number: 01
Generic Max Rate Per Acre:
Generic Max Volume Per Acre:
Decree Defendant:
Decree Plaintiff:
Civil Case Number: 39576
Judicial District: FIFTH
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Carey Act Number:
Mitigation Plan: False

Combined Use Limits:

<u>Rate</u>	<u>Volume</u>	<u>Acres</u>
3.4	5.54	141.2

Combined Water Rights: 21-7148 , 21-2012 , 21-2034

Water Supply Bank:

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 1-10214

WATER RIGHT NUMBER: 1-10214

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	PALISADES WATER USERS INC 900 N SKYLINE DR - STE A IDAHO FALLS, ID 83402 (208)525-7172

Priority Date: 07/28/1939

Basis: License

Status: Active

<u>Source</u>	<u>Tributary</u>
SNAKE RIVER	COLUMBIA RIVER

<u>Beneficial Use</u>	<u>From</u> <u>To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
IRRIGATION FROM STORAGE	3/15 to 11/15		54,130.00 AF
IRRIGATION STORAGE	1/01 to 12/31		54,130.00 AF
	<u>Total Diversion:</u>		54,310.00 AF

Location of Point(s) of Diversion

SNAKE RIVER	SE1/4NE1/4	Sec. 17, Twp 01S, Rge 45E, B.M.
BONNEVILLE County		
SNAKE RIVER	NE1/4NE1/4	Sec. 17, Twp 01S, Rge 45E, B.M.
BONNEVILLE County		
SNAKE RIVER	NW1/4NE1/4	Sec. 17, Twp 01S, Rge 45E, B.M.
BONNEVILLE County		
SNAKE RIVER	SW1/4NE1/4	Sec. 17, Twp 01S, Rge 45E, B.M.
BONNEVILLE County		

Place of Use

IRRIGATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01N	36E	5					28.0	26.0			33.0	7.0							94.0
01N	36E	9	11.0			6.0												25.0	42.0
01N	36E	10			33.0		6.0	40.0	40.0	36.0	40.0	39.0	35.0	40.0	40.0	35.0	40.0	40.0	424.0
01N	36E	11					40.0	40.0	40.0	40.0	40.0	40.0	22.0		12.0				234.0

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 1-10214

01N 36E 15	40.0	37.0		40.0	30.0	9.0	5.0			40.0	60.0	5.0	10.0	276.0			
01N 36E 16	15.0													15.0			
01N 38E 4	35.0		25.0	39.0						40.0	40.0	40.0	40.0	259.0			
01N 43E 1										40.0	37.0	37.0	40.0	154.0			
01N 44E 5								30.0	35.0					65.0			
01N 44E 6								32.0	40.0				30.0	102.0			
01N 44E 7	8.0	12.0	40.0	40.0				32.0	7.0		9.0		22.0	170.0			
01N 44E 8					32.0	35.0	30.0	15.0	40.0	40.0	35.0	39.0	40.0	34.0	35.0	40.0	415.0
01N 44E 9						40.0	40.0	40.0	40.0	40.0	40.0	39.0	40.0	36.0	40.0	40.0	435.0
01N 44E 15									40.0					40.0			80.0
01N 44E 16	40.0	40.0		40.0		39.0	38.0		40.0			40.0		40.0	40.0		357.0
01N 44E 17	39.0	36.0	39.0	39.0	35.0	28.0	40.0	30.0		40.0	36.0	20.0					382.0
01N 44E 18								8.0			40.0			16.0	39.0		103.0
01N 44E 19	13.0				4.0												17.0
01N 44E 20	5.0		40.0	37.0	30.0		5.0	5.0			25.0						147.0
01N 44E 21	40.0	40.0	40.0	40.0	40.0		40.0	37.0	40.0	24.0	31.0	40.0		33.0			445.0
01N 44E 22		40.0				40.0	40.0		40.0	40.0			3.0	18.0			221.0
01N 44E 24						40.0			40.0		3.0			25.0			108.0
01N 44E 25		20.0			40.0	12.0	25.0	20.0		5.0							122.0
01N 44E 26			8.0						15.0	25.0		15.0					63.0

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 1-10214

01N 44E 27		19.0	38.0					40.0	38.0	135.0			
01N 44E 34		12.0	40.0	37.0	9.0	9.0	5.0	26.0		138.0			
01N 44E 35				3.0	40.0	11.0				54.0			
01N 44E 36							14.0			14.0			
01S 45E 5							20.0	30.0		50.0			
01S 45E 6								40.0	24.0	31.0	95.0		
01S 45E 7	5.0									5.0			
01S 45E 8				30.0						30.0			
02N 36E 1		40.0	40.0	40.0	40.0	40.0	40.0		40.0	280.0			
02N 37E 2	40.0									40.0			
02N 37E 4				22.0	22.0		22.0	22.0		88.0			
02N 37E 5	31.0	40.0	40.0	20.0						131.0			
02N 37E 6		40.0				40.0	40.0		40.0	160.0			
02N 37E 8								27.0	40.0	40.0	28.0	135.0	
02N 37E 9	35.0	40.0	40.0	40.0							155.0		
02N 37E 10				25.0	25.0	20.0	20.0				90.0		
02N 37E 18								40.0			40.0		
02N 43E 33		33.0	31.0	30.0		2.0					96.0		
02S 46E 7									14.0		14.0		
02S 46E 8							2.0	1.0	16.0	1.0	30.0	24.0	74.0

03N 37E	1																		15.0
03N 37E	2		15.0	20.0										30.0	20.0	5.0	35.0		125.0
03N 37E	11	30.0	40.0	40.0	16.0					16.0	3.0	30.0	29.0	5.0	40.0	9.0			258.0
03N 37E	12				10.0		15.0	32.0			35.0								92.0
03N 37E	14		30.0	25.0	19.0	7.0	40.0	38.0	13.0	20.0	37.0	32.0	34.0	15.0	40.0	38.0	17.0		405.0
03N 37E	23											12.0	19.0						31.0
03N 37E	26		15.0			38.0	39.0	34.0	38.0	39.0	38.0	39.0	40.0	22.0	28.0	26.0	15.0		411.0
03N 38E	16		35.0					6.5											41.5
03N 38E	27											31.0	5.0						36.0
03N 39E	3									10.0	10.0	40.0	40.0				3.0		103.0
03N 39E	10													22.0	22.0	23.0	6.0		73.0
03N 39E	12					15.0	16.0	18.0	19.0										68.0
03N 40E	16													10.0	2.0	40.0	40.0		92.0
03N 40E	21	28.0	28.0	40.0	40.0	40.0	33.0	33.0	40.0	40.0	33.0	33.0	40.0	40.0	40.0	40.0	40.0		588.0
03N 40E	22							8.0			28.0	38.0							74.0
03N 40E	27						31.0	22.0			40.0	33.0							126.0
03N 40E	28	40.0	40.0	40.0	40.0									40.0	40.0	33.0	40.0		313.0
03N 40E	33	12.0	3.0																15.0
03N 40E	34						3.0												3.0
03N 41E	5			25.0		35.0			35.0	25.0			25.0		25.0	30.0			200.0

[illegible]

Adjudication Claim Report 1-10214

04N 37E	36					4.3			40.0			4.0					48.3
04N 38E	8							5.0									5.0
04N 38E	33	25.0	24.0	24.0	22.0	7.0	40.0	40.0	8.0								190.0
04N 38E	36													36.0	36.0		72.0
04N 39E	4										25.0						25.0
04N 39E	5											25.0	25.0	25.0	30.0		105.0
04N 39E	6			10.0													10.0
04N 39E	8	40.0	25.5								8.0						73.5
04N 39E	9								9.0	13.0							22.0
04N 39E	15													30.0	38.0		68.0
04N 39E	22											40.0			32.0		72.0
04N 39E	23										40.0						40.0
04N 39E	26								1.0	1.0	38.0				20.0		60.0
04N 39E	27		15.0	15.0					40.0	30.0	30.0	40.0	40.0	10.0	40.0		260.0
04N 39E	28		20.0				40.0	40.0	10.0	10.0	1.0		10.0	35.0	8.0		174.0
04N 39E	29		40.0	40.0								24.0		5.0	40.0		149.0
04N 39E	32											40.0	40.0	37.0	35.0		152.0
04N 39E	33	40.0	40.0						40.0	40.0	38.0	38.0					236.0
04N 39E	34			40.0			40.0		40.0		40.0		40.0	40.0			240.0
04N 40E	3	3.0				11.0	28.0	8.0	20.0	5.0	40.0	6.0					121.0

Adjudication Claim Report 1-10214

04N 40E	35					18.0	2.0										20.0
04N 40E	36						12.0	29.0	10.0		20.0		22.5				93.5
04N 41E	6		8.0			16.0											24.0
04N 41E	31			40.0	8.0	36.0	36.0	35.0	30.0	21.0		26.0	40.0	22.0	8.0		302.0
05N 37E	22									20.0							20.0
05N 37E	24								35.0				35.0	35.0	5.0	33.0	143.0
05N 37E	25	36.0	36.0	16.0	16.0	32.0	36.0	18.0	18.0								208.0
05N 37E	27						2.0										2.0
05N 38E	12													31.0	34.0		65.0
05N 38E	15									3.0	4.0						7.0
05N 38E	18						3.5										3.5
05N 38E	22						2.0										2.0
05N 39E	13	35.0	40.0														75.0
05N 39E	18						15.0										15.0
05N 39E	23												40.0				40.0
05N 39E	27			30.0	32.0						30.0	35.0	3.0	23.0	38.0	35.0	226.0
05N 39E	34	40.0	22.4	5.0 L 4	16.0	40.0	12.0		12.0				3.0 L 5				150.4
05N 39E	35									6.0 L 1							6.0
09S 28E	25			11.0		12.0	6.0	26.0	9.0	20.0	28.0	29.0	20.0		16.0	6.0	183.0
09S 28E	26		14.0	25.0		26.0	2.0	2.0	22.0	40.0	24.0	40.0	40.0	6.0	23.0	9.0	273.0

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 1-10214

09S 28E 27	23.0	40.0	40.0	37.0	23.0	32.0	16.0	37.0	25.0	32.0	12.0	13.0	29.0	26.0	17.0	34.0	436.0
09S 28E 34	23.0	12.0			9.0												44.0
09S 28E 35	26.0	4.0			19.0	39.0											88.0
09S 28E 36						9.0											9.0
10S 22E 19											4.0	13.0					17.0
											L 4	L 3					
10S 22E 20	9.0			40.0													49.0
10S 22E 21	24.0	30.0			36.0	38.0	40.0	20.0									188.0
10S 22E 30					7.0	17.0											24.0

Total Acres: 21030

IRRIGATION FROM STORAGE same as IRRIGATION STORAGEConditions of Approval:

1. THE WATER IS USED ON THE LAND OF THE SHAREHOLDERS IN PALISADES WATER USERS, INC. RENTED TO AND FROM THE WATER BANK; AND ON THE LANDS OF THE FOLLOWING CANAL COMPANIES AND WATER DISTRICTS, A & B IRRIGATION DISTRICT, ABERDEEN-SPRINGFIELD CANAL COMPANY, BURGESS CANAL & IRRIGATING COMPANY, BUTTE & MARKET LAKE CANAL COMPANY, CLARK & EDWARDS CANAL COMPANY, CORBETT SLOUGH DITCH COMPANY, CRAIG-MATTSON CANAL COMPANY, DANSKIN DITCH COMPANY, DILTS IRRIGATION COMPANY, ENTERPRISE CANAL COMPANY, FALLS IRRIGATION DISTRICT, FARMERS FRIEND IRRIGATION COMPANY, LTD., HARRISON CANAL & IRRIGATION COMPANY, IDAHO IRRIGATION DISTRICT, ISLAND IRRIGATION COMPANY, J.R. SIMPLOT COMPANY, LENROOT CANAL COMPANY, LOWDER SLOUGH CANAL COMPANY, LTD., MILNER IRRIGATION DISTRICT, MINIDOKA IRRIGATION DISTRICT, NEW LAVA SIDE DITCH COMPANY, NEW SWEDEN AND WEST SIDE MUTUAL DITCH COMPANY (MARTIN), NORTH RIGBY IRRIGATION & CANAL COMPANY, PARKS & LEWISVILLE IRRIGATION COMPANY, PARSONS DITCH COMPANY, LTD., PEOPLES CANAL & IRRIGATION COMPANY, POPLAR IRRIGATION DISTRICT (RILEY CANAL), PROGRESSIVE IRRIGATION DISTRICT, RIGBY CANAL & IRRIGATION COMPANY, INC., RIVERSIDE DITCH COMPANY, RUDY IRRIGATION CANAL COMPANY, SNAKE RIVER VALLEY IRRIGATION DISTRICT, SUNNYDELL IRRIGATION DISTRICT, TEXAS SLOUGH AND LIBERTY PARK, REID CANAL COMPANY, TREGO DITCH COMPANY, WATSON SLOUGH & IRRIGATION COMPANY, WEARYRICK DITCH COMPANY, WEST LABELLE IRRIGATING COMPANY, LONG ISLAND IRRIGATING COMPANY, WOODVILLE CANAL COMPANY. THE LICENSE FOR PALISADES RESERVOIR (01-02068) IS FOR 1,200,000 ACRE FEET. THIS CLAIM IS FOR A PART OF THAT WATER THAT IS HELD BY THE PALISADES WATER USERS, INC. UNDER CONTRACT WITH THE U.S. BUREAU OF RECLAMTION.
PALISADES WATER IS AVAILABLE FOR USE ON ALL IRRIGATED LANDS WITHIN WATER DISTRICT 1 FROM ALL POINTS OF DIVERSION IDENTIFIED BY DECREE, LICENSE, OR PERMIT. THE LAND LIST IN THIS CLAIM IS NOT MEANT TO BE LIMITING BUT RATHER PRESENTS THE CURRENT LANDS OWNED AND IRRIGATED BY THE CURRENT STOCK HOLDERS OF PALISADES WATER USERS INC. MANY OF THE LANDS LISTED CAN ONLY RECEIVE WATER BY EXCHANGING NATURAL STREAM FLOW (OR OTHER STORAGE) AT THE LOCATIO N OF OF THE POINT OF DIVERSION FOR STORED WATER RELEASED FROM PALI SADES RESERVOIR

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 1-10214

Remarks:

Comments:

1. ecarlsen 11/4/2006 POD

Comment: Correlated PODID 202755 from SpatialDataID 377754 to SpatialDataID 272981

2. ecarlsen 11/4/2006 POD

Comment: Correlated PODID 202755 from SpatialDataID 377754 to SpatialDataID 272981

Dates and Other Information:

Claim Received Date: 4/14/1993

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate Per Acre:

Generic Max Volume Per Acre:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Carey Act Number:

Mitigation Plan: False

Combined Use Limits:

Water Supply Bank:

WR 21-2012 & 21-2034 Consumptive Use Analysis - 11 Year Historical Average Calculations
WR Irrigation Season: 4/1-10/31

Full Water Allotment

	April	May	June	July	August	September	October	Season Total
Mean Monthly Precip Deficit (mm/day)	0.52	2.03	3.48	4.34	4.40	2.80	0.31	N/A
Mean Monthly Precip Deficit (ft/day)	0.002	0.007	0.011	0.014	0.014	0.009	0.001	N/A
Number of Days in Month	30	31	30	31	31	30	31	214
Mean Monthly Precip Deficit (ft/month)	0.05	0.21	0.34	0.44	0.45	0.28	0.03	1.80
Number of Acres Irrigated	141.2	141.2	141.2	141.2	141.2	141.2	141.2	N/A
Crop Consumption (ac-ft/month)	7.23	29.15	48.36	62.33	63.19	38.91	4.45	253.62

21-2034 Water Allotment Based on Previous 11-Year Historical Average

	April	May	June	July	August	September	October	Season Total
Mean Monthly Precip Deficit (mm/day)	0.52	2.03	3.48	4.34	4.40	2.80	0.31	N/A
Mean Monthly Precip Deficit (ft/day)	0.002	0.007	0.011	0.014	0.014	0.009	0.001	N/A
11 Yr. History: Avg. No. of Days Per Month								
Water Was Recived	28.8	20.0	18.0	6.5	1.9	1.6	21.3	98.1
Mean Monthly Precip Deficit (ft/month)	0.05	0.13	0.21	0.09	0.03	0.02	0.02	0.54
Number of Acres Irrigated	141.2	141.2	141.2	141.2	141.2	141.2	141.2	N/A
Crop Consumption (ac-ft/month)	6.94	18.81	29.02	12.98	3.89	2.12	3.05	76.81

21-2012 Water Allotment Based on Previous 11-Year Historical Average

	April	May	June	July	August	September	October	Season Total
Mean Monthly Precip Deficit (mm/day)	0.52	2.03	3.48	4.34	4.40	2.80	0.31	N/A
Mean Monthly Precip Deficit (ft/day)	0.002	0.007	0.011	0.014	0.014	0.009	0.001	N/A
11 Yr. History: Avg. No. of Days Per Month								
Water Was Recived	13.6	12.5	11.5	4.3	1.7	0.0	0.0	43.6
Mean Monthly Precip Deficit (ft/month)	0.02	0.08	0.13	0.06	0.02	0.00	0.00	0.32
Number of Acres Irrigated	141.2	141.2	141.2	141.2	141.2	141.2	141.2	N/A
Crop Consumption (ac-ft/month)	3.28	11.80	18.47	8.59	3.52	0.00	0.00	45.66

Combined (21-2024, 21-2012) Water Allotment Based on Previous 11-Year Historical Avg.

Combined Crop Consumption* (ac-ft/month)	7.23	29.15	47.48	21.57	7.41	2.12	3.05	122.47
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*Crop Consumption value can not exceed the full water allotment value for 141.2 acres.

Required Mitigation Acreage Calculation

Seasonal Avg. Crop Consumption =	122.47	ac-ft/season
Number of Acres Irrigated =	141.2	acres
Seasonal Consumption Vol. per Acre =	0.87	ac-ft/acre (avg. crop consumption/total number of acres)
AtR Reach Required Mitigation Volume =	9.00	ac-ft/year (from ESPA Transfer Spreadsheet)
Required Acreage for Mitigation =	10.4	acres (mitigation vol./season consumption vol. per acre)

Required Mitigation Flowrate Calculation

Required Acreage for Mitigation =	10.38	acres
WR 21-2034 Flowrate, Q =	1.90	CFS
WR 21-2034 Area of POU =	141.20	acres
WR 21-3034 Proportional Mitigation Q =	0.14	CFS
Required Acreage for Mitigation =	10.38	acres
WR 21-2012 Flowrate, Q =	1.60	CFS
WR 21-2012 Area of POU =	141.20	acres
WR 21-2012 Proportional Mitigation Q =	0.12	CFS

WR 21-2012 & 21-2034 - Historical Number of Days That Irrigation Water Was Delivered
to the Applicant for Each Month of the Irrigation Season
WR Irrigation Season: 4/1-10/31

Days in the Month	April	May	June	July	August	September	October	Season Total	% Total Season
1997	30	31	30	31	31	30	31	214	84%
1998	30	31	30	30	21	8	30	180	
1999	30	31	30	18	0	5	30	144	67%
2000	30	31	30	22	0	0	17	130	61%
2001	30	26	19	0	0	0	15	90	42%
2002	25	0	0	0	0	0	17	42	20%
2003	30	15	13	0	0	0	23	81	38%
2004	30	9	13	0	0	0	16	68	32%
2005	22	0	6	0	0	0	14	42	20%
2006	30	31	30	1	0	0	22	114	53%
2007	30	31	27	0	0	5	27	120	56%
21-2034: Number of Days the Month Water Was Received for Irrigation	30	15	0	0	0	0	23	68	32%
11-Yr Average	28.8	20.0	18.0	6.5	1.9	1.6	21.3	98.1	

Days in the Month	April	May	June	July	August	September	October	Season Total	% Total Season
1997	30	31	30	31	31	30	31	214	62%
1998	30	31	30	22	19	0	0	132	
1999	30	31	30	13	0	0	0	104	49%
2000	30	31	30	12	0	0	0	103	48%
2001	30	24	13	0	0	0	0	67	31%
2002	16	0	0	0	0	0	0	16	7%
2003	0	0	0	0	0	0	0	0	0%
2004	0	0	0	0	0	0	0	0	0%
2005	0	4	0	0	0	0	0	4	0%
2006	11	17	23	0	0	0	0	51	24%
2007	3	0	0	0	0	0	0	3	1%
21-2012: Number of Days the Month Water Was Received for Irrigation	13.6	12.5	11.5	4.3	1.7	0.0	0.0	43.6	
11-Yr Average	13.6	12.5	11.5	4.3	1.7	0.0	0.0	43.6	

WR 21-2012 & 21-2034 Consumptive Use Analysis - 11 Year Worst Case Scenario (WCS) Calculations
WR Irrigation Season: 4/1-10/31

Full Water Allotment

	April	May	June	July	August	September	October	Season Total
Mean Monthly Precip Deficit (mm/day)	0.52	2.03	3.48	4.34	4.40	2.80	0.31	N/A
Mean Monthly Precip Deficit (ft/day)	0.002	0.007	0.011	0.014	0.014	0.009	0.001	N/A
Number of Days in Month	30	31	30	31	31	30	31	214
Mean Monthly Precip Deficit (ft/month)	0.05	0.21	0.34	0.44	0.45	0.28	0.03	1.80
Number of Acres Irrigated	141.2	141.2	141.2	141.2	141.2	141.2	141.2	N/A
Crop Consumption (ac-ft/month)	7.23	29.15	48.36	62.33	63.19	38.91	4.45	253.62

21-2034 Water Allotment Based on Worst Case Year from Previous 11 Years

	April	May	June	July	August	September	October	Season Total
Mean Monthly Precip Deficit (mm/day)	0.52	2.03	3.48	4.34	4.40	2.80	0.31	N/A
Mean Monthly Precip Deficit (ft/day)	0.002	0.007	0.011	0.014	0.014	0.009	0.001	N/A
11 Yr. History: WCS No. of Days Per Month								
Water Was Recived	25.0	0.0	0.0	0.0	0.0	0.0	17.0	42.0
Mean Monthly Precip Deficit (ft/month)	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.06
Number of Acres Irrigated	141.2	141.2	141.2	141.2	141.2	141.2	141.2	N/A
Crop Consumption (ac-ft/month)	6.02	0.00	0.00	0.00	0.00	0.00	2.44	8.46

21-2012 Water Allotment Based on Worst Case Year from Previous 11 Years

	April	May	June	July	August	September	October	Season Total
Mean Monthly Precip Deficit (mm/day)	0.52	2.03	3.48	4.34	4.40	2.80	0.31	N/A
Mean Monthly Precip Deficit (ft/day)	0.002	0.007	0.011	0.014	0.014	0.009	0.001	N/A
11 Yr. History: WCS No. of Days Per Month								
Water Was Recived	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean Monthly Precip Deficit (ft/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of Acres Irrigated	141.2	141.2	141.2	141.2	141.2	141.2	141.2	N/A
Crop Consumption (ac-ft/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Combined (21-2034, 21-2012) Water Allotment Based on Worst Case Year from Previous 11 Years

Combined Crop Consumption* (ac-ft/month)	6.02	0.00	0.00	0.00	0.00	0.00	2.44	8.46
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*Crop Consumption value can not exceed the full water allotment value for 141.2 acres.

Required Mitigation Acreage Calculation

Seasonal Avg. Crop Consumption =	8.46	ac-ft/season
Number of Acres Irrigated =	141.2	acres
Seasonal Consumption Vol. per Acre =	0.06	ac-ft/acre (avg. crop consumption/total number of acres)
AtR Reach Required Mitigation Volume =	9.00	ac-ft/year (from ESPA Transfer Spreadsheet)
Required Acreage for Mitigation =	150.1	acres (mitigation vol./season consumption vol. per acre)

Required Mitigation Flowrate Calculation

Required Acreage for Mitigation =	150.15	acres
WR 21-2034 Flowrate, Q =	1.90	CFS
WR 21-2034 Area of POU =	141.20	acres
WR 21-2034 Proportional Mitigation Q =	1.90	CFS
Required Acreage for Mitigation =	150.15	acres
WR 21-2012 Flowrate, Q =	1.60	CFS
WR 21-2012 Area of POU =	141.20	acres
WR 21-2012 Proportional Mitigation Q =	1.60	CFS

Water District 01: 18 Year Historical Record of Palisade Reservoir Storage

% of AVG YEAR		Full Water		TOTAL STORAGE =		EVAPORATIVE		% OF		NEW FILL		% ALLOCABLE	
Year	RUNOFF (April 1st)	Space (ac-ft)	CARRYOVER AT END OF YEAR	Received	CARRYOVER	NEW FILL AND CARRYOVER (ac-ft)	CARRYOVER (ac-ft)	NEW FILL (ac-ft)	LOSS FROM STORAGE (ac-ft)	EVAP LOSS	MINUS EVAP (ac-ft)	NEW FILL	% NEW FILL
2007	65	940,400		Y	787,732		0	787,732	19,060	2.42%	768,671.9	81.7%	
2006	102%	940,400	618,991	Y	898,234		0	898,234	19,060	2.12%	879,174.0	93.5%	
2005	78%	940,400	259,259	N	427,001		56,802	370,199	11,066	2.59%	360,604.7	38.3%	
2004	72%	845,430	56,802	N	69,412		69,412	0	2,205	3.18%	0.2	0.0%	
2003	73%	845,430	69,412	N	90,616		89,608	1,009	2,777	3.06%	977.6	0.1%	
2002	68%	845,430	89,608	N	158,944		158,944	0	3,183	2.00%	0.1	0.0%	
2001	55%	845,430	158,944	N	566,031		462,574	103,457	9,274	1.84%	101,762.1	12.0%	
2000	81%	940,400	462,574	Y	912,755		0	912,755	20,010	2.19%	892,745.0	94.9%	
1999	117%	877,421	756,637	Y	870,107		0	870,107	13,104	1.51%	857,003.0	97.7%	
1998	111%	882,802	852,480	Y	882,802		0	882,802	12,553	1.42%	870,249.0	98.6%	
1997	159%	837,098	NA	Y	837,089		0	837,089	13,158	1.57%	823,931.0	98.4%	
1996	129%	861,766	817,475	Y	850,102		0	850,102	14,297	1.68%	835,805.0	97.0%	
1995	103%	879,040	NA	Y	879,040		0	879,040	16,003	1.82%	863,037.0	98.2%	
1994	64%	872,715	M	Y	872,715		0	872,715	12,238	1.40%	860,477.0	98.6%	
1993	93%	899,498	820,107	Y	899,498		0	899,498	8,801	0.98%	890,697.0	99.0%	
1992	56%	899,502	228,281	N	549,994		541,641	8,353	14,472	2.63%	8,133.0	0.9%	
1991	81%	897,303	541,641	Y	897,303		0	897,303	21,193	2.36%	876,110.0	97.6%	
1990	72%	972,800			957,351				26,132	2.73%	931,219.0	95.7%	

Spreadsheet Description

- Column 1: Direct Input
- Column 2: Direct Input
- Column 3: Direct Input
- Column 4: Direct Input
- Column 5: Direct Input
- Column 6: Direct Input
- Column 7: Carryover = Total Storage - New Fill
- Column 8: New Fill = if(Fill? = Y, Total Storage, Total Storage - Carryover From Previous Year))
- Column 9: Direct Input
- Column 10: % Evaporative Loss - Evaporative Loss - Total Storage
- Column 11: New Fill Minus Evap = New Fill - % Evaporative Loss(New Fill)
- Column 12: % Allocable New Fill - New Fill Minus Evap - Space
- Column 13: 130 Shares Allocated Volume = %Allocable New Fill(130)

*Spreadsheet provided by Joe Kaufman on June 24, 2008 via email from Wendy Murphy.

Palisade Water User Shares - Mitigation Storage Water Balance
Calculation of Required No. of Shares to Accommodate Historical Conditions for Past 18 Years

of Mitigation Shares: 64 input for calculations in table below

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Year	Full Water Right Received?	% OF EVAP LOSS	% ALLOCABLE NEW FILL	ALLOCATED VOLUME (ac-ft)	Start of Year Volume (ac-ft)	Mitigation Water (ac-ft)	End of Year Volume (ac-ft)
1990		2.73%	95.7%	61.3	61.3	14	47.3
1991	Y	2.36%	97.6%	62.5	62.5	14	48.5
1992	N	2.63%	0.9%	0.6	49.1	14	35.1
1993	Y	0.98%	99.0%	63.4	63.4	14	49.4
1994	Y	1.40%	98.6%	63.1	63.1	14	49.1
1995	Y	1.82%	98.2%	62.8	62.8	14	48.8
1996	Y	1.68%	97.0%	62.1	62.9	14	48.9
1997	Y	1.57%	98.4%	63.0	63.0	14	49.0
1998	Y	1.42%	98.6%	63.1	63.1	14	49.1
1999	Y	1.51%	97.7%	62.5	63.0	14	49.0
2000	Y	2.19%	94.9%	60.8	62.6	14	48.6
2001	N	1.64%	12.0%	7.7	56.3	14	42.3
2002	N	2.00%	0.0%	0.0	42.3	14	28.3
2003	N	3.06%	0.1%	0.1	28.4	14	14.4
2004	N	3.18%	0.0%	0.0	14.4	14	0.4
2005	N	2.59%	38.3%	24.5	24.9	14	10.9
2006	Y	2.12%	93.5%	59.8	62.6	14	48.6
2007	Y	2.42%	81.7%	52.3	62.5	14	48.5

Spreadsheet Description

Column One: Storage Year

Column Two: Indication of weather the applicant received a full allotment of storage water for that given year.

Column Three: Percent of allocated storage water lost to the applicant due to the evaporative loss difference.

Column Four: The percent of the total water volume associated with PWU shares allocable to the applicant for that given year. This number will always be less than 100% b/c at a minimum evaporative losses are deducted from the allocated volume. In years where the full allotment of storage water was not received due to drought conditions, this percentage can be significantly less.

Column Five: The percent of allocable water times the number of water shares dedicated to mitigation (one share = one ac-foot).

Column Six: Volume of water associated with the mitigation shares stored in the reservoir at the beginning of the year. If a full allotment of water is delivered it will be that volume (total water shares less evaporative loss difference), else it will be the carry over volume (end of year volume from previous year) plus any water received that year, not to exceed the theoretical full allotment of water for that year (i.e. total water shares less evaporative loss difference).

Column Seven: Volume of water required for mitigation in that year.

Column Eight: Volume of water associated with the mitigation shares stored in the reservoir at the end of the year (start of year volume less mitigation volume).

Mitigation Plan Evaluation

When the Department of Water Resources determines that the source of water is not sufficient to supply a proposed appropriation of water (Rule 45.01.b) or water right transfer, and approval would result in injury to other water rights, the applicant may mitigate to avoid denial of the proposed appropriation or transfer. A mitigation plan must offset the depletion of water associated with a new appropriation or transfer in quantity, time, location¹, and/or quality to protect senior water right holders. Use the following checklist to evaluate the mitigation plan. Attach additional pages if necessary.

- 1 ____ Why is mitigation required? Moratorium area? GWMA? CGWA? Fully appropriated source?
Administrative hold? Other? (See the controlling order, policy memo, or management plan for guidance.)
- 2 ____ What water source is being protected by the mitigation requirement? _____
- 3 ____ What water source is proposed to be depleted by the applicant? _____
- 4 ____ How are the two water sources connected? _____
- 5 ____ Did the applicant provide an analysis estimating timing, quantity, and location, of the proposed depletion of the protected source? _____
- 6 ____ Is the source of mitigation water, including WR #s, identified? _____
- 7 ____ Does the applicant have authority or proper permission to use the mitigation rights? _____
- 8 ____ Are the mitigation rights valid, and are they sufficient for the required mitigation?
 - ____ historic use and availability of water: _____
 - ____ forfeiture protection: _____
 - ____ overlapping rights: _____
 - ____ water quality: _____
 - ____ watermaster input: _____
- 9 ____ Does the mitigation plan call for replacement water or for non-use of water? Replacement water normally requires a separate filing, such as a transfer or Water Supply Bank rental, whereas non-use of water is normally addressed in the conditions of the new application or transfer approval. _____
- 10 ____ How will the new water diversion and the mitigation water both be measured and monitored for compliance to ensure that the enough mitigation water is provided at the correct location? _____
- 11 ____ Is the mitigation plan adequate? (May need technical analysis or modeling from the Hydrology Section or reference to a prior similar plan.) _____

¹ The word "location" for ground water means both the ground-surface site and the aquifer from which the water is being withdrawn. The word "location" for surface water means within a reasonable distance of the point of diversion, taking into account other water right diversions and possible environmental concerns.