

STOCKWATER FOR CHINOOK - SCOTT VALLEY IRRIGATION DITCH

Final Report for Agreement # 14-48-0001-945222
U. S. Fish and Wildlife Service

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for

Siskiyou Resource Conservation District
1995

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ABSTRACT

The prominent diversion from the Scott River in Scott Valley is the Scott Valley Irrigation District (SVID) ditch. This ditch is used for irrigation and stockwater. The Scott River is an important spawning tributary for fall chinook salmon and steelhead trout. During the past ten years (1985-1995) the Scott River fisheries, as well as other users, has been in a serious declining state. One of the reasons has been continued drought conditions and low flows in the Scott River.

Being the largest diversion from the Scott River, the SVID initiated a study to determine the feasibility and desirability of converting the SVID water source from a surface water diversion from Scott River to a ground water supply. The basic premise was to use underground sources of water for stockwater requirements in order to leave more surface water in the river during low flow periods that are critical for anadromous fish. The study included a survey of all SVID users to help determine the extent of use of SVID water, collect opinions of users, and address the many questions and speculation regarding water rights and anadromous fisheries. The objectives of the study were to promote constructive and cooperative attitudes, determine feasibility of an alternate stockwater source, and provide information that could possibly lead to a plan that would mutually benefit water users and fish habitat.

The study revealed many diverse opinions and concerns. The opinions ranged from being satisfied with the current operation to changing the SVID to ground water supply for both stockwater and irrigation and included the possibility of selling diversion during certain periods to enhance the surface flow in Scott River. The major concerns focused on costs, water rights, severe leakage in the District ditch, and sealing problems associated with the ditch being dry for extended periods of time.

Basic costs for potential alternative stockwater wells were determined, sources of funding explored, and avenues of legal and technical assistance were established.

The specific data and results of the study have been detailed within the body of this report. This study has been reported to the SVID Board of Directors for review. It is appropriate that a final plan or course of action can be determined only after review and approval by the SVID Board and members.

INTRODUCTION

Project Objectives

1. Promote constructive and cooperative attitudes by opening communication with water users in the District about the potential mutual benefits to fish and ranchers of the proposed water system change.
2. Determine the feasibility of using wells as an alternate stockwater source while leaving surface water in the river for the fish. This would improve both streamflows and water quality of the Scott River.
3. Provide information on which to base a specific plan and recommend specific action.

Background

The Scott Valley Irrigation District (SVID) diverts water from Scott River at Young's Point. The adjudication allots 42.60 cfs to be diverted into the SVID ditch at this point for irrigation. Historically and at present the SVID does not divert its full allotment. As example, during June 1990, average diversion by SVID was 38 cfs (CDWR, 1991).

The SVID diversion for stockwater during non-irrigation season, by necessity, exceeds the actual requirements for livestock. Hypothetically, 3,000 head of cattle drinking 15 gallons of water per day equals about 45,000 gallons per day. A surface diversion of 10 cubic feet per second (cfs) equals about 6,048,000 gallons per day. Based on 1992 SVID records, surface flow over the Young's Point Dam was:

Sept. 12 to Oct. 23 (40 days) Dry, all diverted, up to 20 cfs.

Oct. 23 to Dec. 14 (80 days) Reduced by 20 cfs-diverted.

Dec. 14 to Apr. 1, '93 (90 days) Reduced by 10 cfs-diverted.

This reduced surface flow in the Scott River because of the diversion coincides with the steelhead, coho, and chinook fall runs which peak in early November. Fall chinook have had difficulty spawning in Scott Valley for several years due to low flows and this condition was exaggerated in the Fall of 1994 which was the third driest year on record.

Water loss in ditch diversions is a serious concern. Data collected by the U.S. Soil Conservation Service showed that water delivery was reduced 21 to 39% as a result of seepage (USSCS 1976). In the SVID ditch, especially after a long dry summer, the diversions as described above (Sept. 12 to Dec. 14) are believed to be necessary to soak and seal the ditch so it will carry water to the farthest landowner and user which is

approximately 12 miles from the initial diversion point. After mid-December, about 10 cfs is needed for ditch saturation and to insure that the flow is sufficient to prevent freeze-up.

If suitable funding could be arranged, and mutually beneficial system developed to enable being able to leave this presently diverted water in the river as added surface flow, especially during dry and low flow periods, it would benefit coinciding anadromous fish spawning activity.

PURPOSE

This study is to provide information necessary to determine, in the opinion of the Scott Valley Irrigation District users, the practicality, acceptability, and cost-effectiveness of providing stockwater from SVID users wells in order to leave surface water in the river during low flow periods that are critical for anadromous fisheries.

Location and Description

The SVID ditch is located in the central area of Scott Valley. The SVID diversion is at Young's Point on Eastside Road just east of the town of Etna, California. The ditch follows the general course of Eastside Road north for approximately twelve miles to just south of the town of Fort Jones. (Figure 1)

The SVID is the largest diversion on the Scott River. The diversion point is a concrete dam fitted with a fish screen mechanism and flow bypass. The adjudication allots 42.60 cfs to the SVID at this diversion. The SVID serves approximately 3200 acres for both irrigation and stockwater. There are twenty-five physical user locations which are allotted SVID water based on number of acres. The adjudication also allows for ground water wells within the Interconnected Ground Water boundary. (Figure 2) (Appendix E)

METHODS

This study was done in several phases. First, was the preliminary research and compilation of historical data needed for the development of the study, preparation of an Interview Guide, and a questionnaire Check-list. The Interview Guide described the basic premise for the study and the questionnaire check-list. This material provided each user with essentially the same background information. Secondly, each SVID user was given a copy of the Interview Guide and Checklist (Appendix A) for preliminary review and to acquaint the users with the basic plan and supporting information they would need to evaluate their particular requirements. Each user was given sufficient time for review and possible input regarding the purpose and background of the project. Third, a series of in-person interviews was done with each user and the interview questionnaire was completed (Appendix A). All responses were confidential and were designated by a number instead of by name. The results of the interviews were compiled and analyzed.

The interview questions were developed and selected with input from the SVID and RCD Board of Directors. Board members of the SVID and RCD approved the final list of questions. The questions were designed to obtain some direct "yes" or "no" answers, while others were designed to stimulate general comments and promote open communication of some very sensitive issues.

Answering the questionnaire was only one portion of the interview process. During the course of reviewing the questions, general comments were expanded on and information was shared regarding various alternatives to the present operation, possible costs for each of the various alternatives, and legal insures.

Costs for well drilling, or converting existing wells for stockwater purposes, including labor, and materials are expressed as an average based on estimates obtained from local vendors as well as vendors from Medford, Oregon, and Redding, California.

DISCUSSION

Background

Water rights are long standing and are a major asset to landowners. Farmers, ranchers, and other water right holders and users are becoming increasingly apprehensive regarding the possible loss or modification of these rights. The recent low water and drought conditions of the past several years, the decline of fish habitat and fish counts, and the public and regulatory agencies reactions to these problems, have contributed to this apprehension.

Particularly after a long dry spell, all of the surface water in the river is diverted until the ditch soaks and seals and reliable stockwater is delivered to the bottom end of the ditch. This can amount to as much as 20 cfs and can occur over a prolonged period of time, (several months). This coincides with the fall chinook run, which is a prime candidate for endangered species listing.

Hydrology

The primary source of water for the valley is the spring melt and run-off from the previous winter's snow pack. If this snow is plentiful and has occurred early enough in the season to pack and freeze, the following season is a better water year. The overall annual flow in the Scott River exceeds annual requirements by at least 2 or 3 times, even in driest years. Unfortunately, when broken down into monthly flows, they do not correspond to minimum requirements for either fish or agriculture. The flows at Young's Point diversion roughly correspond to those at the gauging station. (California State Water Resources Report on Hydrogeologic Conditions - Scott River, 1975) They are extremely high during the snow melt and run-off in the spring, and are extremely low or nonexistent for about 4 months after the middle of the year. This is the period when SVID's need of water for both irrigation and stockwater conflicts most with the needs of anadromous fish.

The area normally served by SVID is over the Scott Valley Aquifer. This aquifer has an estimated capacity in excess of 300,000 acre feet (USGS, 1958). In addition, this aquifer has the unique feature of continually replenishing itself by the underground flow from deltas of the streams feeding it. Before these streams appear as surface flow, their drainage fills the deltas. As the deltas become saturated, the surface waters appear. Long after these surface waters disappear, the sub-surface flow through the deltas continues. Since the sub-surface flow rate is much slower than the surface flow rate, the aquifer continues to be replenished into the next seasons snow melt and run-off period. In dry years, actual use amounts to 100% of the surface flow in Scott River for approximately 4 months of the year. This use, if drawn from wells, would amount to less than 1% of the aquifer capacity and should not be detrimental to either fish or the aquifer.

Costs

The estimated basic cost for a single 100 ft. well producing 15 gpm, which would service approximately 100 head of cattle is approximately \$6,000. This would include well drilling and casing, pumphouse materials and labor, half hp pump, pressure tank, and a heater system. The cost of associated troughs, pipelines (1" pvc), trenching, storage tanks, and labor would be approximately \$2000. With an already existing well the cost of conversion for a basic stockwater system would be approximately \$4000. These figures are for basic planning purposes only, as costs would vary per individual system based on number of stock, dispersal needs, and system design. In addition, these systems would be considered new construction by the Siskiyou County Assessor's Office and would be assessable.

Operating costs would include the cost of electricity. A single phase hook-up would cost \$10.00 per month plus 9.27 cents per kilowatt. A three phase hook-up would cost \$13.75 per month plus 9.27 cents per kilowatt. Whether a standby charge would be assessed would depend on each individual situation and the number of kilowatts used per well would vary depending on size of system and amount of use (Pacific Power).

Water Rights

There are some water law scenario's that must be considered having to do with stockwater wells. If no new wells were drilled and existing irrigation wells were used, it would depend on whether the well was outside or inside the Interconnected Ground Water in the adjudicated boundary. If it were outside there would be no effect because of "overlying rights to groundwater". If the well was inside the adjudicated zone it would be listed on the adjudication (Appendix E). If the well is not listed on the adjudication it was constructed later with State permission, was constructed later without State permission, or it was a domestic well not needing specific listing, but needing State permission. If new wells are to be drilled, they would have to go through the standard permit process. (Adjudication, para. 36 & 41, Appendix E)

Funding Sources

Funding is available through the Siskiyou RCD which in turn seeks funding from various private organizations and governmental agencies. There is a preliminary commitment of \$30,000 in grant money through the U.S. Fish and Wildlife Service that could be used in 1995 for stockwater projects.

Legal

Technical engineering and planning assistance may be available through the National Resource Conservation Service (NRCS). Assistance for answering legal and water right concerns is also available from private attorneys, State Water Resources Control Board (Division of Water Rights), and the NRCS. During the course of this study, several legal

questions were tendered by the users during the interview process. In an attempt to address these questions, a letter was written to the State Water Resources Control Board, Division of Water Rights asking for a response to these issues. A reply was received from Charles A. Rich, of the above mentioned agency and is included herein as Appendix F.

QUESTIONNAIRE AND INTERVIEW RESULTS

There are 25 physical user locations which are allotted SVID water based on number of acres. There were 21 respondents to the study. The remaining four user locations either chose not to participate in the survey or through various agreements their use was handled by one of the 21 respondents.

The questionnaire consisted of 11 questions with associated comments. The charts in Appendix B reflect the total responses of the questionnaire. The graph, Appendix C, displays the results of question #6. Appendix D reflects comments made for each question as well as general comments.

Following is a summary of results of questions #3 through #11 which reflect practicality and acceptability:

- Question #3: All respondents would not encumber their own property to secure funding for this project.
- Question #4: 66.7% of all respondents would prefer doing the work themselves and be reimbursed.
- Question #5: Only 19% of respondents would participate in a 10% cost of share program. 81% preferred 100% outside funding.
- Question #6: Average percentage was 17.95% concern for fish, 55.22% concern for water and property rights, and 37.67% for improved efficiency of operation.
- Question #7: Only 9.5% had thoughts on sources of outside funding.
- Question #8: On the issue of whether the SVID should sell water, 52.4% responded "yes" and 47.6% responded "no".
- Question #9: 33.3% had suggestions for other plans or projects (see comments Appendix C).
- Question #10: 38.1% felt the basic stockwater concept could be expanded to the irrigation phase of the SVID.
- Question #11: 95.2% felt they did not need any more specific information.

Most current SVID users who utilize stockwater from the SVID ditch have alternative

stockwater systems which include river access and irrigation wells. The users have developed these alternatives out of necessity due to dry periods when there is no ditch water. In a majority of cases an attempt to gather detailed information for each of their alternative systems was met with resistance with the owners expressing proprietary rights.

It must be understood that water, water rights, and the SVID ditch are very sensitive issues to the users. In many cases there is a low confidence level and reluctance in having dealings with government agencies, especially when it comes to providing detailed information about their property, operations, or entering into agreements or projects (see Appendix D - Comments).

CONCLUSIONS

Results of the study have produced several conclusions and indicators:

1. While most of the SVID users share a concern for fish, the predominant concern is for maintaining water and property rights. This is based on general comments and results of question #6 reflecting an average of only 17.95% concern for fish.
2. All current users who have a need for stockwater already have alternative stockwater systems of various types. The results of questions #1 and #2 and general discussion during interview process lead to this conclusion.
3. There is an interest in alternative stockwater systems using groundwater, but any project would have to be 100% funded from outside sources. SVID members have concerns regarding operating costs, long term maintenance, and practicality in relation to some large dispersal areas and winterizing. When asked directly if they would be willing to alter their current mode of operation, most felt that, although it was worth looking into, they probably would not change their current practice, and definitely felt some water should be flowing in the ditch year around if possible. Question #5 reflected that 81% of the users preferred 100% outside funding, and was supported by general comments.
4. There is interest in exploring the possibilities of selling water, not water rights, during low flow periods to help increase river surface flow. Most users felt it would require a detailed study and would depend on what kind of commitments this would require. How this would be accomplished on an annual should be determined before anyone would commit to this idea. This conclusion is based on general comments and the results of question #8 reflecting 52.4% interest in selling water .
5. Many SVID users felt the SVID has done a great deal toward leaving more water in Scott River as exemplified by the abandoning of the lower end of the ditch. This abandonment resulted in the SVID diversion right being reduced from 62.5 cfs to 42.6 cfs and a reduction of acres served from approximately 5,131 acres to approximately 3,200 acres. The users of this abandoned lower end went to well systems for their irrigation.
6. The largest area of concern that resulted from the interview process related to the physical condition of the SVID ditch itself. There are extensive leakage problems which result in significant water loss along the ditch. The majority of users felt it necessary to keep some flow in the ditch to help maintain it's seal. The longer period of time the ditch is dry, the longer and more water it takes to regain the seal and still provide sufficient water to the last water user on the District.

For example, several sections of the SVID ditch which are constructed along steep hillsides flow over and through fractured serpentine rock formations which are very porous and allow significant water leakage.

Flow measurements taken by the SVID in cooperation with the Siskiyou RCD and U.S. Soil Conservation Service in the winter 1978 and spring of 1986, have shown flow losses to be as high as 45%.

It was felt, by almost 100% of the SVID users, that although ideas such as alternative stockwater sources and selling water could possibly improve water flow and quality in Scott River, the bigger issue is the efficiency of the ditch itself. It was expressed by a majority of users that time and money could be more effectively spent on improving the flow loss, which in turn would have a better overall impact on the beneficial uses of Scott river and on a more year around basis.

RECOMMENDATIONS

The SVID operates on a majority basis and is headed by a board of five elected directors. To proceed with any action or recommendation concerning the operation of the SVID will require the approval of the SVID board. After reviewing the results of the survey the SVID board chose to take no action at this time regarding an alternative stockwater program. This decision was based on the result that only three or four of the 25 users would currently be interested in actually participating in a stockwater project. However, the results and conclusions of this study lead to three main recommendations as follows:

1. The SVID work in coordination with the Siskiyou RCD in developing a plan and funding to improve the efficiency of the SVID ditch in an attempt to significantly reduce the water loss due to seepage. This would address the "larger, more direct issue", and could improve beneficial uses in Scott River on a more year around basis. Additional flows in June and July could possibly help downstream migrating juvenile steelhead and help reduce thermal barriers. With a higher efficiency there would be less water diverted during coinciding anadromous migrating cycles.

The task of treating the entire SVID ditch is overwhelming from a cost stand point. However, there are portions of the ditch which leak more than others. Most of the up to 45% loss is occurring in the upper half of the ditch and more specifically at eight locations where the ditch runs through porous serpentine. These locations are; Horn Ranch, approximately 200 yds. in length, and 1 mile from diversion; Whipple Ranch, approximately 450 yds. in length, and 2 miles from diversion; Rancho del Sol, approximately 200 yds. in length, and 4 miles from diversion; Bryan Ranch, approximately 200 yds. in length, and 4.5 miles from diversion; Hurlimann Ranch, approximately 450 yds. in length, and 6 miles from diversion; Black Ranch, approximately 100 yds. in length, and 7 miles from diversion; Hansen Ranch, approximately 40 yds. in length, and 7.5 miles from diversion; Benjamin Ranch at Scarface and Eastside Rd., approximately 100 yds. in length, and 11 miles from diversion. These eight locations result in a total of approximately 1740 yds. of the 12 mile SVID ditch that would be high priority for leakage treatment.

As an example, controlling seepage with bentonite has become an increasingly accepted practice because of the comparatively low initial costs. While the initial cost of seepage control with bentonite is considered low, the annual cost may be relatively high when compared with more permanent sealing methods. However, with good preparation to treatment and proper maintenance, a good bentonite treatment might last 10 years or more and is especially effective when the higher expense of more permanent methods, such as concrete or piping is not economically feasible. (Wyoming Bentonite Inc.) Bentonite swells 12-15 times it's granular size and one ton of the material can effectively cover 3-4 hundred yards. Rough, applied estimates, depending on specific locations have ranged from \$300-\$700 per ton. With loses of up to 18.9 cfs, there is substantial potential for

direct additional flow through seepage control which would be helpful to beneficial uses of Scott River. In addition, chances are very high this type of project would stimulate the full support of the SVID and would circumvent many legal issues. It is possible that a funding agency would require, as a contingency to funding, that resulting water gains or savings would stay in the river and not be diverted.

2. Selling water, not the water right, could be a viable consideration. Again the recommendation is for the SVID to work in coordination with the Siskiyou RCD to develop a plan and funding for the feasibility of the sale of water. The farmers need water, but the aspect of selling water that is saved or not used could result in a dual benefit, one to the farmers, and one to Scott River. The SVID is not located in a high market area for the potential of selling water when compared to larger canal systems in southern California, but there may be organizations who would be willing to fund the purchase of unused water for the purpose of increasing flows in Scott River. This could be especially true if the time period for purchase was in the fall months of October or November which coincide with peak anadromous migrations. In the beginning this recommendation could be more difficult to put together as compared to the controlling seepage scenario, but could possibly have simpler and more economically beneficial long term effects. Main issues that would have to be considered would be finding a viable purchaser, a basis for setting price, amount to sell, what kind of commitments would have to be made, setting specific time frames the water would be sold, and any potential legal considerations. For example, how much would an acre foot of water cost? How much would the SVID sell water for? The answers to these questions depends on the use of the water and would be market driven. In this area the market value could be higher for fish concerns than it would be for turf use. In the State of California there is a range of prices for water sold from \$18.00 per acre foot to \$400.00 per acre foot (1 cfs = 2 acre feet for 24 hours). With over 50% of the respondents to the study expressing interest in selling water, this recommendation also has good potential for stimulating total support by the SVID.
3. The third recommendation is to pursue the three or four SVID users who were interested in an alternative stockwater system or an improved one, for the purpose of a demonstration project in coordination with the Siskiyou RCD.

Three of the users who were interested have been approached directly and are considering working through the RCD for a project and funding. This approach was cleared through the SVID, however, it was made clear by the SVID that the District would have no responsibility with the proposed projects and because of the District responsibility to the majority of the users it serves, these particular projects would not result in less water being diverted from the Scott River.

The projects are currently being pursued on the basis of improving water quality in Scott River based on the premise that alternative stockwater systems in these

particular cases will keep cattle out of the SVID ditch and the Scott River. These projects should be considered pilot or demonstration projects and the results should be monitored to determine actual effects for future reference.

REFERENCES

- U.S. Soil Conservation Service, Livestock Watering Development, October 1994.
- California State Water Resources Control Board, Report on Hydrogeologic Conditions in Scott River Valley, November 1975.
- California State Water Resource Control Board, Division of Water Rights Mark Stretars, January 1989, Law.
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- California State Department of Water Resources, Scott River Flow Augmentation Study, February 1991.
- Pacific Power, Yreka, Ca. 1995.
- Potential for Water Reallocation in Siskiyou County, David Guy, January 1993.
- Siskiyou County Assessors Office, 1995.
- Siskiyou County, California Scott River Adjudication.
- U.S. Soil Conservation Service, 1976.

APPENDIX A
Questionnaire and Interview Guide

INTERVIEW GUIDE AND CHECKLIST

STOCKWATER for CHINOOK SVID

A. PURPOSE:

1. This study should provide information necessary to determine, in the opinion of the Scott Valley Irrigation District users, the practicality, acceptability, and the cost effectiveness of providing stockwater from SVID user's wells in order to leave surface water in the river during low-flow periods that are critical for the fish.
2. The study will be done in several phases;
 - a. Research and compilation of supporting data, and preparation of an interview check-list which will provide each user with essentially the same data base.
 - b. The initial interview will acquaint the users with the basic plan and the supporting information they will need to evaluate their particular requirements, express their opinions, and provide input which may be needed to modify the plan or the check-list. The initial interview will consist of the following:
 - (1) General discussion of the concept, supporting data, and the various factors affecting the project.
 - (2) Physical features and basic specifications for each user's pumping and distribution system.
 - (3) Responsibility for operation and maintenance, criteria for determining switch-over from ditch to pumps and back, who is responsible for directing the switch-over, and use of the pumping systems during normal ditch operation.
 - (4) A rough layout or map of each system, specific to each user, sufficient to develop requirements for materials, equipment, construction costs, etc., and an approximate time frame for accomplishment.
 - (5) Funding types and sources, incentives, and degree of contribution or participation.
 - (6) General opinions, additional data, alternate solutions, etc.
 - c. The second and finalizing interview will be accomplished after the information, opinions, and requirements developed through the initial interviews have been completed and incorporated into the basic plan.
 - d. The final plan and specific recommendations will be made primarily on the basis of the secondary interview.

B. GENERAL DISCUSSION: The project and various factors affecting it.

1. Due to low water conditions and the drought in general, the decline of fish habitat and fish counts, and the public and regulatory agencies reaction to these problems, farmers, ranchers and other water right holders and users are becoming increasingly vulnerable to the loss or modification of these rights. These are long-standing lawful rights that have been developed into a major asset to the user's facility. They should not be considered lightly or in a voluntary or contributory vein.

2. The general benefits of the study will be the further opening of communications and the demonstration of cooperation and understanding on a feasibility and cost effective basis. Specific benefits of the project for SVID users would be as follows:

a. The project would provide each user with more complete control and availability of stockwater when and where it is needed. At present, reliability and dependability of the SVID ditch for stockwater during the low water season is directly dependent on surface water in the river. This is generally not available for 3 to 4 months during the fall of the year.

b. Installation of these systems would provide more economical stockwater for users on the lower end of the ditch during their dry periods of the irrigation cycle.

c. Availability of water and the judicious placement of watering points would reduce stock handling requirements and improve efficiency of grazing and dry feeding. This should help to off-set the additional management needed.

d. The alternate availability of stockwater would provide SVID with increased and more flexible down time in which to do ditch maintenance and weed control. This would enable us to cure much of our leakage problems and considerably improve our delivery capability to the lower end of the ditch for both irrigation and stockwater.

e. The liability of both the SVID and its members due to ice blockage, freezing and overflowing during cold weather would be considerably reduced.

3. Particularly after a long dry spell, all of the surface water in the river is diverted until the ditch soaks and seals and reliable stockwater is delivered to the bottom end of the ditch. This can amount to as much as 20 CFS and can occur over a prolonged period of time, (several months). This coincides with the fall Chinook run, (a prime candidate for endangered species listing).

C. WATER SOURCES and AVAILABILITY:

1. The primary source of water for the Valley is the spring melt and run-off from the previous winter's snow pack. If this snow is plentiful and has occurred early enough in the season to pack and freeze, the following season is a better water year. The overall annual flow in the river exceeds all annual requirements by at least 2 1/2 to 3 times, even in the driest years. Unfortunately, when broken down into monthly flows, they do not correspond to minimum requirements for either fish or agriculture. The flows at the Youngs point diversion roughly correspond to those at the gauging station. They are extremely high during the snow melt and run-off in the spring, and are extremely low or nonexistent for about 4 months after the middle of the year. This is the period when SVID's need of water for both irrigation and stockwater conflicts most with the needs of the fish.

2. The area normally served by SVID is over the Scott Valley Aquifer. This aquifer has a capacity in excess of 300,000 acre feet. In addition, this aquifer has the unique feature of continually replenishing itself by the underground flow from deltas of the streams feeding it. Before these streams appear as surface flow, their drainage fills the deltas. As the deltas become saturated the surface waters appear. Long after these surface waters disappear, the sub-surface flow through the deltas continues. Since the sub-surface flow rate is much slower than the surface flow rate, the aquifer continues to be replenished into the next seasons snow melt and run-off period. Our actual use amounts to 100% of the surface water in the river for approximately 4 months of the year. This use, if drawn from wells, would amount to less than 1% of the aquifer capacity and should not be detrimental to either fish or the aquifer.

3. Water levels in wells in the outer fringe of the valley where the bedrock raises with the normal geological structure generally coincide with the surface flow of their corresponding watershed. They are not considered to be a reliable water source during the late summer and early fall.

4. The third water source for the valley is rain. We have no control over it. It is sufficiently variable and sporadic to be considered an unreliable source for our purposes.

D. SPECIFICATIONS and physical features proposed for each basic system:

1. A well capable of producing at least 20 GPM.
2. A submersible pump, up to 5 HP (depending on well capacity), length of distribution system, number of water points, and number of animals.
3. A pressure tank and antifreeze house to provide for a more continuous flow and reduce freezing potential.

4. Distribution pipelines, 2" pvc, 200 psi minimum, buried to a depth sufficient to preclude freezing and also breakage during the deep plowing of ground work.

5. Location of watering points and number of tanks will be dependant on size of the area and number of animals served. Water level control should be protected from damage by stock. Provisions should be incorporated to prevent freezing.

6. An electrical hook-up to meter and power the pump, or some other suitable power source.

7. Most irrigation distribution pipelines are unsuitable due to freeze-up of risers in cold weather.

E. OPERATION and MAINTENANCE:

1. The proposed stockwater pumping system is intended to be operated primarily as a part time system during critical low flow periods in the river. Stockwater will normally be provided through the ditch as in the past. Water rights and normal water usage should not change. Use of the pumping system during other than mandated low water periods would be at the discretion of the individual user.

2. Each system, as it becomes operational (after a suitable shakedown period), will become an "asset" to and be owned by the ranch. The Owner/Operator will be responsible for its operation and maintenance. Depending on how the plan develops, and the availability of grants or programmed O&M funds, each user should maintain expense records, (power bills, maintenance and repair bills, etc) to substantiate claims for reimbursement.

3. The decision to switch from ditch delivery to pumps and back again will be made by the SVID Board of Directors or their designee. This decision will be based on pre-determined criteria, and on petition by SVID users or other directly concerned agencies, as: Calif. Dept. of Fish & Game, US Fish & Wildlife Service, Water Quality Control Board, Water Resource Control Board, etc.

4. Pre-determined criteria will be coordinated with appropriate agencies during development of the plan. This criteria should include, but not be limited to:

- a. Stockwater needs and availability of ditch water.
- b. Surface flow conditions at the Youngs Point diversion.
- c. Surface flow and fish habitat conditions in the river above and below the diversion which would also effect overall fish runs or migration.
- d. Weather, water temperatures, likelihood of rain, floods, freeze up, etc.

F. QUESTIONNAIRE: The following questions are intended to determine general opinion, feasibility, acceptability and cost effectiveness of this or a similar project for SVID users. Comments, additional data, and opinions are solicited.

1. Please indicate for each type of ground that you own or operate, the approximate acreage involved which is adjacent to, or is served by the ditch for stockwatering, and also the approximate maximum potential number of animals which could be served by each.

	Acres	# Animals
a. Permanent pasture	_____	_____
b. Crop grazing	_____	_____
c. Dry feeding	_____	_____
d. Other	_____	_____
e. Comment:		

2. For water sources other than the ditch, please indicate the percent of total area served and its reliability, during low water periods in the river.

	% area served	% reliability
a. River/slough	_____	_____
b. Irrigation system	_____	_____
c. Springs	_____	_____
d. Other	_____	_____
e. Comment:		

3. If the concept of this project seems favorable to you, would you encumber your property to secure a low, or no interest loan to finance all or part of the project?

_____ yes _____ no _____ maybe (comment)

Questionnaire continued:

4. In the event that funding becomes available, would you prefer:
- a. Doing the work yourself and being reimbursed? _____
 - b. Doing the work with local labor and tradesman and being reimbursed? _____
 - c. Having the whole project done on a contract basis under a specific agency? _____
 - d. Other (comment) _____

5. If matching funds were the only source of finance, to what extent would you consider contributing to pay for such a project?

___ 10% of cost, ___ 20% of cost, ___ 30% of cost, ___ Other
Comment:

6. Your participation and support of a project such as this would be influenced by: (indicate % for each, total 100%)

- a. Concern for fish _____
- b. Concern for vulnerability of water and property rights _____
- c. Improved income and efficiency of your operation. _____
- d. Other (comment) _____

7. Do you know of any specific source of grant or other funding for a project such as this? (Comment and data)

8. Should SVID sell water (not water rights) to alleviate fish problems and apply the funds to reduce the annual ditch assessment, so that you can use the savings for your own stockwater system or any other purpose you want?

___ yes ___ no

Comment:

Questionnaire continued:

9. Can you suggest another plan or project which would better serve fish requirements, your vulnerability because of fish requirements, and improve your stockwater efficiency?
Comment:

10. Do you think that the basic concept of this project could be expanded and beneficially applied to the irrigation phase of SVID?

_____ yes _____ no

Comment:

11. Do you need any specific information that has not be provided?

_____ yes _____ no

Comment:

APPENDIX B
Questionnaire Responses

Scott Valley Irrigation District

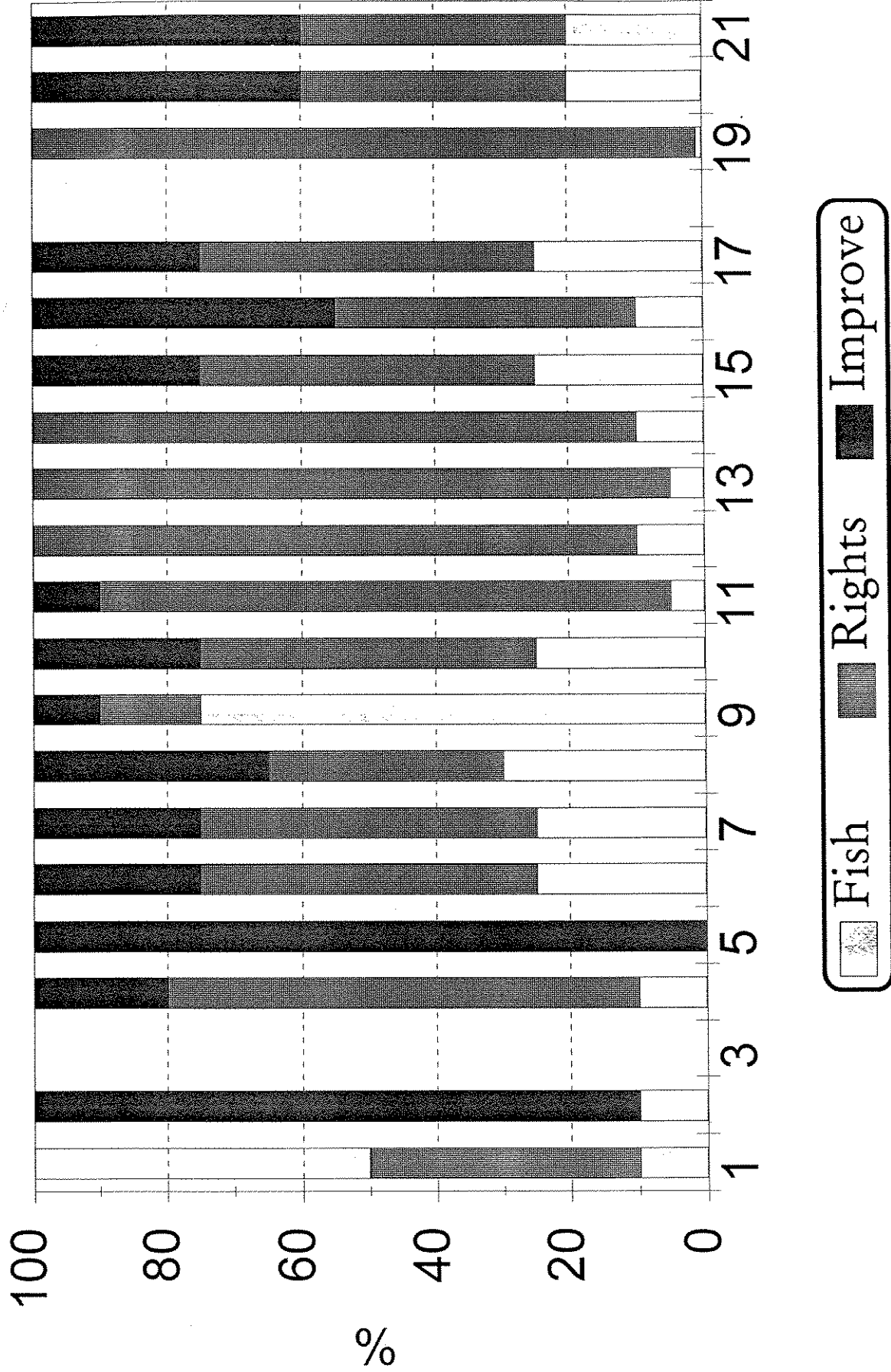
	1								2								3		4			5		
Question	a	aa	b	bb	c	cc	d	dd	C	a	aa	b	bb	c	cc	d	dd	C		a	b	c	d	10%
Respondent																								
1	120	200	110		200				C	5	50	90	90					C	N	X				X
2			200	120					C									C	N	X				
3					150	200				50	100								N	X				
4	110	230	200	70	25				C	200		200		300		300	100	C	N	X				X
5									C			90	90	10	10				N			X	C	
6			215	200						50		50						C	N		X			X
7			215	200						50		50						C	N		X			X
8	16	40	90	40					C			100	100						N	X				
9					220	200						50	100			50	75	C	N		X			
10	375	300								75	75	75	75	75	75				N	X				
11	150	100								50	50								N	X				
12	100	100										100	100						N				C	
13																			N	X				
14	50	10								100	100								N	X				
15																			N	X				
16	200	200								50	50	50	50						N	X				
17																			N	X				
18	300	400			100	300				50	75	25	50						N				C	
19	27	100	50	50	70	10						50	75	10	50				N				C	
20										50	50								N	X				
21	20	5								50	50								N	X				
Totals	1468	1685	1080	680	765	710	0	0		780	600	930	730	395	135	350	175			66.7%	14.3%	4.8%		19.0%
	C - Comment																							

Scott Valley Irrigation District

	6			7			8			9			10			11		Gen.	
Question	a	b	c	d	Yes	No	C	Yes	No	C	Yes	No	C	Yes	No	C	Yes	No	Com
Respondent																			
1	10	40	50			X		X			X		C	X					X
2	10		90			X		X		C		X		X		C			X
3				C		X			X		X		C		X				X
4	10	70	20			X		X		C		X		X		C			X
5	0	0	100			X			X		X			X			X		C
6	25	50	25			X		X		C	X		C	X					X
7	25	50	25			X		X		C	X		C	X					X
8	30	35	35			X			X			X		X		C			X
9	75	15	10		X		C	X			X				X	C			X
10	25	50	25	C		X		X		C	X		C		X	C			X
11	5	85	10			X			X			X			X				X
12	10	90				X			X			X			X				X
13	5	95				X			X			X			X				X
14	10	90				X			X			X			X				X
15	25	50	25			X		X			X			X					X
16	10	45	45			X			X			X			X				X
17	25	50	25		X			X				X			X				X
18				C		X			X	C	X		C		X	C			X
19	1	99		C		X			X	C	X		C		X	C			X
20	20	40	40			X		X				X			X				X
21	20	40	40			X		X				X		X					X
Totals					9.5%	90.5%		52.4%	47.6%		33.3%	66.7%		38.1%	61.9%		4.8%	95.2%	
	17.95	55.22	37.67																
	Average %																		

APPENDIX C
Question Six Graph

Question Six



APPENDIX D
Comments

COMMENTS;

QUESTION #1:

- In the past we've watered 200 head from the ditch. Presently the number of animals will depend on the stock operator renting the grazing land.
- In the fall only a small amount of grazing approximately one month.
- Ditch water used for all of above and corrals. Have a well which could be used. Cost for me would be pipe and trough. Have well and pump. Currently have one small stockwater system for horses and mules.
- Don't use ditch currently but like the availability. Could service about 120 acres.
- Thirty plus acres above ditch used for stockwater and dry feeding lots and winter feeding. Heavily rely on ditch for stockwater.

QUESTION #2:

- Most of ranch is served by two stockwater wells that serve most of the area that is also served by the ditch.
- Use current irrigation well which is 100% reliable. When ditch is running we fill pond for storage. When no water in ditch use well pump system.
- Have stockwater system for 100 acres and is 100% reliable except for freezing and power loss.
- Have private well
- Have domestic well that serves approx. 50% of area.

QUESTION #4

- Not a viable idea.
- Already have a stockwater system that serves 100%.
- A stupid idea, not giving up any water.
- I don't want to do it at all.

QUESTION #6

- We don't want to give up any property right. All people trespassing on property must have a warrent from the judge.
- Have a concern for fish if we can help in a practical way.
- Drying up the ditch would serve no purpose to anyone. The amount of water that goes down the ditch would not change the flow in the river. When th river is that low it feed out of the ground.
- Don't wan to do it at all. I don't trust any government program. Sounds to me like this whole thing would eventually become the landowners responsibility therefore expense.

QUESTION #7

- Klamath Task Force.

QUESTION #8

- Yes, with detailed study.
- Yes, maybe, depending on legalities and strings attached, prices, and type of agreement.
- Yes, would consider depending on what's attached.
- Yes, depending on condition, agreements, etc.
- Keep it simple--on a yearly basis, to be detailed out each year. Sell the water for specified periods of time. Sell water not the right.
- The board should not have the authority to do this all on their own without having a public meeting to find out more about what is going on.
- I don't know enough about it to answer this but if pressed I would say no. Again I don't trust government deals or fish people, they always want more water at our ultimate sacrafice and expense.

QUESTION #9

- The problem with fish population is not in our irrigation district, our government needs to find the source of the problem and work on it from that end.

- Eliminate the fish and eat beef.
- Use well alternatives for irrigation as well as stockwater.
- Look into using wells for both stockwater and irrigation.
- *Upstream restrictions to hold and bank water instead of it all flushing out of the system.*
- Dams in the river every so often to raise the water table and then during the fall months let it go for the fish run.
- More rain would be nice. How about dams in the south end of Scott Valley.

QUESTION #10

- Yes, if done properly.
- Yes, concept could be expanded, but what are the ramifications?
- Yes, but it would have to be studied in detail.
- Irrigation phase wouldn't sell to ag users. SVID helps fill water table which slowly filters back into the river to keep it re-charged.
- Irrigation water needs to stay in ditch and district.
- If you give them an inch they will take a mile.
- In other words phase out the ditch entirely and replace with wells that will eventually become the responsibility of the farmer?!

GENERAL COMMENTS AND CONCERNS FROM OVER 70% OF RESPONDENTS:

- Make sure that we don't lose right to water whatever is done. There is a time factor problem, irrigation adjudication stops around Oct. 15. Selling water would have to be for a specified time each year. Can't let ditch stay dry all winter due to sealing problem. Regarding wells, other than cost of installation there is electrical and standby costs, freezing problems, power outages and they require a lot of attention. When using ditch I only have to see if there is water in the ditch.
- Study entire issue in more depth.

- Have wells on property to totally replace ditch for both stockwater and irrigation.

- Any project should be a district decision. The ditch is important and needs to be maintained. Stockwater pump systems are possible and selling water is possible. Main thing is keep it simple.

- Drying up the ditch will just create more and more leaks when we try and put water down it again. You have to keep water in the ditch or you lose the seal and there will be more leaks than ever.

- Fish, Fish, Fish. How about producers producing, paying taxes, earning a living for themselves, paying their own way. Are these people who are focused on fish producing anything? Are they responsible for taking care of the land and water resources and responsible for paying taxes on the land to pay government wages? Has anyone ever thought the fish might swim around out there until there is enough water to have sex in? Why doesn't the government take some of our tax money and pay people to raise Chinook?

SOME OVERALL CONCERNS:

- For those who use the SVID only for stockwater would they be in risk of losing their use if they used a well system?

- What about the practicality when you consider large dispersal areas, stock re-locations, and winterizing?

- What about cost of operation and upkeep in future years and why should I take on that added responsibility when the ditch currently handles my needs?

- If the SVID sold water and went to well systems for stockwater and/or irrigation, would we be at risk for supposedly getting double the water?

- Usually stock is moved often and to widely dispersed locations, which vary, wouldn't it be difficult to have a fixed stockwater system?

APPENDIX E
Adjudication and Map

22. Post-1914 Appropriative Rights (Schedule E)

Post-1914 appropriative rights are inferior in priority to all other rights, except surplus class rights, to the extent such other rights are reasonably and beneficially used during the authorized seasons of use. Every right in Schedule E is based on either an application to appropriate water filed with the Board or a stockpond certificate issued by the Board. Jurisdiction over incomplete appropriations remains with the Board. When license is issued the licensee or the Board may petition the court for a supplemental decree confirming the right in accordance with the license.

One pending application to appropriate water is listed which represents an inchoate right as described in the application, subject to future action by the Board under provisions of the Water Code.

Thirty-four permits are listed which represent rights defined in the permits issued by the Board, all to the extent such rights are perfected under provisions of the Water Code.

Forty-one licenses are listed which represent rights defined in the licenses issued by the Board.

Seven stockpond certificates are listed which represent rights defined in the certificates issued by the Board.

23. Priority Classes

The term "priority class" when used herein means a class of rights each one of which is equal in priority and correlative in right with all other rights of the same class appearing within the same schedule, except as provided in Paragraph 25, so that in the event of a supply of water sufficient to supply only part of the entitlement of any specific priority class, said available supply shall be prorated in accordance with allotments in that priority class. No priority class is entitled to the use of any water until all rights of all priority classes with lower numbers have been fully satisfied. Thus, within the same schedule, all rights of the second priority class are junior in priority and subordinate to all rights of the first priority class, but are senior in priority and entitled to full satisfaction ahead of all of the remaining higher numbered priority classes. Each successive higher numbered priority is subordinate to all rights in lower numbered priorities, but is superior to and entitled to full satisfaction ahead of all higher numbered priorities.

24. Schedules Containing Noninterrelated Allotments

Schedules B1 through B40 group together for convenience water rights on minor tributaries some of which join at a lower point. Such rights are not interrelated with other rights on different tributaries in the schedule but are interrelated with all other rights on the same tributary and with all other rights downstream on the same stream thread within the schedule.

25. Surplus Class Rights

Water may be diverted in surplus class whenever all downstream diversion systems have sufficient surface stream flow available to satisfy their numbered priority class rights, provided that an amount of water equal to or greater than the amount being diverted in surplus class be allowed to flow unobstructed past the diversion facilities for the benefit of fish, and provided further that the allotments to the U. S. Forest Service in Paragraph 45 are satisfied.

26. Season of Use

Water allotted by direct diversion for domestic, stockwatering, municipal, industrial, mining, and power uses in Schedules A, B, C, and D shall be for continuous use throughout each year, and for irrigation use shall be for the season from about April 1 to about October 15 of each year. Seasons of diversion to storage and seasons of use of allotments in Schedule E are as set forth in each permit or license issued by the Board.

27. Domestic Use

Domestic use is limited to (1) water used for household purposes, watering of domestic animals, and irrigation of up to one-half acre of lawn, garden, and family orchard, and (2) water used within a developed campground.

28. Recreational Domestic Use

Recreational domestic use is limited to drinking, culinary, and washing use outside developed campgrounds by hikers, campers and similar recreational users.

29. Stockwatering Use

Stockwatering use is limited to water required by commercial livestock.

30. Irrigation Use

Irrigation use is limited to surface application of water or sub-irrigation for the purpose of meeting moisture requirements of growing crops.

31. Municipal Use

Municipal use is limited to use of water supplied by a town or community system and includes domestic use by the inhabitants, irrigation of parks, playgrounds, and public areas, industrial and commercial use, and all other uses incidental to town or urban requirements.

32. Industrial Use

Industrial use is limited to use of water for such purposes as lumber mill operations, timber harvesting, road building and maintenance, and sprinkling to allay dust on logging roads.

33. Mining Use

Mining use is limited to use of water in mineral extraction processes as for extraction of ore or for operation of gravel plants.

34. Power Use

Power use is limited to use of falling water for generation of electrical or mechanical power.

35. Combined Uses

Water diverted primarily for irrigation may also be used to the extent necessary for incidental domestic and stockwatering purposes.

Special Provisions

36. Domestic and Stockwatering Uses During the Nonirrigation Season

To provide water at the various places of use for domestic and stockwatering purposes during the nonirrigation season from about October 15 to about April 1, all claimants in Schedules A, B, C, and D are entitled to divert a sufficient amount of water in their priority class to offset reasonable conveyance losses and to deliver 0.01 cfs at the place of use.

37. Rotation

Under direct diversion, claimants may rotate in the use of water with other rights in the same schedule, provided such practice does not unreasonably interfere with the exercise of other rights in the Scott River stream system, junior or senior in priority, and provided further that such rotation does not result in use by any claimant of a total quantity of water during any 30-day period in excess of the equivalent of claimant's continuous flow direct diversion allotment.

38. Irrigation "Head" and Regulatory Storage

All allotments by direct diversion for irrigation, except those in Surplus Class, may be diverted at a rate greater than the allotment to provide a convenient "head" of water, provided that the total amount diverted during any 30-day period shall not exceed the continuous flow equivalent of the allotment, and provided further that such practice shall not unreasonably interfere with the rights of others, junior or senior in priority.

Subject to the foregoing limitations the following reservoirs may be used for regulatory storage to provide an irrigation head and may not be used for seasonal storage purposes unless and until permits authorizing such storage are issued by the Board:

shall meet all requirements set by the California Regional Water Quality Control Board, North Coast Region.

41. Stockwatering, Recreational Domestic, Wildlife, and Firefighting

Any claimant in the Scott River Stream System may divert in first priority class, throughout the year, subject to all upstream rights, from any of the streams, including those listed in Schedules B1 through B40, an amount of water reasonably necessary for stockwatering, recreational domestic, wildlife, or firefighting purposes from any point of diversion on the claimant's land or to which he has access, provided such amount of water or method of diversion will not unreasonably impair first priority rights in the schedule in which the diversion would be placed if the right were specifically defined.

42. Domestic Rights to Surface Flow

All persons owning lands riparian to streams within the Scott River stream system not otherwise allotted water for domestic purposes have a right in first priority class to divert surface water for domestic use on their riparian land in a quantity not to exceed 500 gpd per family residence or 120 gpd per camp unit, subject to all upstream rights defined herein in the Schedules, except those in surplus class. Before diverting water under the provisions of this paragraph (1) the claimant shall notify the SWRCB, Division of Water Rights, of the intention to divert water; (2) the SWRCB shall verify the riparian status of the parcel and report its findings to the court; and (3) the court shall enter a supplemental decree authorizing the diversion. The Board is entitled to receive a reasonable fee for its expenses.

43. Domestic Rights to Supporting Underflow and Interconnected Ground Water

All owners of land overlying supporting underflow or overlying interconnected ground water have a right equal to 1st priority in the B Schedules or Schedule C as the case may be, in which Schedule the diversion would be placed if the right were specifically defined to pump from either such source throughout the year a reasonable amount of water for domestic use on land overlying said supporting underflow or overlying the interconnected ground water, as the case may be, provided that the amount per acre shall not exceed the amount required for irrigation on such land.

44. Changing from Surface Diversion to Interconnected Ground Water Diversion

In lieu of exercising rights to divert surface water from the Scott River, Big Slough, Etna Creek, or Kidder Creek in Schedules D2, D3, D4, B18, B23, and B26, claimants may irrigate that portion of the place of use designated in said schedules that overlies the Scott River ground water basin by pumping from interconnected ground water under the same priority as rights in Schedule C, provided that the new wells or sumps must be located at least 500 feet from the Scott River, or at the most distant point from the river on the land that overlies the area of interconnected ground water, whichever is less.

45. Instream Use on Scott River

The U. S. Forest Service has a right to stream flow in the Scott River measured at the USGS gage below Fort Jones in the following amounts for instream use for fish and wildlife within the Klamath National Forest.

<u>Period</u>	<u>Allotment, in cfs</u>
January	200
February	200
March	200
April	150
May	150
June 1 - 15	150
June 16 - 30	100
July 1 - 15	60
July 16 - 31	40
August	30
September	30
October	40
November	200
December	200

These amounts are necessary to provide minimum subsistence-level fishery conditions including spawning, egg incubation, rearing, downstream migration, and summer survival of anadromous fish, and can be experienced only in critically dry years without resulting in depletion of the fishery resource.

The priority of such right is equal and correlative with first priority rights in Schedule D4. The allotment will be considered satisfied when the flow on the particular day equals or exceeds the allotment or the average flow past the gage during the preceding 10 days equals or exceeds the allotment.

In addition to the allotment above, the U. S. Forest Service has a right to stream flow in the Scott River measured at the USGS gage below Fort Jones in the following amounts for instream uses within the Klamath National Forest for incremental fish flows and for recreational, scenic, and aesthetic purposes:

<u>Period</u>	<u>Allotment, in cfs</u>
January	226
February	226
March	226
April	276
May	276
June 1 - 15	134
June 16 - 30	184
July 1 - 15	132
July 16 - 31	152
August	47
September	32
October	96

SCHEDULE D2 (continued)
 ALLOTMENTS TO CLAIMANTS FROM SCOTT RIVER FROM LOWER END OF DREDGER TAILINGS
 TO THE SCOTT VALLEY IRRIGATION DISTRICT DITCH DIVERSION NO. 223

Name of Claimant	:Diversion : and Map :Sheet No.	: Area :Served : Acres	: Use	: Allotments by Priority : in Cubic Feet per Second						:Total :Amount		
				:1st	:2nd	:3rd	:4th	:5th	:6th		:Surplus	
Beckman	219a-13	300 n/	Irr	4.29 d/							4.29 d/	
Fowle	220-13) 221-13)	362 p/	Irr				7.24				7.24	
Friden	223-13	278	Irr				7.65 g/		7.35		15.00	
Scott Valley Irr. District	223-13	5,131	Irr						62.50		62.50	
TOTALS				7,946	26.44	0.84	6.12	4.00	14.89	62.50	13.37	128.16

d/ This allotment shall be diverted from an offset well or sump.
 n/ This 300 acres may also be irrigated from Diversions 217, 218 and 219 (see Schedule B15) and from
 p/ North Fork French Creek, Diversion 17 and from French Creek, Diversions 43, 47 and 47A, (see Paragraph 56).
 q/ This includes 264 acres that may also be irrigated from Diversion 218 (see Schedule B15) and from
 North Fork French Creek, Diversion 17 and from French Creek Diversion 43 (see Paragraph 56).
 Water under this allotment may be diverted at a maximum rate of 15 cfs to provide a convenient irrigation
 head provided that the total amount diverted during any 30 day period shall not exceed the continuous flow
 equivalent of the allotment.

SCHEDULE D3
 ALLOTMENTS TO CLAIMANTS FROM SCOTT RIVER FROM THE
 SCOTT VALLEY IRRIGATION DISTRICT
 DIVERSION NO. 223 to DIVERSION NO. 576

Name of Claimant	:Diversion : : and Map : :Sheet No. :	: Use :	: Area : : Served, : : Acres :	Allotments by Priority							: Total : Surplus:	: Amount
				:1st	:2nd	:3rd	:4th	:5th	:6th	:7th		
Friden	223a-13	Irr	138a/ 2.76									2.76
	224-10	Irr	62 0.89									0.89
	226-10	Irr	31 0.62									0.62
Horn	232-10) 237-10)	Irr	186	2.66								2.66
Jenner, G.	285-10	Irr	306 b/		6.12							6.12
Hanna, M.	290-7	Irr	20		0.40					0.40		0.80
Hurlimann, J.	293-7	Irr	102		2.04					2.04		4.08
Black, D.	295a-7	Irr	50						0.71			0.71
Davidson	298-7	Irr	92 c/						1.84			1.84

a/ This 138 acres may also be irrigated from Diversion 183 (see Schedule D1).

b/ This includes 250 acres that may also be irrigated from Diversion 286 (see Schedule C).

c/ This 92 acres may also be irrigated from Diversion 297 (see Schedule C).

SCHEDULE D3 (Continued)
 ALLOTMENTS TO CLAIMANTS FROM SCOTT RIVER FROM THE
 SCOTT VALLEY IRRIGATION DISTRICT
 DIVERSION NO. 223 to DIVERSION NO. 576

Name of Claimant	:Diversion : and Map :Sheet No.	: Use	: Area : Served, : Acres	: Allotments by Priority							: Total : Surplus Amount	
				: 1st	: 2nd	: 3rd	: 4th	: 5th	: 6th	: 7th		
Hanna, M.	310-7	Irr	61		1.22						1.22	2.44
	311-7	Irr	58		1.16						1.16	2.32
Hanna Bros.	316a-7	Irr	167d/						2.39			2.39
Tobias, Q.	323-7	Irr	80e/				1.60					1.60
	324-7	Irr	130				1.86					1.86
Piersall	327-7	Irr	155f/				0.86		1.35			2.21
Woolery	330-7	Irr	190				3.80					3.80
Carter	332-4	Irr	160				2.29					2.29
Walker, J.	333-4	Irr	75g/				0.36		0.71			1.07

d/ This 167 acres may also be irrigated from Diversion 316 (see Schedule C).
 e/ This 80 acres may also be irrigated from Diversion 322 (see Schedule C).
 f/ This 155 acres may also be irrigated from Diversion 326 (see Schedule C).
 g/ This includes 50 acres that may also be irrigated from Diversion 333b (see Schedule C).

SCHEDULE D3 (Continued)
 ALLOTMENTS TO CLAIMANTS FROM SCOTT RIVER FROM THE
 SCOTT VALLEY IRRIGATION DISTRICT
 DIVERSION NO. 223 to DIVERSION NO. 576

Name of Claimant	:Diversio : and Map :Sheet No.	: Use	: Area : Served	Allotments by Priority in Cubic Feet per Second					: Total : Surplus				
				: 1st	: 2nd	: 3rd	: 4th	: 5th		: 6th	: 7th		
Nu11	479b-4	Irr	2					0.03	0.03	0.03			
Blackmore	479c-4	Irr	2					0.03	0.03	0.03			
Langford	480-4	Irr	73h/					1.04	1.04	1.04			
McConne11	576-4	Irr	693		10.00			1.04	1.04	10.00			
Scott Valley Irr. District	576-4	Irr	1,630				20.00			20.00			
TOTALS				4,463	4.27	2.66	10.94	10.77	10.00	20.00	8.10	4.82	71.56

h/ This 73 acres may also be irrigated from Diversion. 479d (see Schedule C).

SCHEDULE E (Continued)
POST 1914 APPROPRIATIVE WATER RIGHTS

Name	Diversion and Map Sheet No.	Application No.	Permit or License No.	Source	Use	Area Served, Acres	Allotment
Stevenson	201a-13	24907	P17413	Trail Gulch	Irr	60	48 ac. ft.
Barnes, G.	205-13	24437	P16796	Fay Gulch	Irr	30	8 ac. ft.
Tobias, Q.	206-13	24438	P16913	Unnamed Stream	Irr	10	20 ac. ft.
Timmons	215-13	24152	L10815	Unnamed Stream	Stock		13 ac. ft.
Beckman	216-13	24149	L10817	Clark Creek	Stock		33 ac. ft.
Scott Valley irrigation District	223-13	512	L 441	Scott River	Irr	5,131.3	62.50 cfs.
Starr, K.	228a-10	SP248	b /	Unnamed Stream	Stock		1.0 ac. ft.
JAFAM Corp.	234-13	24180	L10811	Unnamed Stream	Irr	20	29 ac. ft.
Veale	235-10	24150	L10816	Unnamed Stream	Irr	10	16 ac. ft.
Veale	236-10	24148	L10818	Unnamed Stream	Stock		38 ac. ft.
U.S. Klamath National Forest	243-12	16304	L 5316	Unnamed Spring	Stock		2,000 gpd.
Olson, R.	248-13	12738	L 3705	Alder Creek	Power		0.25 cfs.
Walker, H.	249-13	21903	L 9377	Etna Creek	Irr	8.5	15,500 gpd.
Matteson	257-13	24436	P17058	Lower Ruffy Creek	Irr	56	60 ac. ft.

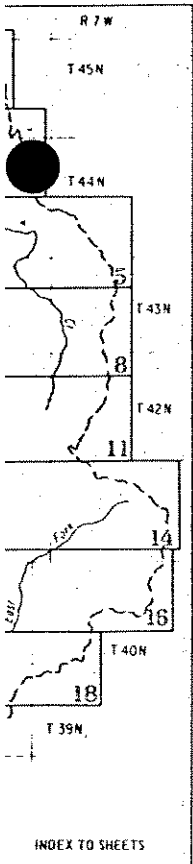
b / Stockpond Certificate Number 248



MT. DIABLO
BASE and MERIDIAN

LEGEND

- c CORN
- t ORCHARD
- g GRAIN
- p PASTURE
- a ALFALFA
- h HAY
- si SUBIRRIGATED
- PUMP
- o WELL
- ☉ SPRING
- ~ CREEK
- - - DITCH
- PIPELINE OR FLUME
- == ROAD
- TOWNSHIP LINE
- SECTION LINE
- - - PROPERTY LINE
- ⊙ U. S. G. S. GAGING STATION
- ⊗ 19 LOCATION OF INSTREAM FLOW ALLOTMENT
- ⊙ 57
82 POINT OF DIVERSION AND SCHEDULE NUMBER
- ⊙ 58
83 PROPOSED POINT OF DIVERSION
- ⊙ IRRIGATED LAND
- ⊙ PRESENTLY NOT IRRIGATED
- LIMIT OF INTERCONNECTED GROUNDWATER
- SCOTT RIVER IRRIGATION DIST. BOUNDARY

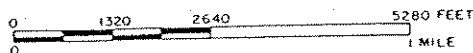


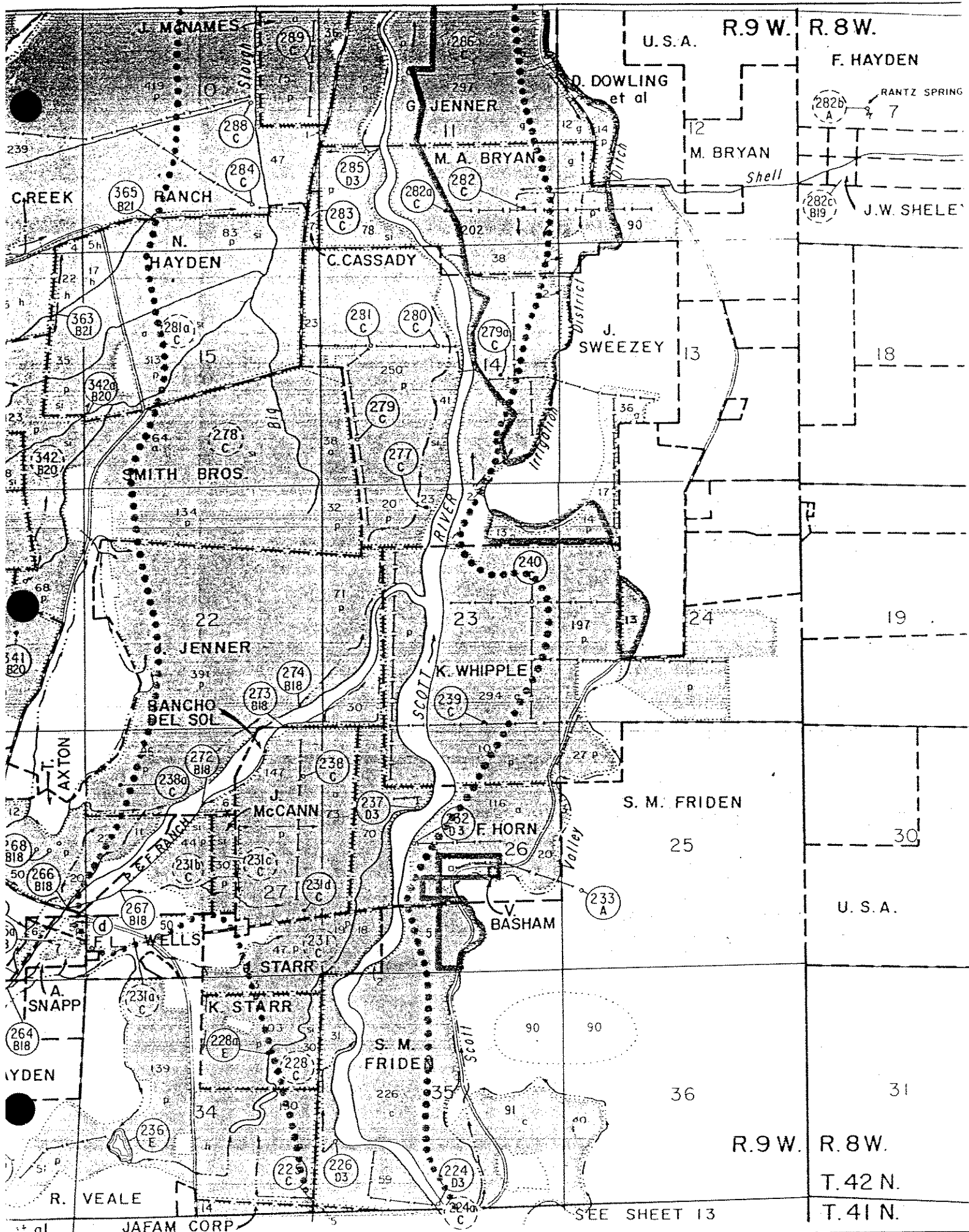
State of California
THE RESOURCES AGENCY
STATE WATER RESOURCES CONTROL BOARD

SCOTT RIVER STREAM SYSTEM

— SHOWING —
DIVERSIONS and IRRIGATED LANDS

SISKIYOU COUNTY
1979





U.S.A. R.9 W. R.8 W.
F. HAYDEN

D. DOWLING et al
M. BRYAN
Shell
RANTZ SPRING 7
J.W. SHELE

CREEK RANCH

HAYDEN

SMITH BROS.

JENNER

BANCHO DEL SOL

J. McCANN

F. L. WELLS

A. SNAPP

HAYDEN

R. VEALE

C. CASSADY

G. JENNER

M. A. BRYAN

J. SWEEZEY

K. WHIPPLE

E. HORN

V. BASHAM

S. M. FRIDEN

S. M. FRIDEN

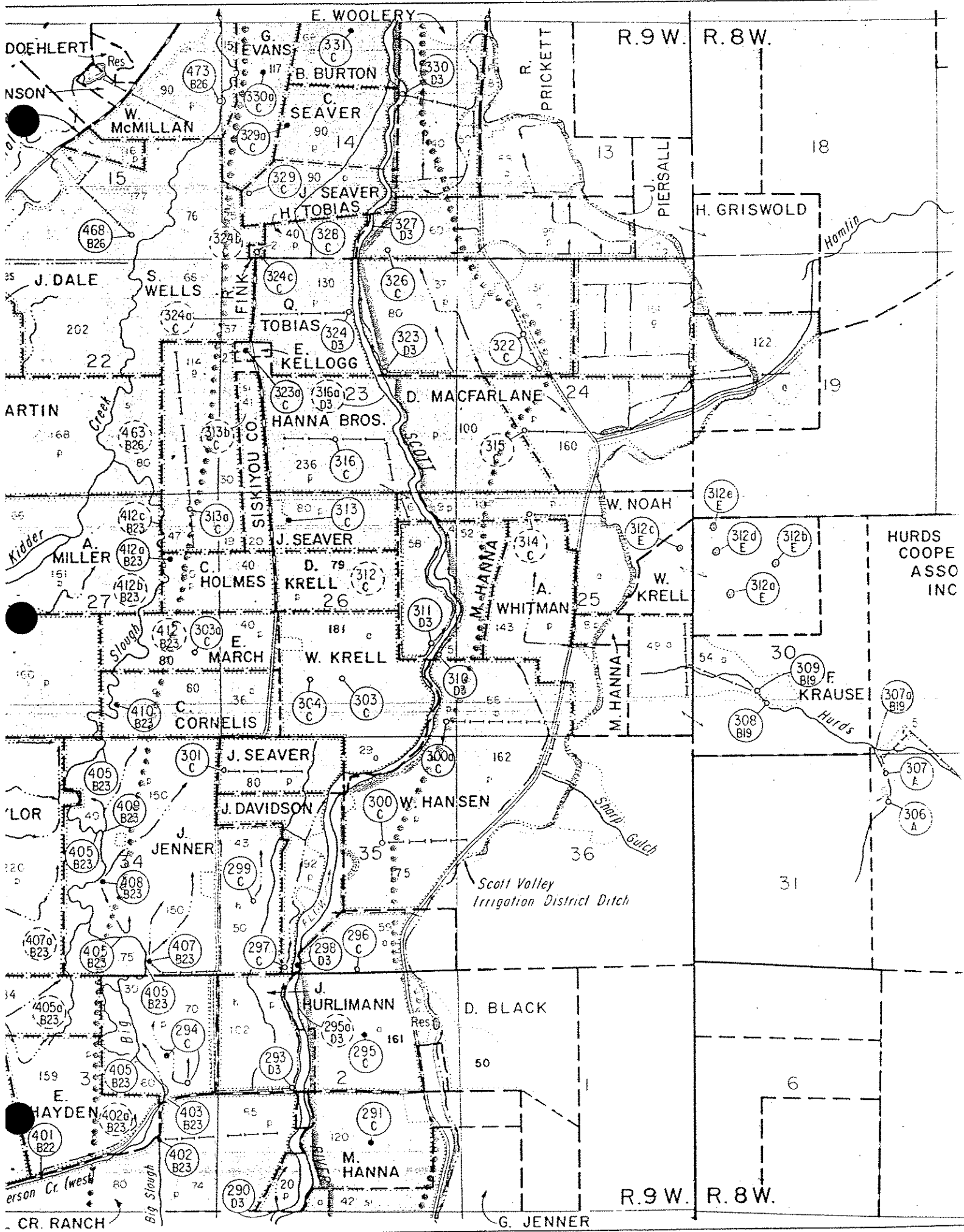
S. M. FRIDEN

R.9 W. R.8 W.

T.42 N.

T.41 N.

SEE SHEET 13



DOEHLERT
NSON
W. McMILLAN
J. DALE
ARTIN
MILLER
LOR
HAYDEN
CR. RANCH

E. WOOLERY
EVANS
B. BURTON
C. SEAVAR
SEAVAR
H. TOBIAS
WELLS
FINK
TOBIAS
E. KELLOGG
HANNA BROS.
J. SEAVAR
D. 79
HOLMES
KRELL
E. MARCH
C. CORNELIS
J. SEAVAR
J. DAVIDSON
JENNER
J. HURLIMANN
E. HAYDEN
M. HANNA

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R.9W. R.8W.
PRICKETT
PIERSALL
H. GRISWOLD
D. MACFARLANE
W. NOAH
W. KRELL
W. HANSEN
D. BLACK
G. JENNER

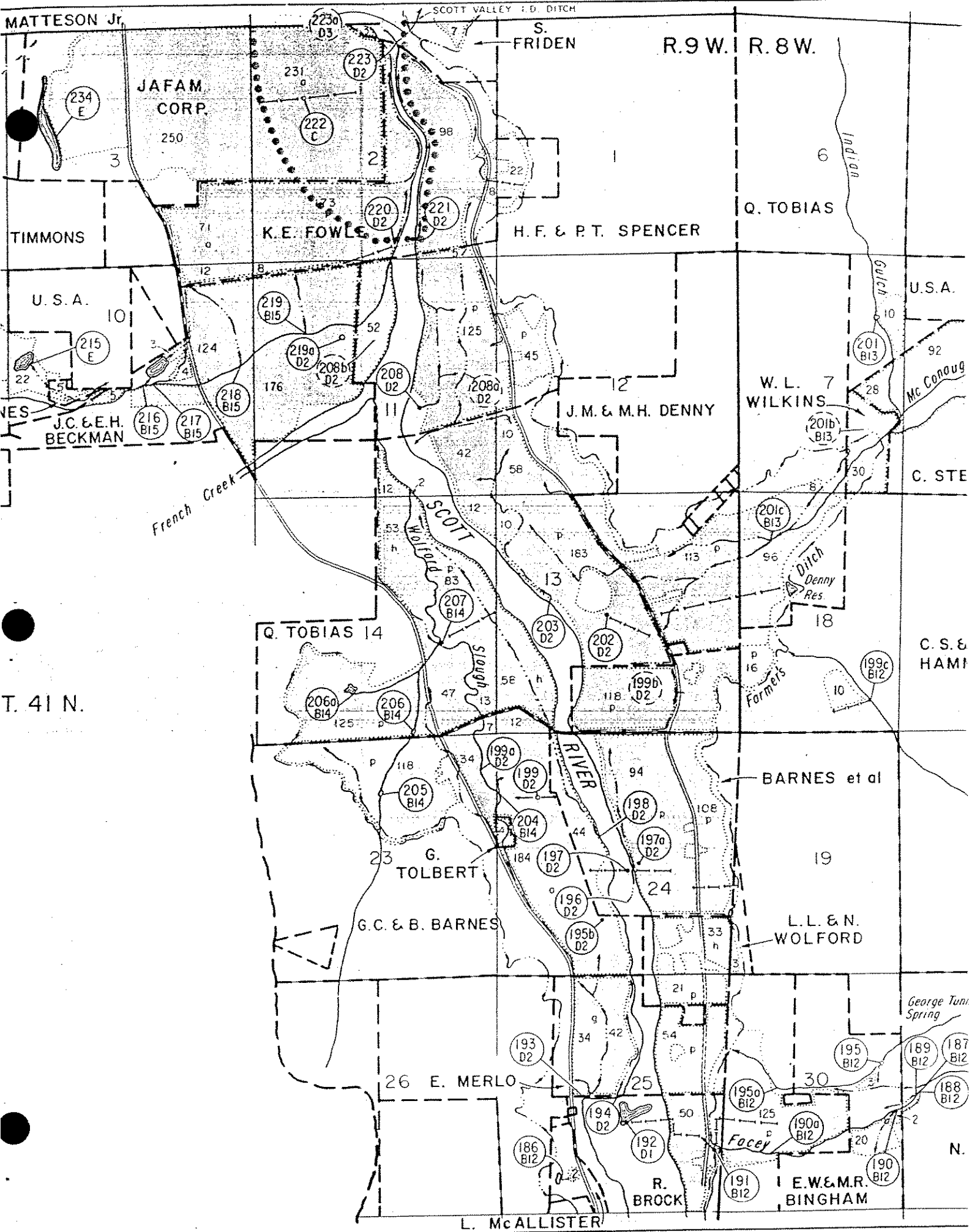
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Scott Valley Irrigation District Ditch
Kidder Slough
Sharp Gulch
Big Slough
Hanna
Hanna Bros.
Hanna

HURDS
COOPE
ASSO
INC
F. KRAUSE



MATTESON Jr.

SCOTT VALLEY D. DITCH

S. FRIDEN

R. 9 W. R. 8 W.

JAFAM CORP.
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Q. TOBIAS

TIMMONS

K.E. FOWLE

H.F. & P.T. SPENCER

U.S.A.

U.S.A.

J.C. & E.H. BECKMAN

J.M. & M.H. DENNY

W.L. WILKINS

C. STE

T. 41 N.

Q. TOBIAS 14

C.S. & HAM

BARNES et al

G. TOLBERT

G.C. & B. BARNES

L.L. & N. WOLFORD

26 E. MERLO

George Tun Spring

R. BROCK

E.W. & M.R. BINGHAM

L. McALLISTER

APPENDIX F
Letter from State Water Resources Control Board



SISKIYOU RESOURCE CONSERVATION DISTRICT

P.O. Box 268 • Etna California 96027
(916) 467-3975 • FAX (916) 467-3217

May 1, 1995

Charles Rich & Mark Streetar
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento CA 95812

Dear Mr. Rich & Mr. Streetar:

The Siskiyou RCD has several water law questions which need answers before the District can pursue certain water conservation projects with landowners. We would appreciate your written reply to the following questions pertaining to the Scott River Adjudication:

1. Regarding the Scott Valley Irrigation District (SVID) right (Diversion # 223-13-D2), this original amount was 62.5 cfs in the 1980 Decree for 5,131 acres. After the District reduced the amount of land it served, the right was reduced in 1991 to 42.5 cfs to irrigate about 3200 acres (SWRCB License #441, as amended).

a. How was this latter quantity determined (i.e., water duty of 1 cfs per 70 sprinkler-irrigated acres)? Does this amount assume a certain conveyance loss in the ditch? If the ditch is replaced with a pipeline or is lined, what is the amount of the allowable, reasonable diversion at place of use if conveyance losses become minimal?

b. During the non-irrigation season, what is the amount of water which SVID is allowed to divert for stockwater use? Does Paragraph 36 of the Adjudication apply or is there a specified amount for SVID since it is on Schedule E? What are the dates for the non-irrigation season for SVID?

c. How can SVID switch its water right for stockwater use from the current point of diversion, to new stockwater wells (1/2 hp pumps), some located within the interconnected zone and some outside of it? Can it add new points of diversion? Would it lose its ditch right from non-use during the non-irrigation season?

d. If the District wanted to sell its water right for instream beneficial uses, either seasonally or yearly, how can that work under state water law and the Adjudication? How is the value of water determined?

2. Regarding the Butts diversion (Alger Ditch - #133-15-D1), this first priority right is for 6.16 cfs to irrigate 58 acres.

a. At the 1 cfs per 50 flood-irrigated acres water duty, is the right at place of use 1.16 cfs?

b. If the ditch is replaced with a pipeline to provide water savings, does the owner have a right to sell the 5.0 cfs saved?

c. As an alternative to the 10,300 ft. ditch, one option is to change the point of diversion to a place below the property and pump the water from a river intake up to the property through a pipeline. Since there would be no seepage loss, should this system be designed for 1.1 cfs?

3. General administrative questions:


a. Does your office need to be notified of a change in amount diverted if this project proceeds?

b. Can the change in point of use and amount diverted be done with minimal paperwork?

c. What is the timeframe to get approval from your office for such changes?

Your presentation and comments at the Scott River Water Law Symposium in March were very informative. However, now we need answers to these specific questions before we can proceed with project design and funding. If you have any questions, please call Sari Sommarstrom at (916) 467-5783.

Sincerely,



David Krone, Chairman

STATE WATER RESOURCES CONTROL BOARD

R. BONDERSON BUILDING
 STREET
 SACRAMENTO, CALIFORNIA 95814

(916) 657-1945
 FAX: 657-1485

Mailing Address

DIVISION OF WATER RIGHTS
 P.O. BOX 2000, Sacramento, CA 95812-2000



In Reply Refer
 to:332:CAR:261.0(Scott Valley)

June 22, 1995

Mr. David Krone, Chairman
 Siskiyou Resource
 Conservation District
 P.O. Box 268
 Etna, CA 96027

Dear Mr. Krone:

WATER LAW QUESTIONS REGARDING THE SCOTT RIVER ADJUDICATION

Please excuse the delay in responding to your letter of May 1, 1995 which contains several water law questions relating to specific water rights under the Scott River Decree (Decree). Some of these questions can be answered rather quickly with factual information. Others, though, require considerable thought and interpretation of California water law. Since all of the water rights under the Scott River Decree are under the continuing authority of the Superior Court of Siskiyou County (Court), the ability to provide conclusive interpretation of the rights under the Decree generally rests with the Court. I will, however, try to provide you with some information regarding these questions that might help you understand how the Court MIGHT interpret the rights. Please remember that the Court may not interpret the rights as I have and could reach different conclusions that dictate other courses of action.

-
1. Regarding the Scott Valley Irrigation District (SVID) right (Diversion #223-13-D2), this original amount was 62.5 cfs in the 1980 Decree for 5,131 acres. After the District reduced the amount of land it served, the right was reduced in 1991 to 42.5 cfs to irrigate about 3200 acres (SWRCB License #441, as amended).

 Question #1a(1): How was this latter quantity determined (i.e., water duty of 1 cfs per 70 sprinkler-irrigated acres)?

Answer: The Scott Valley Irrigation District (District) project was inspected on July 19, 1985 by Mr. Dave McAnlis, formerly of this office. According to Mr. McAnlis's inspection report, the District's place of use under License 441 (Application 512) has been reduced to 3,475 acres. License 441, which was issued in 1925, contains a specific term that limits diversion to no more than 1 cfs per 80 acres. The maximum diversion quantity which could be justified with the reduced place of use would be:

$$3,475 \text{ acres} / 1 \text{ cfs per } 80 \text{ acres} \approx 43 \text{ cfs}$$

A change order dated January 30, 1991 was issued by the Division of Water Rights (Division) which reduced the authorized place of use under License 441 to 3,475 acres and reduced the amount of diversion authorized by License 441 to 43 cfs.

Question #1a(2): *Does this amount assume a certain conveyance loss in the ditch?*

Answer: Conveyance losses are often, but not always, assumed to be a part of irrigation duties. Most duties include, at a minimum, evapotranspiration (ET), seepage or deep percolation losses, and tailwater. The 1 cfs to 80 acre duty contained in License 441 is apparently derived from §697(a) of Title 23 (Water) of the California Code of Regulations (C.C.R.) which addresses reasonable duties of water for post-1914 appropriations as follows:

"(a) Irrigation Use.

- (1) In most portions of the central valley of California and elsewhere in the State where similar conditions prevail a duty of one cubic foot per second continuous flow to each 80 acres shall be considered a reasonable headgate duty for most crops. Where there is a greater abundance of water and a heavy transportation loss, or the land to be irrigated is of a porous, sandy, or gravelly character a continuous flow allowance of one cubic foot per second to each 50 acres may be considered reasonable. Under other conditions where water supply is less abundant and conditions are favorable to a more economical use a duty of one cubic foot per second to 150 acres may be considered reasonable for most crops. For the irrigation of rice the customary allowance shall be one cubic foot per second continuous flow to each 40 acres of irrigated land.*
- (2) The equivalent of these continuous flow allowances for any 30-day period may be diverted in a lesser time at a greater rate so long as there is no interference with other users, and a clause allowing such rotation will be included in a permit issued for irrigation purposes."*

Conveyance losses appear to be included in the duties identified in §697(a). The ratios contained in this section, are only intended to provide maximum duties of water that would be considered reasonable absent additional information which might justify a lower ratio. A site specific analysis would be required to determine what would constitute a reasonable amount for each of the four components identified above. A copy of an article entitled: *The Constitutional Requirement of Reasonableness of Use and Diversion of Water* which was

prepared by the Chief Counsel to the State Water Resources Control (SWRCB) is enclosed. According to page 3 of this article:

"There is no fixed definition of 'reasonable', nor is there a fixed, quantifiable standard for determining whether a use is reasonable or unreasonable. Reasonableness is a question to be determined on the facts and circumstances of each case. Reasonableness (or unreasonableness) is not a question of law; it is a question of fact which must be established by evidence presented to an administrative body (such as the SWRCB) or to a court."

Consequently, while duties that are less than 1:80 would probably be suspect, any duty could be considered unreasonable or reasonable -- depending entirely upon the specific situation and the facts involved. A factual analysis is usually required in order to show that a particular diversion or use of water is unreasonable. Two key elements of such an analysis are that another use of water is being adversely impacted and that a practical alternative exists which would alleviate or minimize the adverse impacts to the other use of water.

Question #1a(3): *If the ditch is replaced with a pipeline or is lined, what is the amount of the allowable, reasonable diversion at the place of use if conveyance losses become minimal?*

Answer: If conveyance losses become minimal because the diverter (or any other entity) undertakes activities that result in the reduction of these losses, a reasonable diversion amount would be equal to the water required to satisfy the ET, deep percolation, and tailwater requirements. This amount could be computed in one of two methods. The first would be to measure conveyance losses directly and then subtract them from the diversion right to determine the allowable amount at the place of use. The second method would entail an analysis of the amount of water necessary for ET, deep percolation, and tailwater. A reasonable amount necessary to supply these needs could then be computed directly. The former method would probably be the easiest method to utilize. Since the amount of water necessary for conveyance losses, ET, deep percolation, and tailwater may vary depending upon the amount of the diversion and the hydrologic period (i.e., wet, average, or dry), some type of hydrologic analysis may be required to define the duty more precisely; especially if the final product may be challenged in Court.

Question #1b(1): *During the non-irrigation season, what is the amount of water which SVID is allowed to divert for stockwater use?*

Answer: The maximum amount of water that could be diverted for stockwatering purposes would be the face value of the license or 43 cfs. However,

only that water which could be put to reasonable beneficial use can actually be diverted.

Question #1b(2): *Does Paragraph 36 of the Adjudication apply or is there a specified amount for SVID since it is on Schedule E?*

Answer: Paragraph 36 does not have a direct bearing on License 441 which is listed in Schedule E because Paragraph 36 only applies to diverters under Schedules A - D. However, as mentioned above, the maximum amount of water that could be diverted for stockwatering purposes would be the lesser of (a) the face value of the license which is 43 cfs; or (b) the maximum amount of water which could be put to reasonable beneficial use. The requirement contained in Paragraph 36 that the use of water for domestic and stockwatering uses during the non-irrigation season be limited to that necessary to offset reasonable conveyance losses and to deliver 0.01 cfs (4.5 gpm) at the place of use would probably be construed as a "*prima facie*" finding that diversions in excess of this amount would be unreasonable. If the SWRCB or the Court were to quantify the amount of water which could be diverted during the non-irrigation season for stockwatering uses, the amount would probably be limited to that necessary to offset reasonable conveyance losses and to deliver 0.01 cfs (4.5 gpm) at the place of use or 43 cfs, whichever is less, absent compelling evidence to justify some other amount.

Question #1b(3): *What are the dates for the non-irrigation season for SVID?*

Answer: License 441 was issued for general agricultural purposes which would include irrigation and stockwatering purposes. The license does not specify a particular diversion season. Consequently, a year-round season can be assumed. §669, Title 23 of the C.C.R. states that the amount or season of an application may not be extended after the application is accepted for filing. The initial application for this right indicated that irrigation was to be practiced from about March to about September. Therefore, one interpretation of the irrigation season for License 441 would be that it extends from March 1 to September 30. Consequently, the non-irrigation season could be interpreted to extend from September 30 to March 1.

Question #1c(1): *How can SVID switch its water right for stockwater use from the current point of diversion, to new stockwater wells (1/2 hp pumps), some located within the interconnected zone and some outside of it?*

Answer: Paragraph 22 of the Decree indicates that jurisdiction over incomplete appropriations remains with the SWRCB. However, the SVID license represents a completed appropriation. Therefore, this right

is under the jurisdiction of the Court and any changes to the exercise of this right would need to conform to the requirements of rights administered by the Court.

Paragraph 64 of the Decree provides that any party who wishes to change or modify the exercise of rights set forth in the Decree may request the SWRCB to investigate the change or modification. The SWRCB must notify all affected parties of the investigation and hold a hearing or proceedings in lieu of a hearing if anyone objects to the change or modification. The SWRCB must then file a recommendation with the Court regarding the requested changes or modifications. After review and approval by the Court, a supplemental decree would be entered. The SWRCB is entitled to reimbursement for all expenses incurred in this process.

Diversions from new wells located outside of the "interconnected zone" could be initiated at any time without notifying the SWRCB or obtaining approval from the Court as the Decree does not address percolating groundwater in this area. Division staff understand that some parties believe that diversion of percolating groundwater from wells located outside the interconnected zone may have an appreciable impact of ground and surface water within the zone. While the initiation of new pumping for stockwatering shouldn't have a major impact on this source, establishing new wells in this area might lead to a complaint with the Court or the SWRCB; especially if groundwater levels decline even though the stockwater pumping was not the major cause.

The SWRCB's independent authority over the diversion of percolating groundwater is restricted by law to the "reasonableness" of the diversion. The Court has the sole authority to settle disputes involving priorities amongst diverters which include pumpers of percolating groundwater. The Court, however, does have the option of referring this type of dispute to the SWRCB for an investigation and report regarding the best course of action.

Question #1c(2): *Can it add new points of diversion?*

Answer: New points of diversion for water covered by the Decree (i.e., surface water or groundwater within the interconnected zone) can be added pursuant to Paragraph 64 so long as the total amount of water diverted is not increased AND there are no adverse impacts to other right holders. The SWRCB would have to be able to make these findings before recommending that the Court approve such changes. New points of diversion for percolating groundwater outside of the interconnected zone can be added at any time.

Question #1c(3): *Would it lose its ditch right from non-use during the non-irrigation season?*

Answer: I don't believe that SVID or any other right holder under the decree has "ditch rights". All of the rights under the Decree relate to specific uses of water at a clearly defined place of use. Diversion amounts are presently based upon the allowable use and conveyance losses which were "reasonable" when the Decree was entered. "Reasonableness" is not a static concept. The "reasonableness" of conveyance losses can easily change over time depending upon a number of factors including those identified on pages 15 - 19 of the enclosed memorandum by the SWRCB's Chief Counsel.

The SVID has water rights for agricultural purposes which include irrigation and stockwatering. Even though the Decree identifies diversion amounts, the right is based on the end use, not the point of diversion. According to the page 133 of The California Law of Water Rights by Wells A. Hutchins:

"The measure of the appropriative right was thus summarized by a district court of appeal:

*"The extent of an appropriator's or adverse user's right is limited, not by the quantity of water actually diverted, nor by the capacity of his ditch, but by the quantity which is, or may be, applied by him to his beneficial uses. * * * An appropriator's right is limited to such quantity, not exceeding the capacity of his ditch, as he may put to a useful purpose upon his land within a reasonable time, by use of reasonable diligence. * * * A diversion over and above what is reasonably necessary for the uses to which he devotes the water cannot be regarded as a diversion for a beneficial use. He cannot waste. * * *" [Felsenthal v. Warring, 40 Calif. App. 119, 133, 180 Pac. 67 (1919)]"*

If the SVID were to change the point of diversion from the Scott River to stockwatering wells within the interconnected zone, the right would still be fully exercised - even though conveyance losses would be significantly reduced. If the SVID wished to change the point of diversion back to the Scott River at some later date and thereby incur greater conveyance losses again, a demonstration of why this would be reasonable would probably be required. Such a demonstration might include a showing that the groundwater had become unusable for some reason so that only surface water could be used to water stock and that lining the ditch to reduce conveyance losses was not practical.

The SVID might lose some of the rights under License 441 if the point of diversion was moved to wells located outside of the interconnected zone. An argument could be made that since percolating groundwater

in this area is not included in the decree, the SVID was voluntarily forgoing diversion under the decree and the right might eventually be lost due to nonuse. I don't believe that the Decree deals specifically with nonuse of water. §1241 of the Water Code does address the nonuse of water. Prior to 1980, this section stated:

"When the person entitled to the use of water fails to beneficially use all or any part of the water claimed by him, for which a right of use has vested, for the purpose for which it was appropriated or adjudicated, for a period of three years, such unused water reverts to the public and shall be regarded as unappropriated public water."

This section was amended in 1980 and now states:

"When the person entitled to the use of water fails to use beneficially all or any part of the water claimed by him, for a period of five years, such unused water may revert to the public and shall, if reverted, be regarded as unappropriated public water. Such reversion shall occur upon a finding by the board following notice to the permittee and a public hearing if requested by the permittee."

The impact of §1241 on the potential nonuse of water under the decree is difficult to define due to the ambiguity of these revisions. In addition, several statutes have been approved by the Legislature within the past 20 years which are intended to allow more flexible use of water rights in order to alleviate water shortages. The impact of these statutes on the historical nonuse provisions of the Water Code have not, as yet, been fully determined. One such section is §1011 of the Water Code which states:

"(a) When any person entitled to the use of water under an appropriative right fails to use all or any part of the water because of water conservation efforts, any cessation or reduction in the use of such appropriated water shall be deemed equivalent to a reasonable beneficial use of water to the extent of such cessation or reduction in use. No forfeiture of the appropriative right to the water conserved shall occur upon the lapse of the forfeiture period applicable to water appropriated pursuant to the Water Commission Act or this code or the forfeiture period applicable to water appropriated prior to December 19, 1914.

The board may require that any user of water who seeks the benefit of this section file periodic reports describing the extent and amount of the reduction in water use due to water conservation efforts. To the maximum extent possible, the reports shall be made a part of other reports required by the board relating to the use of water. Failure to file the reports shall deprive the user of water of the benefits of this section.

For purposes of this section, the term 'water conservation' shall mean the use of less water to accomplish the same purpose or purposes of use allowed under the existing appropriative right. Where water appropriated for irrigation purposes is not used by reason of land fallowing or crop rotation, the reduced usage shall be deemed water conservation for purposes of this section.

(b) Water, or the right to the use of water, the use of which has ceased or been reduced as the result of water conservation efforts as described in subdivision (a), may be sold, leased, exchanged, or otherwise transferred pursuant to any provision of law relating to transfer of water or water rights, including, but not limited to, provisions of law governing any change in point of diversion, place of use, and purpose of use due to the transfer."

Since the SVID water right license is under the supervision of the Court, the applicability of this section may be questionable. A request for change pursuant to Paragraph 64 might be necessary in order to settle this issue. If §1011 does apply, the right to divert surface flow in the SVID ditch could be protected even if water was pumped from outside the interconnected zone as a replacement supply.

If this type of change were allowed pursuant to Paragraph 64 and the SVID wished to change the diversion point back to the ditch at a later date, another request to change the Decree would need to be made. The SWRCB would have to consider at that time if allowing the point of diversion to revert to the ditch would adversely impact other water uses which had become dependent upon the reduction in diversion of surface water. If adverse impacts to other uses of water would result, the SWRCB and the Court would have to decide if allowing the change back to initial conditions was reasonable.

There probably isn't any guarantee that a portion of the right to divert surface flows wouldn't be effectively lost if the source is changed. The ability to provide water, however, even if not always from the preferred source, should be protected. This may not be much of a change from the present state of affairs. Under the "reasonableness" provisions of California water law, a diverter can be required to make appropriate changes in order to provide the greatest beneficial use of water; especially if another party is willing to pay for all or a portion of the costs incurred in the change.

Question #1d(1): *If the District wanted to sell its water right for instream beneficial uses, either seasonally or yearly, how can that work under state water law and the Adjudication?*

Answer: Paragraph 64 of the Decree provides a general procedure for modifying or changing the exercise of rights under the Decree. I can't say

whether the Court would be willing to utilize Paragraph 64 for this type of purpose.

§1707 of the Water Code states:

- "(a) Any person entitled to the use of water, whether based upon an appropriative, riparian, or other right, may petition the board pursuant to this chapter, Chapter 6.6 (commencing with Section 1435) or Chapter 10.5 (commencing with Section 1725) for a change for purposes of preserving or enhancing wetlands habitat, fish and wildlife resources, or recreation in, or on, the water.*
- (b) The board may approve the petition filed pursuant to subdivision (a), subject to any terms and conditions which, in the board's judgment, will best develop, conserve, and utilize, in the public interest, the water proposed to be used as part of the change, whether or not the proposed use involves a diversion of water, if the board determines that the proposed change meets all of the following requirements:*
- (1) Will not increase the amount of water the person is entitled to use.*
 - (2) Will not unreasonably affect any legal user of water.*
 - (3) Otherwise meets the requirements of this division".*

Apparently, the SWRCB could authorize this type of transfer without notifying or obtaining the approval of the Court. However, prior to approving the transfer of any SVID rights under §1707, the SWRCB would need to determine if the proposed transfer or change would adversely impact any legal user of water in an unreasonable manner. This can become a difficult question to answer depending on the specific situation.

Under a typical adjudication, if a higher priority right holder chooses to forgo diversion for whatever reason, junior right holders are entitled to the water. These right holders might argue that they should receive the benefit of any foregone diversions. A contrary view would be that junior right holders would only be entitled to that portion of the diversion which normally finds its way back into the system via conveyance losses, deep percolation, or tailwater returns. All water lost via ET or that portion, if any, of conveyance losses, deep percolation, or tailwater returns that would normally not be available to other consumptive diverters would be available for transfer. Determining the amount of water that would be available for a potential transfer in the Scott Valley without impacting other right holders certainly won't be an easy task.

Obviously, if no one objects to the change, either the SWRCB or the Court would probably be willing to approve such a transfer. If

aggrieved parties objected to this type of transfer, but it could be demonstrated that the proposed transfer would not adversely impact their rights as compared to normal diversion by the transferor, the SWRCB and the Court would probably approve the transfer as a fair and equitable change. I am not aware of any precedents with this type of situation. A prudent course of action might be to seek approval of a change in the exercise of the right in accordance with Paragraph 64 prior to actually expending effort or funds to make improvements to the conveyance system.

Questions #1d(2): *How is the value of the water determined?*

Answer: The "corpus" of the water is owned by the People of the State of California. As such, it cannot be sold. A usufructuary right to divert and use the water can be transferred among parties, although apparently only via the procedures contained in Paragraph 64 of the Decree and §1707 of the Water Code.

The "value" of the water right would have to be agreed upon by both the buyer and seller and would probably be dependent upon the method of transfer. If the "buyer" were to merely pay the "seller" to forgo diversions under a specific right, other diverters would not be precluded from diverting the water and the value of the foregone diversions could be significantly reduced. If a formal change pursuant to Paragraph 64 were made, the benefits to be gained would be easier to define and the "value" of the water would probably be considerably higher.

2. Regarding the Butts diversion (Alger Ditch - #133-15-D1), this first priority right is for 6.16 cfs to irrigate 58 acres.

Questions #2a: *At the 1 cfs per 50 flood-irrigated acres water duty, is the right at the place of use 1.16 cfs?*

Answer: The Decree does not specify what the right at the place of use is, but instead only defines the right at the point of diversion. However, the "Report on Water Supply and Water Use; Scott River System; December 1974" (Water Supply and Use Report) does address ditch losses and irrigation needs at the place of use. According to page 2 of Appendix B, the Alger Ditch supplies water to 58 irrigated acres. At a duty of 1 cfs per 50 flood irrigated acres¹, 1.16 cfs

¹ - The duties defined in the Water Supply and Use Report are based on the amount of applied water; (i.e., the water necessary for ET, deep percolation, and tailwater). In most cases, measured ditch losses were added to this duty to obtain the "diversion requirement". The duties discussed in

would be required at the place of use to satisfy ET, deep percolation, and tailwater. Conveyance losses in the ditch were measured at 5.00 cfs. All ditch losses were apparently considered reasonable at the time the Decree was entered; quite possibly because shortages of water at that time did not occur very often. Consequently, the diversion requirement was estimated at 6.16 cfs.

The "Order of Determination" that was prepared by the SWRCB is based on the material contained in the Water Supply and Use Report and the Decree is based on the "Order of Determination". Consequently, a good argument could be made that the Butts right should be limited to 1.16 cfs at the place of use. The reasonableness of the 5 cfs conveyance loss would likely come under more scrutiny in a proceeding today in view of the water supply deficiencies, especially for instream uses, which have become more prevalent in recent years.

Questions #2b: *If the ditch is replaced with a pipeline to provide water savings, does the owner have a right to sell the 5.0 cfs saved?*

Answer: This question raises an issue on which numerous opinions have been expressed. The Legislature has taken several actions within the past 20 years or so to encourage the implementation of voluntary conservation measures. Therefore, if voluntarily actions are taken to reduce or eliminate conveyance losses, the water right holder may be able to sell the diversion rights to the water saved. As previously discussed, though, junior right holders under the Decree might argue that they are entitled to the benefits of any conservation measures.

If a complaint was filed alleging that the conveyance losses constituted an unreasonable method of diversion and either the SWRCB or the Court found this to be the case, the water right holder would be obligated to reduce the conveyance losses to a "reasonable" amount as specified by either the SWRCB or the Court. Any water saved would be available to satisfy other rights under the Decree. Consequently, if any water right holder is afraid that a valid case of unreasonable diversion or use can be demonstrated, the water right holder might find it advantageous to reduce the losses voluntarily so as to take advantage of any potential opportunities to sell or trade that portion of the "conserved right" for some tangible benefit.

Questions #2c: *As an alternative to the 10,300 ft. ditch, one option is to change the point of diversion to a place below the property and*

\$697(a) of Title 23; C.C.R. appears to include the water necessary for conveyance losses. Consequently, the duties in each case are defined differently and are not directly comparable.

pump the water from a river intake up to the property through a pipeline. Since there would be no seepage loss, should this system be designed for 1.1 cfs?

Answer: I would only recommend designing the diversion system with a capacity of 1.1 cfs (assuming zero conveyance losses) if:

- the current right holder is willing to accept 1.1 cfs; or
- an order has been obtained from either the SWRCB or the Court limiting the diversion to 1.1 cfs and all appeals have been exhausted.

If someone other than the present right holder is willing to pay for the new diversion and conveyance system, a strong argument might be made that the existing ditch conveyance is unreasonable. If such a argument were upheld by either the SWRCB or the Court, the diverter could be required to accept a higher efficiency system which reduces or eliminates conveyance losses. However, there are several points which should be taken into consideration before any decisions are made with respect to the sizing of a new, high efficiency delivery system:

1. While one may assume that the amount of water needed at the place of use is 1.16 cfs based on a 1 cfs per 50 acre duty for 58 acres of flood irrigation, this may not be a completely accurate or up-to-date assessment. According to page 18 of the Water Supply Report, actual measured application of water for flood irrigation varied from 1 cfs per 40 acres to 1 cfs per 73 acres. Unfortunately, measurements were not made of the actual duty of water for lands irrigated from the Alger Ditch. I also suspect that the estimated conveyance losses in the Alger Ditch depicted on page B-2 of the Water Supply Report reflects only one, or two measurements at most. In addition, I am not aware of any measurements which indicate that the actual diversions into the Alger Ditch since the Decree was entered have been limited to 6.16 cfs. Consequently, while the best estimate of the amount of water that is necessary to provide for ET, deep percolation, and tailwater is presently 1.16 cfs, the actual amount that has been utilized may be significantly different. If only 1.16 cfs is supplied, there may not be enough water to adequately irrigate the entire 58-acre place of use. In this event, the right holder probably won't be satisfied with the system and may file a complaint with the SWRCB or the Court requesting that additional supplies be provided.
2. The duties of water that were computed (including the 1 cfs per 50 acres for flood irrigation) are based on a continuous diversion. However, paragraph 37 of the Decree allows diversion at a faster rate as long as the 30-day average

diversion does not exceed the continuous diversion rate and other rights are not adversely impacted. If the actual irrigation practices included large diversions for shorter periods of time instead of a continuous diversion, and the right holder wishes to maintain these practices; the diversion system may need to be sized larger.

3. General administrative questions:

Question #3a: *Does your office need to be notified of a change in amount diverted if this project proceeds?*

Answer: Paragraph 64 indicates that any change or modification of rights under the Decree requires notification, investigation, and action by the SWRCB and then the Court. If improvements are made to the conveyance system (e.g., lining the ditch or installing a pipeline), the only change would be in the amount of water diverted. The amount of water diverted varies from year to year based on the available supply. An argument could be made that this type of change would not adversely impact other uses of water and, therefore, should not require action under the provisions of Paragraph 64. However, the right holder might want to obtain a formal ruling from the SWRCB that the reduction in diversion was the result of conservation and that the ultimate use of water would not be reduced due to non-diversion from surface supplies. This might also provide a forum to discuss under what conditions reversion to the old method of diversion would be allowed.

Question #3b: *Can the change in point of use and amount diverted be done with minimal paperwork?*

Answer: All that is required to initiate the process is a petition (which could be in the form of a letter) requesting that the SWRCB initiate the process under Paragraph 64 of the Decree. The amount of effort and time required by the SWRCB as well as the costs to the parties involved to process the petition can be reduced if local entities take the lead in working with all the parties involved to reach consensus on the actions to be taken. An up-to-date mailing list of all right holders in the adjudication and any interested parties (such as U.S. Fish and Wildlife Service, etc.) will be needed in order to provide notice of any proposed changes. If a local entity such as your District could develop this list, considerable time, effort, and costs can be avoided. If no objections are received after notice is provided, a short investigative report which could be approved by the SWRCB along with a draft Supplemental Decree could be forwarded to the Court with relatively little effort.

If objections were received, a more detailed investigation and possibly a hearing or proceedings in-lieu of a hearing would be required. As previously discussed, some of the issues can become relatively complex. If a formal hearing is necessary, significant time, effort, and expense could be required of all parties.

Question #3c: *What is the timeframe to get approval from your office for such changes?*

Answer: If the process under Paragraph 64 were invoked and no objections were received, 3 to 6 months would probably be required from the receipt of a "petition(s)" until a Supplemental Decree was entered by the Court. SWRCB approval pursuant to §1707 of the Water Code might be achieved a little more quickly as approval of the Court is not required.

If objections are received, the time required to obtain SWRCB approval and a Supplemental Decree could be extended considerably. Detailed investigations could require several seasons for data collection and analysis. An in-lieu hearing would probably require 3 to 4 months to complete and the results would still have to be taken before the SWRCB. A minimum of 6 months would probably be required to obtain a decision after a formal hearing and several years might be required if the issues are very complex and considerable legal maneuvering is involved.

I hope the information above is useful and does not confuse the situation too much. I have probably raised more questions than I have answered due to the "reasonableness" issues. As you can see from the enclosed memorandum on this subject, the issue of "reasonableness" is very complex and often dynamic in nature. I have found that the more experience one has with this issue, the easier it is to develop workable solutions.

While the efforts of the Siskiyou Resource Conservation District are to be commended, I wonder if the present course of action is the most desirable; especially in view of the complexities discussed above. I understand why convincing one or two diverters to improve their diversion efficiency is important if voluntary acceptance by other diverters is to be achieved. However, in view of some of the points above, there is a distinct possibility that effective solutions will require modification of numerous rights and an accountability of all diversions. Before any of this can be achieved, a relatively clear picture of the hydrology of the entire valley must be developed. A significant amount of money could be expended to reduce conveyance losses in ditches on a piecemeal basis. However, if most of these losses previously returned to the river or if any conserved losses which increased the flows in the river were quickly depleted due to other surface diversions and/or pumping from both the interconnected and non-interconnected groundwater, little benefit would be gained.

An alternative course of action would be to prepare a report which addresses the following topics:

- present problems due to inadequate water supplies (i.e., identify the amounts and timing of deficient instream flows);
- potential methods of increasing instream flows (i.e., which diversions, if reduced, would provide the greatest benefits and could other diverters adversely impact any savings obtained);
- reasonableness of requiring diverters to improve diversion and/or application efficiency (i.e., how much would it cost, how much benefit would be gained, and are outside funds available to offset the costs);

Such a report should prove to be a very productive tool to utilize in discussions with the minimum number of diverters necessary to implement an effective, voluntary solution. If voluntary agreement for such a solution could not be obtained, the report could serve as evidence in a reasonableness action before either the SWRCB or the Court.

I understand that the U.S. Forest Service, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and possibly some private environmental groups are very much interested in the current problems. These entities should have the necessary technical staff to collect sufficient data to complete a reasonableness analysis.

If assistance is needed in establishing a program outline that will produce a fair and equitable reasonableness analysis, please let me know as I have extensive experience in this area. The Division has definite staffing limitations and an abundance of work. However, I'm sure the Division would attempt to provide as much assistance as possible, as this would not only reduce our ultimate work load, but also provide benefit to all the parties involved. Please let me know if we can be of further assistance. I can be reached at (916) 657-1945.

Sincerely,

Charles A. Rich

Charles A. Rich
Senior Water Resources Control Engineer
Hearing Unit

Enclosure