

MEMORANDUM

To: Jeff Peppersack, Rick Raymondi
Cc: Tim Luke, Hal Anderson, Chuck Galloway, Brian Patton
From: Gary Spackman 
Date: August 15, 2007

Re: Fish Creek Reservoir Company Recharge Plan

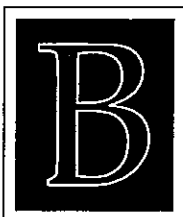
On July 23, 2007, Charles G. Brockway submitted two copies of a document titled *Preliminary Aquifer Recharge Plan for the Fish Creek Reservoir Company* to the Director of IDWR. A cover letter submitted with the documents states that the plan develops a concept, previously discussed with the Director, "which involves recharging water each year to the ESPA that can no longer physically be stored due to state-mandated modifications to the Fish Creek Dam."

The Director forwarded the documents to me and asked that "someone analyze the plan and brief us." I've skimmed the contents of the plan and have difficulty with this determining who should review the plan. Consequently, a copy of the plan is transmitted with this memo to Jeff Peppersack and Rick Raymondi. A copy of the cover letter is transmitted to all recipients of this memo.

The cover letter and the plan propose that the "recharged water" be used "for mitigation purposes," and "could potentially be handled through the state water supply bank." I understand that Fish Creek Reservoir Company (Fish Creek) wants to divert Fish Creek water during the season of storage authorized by their storage water right to ground water recharge. The quantity of water Fish Creek wants to divert would be equal to a portion of the storage once impounded behind Fish Creek Dam that can no longer be impounded because of reductions in storage resulting from dam safety concerns. Fish Creek proposes to place the water in the water bank, and allow water users who need to acquire water for mitigation to rent the water through the water supply bank.

Jeff, the proposal needs to be analyzed to determine how the water rights can be changed, either through a transfer or the rental to the water bank, what quantities would be available, and how leases of the water would occur. In addition, there may need to be a technical analysis of what mitigation benefits would be derived from recharge in the area of Carey, Idaho for uses of water at remote locations within the ESPA. For instance, what is the timing of the interaction of mitigation recharge in Carey as replacement water for a diversion of ground water near Gooding? Because the plan proposes use of the Water Supply Bank for ESPA matters, does the Board want to personally be involved?

Jeff, could you and Rick Raymondi review Brockway's proposal and formulate a plan for assignment of tasks, coordinating an analysis, and presenting the conclusions of the analysis to administration within the next three weeks? Thanks.



BROCKWAY
ENGINEERING
P.L.L.C.

Hydraulics

Hydrology

Water Resources

July 19, 2007

David Tuthill, Director
Idaho Department of Water Resources
322 E. Front Street
PO Box 83720
Boise, Idaho 83720-0098

RECEIVED
JUL 23 2007
DEPARTMENT OF
WATER RESOURCES

Re: Fish Creek Reservoir Company – Aquifer Recharge Plan
Project No. 052-05-2005

Dear Mr. Tuthill:

Enclosed please find two (2) copies of a preliminary report detailing a proposed aquifer recharge plan framework for the Fish Creek Reservoir Company. You may recall our meeting last year regarding the general concept of this plan, which involves recharging water each year to the ESPA that can no longer physically be stored due to state-mandated modifications to the Fish Creek Dam.

It was my understanding that utilization of recharged water for mitigation purposes could potentially be handled through the state water supply bank. Toward that end, I would be grateful if you would distribute copies of this report to whomever you see fit, including the manager(s) of the water supply bank and/or members of the water resources board, for discussion purposes.

The directors of the Fish Creek Reservoir Company would like to move this process as quickly as possible to ensure that an approved plan is in place to allow recharge to begin in 2008.

Thank you for your time and effort on this matter, and please feel free to contact me if you have any questions.

Cordially,

Charles G. Brockway, P.E.

Enc.: Preliminary Report
Cc: Doug Surerus

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Project No. 052-05-2005

Preliminary Aquifer Recharge Plan for the Fish Creek Reservoir Company

Prepared for:

Fish Creek Reservoir Company, Inc.
Carey, Idaho

July 19, 2007

For information concerning this report, contact
Charles G. Brockway, Ph.D., P.E.



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Preliminary Aquifer Recharge Plan for the Fish Creek Reservoir Company

Charles G. Brockway, P.E.
Brockway Engineering, PLLC

July 19, 2007

A. OVERVIEW

Fish Creek Dam, owned by the Fish Creek Reservoir Company (the Company), is located on Fish Creek approximately 10 miles northeast of Carey, Idaho (see Figure 1). The dam spans a narrow valley and impounds water from the Fish Creek basin and tributaries. Fish Creek is a perennial stream which also carries minor year-round spring discharge. Inflow to the reservoir consists almost entirely of runoff due to snowmelt and rainfall on the catchment above the dam. The dam has been in operation since its construction in approximately 1921. The reservoir provides storage for irrigation water supply within the service area of the Fish Creek Reservoir Company, but ancillary uses include recreation and flood control, although the dam has not been operated to optimize these ancillary uses.

The dam is a reinforced concrete dam in a multiple arch-buttress configuration. The total length of the dam is 1,630 feet, and the height from the lowest downstream invert to the top of the concrete is 92 feet. Drawings showing the plan and upstream elevation of the dam and various photographs of the dam are on file with the Idaho Department of Water Resources (the Department).

Due to acute concerns about the structural integrity of the dam, the capacity of the original spillway, and the potential risk to public health and safety, the Department issued an order in January 2005 requiring that the emergency spillway be lowered approximately 19 feet vertically in an effort to reduce the hydraulic head restrained by the dam and lower both the risk of dam failure and the potential for loss of life should the dam fail. The Company complied with the order and completed the spillway reconstruction in March 2005. The result of the spillway lowering is the elimination about 62% of the storage capacity compared to the historical operation of the dam. The volume which will no longer be stored and used for irrigation will overflow to Fish Creek, be conveyed southward to the lava beds south of Highway 20. Under normal conditions, no hydraulic connection to tributary streams exists, and therefore the water will infiltrate within the basalt flows.

The Company desires to reclaim at least a portion of the economic injury caused by the Department's order to lower the spillway by marketing the recharged water to interested parties or organizations who have a need to acquire water on a short- or long-term basis. Such entities would primarily include groundwater pumping groups,

municipalities, or individual users who desire to obtain water to mitigate for groundwater depletion, either as a response to recent Department orders or as voluntary measures.

The purpose of this report is to develop and present to the Department a conceptual plan for a managed recharge program to be operated by the Company. This conceptual plan could form the basis for negotiations with the Department relative to structure of the plan, allowable volume of recharge, or other facets of the plan. The desired end result will be explicit approval by the Department of a recharge plan which may be implemented beginning in 2008.

B. RESERVOIR CAPACITY CURVE

A volume-capacity curve was developed for the reservoir apparently near the time of construction of the dam by the project engineer. This curve has been in use since that time and represents the current best available information about storage characteristics of the reservoir. The volume-capacity relationship is shown in Figure 2, and the original table is provided in the Appendix.

The maximum usable storage volume at the historic spillway elevation is 12,743 acre-feet. However, historic practice often was to "check up" the spillway using boards to increase the water surface to 1 foot below the top of the dam, at which point the storage volume is 14,411 acre-feet. This is the volume allowed on water right 37-1162. There is essentially no dead storage. Current reservoir capacity due to lowering of the spillway elevation is 5,515 acre-feet.

The original spillway consisted of an uncontrolled, concrete side-channel spillway with an estimated capacity of approximately 300 cfs. Controlled outlet gates are located at the low point of the dam, consisting of two (2) 30-inch valves discharging directly to the natural Fish Creek channel. Estimated capacity of these gates is 240 cfs based on the discharge curve developed for the dam (source unknown, contained in IDWR files).

C. WATER USAGE FROM FISH CREEK

Irrigation using natural flow from Fish Creek and its tributaries has occurred in the vicinity of the dam, upstream of the reservoir, and downstream within the current company service area since perfection of the earliest right on the creek (1883). Natural flow rights held by private entities total 93.5 cfs, based on the SRBA recommendations, which are tabulated in the Appendix. Construction of the dam in 1921-22 allowed additional acreage to be reclaimed and put into agricultural production. The storage water right, 37-1162, was originally held by the Carey Valley Irrigation Reservoir Company, Inc., now the Fish Creek Reservoir Company, Inc.

Fish Creek Reservoir Company, Inc. is a mutual irrigation company with a total of 14,411 outstanding shares, each share representing 1.0 acre-feet of storage in the dam (see the incorporation document in the Appendix). Water released from storage is delivered to the project via the Fish Creek natural channel. A diversion dam in the channel diverts

water to a system of man-made ditches throughout the project. A watermaster administers both storage and natural flow rights on Fish Creek, and traditionally has been a member of the Company.

Historical records of irrigated area with the Company service area are not available, but a current analysis was made by the Department in preparing the SRBA recommendation. Total irrigated area was estimated to be 8,066 acres within the total service area, and approximately 6,200 acres within the lower service area below the dam shown on Plate 1. At its historical capacity, the reservoir could provide 2.32 ac-ft/acre if it filled. At the current capacity, the reservoir could provide only 0.89 ac-ft/acre.

D. RECENT PROJECT HISTORY, IDWR ORDERS, AND COMPANY RESPONSES

Apparent accelerated deterioration of the concrete dam noted in approximately 2002 prompted the Department to compel increased monitoring, testing, and rehabilitation work on the dam. In an Order to Show Cause issued on October 31, 2003, the Department cited various deficiencies in the dam and required the Company to show cause why continued storage should be allowed above elevation 67. Numerous orders have been issued by the Department since that time, and the Company has responded to the various requirements of the orders. Following is a listing and content summary of each pertinent Department issuance and company response since October 31, 2003.

Order to Show Cause

October 31, 2003

After expiration of the authorization to store water in 2003, the Department issued this order citing a number of deficiencies in the dam integrity and warning system, and ordered the Company to show cause within 30 days why the reservoir elevation should not be restricted to 67 feet and why the dam should not be breached to maintain said elevation.

Compliance Conference

November 25, 2003

Interim Authorization to Store Water

December 1, 2003

The Department issued an interim authorization to store, expiring on January 15, 2004, providing that 1) the reservoir level not exceed 67 feet, 2) full response to show cause order by January 15, 2004.

Company Response

January 8, 2004 and January 16, 2004

Written specifications and details regarding proposed concrete repair work on buttresses with sever deterioration.

Order and Interim Authorization to Store Water

February 26, 2004

In this order, the Department set aside the show cause order and required remedial measures prior to the onset of spring runoff including 1) repair of nine deteriorated buttresses, 2) construction of additional spillway capacity to provide a total capacity of 1,170 cfs, 3) enhanced testing of the emergency warning system (EWS), and 4) submission of a schedule by May 31, 2004 for developing plans for the full, permanent rehabilitation of the dam. This order did not require installation of a spillway at 67 feet unless the buttress repair was not completed by the onset of spring runoff. Interim authorization to store water was granted, expiring on October 31, 2004.

Company Response

March 29, 2004

Proposed design for additional spillway capacity.

May 30, 2004

Plan for rehabilitation of Fish Creek Dam. Department approved the Plan on July 29, 2004.

Order

December 10, 2004

After expiration of the interim authorization to store for 2004, the Department issued this order finding the buttress repair work to be satisfactory but cited a number of persistent deficiencies in the dam integrity, spillway capacity, and EWS, and noting that the seismic analysis and rehabilitation of high bays had not been done as proposed in the May 30, 2004 rehabilitation plan. The order required that the outlet valves be fully opened and prohibited any and all storage behind the dam.

Company Response

December 22, 2004 – Petition for Reconsideration of December 10, 2004 order.

Order

January 10, 2005

The Department granted the petition for reconsideration, requiring 1) modification of the dam so that 1,170 cfs can be passed at reservoir elevation 72.0 feet, 2) submittal of plans and specifications for approval by the Department, 3) inspection and approval of the work by the Department prior to storage, and 4) repair of buttress 52. The order also contained requirements for continued EWS testing and seepage monitoring.

Company Response

February 10, 2005

Engineering report and preliminary construction plans and technical specifications for new spillway construction (Brockway Engineering, PLLC). Approved by the Department on February 17, 2005.

February 16, 2005

Petition for Reconsideration of January 10, 2005 order, requesting authorization to store water after demolition but before entire spillway project is complete.

Second Amended Order

February 22, 2005

This order outlined the history of the project to date, including Department orders and company responses, and granted interim authorization to store water conditioned upon approval of the Department of the demolition work. The order also contained

requirements for continued EWS testing and seepage monitoring. The Department also noted that the seismic analysis and high bay rehabilitation had not been completed.

Company Response

October 31, 2005 Proposal and cost estimate for dam replacement alternatives (Brockway Engineering, PLLC).

Order

November 25, 2005

After expiration of the interim authorization to store for 2005, the Department issued this order finding the buttress repair work to be satisfactory but cited a number of persistent deficiencies in the dam integrity and the EWS, and noting that the seismic analysis and rehabilitation of high bays had not been done as proposed in the May 30, 2004 rehabilitation plan. The Department extended the authorization to store water through January 31, 2006, and required 1) submittal of plans to repair a hole in the arch between buttresses 23 and 24, 2) repair of the hole, and 3) submittal of a dam break analysis based on the new spillway elevation and incorporating detailed cross-sections. The order also contained requirements for continued EWS testing and seepage monitoring.

Company Response

December 2005 Plans and specifications for arch repair (Brockway Engineering, PLLC). Approved by Department on December 5, 2005.

January 2006 Performed repair work as required.

February 2, 2006 Requested extension of time for detailed dam break analysis to July 1, 2006, and proposed submitting an interim dam break analysis using existing cross-sections by February 21, 2006.

Order

March 3, 2006

This order partially recounted the project history, noted that the Department found the arch 23-24 work to be satisfactory, extended authorization to store water to April 1, 2006, and required submittal of both an interim dam break analysis and a detailed dam break analysis. The order also contained requirements for continued EWS testing and seepage monitoring.

Company Response

An interim dam break analysis was prepared by Brockway Engineering and submitted to the Department on April 4, 2006.

Order

April 25, 2006

The Department extended the authorization to store water through October 31, 2006. The order noted that the seismic analysis and rehabilitation of high bays had not been done as proposed in the May 30, 2004 rehabilitation plan, required the submittal of a detailed dam break analysis, required continued maintenance and testing of the emergency warning system, and required monitoring and reporting of reservoir levels to the Department. The order also suspended the seismic requirements until October 31, 2006 pending the outcome of a dam replacement alternatives study.

Company Response

A detailed cross-section survey was performed in August 2006. This data formed the basis for the detailed dam break analysis prepared by Brockway Engineering and submitted to the Department by e-mail on September 22, 2006 with a hard copy on September 25, 2006. Testing of the EWS has been ongoing.

E. SPILLWAY RECONSTRUCTION**E.1. Structural Deficiencies**

Deficiencies in the concrete structure of the dam have been noted by the Department and consultants retained by the Company since approximately 2002. Deficiencies generally include spawling concrete, development of holes or structural problems in the buttresses and arches, and exposure of steel reinforcement. A total of ten (10) buttresses have been repaired by patching excessively deteriorated areas with unreinforced concrete. A hole that developed in an arch section, located between buttresses 23 and 24, has been repaired by removing weakened concrete in the vicinity of the hole and placing a patch of reinforced concrete across the width of the upstream side of the arch. The Department continues to indicate concerns relative to the structural integrity of the dam.

Comprehensive testing of the dam's integrity by subjecting samples of the concrete to laboratory stress testing has not been performed. Seismic testing has also not been performed to date.

E.2. Storage Restrictions and Spillway Reconstruction

As a result of the Department's order dated January 10, 2005, the Company constructed a new spillway with a capacity sufficient to pass the 100-year flood inflow to the reservoir of 1,170 cfs, after routing through the reservoir and accounting for the outlet gate capacity.

The spillway was designed by Brockway Engineering and included removal of two arch sections, construction of an uncontrolled rip-rapped spillway, and a new spillway channel running southward and joining the old spillway channel. This project was constructed from January through March of 2005 and was approved by the Department. The new spillway elevation is 69.2 feet, corresponding to a storage volume of 5515 acre-feet.

The spillway operated flawlessly in 2005 and 2006, passing an estimated 500 cfs or more each year.

Abandonment of the original spillway and construction of a spillway at a lower elevation has alleviated to some extent the structural concerns, since the dam now holds about 38% of its maximum original volume and the hydraulic head has been reduced by 21

feet. The reduction in storage volume compared to the maximum historical storage of the dam (with the spillway check boards in place) is 8,896 acre-feet.

The volume contained in the reservoir above the lowered spillway elevation will no longer be stored each year and will continue to flow in Fish Creek to its natural terminus in the basalt flows south of Highway 20. Depending on the available water supply, the volume of foregone storage could be up to 8,896 acre-feet.

F. FISH CREEK BASIN HYDROLOGY

The watershed above Fish Creek Dam is characterized chiefly by rangeland with minor forested areas above 6000 feet. Two major drainages have their confluence at Fish Creek Reservoir: West Fork Fish Creek and the main channel of Fish Creek. East Fork Fish Creek enters the main channel about 2 miles above the dam.

The total drainage area and other pertinent hydrologic characteristics of the basin above the dam were calculated using topographic digital elevation model (DEM) data utilizing the Streamstats web-based tool developed by the U.S. Geological Survey. Mean annual precipitation was taken from the most recent map prepared by the Idaho State Climatologist's office. The results are shown in Table 2. The drainage basin delineation is shown on Figure 1.

Table 2. Characteristics of Fish Creek basin above reservoir.

Drainage area	74.7 mi ²
Average elevation	6540 feet
Maximum elevation	9240 feet
Average slope	33%
Mean annual precipitation	18 inches

G. HISTORICAL STORAGE STATISTICS

Typical operation of the dam has been to close the outlet gates in November after the irrigation season. From November through the onset of runoff, base flow in Fish Creek is stored in the reservoir. All runoff has generally been stored in the reservoir up to the spillway elevation. However, in extremely high runoff years, e.g. 1997, 2005, and 2006, the outlet gates are also opened to release water and alleviate the spillway flow.

Records have reportedly been kept by the Fish Creek watermaster since the dam's construction, but most of the records are not contained in either the Company files or IDWR files, and likely do not exist based on personal conversations with the current watermaster. Fortunately, a portion of the reservoir fill data for 24 years from 1960-1965, 1971, 1975, and 1991-2006 has survived. This data is presented in Table 3.

Table 3. Maximum fill data for the reservoir.

Year	Maximum Fill (ac-ft)
1960	8926
1961	5200
1962	13548*
1963	13200*
1964	12743
1965	14411*
1971	14411*
1975	13548*
1991	5329
1992	5374
1993	13274*
1994	7195
1995	13274*
1996	13828*
1997	13828*
1998	13828*
1999	13828*
2000	10110
2001	5875
2002	6502
2003	7450
2004	6250
2005	5515**
2006	5515**

* Assumed that reservoir filled and spilled

** With lowered spillway; reservoir would have filled during these years.

Because of the historic practice of "checking up" the spillway to some unknown degree, it is assumed that any maximum fill volume above 12,743 ac-ft represents a year in which checking up occurred and the reservoir filled and spilled. It is possible that some of the values above 12,743 ac-ft but less than 14,411 ac-ft represent situations where the spillway was checked up fully but the reservoir did not spill, but it is not possible to determine this from the available data.

Note that the storage was limited in 2005 and 2006 by the IDWR storage restriction described above. In these two years, the runoff was extremely high, with a peak discharge probably exceeding 500 cfs, and the reservoir unquestionably would have filled to capacity had the spillway not have been lowered. Making this assumption for 2005-2006, the reservoir has filled to at least the old spillway elevation 63% of the years. Because the runoff which spills or is intentionally released has not historically been measured, the reservoir fill data cannot be used to determine statistics of total runoff for all years. However, in years when the reservoir did not fill, the peak reservoir content is

likely a reasonable proxy for total runoff plus any carryover storage, which includes off-season base flow storage. In these years, the mean peak contents is 6,821 ac-ft and the standard deviation is 1,635 ac-ft. The one factor unable to be accounted for in historical data is the possibility of irrigation deliveries from natural flow and storage releases which occurred early in the season around the time of the peak.

The percentage of years in which the reservoir would have spilled with the spillway at its current elevation is of interest in assessing the potential frequency of recharge to the ESPA. The available fill data indicates that the runoff exceeded 5,515 acre-feet in 21 of the 24 years of data, or 88%. However, the total runoff magnitude for these years cannot be determined due to the limitations described above.

H. POTENTIAL AQUIFER RECHARGE ESTIMATION

H.1. Assumptions

Due to the state-mandated lowering of the overflow spillway, the capacity of Fish Creek reservoir has been reduced by 8,896 acre-feet (the difference between 14,411 ac-ft and 5,515 ac-ft). This value represents the maximum annual volume of water that will not be stored in the future (termed "foregone storage") and which will continue downstream in Fish Creek. Foregone storage may be less than 8,896 acre-feet in years when the reservoir would not have filled with the spillway at the original level, i.e. when runoff volume plus carryover is less than 14,411 ac-ft.

Fish Creek does not normally discharge to any other surface stream. Water passing under Highway 20 in the Fish Creek channel reaches the basalt fields east of Carey and south of the highway and infiltrates to the Eastern Snake Plain Aquifer. The exception to this fact occurs during extremely high years such as 2006. In these years, water flowing in Fish Creek may reach Carey Lake. Carey Lake ordinarily has no overflow and all water entering the lake either evaporates or infiltrates. If overflow does occur from the lake, it reaches one or more laterals at the lower end of the Little Wood Irrigation District system, which subsequently discharge to disposal areas within the lava beds south of Carey. This is an extremely rare event, however.

Evaporation losses will occur in the Fish Creek reach from the reservoir to the discharge to the ESPA. These losses are small but should be deducted from the foregone storage in estimating potential recharge credit. Free water surface evaporation was calculated for April through June using the procedure developed by Molnau et al. (1992) (see Table 3). The result of this calculation is an estimated 6.9 acre-feet of evaporation.

Table 3. Fish Creek evaporation estimation.

Annual FWS evaporation (NOAA atlas)	38 inches
Region	4
April 15 – June 15 percentage of annual	17%
Total April – June evaporation	6.5 inches
Maximum length of Fish Creek	7 miles
Average water surface width	15 feet

Total water surface area	12.7 acres
Total evaporation April 15 – June 15	6.9 acre-feet

Seepage losses will occur in the Fish Creek channel downstream of the dam. These seepage losses will infiltrate to the alluvial depositions within the Fish Creek valley. Lithologic information regarding this alluvium between the dam and the populated areas near Highway 20 is essentially nonexistent. However, it can be reasonably inferred that the Fish Creek alluvium is similar to nearby intermontane aquifers, likely consisting of depositions of sand, gravel, and clay to varying degrees, underlain by granitic bedrock which forms essentially the lower boundary of the aquifer. Under this assumption, the aquifer should be considered tributary to the ESPA, and therefore a portion of the seepage should be considered in the recharge calculation each year. This portion should be equal to the seepage in the channel which would not ordinarily have occurred due to delivery of natural flow and storage releases. For example, if no irrigation deliveries are made prior to May 15, then seepage from the commencement of spillway overflow prior to May 15 should be credited toward recharge because no water would have been in the channel historically. Once irrigation deliveries begin, it would be difficult to determine the percentage of total seepage attributable only to the forgone storage water released.

Although conceptually, all foregone storage up to 8,896 acre-feet (less 7 acre-feet of evaporation) will be recharged to the ESPA, accurate measurement of the recharge volume is more problematic due to factors discussed above, namely the channel seepage and irrigation deliveries. A proposal for recharge measurement is outlined in Section J.2.

H.2. Potential Recharge Characterization

As noted above, 24 years of historical reservoir fill data are available, but 13 of those years are not useful in determining runoff volume due to the fact that the reservoir filled and spilled and the spill was unmeasured. Therefore, in order to better predict the magnitude and variability of potential future aquifer recharge, historical runoff plus carryover storage was estimated using a correlation with measured runoff data on the Little Wood River above the reservoir. Overlapping data between the USGS gauge above High Five Creek (Gauge No. 13147900) and Fish Creek reservoir peak contents data exist for the 11 years in which the reservoir did not fill. (As noted above, irrigation deliveries made around the time of the reservoir peak are not accounted for). The correlation between April – June runoff and maximum reservoir level is reasonably good for these years (see Figure 3). With the intercept forced to zero, a linear fit is better than any other and the correlation is

$$R_{FishCr} = 0.2191 R_{LitWood}$$

Using this equation, Fish Creek runoff was estimated for the period of record of the Little Wood gauge (1959 through 2006), with measured data being substituted for years where it is available. The potential recharge was calculated by determining the foregone

storage for each year (i.e. the spill which would have occurred in that year if the spillway had been at its current elevation), with the total limited to 8,896 acre-feet.

Figure 4 shows the time series of estimated runoff and Figure 5 shows a graphical depiction of potential recharge. Summary statistics were calculated and are shown in Table 4. Values are in acre-feet.

Table 4. Summary statistics for estimated potential recharge.

Mean	5579
Median	6714
Maximum	8896
Minimum	0
Upper quartile	12%
Lower quartile	43%
% zero years	8896
% maximum years	1744

This analysis shows that, assuming the 1959-2006 period is reasonably representative of future patterns, the full allotment of potential recharge would be realized in 43% of the years, and the median recharge would be 6,714 acre-feet (75% of the maximum). Due to the high variability in water supply in this basin, a significant percentage of very low runoff years is expected, but only 12% of the years are expected to have runoff plus carryover less than the current reservoir capacity.

Based on the water supply analysis, significant recharge volume will be available in a high percentage of years, and it appears reasonable to pursue the approval of an aquifer recharge plan by the Department.

I. PROPOSED WATER RIGHT ADMINISTRATIVE MECHANISM

The water right held by Fish Creek Reservoir Company for storage of surface water is 37-1162. This right has been recommended in the Snake River Basin Adjudication for 14,411 acre-feet of storage with an 11/2/1922 priority date. The right allows storage for irrigation purposes only, and therefore would not allow water to be released for recharge, which is a recognized beneficial use.

It is proposed to utilize the state water supply bank, administered by the Idaho Water Resource Board, as a mechanism by which a portion of water right 37-1162 may be used for recharge purposes. Fish Creek Reservoir Company proposes to lease 8,896 acre-feet of irrigation storage water to the water supply bank. Parties who may wish to acquire the water on a short-term basis may then apply to rent water from the water supply bank. The specified minimum payment will likely be greater than the prevailing rental rate, and will be dictated by market conditions.

J. PROPOSED OPERATION

J.1. Reservoir storage and release timing

It is proposed to close the outlet gates on or about November 1, corresponding to historic operational practice. With only 5,515 acre-feet of storage, carryover of previous-season storage is assumed to be essentially zero in all years. However, storage of base flow will occur from November 1 to about April 1, the approximate average date of runoff commencement. Base flow magnitude is expected to range from 10 to 20 cfs based on spot discharge measurements at the upstream and downstream weirs.

Assuming an average 15 cfs base flow for these 151 days, off-season storage will be 4,493 acre-feet, but will be highly variable from year to year.

Releases from the reservoir for irrigation will occur typically no earlier than about May 15. Generally, releases begin after the reservoir has either filled or reached a volume very close to the peak. In most years, the reservoir will fill and the spillway will discharge. In very high-flow years, the outlet gates may be operated as a secondary spillway.

J.2. Recharge Measurement

Some means of measuring and recording the volume of recharge is required. Ideally, the discharge should be measured in Fish Creek channel near the dam downstream of the inflow from the spillway channel. A measurement at this location would also measure the channel seepage, a portion of which should be credited toward recharge. However, several unmeasured irrigation diversions are delivered by the watermaster from Fish Creek, and thus water flowing in the creek may be a combination of natural flow rights, released irrigation storage, and foregone storage water. These factors complicate the measurement of recharge, and it would be difficult to isolate the recharge volume without significant error.

To avoid the above problems and obtain the most direct measurement of recharge possible, it is proposed to install a measuring weir just downstream of the last irrigation diversion, located at the Hot Springs Ditch. This location is shown on Plate 1. Historically at this location, the creek has been physically blocked except during times of very high spring runoff. All water flowing past this point will eventually recharge the ESPA. An inspection and survey has been made of the existing concrete structure at this location, and it has been determined that a sharp-crested weir can readily be installed which will essentially meet U.S. Bureau of Reclamation criteria for a standard weir.

The device will be equipped with a stilling well, an ultrasonic level sensor, and data recorder to record flow rate at intervals not greater than 1 hour, thereby allowing a total daily volume calculation.

The only water volume not measured by the weir at the proposed location is channel seepage (see Section H.1). Channel seepage volume above that which would have normally occurred due to irrigation deliveries should be credited toward recharge. The amount of seepage in the channel is not known with certainty, but the Company is currently undertaking a program of measuring device installations within Fish Creek, one purpose of which is to determine the channel seepage in certain reaches. When these devices are operational, it is proposed to use them to determine the seepage rate, potentially as a function of stream discharge, for use in subsequent years' accounting. This would be in lieu of attempting to measure the seepage in real-time each year. The following approach is proposed:

1. Conduct a study to estimate the magnitude of total channel seepage from the dam to the Hot Springs Ditch diversion at several stream discharge rates, and develop a seepage vs. discharge curve.
2. For recharge accounting:
 - a. Prior to irrigation deliveries commence: 100% of channel seepage is credited toward recharge
 - b. After irrigation deliveries commence: Seepage credited toward recharge is a pro-rated portion of the total seepage based on the estimated fraction of the total streamflow which is foregone storage. This fraction would be determined by the watermaster by subtracting irrigation deliveries from the total streamflow.
3. Depending on the magnitude of the seepage credit and the effort required to measure it, the company may decide to utilize only the measured volume at the Hot Springs weir.

J.3. System Monitoring

Responsibility for monitoring the recharge system during the typical recharge period (April – June) will lie with the Fish Creek watermaster, currently Lawrence Kimball.

The discharge measuring device will be visually inspected at least once per week from the onset of recharge through June 30. During this inspection, the following activities will be performed:

1. Inspect the weir plate for damage or leakage.
2. Remove debris and/or vegetation from the weir plate and pool.
3. Verify adequate aeration of the weir.
4. Backflush stilling well pipe.
5. Verify that the level sensor readout agrees with the staff gauge in the weir pool to within ± 0.01 feet; apply shift as necessary.

Conditions downstream of Highway 20 will be inspected at least twice per month from the onset of runoff through June 30 to verify that the water is reaching the basalt flows and recharging, and no unauthorized diversions are taking place.

J.4. Reporting

A tabulation of daily recharge volumes and total recharge will be reported each year to the Department within 30 days after the cessation of recharge but no later than September 30.

J.5. Maintenance

General repairs and maintenance to the measurement weir will be the responsibility of Fish Creek Reservoir Company.

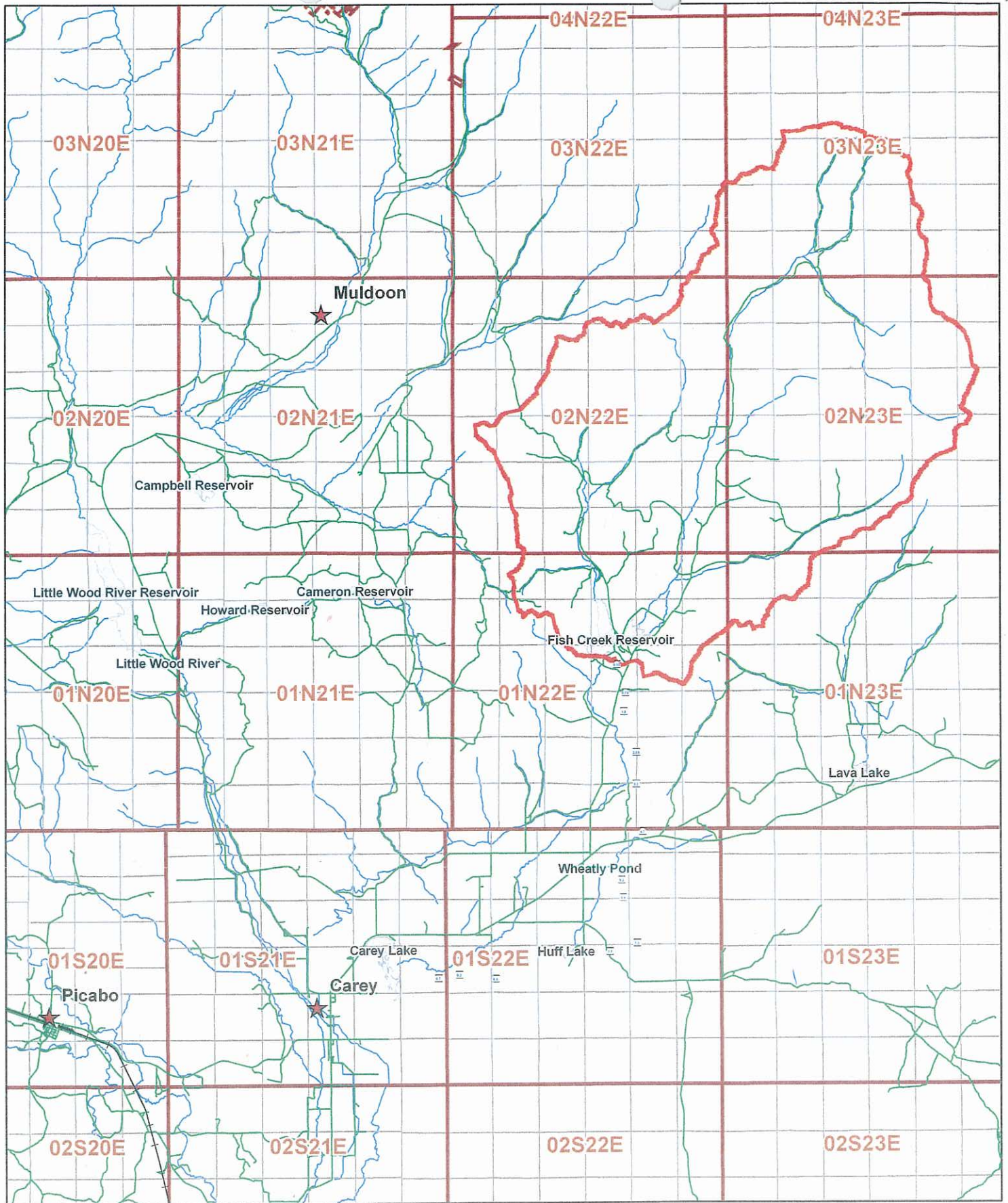


FIGURE 1 - VICINITY MAP
FISH CREEK RESERVOIR COMPANY

Figure 2. Volume-Capacity Curve for Fish Creek Reservoir

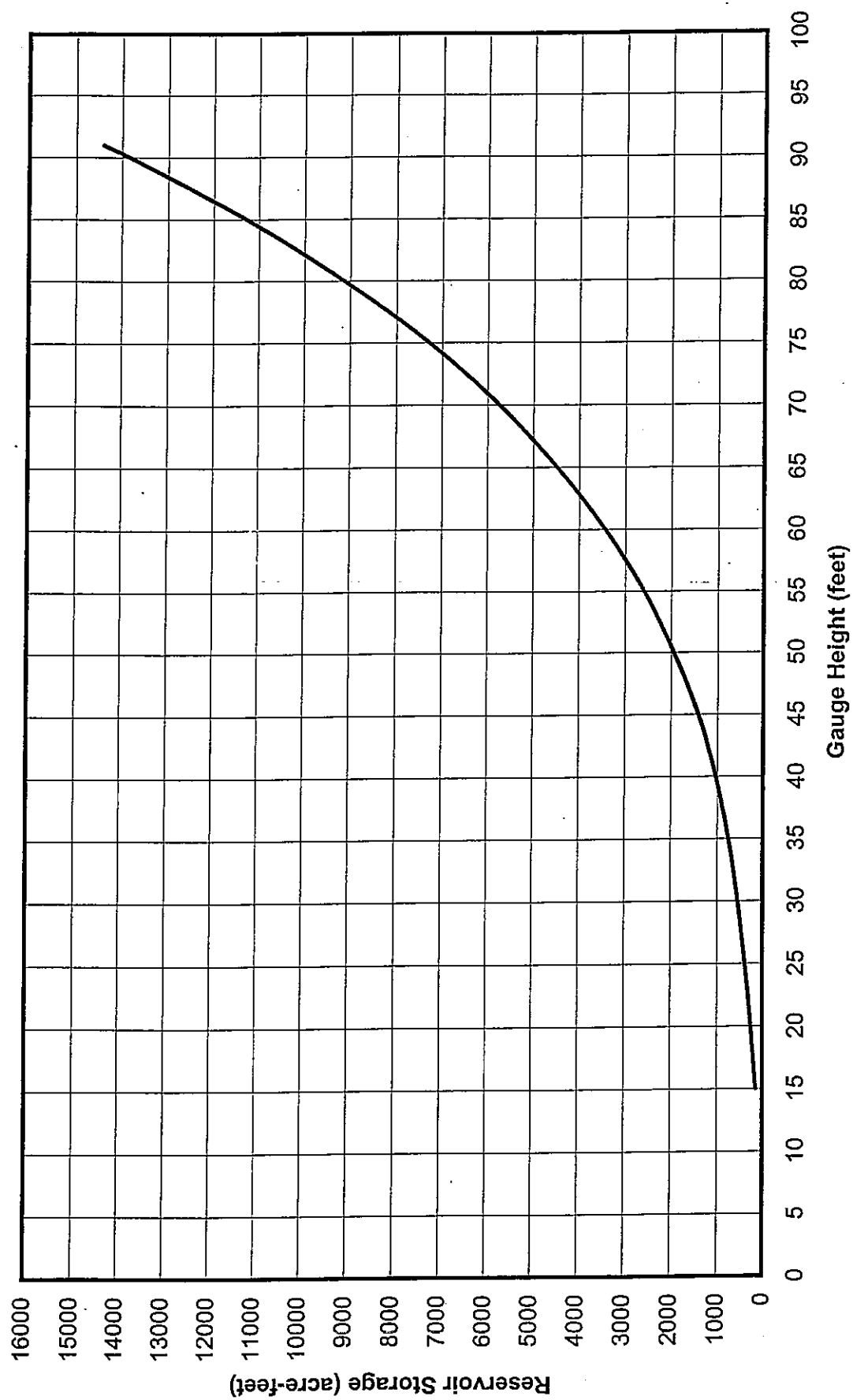


Figure 3. Fish Creek Reservoir fill data and regression with Little Wood River runoff.

CGB 5/30/07

Year	Fish Cr max fill (ac-ft)	Little Wood Apr-Jun (ac-ft)
1960	8926	37201
1961	5200	22513
1962	13548	69488
1963	13200	57742
1964	12743	60884
1965	14411	147063
1971	14411	128257
1975	13548	
1991	5329	31177
1992	5374	16959
1993	13274	88450
1994	7195	18821
1995	13274	121573
1996	13828	71426
1997	13828	124461
1998	13828	83476
1999	13828	84067
2000	10110	39242
2001	5875	18298
2002	6502	31264
2003	7450	46146
2004	6250	28051
2005	14411	76867
2006	14411	141628

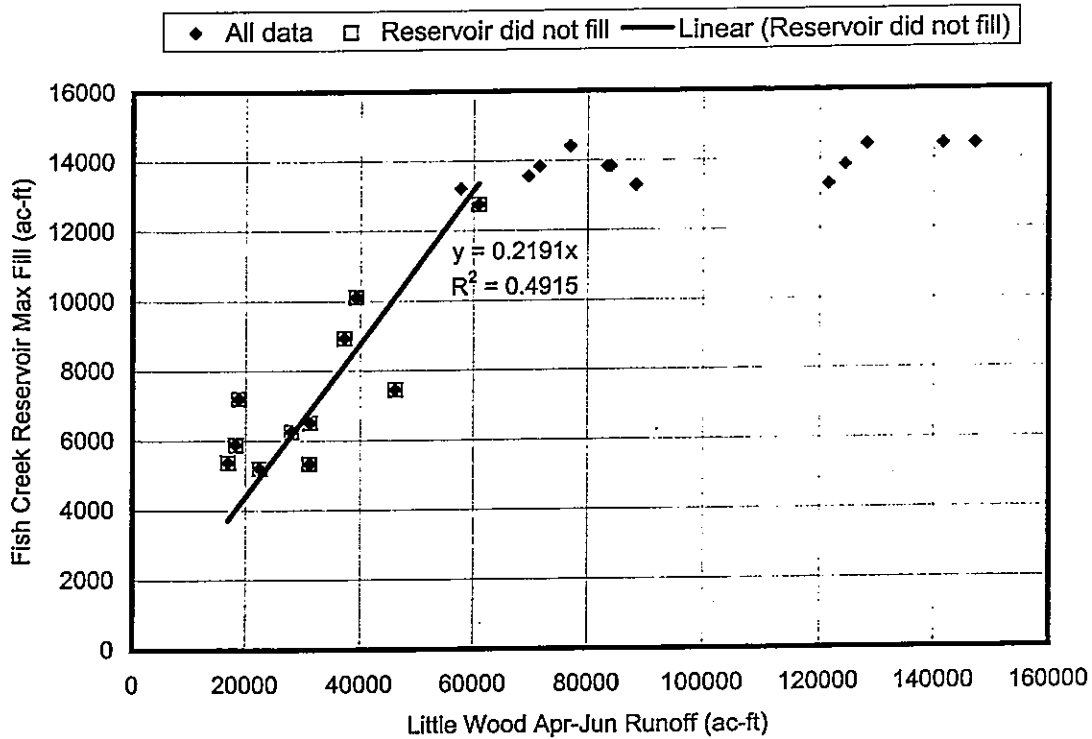


Figure 4. Historical Runoff plus Carryover at Fish Creek Reservoir, Estimated From Little Wood River

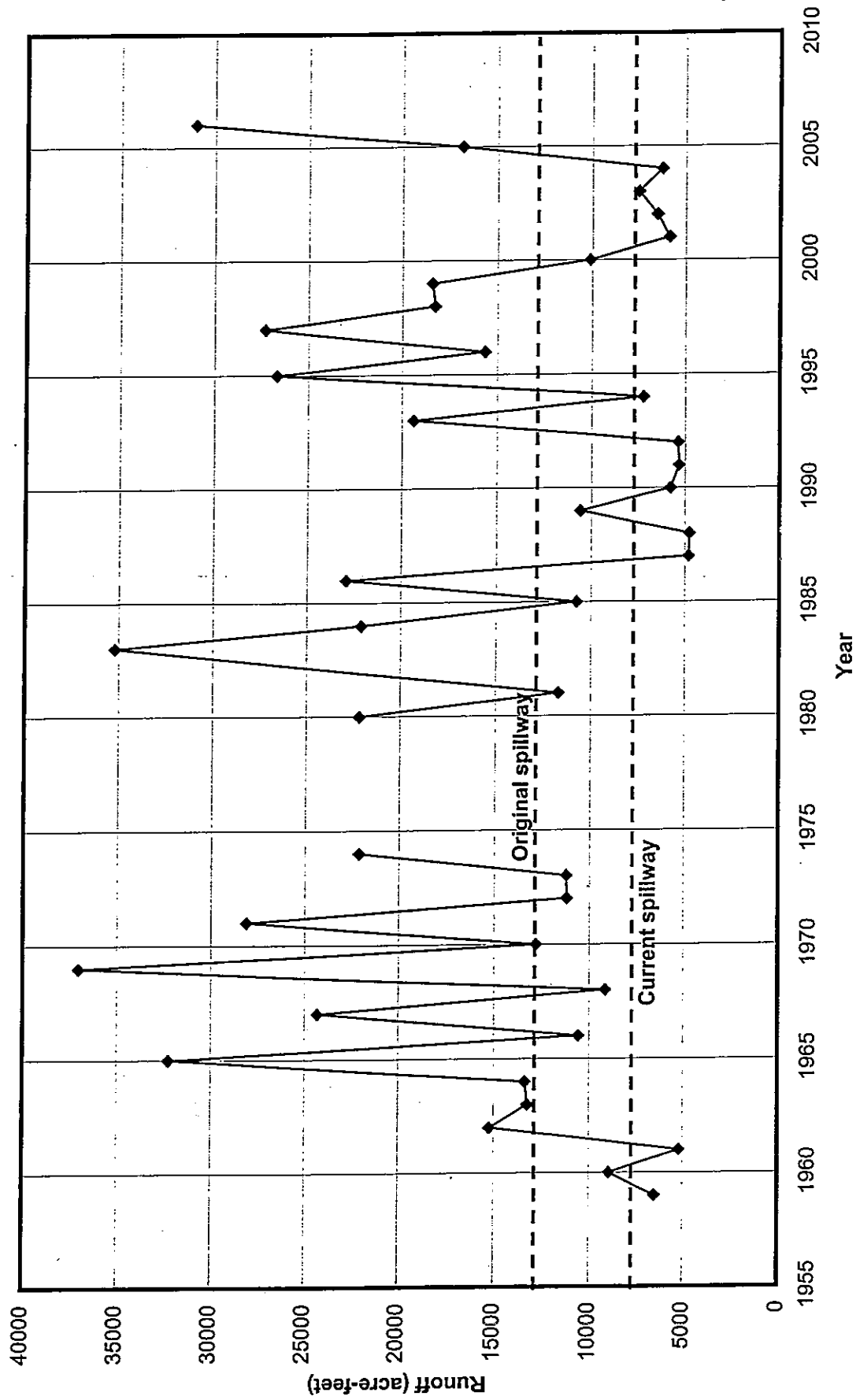
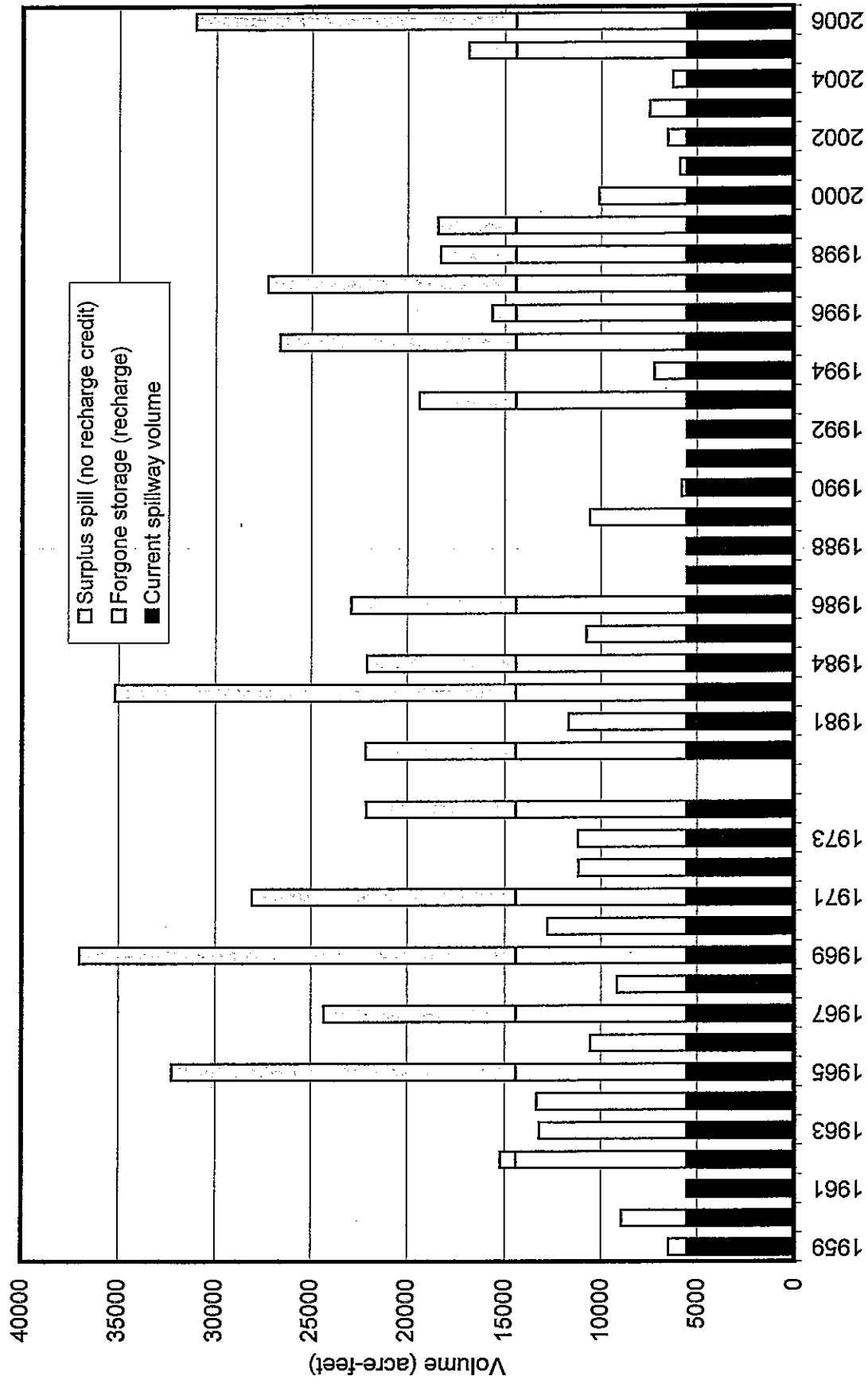


Figure 5. Potential Recharge Depiction Based on Historical Runoff



Appendix

Supplemental Material

Reservoir Storage Table
Fish Creek Natural Flow Water Rights
Fish Creek Reservoir Company Incorporation Documents

TABLE 3

CAPACITY TABLE FOR FISH CREEK OR — CAREY VALLEY RESERVOIR

G.H.	Capacity	Diff.	G.H.	Capacity	Diff.	G.H.	Capacity	Diff.	G.H.	Capacity	Diff.	G.H.	Capacity	Diff.
15.0	145		34.5	732	23	54.0	2482	68	73.5	6784	189			
15.5	155	10	35.0	756	24	54.5	2522	69	74.0	6846	162			
16.0	165	10	35.5	780	24	55.0	2592	70	74.5	7111	165			
16.5	175	10	36.0	805	25	55.5	2664	72	75.0	7279	168			
17.0	185	10	36.5	830	25	56.0	2738	74	75.5	7450	171			
17.5	195	10	37.0	856	26	56.5	2814	76	76.0	7624	174			
18.0	205	10	37.5	883	27	57.0	2895	79	76.5	7801	177			
18.5	216	11	38.0	911	28	57.5	2975	82	77.0	7981	180			
19.0	227	11	38.5	940	29	58.0	3060	85	77.5	8164	183			
19.5	239	12	39.0	970	30	58.5	3148	88	78.0	8350	186			
20.0	252	13	39.5	1001	31	59.0	3238	90	78.5	8539	189			
20.5	265	13	40.0	1033	32	59.5	3330	92	79.0	8731	192			
21.0	278	13	40.5	1066	33	60.0	3424	94	79.5	8926	195			
21.5	291	13	41.0	1100	34	60.5	3520	96	80.0	9124	198			
22.0	304	13	41.5	1135	35	61.0	3618	98	80.5	9325	201			
22.5	317	13	42.0	1171	36	61.5	3718	100	81.0	9529	204			
23.0	330	13	42.5	1208	37	62.0	3820	102	81.5	9736	207			
23.5	343	13	43.0	1246	37	62.5	3924	104	82.0	9946	210			
24.0	356	13	43.5	1286	40	63.0	4030	106	82.5	10159	213			
24.5	370	14	44.0	1327	41	63.5	4138	108	83.0	10375	216			
25.0	384	14	44.5	1370	43	64.0	4248	110	83.5	10594	219			
25.5	398	14	45.0	1415	45	64.5	4360	112	84.0	10816	222			
26.0	413	15	45.5	1461	46	65.0	4474	114	84.5	11041	225			
26.5	428	15	46.0	1508	47	65.5	4590	116	85.0	11270	229			
27.0	443	15	46.5	1556	48	66.0	4708	118	85.5	11503	233			
27.5	459	16	47.0	1606	50	66.5	4828	120	86.0	11741	238			
28.0	475	16	47.5	1658	52	67.0	4950	122	86.5	11984	243			
28.5	492	17	48.0	1711	53	67.5	5074	124	87.0	12232	248			
29.0	509	17	48.5	1765	54	68.0	5200	126	87.5	12485	253			
29.5	527	18	49.0	1821	55	68.5	5329	129	88.0	12743	258			
30.0	545	18	49.5	1879	57	69.0	5461	132	88.5	13006	263			
30.5	564	19	50.0	1938	58	69.5	5596	135	89.0	13274	268			
31.0	583	19	50.5	1998	60	70.0	5734	138	89.5	13548	274			
31.5	603	20	51.0	2060	62	70.5	5875	141	90.0	13828	280			
32.0	623	20	51.5	2123	63	71.0	6019	144	90.5	14115	287			
32.5	644	21	52.0	2187	64	71.5	6166	147	91.0	14411	296			
33.0	665	21	52.5	2252	65	72.0	6316	150						
33.5	687	22	53.0	2318	66	72.5	6469	153						
34.0	709	22	53.5	2385	67	73.0	6625	156						

Spillway Crest

Crest of Dam

GAGE DATUM: 4990 ELEV. - 150 FT. GAGE HEIGHT

JAN 05 1993

#1A

IDAHO DEPARTMENT OF WATER RESOURCES
RECOMMENDED WATER RIGHTS ACQUIRED UNDER STATE LAW

RIGHT NUMBER: 37-1162

NAME AND ADDRESS: FISH CREEK RESERVOIR CO INC
C/O RONALD F PECK
395 AUSTIN RD
CAREY ID 83320

SOURCE: FISH CREEK

TRIBUTARY: LITTLE WOOD RIVER

QUANTITY: 14,411.00 AFY

PRIORITY DATE: 11/02/1922

POINT OF DIVERSION: T01N R22E S15 SWNNW Within BLAINE County

PURPOSE AND PERIOD OF USE:

<u>PURPOSE OF USE</u>	<u>PERIOD OF USE</u>	<u>QUANTITY</u>
IRRIGATION STORAGE	01/01 12/31	14,411.00 AFY
IRRIGATION FROM STORAGE	04/15 10/31	14,411.00 AFY

PLACE OF USE:

8066.3 ACRES TOTAL

The boundary encompassing the place of use for this water right is described with a digital boundary as defined by I.C. Section 42-202B(2) and authorized pursuant to I.C. Section 42-1411(2)(h). The data comprising the digital boundary are incorporated herein by reference and are stored on a CD-ROM disk issued in duplicate originals on file with the SRBA District Court and the Idaho Department of Water Resources. A map depicting the place of use is attached hereto to illustrate the place of use described by the digital boundary.

Place of Use is within Blaine County, and is on land irrigated by shareholders of the Fish Creek Reservoir Co Inc.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.

EXPLANATORY MATERIAL: BASIS OF CLAIM - Decreed

IDAHO DEPARTMENT OF WATER RESOURCES
RECOMMENDED WATER RIGHTS ACQUIRED UNDER STATE LAW

RIGHT NUMBER: 37-14273

NAME AND ADDRESS: FISH CREEK RESERVOIR CO INC
C/O RONALD F PECK
395 AUSTIN RD
CAREY ID 83320

SOURCE: GROUND WATER

TRIBUTARY:

QUANTITY: 2.400 CFS
17,094.00 AFY

PRIORITY DATE: 05/23/1961

POINT OF
DIVERSION: T01N R22E S11 SWSNW Within BLAINE County
T01N R22E S11 NWNWE Within BLAINE County
T01N R22E S11 SENWE Within BLAINE County

PURPOSE AND
PERIOD OF USE:

<u>PURPOSE OF USE</u>	<u>PERIOD OF USE</u>	<u>QUANTITY</u>
IRRIGATION STORAGE	01/01 12/31	1,738.00 AFY
IRRIGATION	04/15 10/15	2.400 CFS 17,094.00 AFY
DIVERSION TO STORAGE	01/01 12/31	2.400 CFS
IRRIGATION FROM STORAGE	04/15 10/15	1,738.00 AFY

PLACE OF USE:

4884 ACRES TOTAL

The boundary encompassing the place of use for this water right is described with a digital boundary as defined by I.C. Section 42-202B(2) and authorized pursuant to I.C. Section 42-1411(2)(h). The data comprising the digital boundary are incorporated herein by reference and are stored on a CD-ROM disk issued in duplicate originals on file with the SRBA District Court and the Idaho Department of Water Resources. A map depicting the place of use is attached hereto to illustrate the place of use described by the digital boundary.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.

EXPLANATORY MATERIAL: BASIS OF CLAIM - Beneficial Use

NATURAL FLOW RIGHTS ON FISH CREEK, BLAINE COUNTY
SRBA Recommendations from IDWR database

31-May-1

Basin	Priority Date	Div Rate	Source	Water Uses	Owner List
37-733	Decreed	1893-03-30	0.225 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-734	Decreed	1910-04-15	1 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-735	Decreed	1893-03-30	0.225 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-736	Decreed	1910-05-23	2 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-737A	Decreed	1893-03-30	0.7 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-737B	Decreed	1893-03-30	0.7 FISH CREEK	IRRIGATION	MOLYNEUX, C E (Current)
37-738	Decreed	1893-03-30	2 FISH CREEK	IRRIGATION	ELLSWORTH, MAURICE C (Current)
37-739	Decreed	1905-08-18	2 FISH CREEK	IRRIGATION	REAY, DELORES (Current); REAY, SHIRL (Current)
37-740	Decreed	1905-08-18	2.4 FISH CREEK	IRRIGATION	PECK, RONALD F (Current); PECK, WANDA (Current)
37-741	Decreed	1908-05-15	0.5 FISH CREEK	IRRIGATION	SHAW, T FRANK (Current)
37-743A	Decreed	1909-01-16	1.6 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-743B	Decreed	1909-01-18	1.6 FISH CREEK	IRRIGATION	SWEAT, CATHERINE L (Current); SWEAT, MILFORD (Current)
37-744B	Decreed	1905-09-15	1.3 FISH CREEK	IRRIGATION	BAIRD, DENNIS (Current); FISCUS, LAURIE (Current)
37-745	Decreed	1909-05-05	0.4 FISH CREEK	IRRIGATION	LAVA LAKE LAND & LIVESTOCK LLC (Current)
37-746	Decreed	1911-05-30	0.5 FISH CREEK	IRRIGATION	LAVA LAKE LAND & LIVESTOCK LLC (Current)
37-747	Decreed	1908-08-01	2.9 FISH CREEK	IRRIGATION	REAY, DELORES (Current); REAY, SHIRL (Current)
37-748	Decreed	1905-08-18	1.6 FISH CREEK	IRRIGATION	KIMBALL, DARLA M (Current); KIMBALL, LAWRENCE C (Current)
37-749C	Decreed	1893-03-30	3.2 FISH CREEK	IRRIGATION	ELLSWORTH, MAURICE C (Current)
37-750	Decreed	1908-06-15	0.8 FISH CREEK	IRRIGATION	TELFER INC (Current)
37-751	Decreed	1907-05-01	0.5 FISH CREEK	IRRIGATION	PARDUE CATTLE COMPANY LLC (Current)
37-752	Decreed	1893-03-30	0.225 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-754	Decreed	1908-05-15	1 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-756	Decreed	1893-03-30	0.225 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-757	Decreed	1909-01-16	4 FISH CREEK	IRRIGATION	PARDUE CATTLE COMPANY LLC (Current)
37-758	Decreed	1894-06-01	2 FISH CREEK EAST FORK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-759	Decreed	1894-06-01	0.5 FISH CREEK EAST FORK	IRRIGATION	SKELTON, FRANCES (Current); SKELTON, LEON (Current)
37-760	Decreed	1895-06-01	0.8 FISH CREEK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-761A	Decreed	1895-06-01	0.25 FISH CREEK EAST FORK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-761B	Decreed	1895-06-01	0.75 FISH CREEK EAST FORK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-762	Decreed	1902-06-01	0.4 FISH CREEK EAST FORK	IRRIGATION	SKELTON, FRANCES (Current); SKELTON, LEON (Current)
37-763	Decreed	1897-06-01	0.8 FISH CREEK	IRRIGATION	SKELTON, FRANCES (Current); SKELTON, LEON (Current)
37-764	Decreed	1900-06-01	0.8 FISH CREEK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-766	Decreed	1905-04-10	0.8 FISH CREEK EAST FORK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-767	Decreed	1904-04-30	1 FISH CREEK	IRRIGATION	BLANCHARD, RICHARD F (Current)
37-768A	Decreed	1903-04-30	0.9 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-769	Decreed	1893-03-30	2.3 FISH CREEK	IRRIGATION	PARDUE CATTLE COMPANY LLC (Current)
37-769A	Decreed	1893-03-03	0.9 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-770C	Decreed	1893-03-30	2.5 FISH CREEK	IRRIGATION	PARDUE CATTLE COMPANY LLC (Current)
37-771	Decreed	1898-06-01	0.1 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-772A	Decreed	1893-03-30	1.6 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-773	Decreed	1905-08-18	1.6 FISH CREEK	IRRIGATION	WHITBY, BEVERLY A (Current); WHITBY, ROBERT D (Current)
37-774A	Decreed	1905-08-18	1.26 FISH CREEK	IRRIGATION	WILDE, EDIC L (Current); WILDE, SHERIE (Current)
37-774B	Decreed	1905-08-18	1.34 FISH CREEK	IRRIGATION	STYHL, EDITH (Current); STYHL, PHILIP (Current)
37-775	Decreed	1905-08-18	2.16 FISH CREEK	IRRIGATION	STYHL, ELWYN (Current)
37-776	Decreed	1905-08-18	5.8 FISH CREEK	IRRIGATION	HAWKES, ANTHONY B (Current); HAWKES, CHERYL A (Current)
37-777	Decreed	1899-08-30	3.1 FISH CREEK	IRRIGATION	PECK, LEON (Current)
37-778	Decreed	1907-06-15	2.2 FISH CREEK	IRRIGATION, STOCKWATER	BARTON, JOHN K (Current); BARTON, LETA (Current)
37-778	Decreed	1905-04-21	1.06 FISH CREEK WEST FORK	IRRIGATION, STOCKWATER	BARTON, JOHN K (Current); BARTON, LETA (Current)
37-780A	Decreed	1893-03-30	1.3 FISH CREEK	IRRIGATION	BLANCHARD, RICHARD F (Current)
37-780B	Decreed	1893-03-30	0.8 FISH CREEK	IRRIGATION, STOCKWATER	CROSS, GILBERT G (Current)
					MOLYNEUX, C E (Current)

37-781A	Decreed	1883-03-30	1.62 FISH CREEK	IRRIGATION	CENARRUSA, JANICE M (Current); CENARRUSA, JERRY (Current)
37-781B	Decreed	1883-03-30	1.58 FISH CREEK	IRRIGATION	CENARRUSA, JANICE M (Current); CENARRUSA, JERRY (Current)
37-782	Decreed	1904-05-18	1.2 WEST FORK FISH CREEK	IRRIGATION	HANSEN, LANEETA (Current)
37-786	Decreed	1904-08-23	1.4 FISH CREEK	IRRIGATION	TELFER INC (Current)
37-1163	Decreed	1923-05-01	1.56 FISH CREEK	IRRIGATION	CARNEY, BARBARA J (Current); CARNEY, GARY (Current); CARNEY, PAUL (Current); CARNEY, POLLY (Current)
37-1178	Decreed	1907-07-25	0.8 FISH CREEK	IRRIGATION	KIMBALL, DARLA M (Current); KIMBALL, LAWRENCE C (Current)
37-1179	Decreed	1909-01-16	4 FISH CREEK	IRRIGATION	KIMBALL, DARLA M (Current); KIMBALL, LAWRENCE C (Current)
37-1181	Decreed	1910-08-10	1.1 FISH CREEK	IRRIGATION	ELLSWORTH ENTERPRISES (Current)
37-1214	Decreed	1884-06-01	0.5 FISH CREEK	IRRIGATION	SKELTON, FRANCES (Current); SKELTON, LEON (Current)
37-1215	Decreed	1885-06-01	1.6 FISH CREEK	IRRIGATION	SKELTON, FRANCES (Current); SKELTON, LEON (Current)
37-2185	License	1910-11-13	0.86 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-4392	Beneficial U	1928-12-31	0.8 FISH CREEK	IRRIGATION	LAVA LAKE LAND & LIVESTOCK LLC (Current)
37-10675	Decreed	1883-03-30	1.6 FISH CREEK	IRRIGATION	PETERSON, RICHARD E (Current); PETERSON, ROSEMARY (Current)
37-12021	Decreed	1904-05-15	0.4 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-12022	Decreed	1905-08-18	1.6 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-12023	Decreed	1903-05-15	1.6 FISH CREEK	IRRIGATION	PARDUE, W D (Current)
37-21127	Beneficial U	1930-01-01	0.02 LITTLE FISH CREEK	STOCKWATER	MACLAIG CORP (Current)
37-21218	Decreed	1905-08-18	0.8 FISH CREEK	IRRIGATION	RUSH, ALMA F (Current); RUSH, JOE L (Current)
37-21218	Decreed	1905-08-18	0.8 FISH CREEK	IRRIGATION	VILLAVICENCIO, MARLA (Current); VILLAVICENCIO, VICTOR (Current)
37-21636	Decreed	1905-09-15	0.65 FISH CREEK	IRRIGATION	PECK, KATHI L (Current); PECK, ROBB (Current)
37-21637	Decreed	1905-09-15	0.65 FISH CREEK	IRRIGATION	ADAMS, ROBERT MICHAEL (Current)
37-22082	Beneficial U	1885-07-01	0.02 UNNAMED STREAM, WEST F	STOCKWATER	LAVA LAKE LAND & LIVESTOCK LLC (Current)
37-22089	Beneficial U	1885-07-01	0.02 FISH CREEK, UNNAMED STF	STOCKWATER	LAVA LAKE LAND & LIVESTOCK LLC (Current)
37-22094	Beneficial U	1885-07-01	0.02 FISH CREEK, UNNAMED STF	STOCKWATER	LAVA LAKE LAND & LIVESTOCK LLC (Current)
37-22095	Beneficial U	1885-07-01	0.02 EAST FORK FISH CREEK, UN	STOCKWATER	LAVA LAKE LAND & LIVESTOCK LLC (Current)

TOTAL CFS 93.54

State of Idaho

Department of State

CERTIFICATE OF INCORPORATION OF

CAREY VALLEY IRRIGATION RESERVOIR COMPANY, INC.

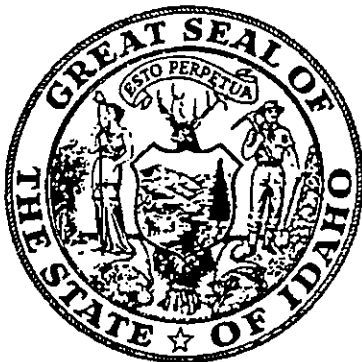
I, PETE T. CENARRUSA, Secretary of State of the State of Idaho, hereby certify that duplicate originals of Articles of Incorporation for the incorporation of _____

CAREY VALLEY IRRIGATION RESERVOIR COMPANY, INC.

duly signed pursuant to the provisions of the Idaho Nonprofit Corporation Act, have been received in this office and are found to conform to law.

ACCORDINGLY and by virtue of the authority vested in me by law, I issue this Certificate of Incorporation and attach hereto a duplicate original of the Articles of Incorporation.

Dated October 3, 19 79.



Pete T. Cenarrusa

SECRETARY OF STATE

Corporation Clerk

FILED

ARTICLES OF INCORPORATION

OCT 5 1 22 PM '79

OF

SECRETARY OF STATE

CAREY VALLEY IRRIGATION RESERVOIR COMPANY, INC.

We, the undersigned, full-aged citizens of the United States and all residents of the County of Blaine, State of Idaho, do hereby voluntarily associate ourselves together for the purpose of forming a mutual non-profit irrigation corporation under the provisions of Idaho Code Section 30-301, et. seq., and the amendments thereto.

ARTICLE I

Name

The name of this corporation shall be the "CAREY VALLEY IRRIGATION RESERVOIR COMPANY, INC.," and shall have perpetual existence.

ARTICLE II

Purposes

The purposes for which this corporation is formed are as follows:

(1) To construct, contract for the construction, own, hold, maintain and operate on a non-profit basis a certain dam, reservoir, irrigation system and appurtenant facilities located in Blaine County, Idaho, whereby certain waters are to be diverted from Fish Creek and its tributaries, stored in the Fish Creek Reservoir, conveyed, and delivered for beneficial use to irrigate lands which lie in Township 1 North, Range 42 E.B.M.,

1 Township 1 South, Range 22 E.B.M., and Township 1 South, Range
2 21 E.B.M., all in Blaine County, Idaho;

3 (2) To acquire, hold, own adequate water rights,
4 directly or by contract, for the irrigation of the lands under
5 said irrigation system, and to acquire additional or other water
6 rights if deemed desirable;

7 (3) To deliver said water represented by said water
8 rights for the benefit of the stockholders of this corporation
9 equally and ratably per share, or to convey water owned by
10 others under such rules as may be established in the company's
11 By-laws;

12 (4) To fix, charge, levy and collect from the stock-
13 holders assessments against said stock in sufficient and
14 appropriate amounts to pay construction charges, tolls, rentals,
15 assessments, operation and maintenance costs, pumping charges or
16 other service charges that are appropriate;

17 (5) To sell and issue shares of stock, as well as
18 different classes of stock, if necessary, for the purpose of
19 appropriately levying and assessing operation and maintenance
20 charges on an equitable basis among lands served by the system;

21 (6) To levy assessments against the capital stock in
22 accordance with Idaho law, and as provided in these Articles and
23 in the By-laws of this corporation and to provide the manner of
24 collecting the same and the penalty to attach for non-payment
25 thereof including the right to a lien against the land where the
26 water represented by such stock is appurtenant and to foreclose

1 such lien as provided in Idaho Code Section 42-2201 et. seq., or
2 any amendment thereto;

3 (7) To operate, maintain, rehabilitate, reconstruct,
4 and improve dams, reservoirs, canals, pumps, motors, pumping
5 stations, pipelines, lateral ditches, reservoirs, and other
6 irrigation structures or related facilities;

7 (8) To do any and all things necessary or proper to be
8 done in conducting the business of supplying the corporation's
9 stockholders with irrigation water for beneficial use on the
10 lands served by the corporation's system;

11 (9) To buy, own, hold, lease and dispose of such real
12 and personal property as may be necessary or expedient for the
13 proper conduct of the corporation's business;

14 (10) To commence, prosecute or defend suits, to
15 protect water rights appurtenant to the lands served by said
16 canal system, or suits for any and all other purposes;

17 (11) To borrow money, negotiate notes, bonds,
18 mortgages or other obligations for the payment of money for the
19 purposes of raising revenue to defray the expense of con-
20 struction, improvement, and all other capital expenditures, as
21 well as the management, maintenance and operation of its irriga-
22 tion system;

23 (12) To enter contracts with the Idaho Water Resource
24 Board, other State or Federal Agencies, or other persons or
25 entities in regard to the acquisition of water rights or for the
26 construction or reconstruction of dams, reservoirs, and all
27 other necessary facilities.

1 and stock shall be issued to only such persons, groups of
2 persons, organizations or corporations who own or operate real
3 property where the corporation can physically and has previously
4 made delivery of water from Fish Creek Reservoir under the
5 irrigation system presently constructed and operating, or as may
6 be later expanded or extended hereafter by acquiring additional
7 water supplies and improving and enlarging the distribution
8 system of the corporation. The corporation shall be entitled to
9 retain and hold in trust the legal title to all storage water
10 rights in Fish Creek Reservoir for the benefit of its
11 shareholders when such rights are transferred to the corporation
12 and each shareholder for whom the company holds such water
13 rights shall be entitled to his proportionate share of the water
14 rights so held in trust in accordance with his stock ownership,
15 conditioned upon the payment of all construction, operation and
16 maintenance, and other charges which may be levied against each
17 share of stock as is appropriate and in accordance with the
18 articles and By-laws of this corporation.

19 Section 2. The authorized capital stock of this
20 corporation shall be ~~Fourteen Hundred Four~~ ^{Fourteen Hundred-Fifteen} (14,411) shares of no par
21 value stock. Each share of stock in this corporation shall
22 represent one acre foot of storage space in Fish Creek Reservoir
23 owned by the corporation, together with a proportionate interest
24 in the dam, reservoir, diversion works and other facilities.

25 Section 3. In the event that the system is a sub-
26 sequently enlarged and adequate water is available for the

1 delivery to additional acres of land without reducing the amounts
2 of water to which the then present stockholders are entitled,
3 subject to the pre-emptive rights of the then stockholders, the
4 corporation may issue additional shares of the capital stock to
5 new members who shall be entitled to vote and share in the
6 ownership of the corporation equally with old members so long as
7 the new members pay their proportionate part of the total
8 construction cost of the project, including all irrigation
9 facilities, all capital costs, and equipment, and thenceforth
10 assume and agree to pay the annual operation and maintenance
11 expenses necessary for the operation of the complete system.

12 Section 4. The shares of capital stock of this cor-
13 poration and the water represented thereby shall not be trans-
14 ferable except when said transfer is approved by the Board of
15 Directors under such criteria as are prescribed in the By-laws
16 and such rules and regulations as might be adopted by the Board
17 of Directors.

18 Section 5. Each shareholder of this corporation shall
19 be entitled to one vote for every share of stock held by said
20 shareholder, regardless of the class of stock.

21 Section 6. This corporation is organized on a non-
22 profit basis for the mutual benefit of its shareholders and
23 consequently will not have profits from which to pay dividends
24 on its capital stock. Each year after all expenses of the
25 corporation have been paid and reasonable reserves have been
26 said aside to meet anticipated costs as determined by the Board

1 of Directors, any additional monies of the corporation may be.
2 accumulated in a fund for the purpose of replacing, enlarging,
3 extending, and repairing the system and property and property of
4 the corporation, and for such other purposes as the Board of
5 Directors may determine to be for the best interests of the
6 corporation. No distribution of any surplus funds shall be made
7 to the shareholders of this corporation except on final
8 dissolution of the corporation.

9

ARTICLE VII

10

Benefit of Shareholders

11 The corporation shall operate and maintain all por-
12 tions of the dam, reservoir and delivery system primarily for
13 the benefit of the lands to which said water rights are
14 appurtenant.

15

ARTICLE VIII

16

Right to Lien

17 The corporation shall be entitled to a first and prior
18 lien upon the lands to which the rights represented by the stock
19 in this corporation are appurtenant, for all amounts owing
20 pursuant to the assessments levied pursuant to these Articles,
21 said lien to be perfected, maintained and foreclosed in the
22 manner as set out in Idaho Code Sections 42-2202 -42-2209.

23

ARTICLE IX

24

Amendment of Articles

25 These Articles may be amended in any manner permitted
26 or authorized by law by a favorable vote of a majority of the

1 stockholders present or represented by proxy at a meeting of the
2 shareholders duly called on notice of the specific purpose
3 thereof and containing a statement of the proposed amendment.

4 ARTICLE X

5 Subscription of Stock

6 The amount of capital stock of said corporation which
7 has actually been subscribed is Fifteen Hundred Eighty Six (1586), and
8 the following are the names and addresses of each of the
9 incorporators and the number of shares subscribed by each:

Joe Rush	150 shares
Milford Sweat	200 shares
Maurice C. Ellsworth	84 shares
Shirl M. Reay	652 shares
Harold J. Tolman	500 shares

10 ARTICLE XI

11 By-Laws

12 The power to adopt, repeal and amend the By-Laws of
13 the corporation shall be in the stockholders and the By-Laws may
14 be amended, adopted, or repealed by a majority vote of the stock
15 issued and entitled to vote.

16 ARTICLE XII

17 Incorporators, Original Members and Directors

18 The names and addresses of the incorporators and
19 original members of the original Board of Directors of the
20 corporation each of whom shall serve as a trustee until his
21 successor is duly elected and qualified are:

	<u>NAME</u>	<u>ADDRESS</u>
1		
2	<u>Joe Rush</u>	<u>Route 1, Carey, Idaho 83320</u>
3		
4	<u>Milford Sweat</u>	<u>P.O. Box 234, Carey, Idaho 83320</u>
5		
6	<u>Maurice C. Ellsworth</u>	<u>P.O. Box 158, Carey, Idaho 83320</u>
7		
8	<u>Shirl M. Reay</u>	<u>Route 1, Carey, Idaho 83320</u>
9		
10	<u>Harold J. Tolman</u>	<u>P.O. Box 206, Carey, Idaho 83320</u>
11		

12 IN WITNESS WHEREOF, The undersigned, all being the
13 incorporators of Carey Valley Irrigation Reservoir Company,
14 Inc., have executed these Articles of Incorporation this 2d
15 day of October, 1979.

16	<u>Joe Rush</u>
17	<u>Milford Sweat</u>
18	<u>Maurice C. Ellsworth</u>
19	<u>Shirl M. Reay</u>
20	<u>Harold J. Tolman</u>

21 STATE OF IDAHO)
22) ss.
23 County of Blaine)

24 On this 2d day of October, 1979, before me, the
25 undersigned, a Notary Public in and for said County and State,
26 personally appeared Joe Rush, Milford

1 Sweet, Maurice C. Ellsworth, Skirl M. Reay,
2 Harold J. Talman, known to me to be the persons whose
3 names are subscribed to the within instrument and acknowledged
4 to me that they executed the same.

5 IN WITNESS WHEREOF, I have hereunto set my hand and
6 affixed my official seal, the same day and year in this certi-
7 ficate first above written.

8
9
10


NOTARY PUBLIC FOR IDAHO
Residing at: Carey

